RECOUP

UK Household Plastics Collection Survey 2021

A PUBLICATION TO OUTLINE THE COLLECTION OF HOUSEHOLD PLASTICS IN THE UK

UK HOUSEHOLD PLASTICS COLLECTION SURVEY

2021

This work was commissioned by RECycling of Used Plastics Limited (RECOUP) using data, estimates and views gathered from UK Local Authorities and waste management companies. It also has the support of LARAC (Local Authority Recycling Advisory Committee) and NAWDO (National Association of Waste Disposal Officers).

The content and analysis contained in this document is based on the information received. While every effort has been made to ensure the accuracy of the contents of this report, RECOUP cannot accept any responsibility or liability for any errors or omissions. Opinions expressed and recommendations provided herein are offered for the purpose of guidance only.

Information in this report is correct as of November 2021.

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RECOUP is a charity and leading authority providing expertise and guidance across the plastics recycling value chain. Built on a network of valued members, collaboration is central to our activities, and we are committed to securing sustainable, circular and practical solutions for plastic resources both in the UK and worldwide.

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Foreword

The RECOUP UK Household Plastics Collection Survey is a specialist, research-based report for stakeholders and decision makers in the household plastics value chain. The aim of the Survey is to provide evidence to support the development of sustainable plastic collection and recycling solutions across the UK.

Survey 2021

Each year, all Local Authorities in the UK, including borough, district, city and county councils, as well as waste partnerships, are surveyed through an online questionnaire about many of the key areas affecting their recycling collections and operations. Collation of this information allows for the *2021 RECOUP Survey* to provide a comprehensive and transparent review of the collection of household plastics for recycling in the UK, as well as the challenges and opportunities facing Local Authorities and waste management providers.

The *RECOUP Survey* is supported by the Local Authority Recycling Advisory Committee (LARAC) and the National Association of Waste Disposal Officers (NAWDO), which is invaluable when collecting data and reporting the results.

COVID-19 and Brexit

Since March 2020, there has been considerable disruption to all walks of life, in all countries across the globe, as a result of the COVID-19 pandemic. This, combined with the UK leaving the European Union, has caused significant and unavoidable impacts to the plastics supply chain in the UK, both around the economics and logistics. These factors have created uncertainty in processes, increased costs for imports and exports, as well as widespread shortages, particularly for heavy goods vehicle (HGV) drivers. This year's *RECOUP Survey* will explore this in greater detail, as well as the impacts and changes to the volumes of plastic packaging placed on the market and collected for recycling.

Legislation

Northern Ireland faces further complications due to the new *Northern Ireland Protocol* [1] , which has seen it adopt several EU policies separately from the rest of the UK, including the implementation of the EU's *Single-Use Plastic Directive* [2] from January 2022.

Despite the disruption, Government plans around the various consultations on waste and environmental legislation have largely gone ahead as scheduled. This, as part of the *Resources and Waste Strategy* [3] , will help to transform the future governance, structure, and funding of how the UK manages plastic packaging waste. These legislative changes include: the reform of the *UK Packaging Producer Responsibility System* [4] and use of *Extended Producer Responsibility* [5] (EPR), *Consistency in Household and Business Recycling in England* [6] , introduction of a *Plastic Packaging Tax* [7] to incentivise the use of at least 30% recycled content in plastic packaging, and introduction of *Deposit Return Schemes* (DRS) for drinks containers in England, Wales and Northern Ireland [8] , and Scotland [9] separately.

Government, industry, and the general public have shown continued commitment to environmental targets, and whilst some consultations and implementation dates for legislation have been pushed back, the overall aims and objectives remain the same.

Thank you for your continued support!

With the continued importance and focus on addressing the challenges of plastic waste, the Survey responses from Local Authorities and waste management providers each year are increasingly valuable.

RECOUP would like to thank all of the Local Authority waste management and recycling scheme staff members and their service contractors who took the time to respond to this year's *Survey*.

Despite the challenges faced in 2020 and 2021, the response rate this year was extremely positive.

The continued support from across the plastics supply chain helps to make the research that forms the core data both comprehensive and worthwhile.

In recent years, the findings in the *RECOUP Survey* reports have received coverage in Sky News Ocean Rescue, the BBC, national and industry media, research reports, Government consultations and in communications from other corporate and non-governmental organisations (NGOs).

Data and views in this report will feed directly into waste management and resource strategy development. This includes consultations, advisory groups, and discussions. It will also help to highlight opportunities and challenges to the wider industry, decision makers, and the media on a global level.

The *RECOUP UK Household Plastics Collection Survey* is also supported by the Local Authority Recycling Advisory Committee (LARAC) and National Association of Waste Disposal Officers (NAWDO).

Thank you to all of the following waste management companies, Local Authorities and waste partnerships for their continued support of RECOUP through membership.

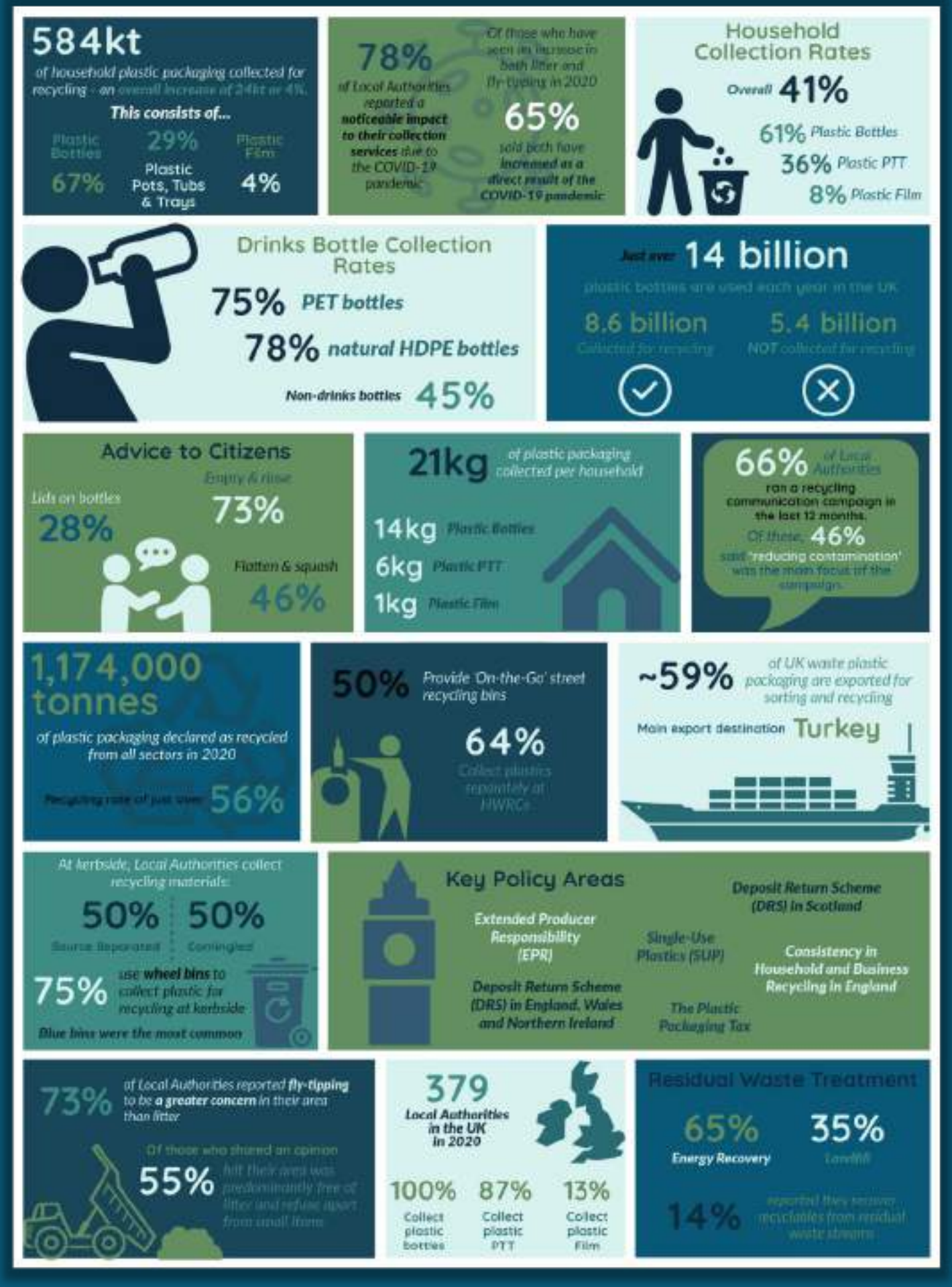
To find out more about RECOUP membership, visit the RECOUP website:

www.recoup.org

You can also follow RECOUP and Pledge2Recycle Plastics on

the following social media platforms:
recoup_uk
pledge2recycle

Data Summary



Report Summary

UK Household Plastics Collection Data

- In 2020, there were **379** UK Local Authorities, all of which provide a kerbside household recycling collection service
- **584,000 tonnes** of household plastic packaging was collected for recycling in 2020. This is an overall increase of around 24kt or 4% on 2019
- **828,000 tonnes** was not collected for recycling went to landfill or for energy recovery
- This breaks down as **21 kg** of plastics packaging collected per household per year, out of a total **51 kg** consumed
- Just over **14 billion** plastic bottles are used each year in the UK. That's **38 million** plastic bottles every day – **1.4 bottles** per household per day
- The overall collection rate of all consumer plastic packaging in 2020 was **41%**
- **1,174,000 tonnes** of plastic packaging was declared as recycled from all sectors in 2020, this is a recycling rate of **just over 56%**

Placed on the Market Figures

- It is estimated that, In 2020, **1,412kt** of household plastic packaging was placed on the market in the UK
- Estimates from the Valpak *PackFlow Covid-19 Phase II: Plastic* report showed changes in packaging Placed on the Market in 2020 as a result of the COVID-19 pandemic

Plastic Bottles

- **100%** of Local Authorities offered a kerbside recycling collection for plastic bottles in 2020
- **390,000 tonnes** of plastic bottles were collected for recycling in 2020. This is an increase of 13 kt on 2019
- In 2020, **67%** of household plastic packaging collected was plastic bottles
- This breaks down as **14 kg** of plastic bottles collected per household out of a total of **23 kg** consumed
- The collection rate for drinks bottles is **75% for PET drinks bottles** and **78% for natural HDPE drinks bottles**
- For non-drinks bottles, the collection rate is **45%**
- The collection rate for all household plastic bottles is **61%**
- Over **8.5 billion** plastic bottles were collected for recycling in 2020. That's over **23 million** bottles every day
- Over **5 billion** household plastic bottles were not collected for recycling from UK households in 2020. That's just under **15 million** plastic bottles every day
- The average UK household uses **over 500** plastic bottles a year and recycles around 325 of them. 175 are not disposed of for recycling
- **425 tonnes** of plastic bottles were collected for recycling in 1994. Since then **over 100 billion** plastic bottles have been collected in total. That's over **4.5 million tonnes** of plastic collected for recycling

Plastic Pots, Tubs and Trays

- 329 (**87%**) Local Authorities offered a kerbside recycling collection for plastic pots, tubs and trays in 2020, a 2% increase on 2019
- In 2020, **29%** of plastic packaging collected was plastic pots, tubs and trays
- **170,000 tonnes** of plastic pots, tubs and trays was collected for recycling in 2020, 9kt more than in 2019
- **This breaks down as 6 kg** of plastic pots, tubs and trays collected per household per year, out of a total **17 kg** Placed on the Market
- This was a **36%** collection rate for plastic pots, tubs and trays
- Around **10,000 tonnes** of plastic pots, tubs and trays were collected in 2007. This is now almost **170,000 tonnes** annually. Since 2007, almost **2 million tonnes** have been collected for recycling in total

Plastic Film

- 49 (**13%**) Local Authorities offered a kerbside recycling collection for plastic film in 2020, a 1% decrease on 2019
- 2020 was the **4th consecutive year of decline** of Local Authorities offering a kerbside recycling collection for plastic film
- In 2020, **4%** of plastic packaging collected was plastic film
- **25,000 tonnes** of plastic film was collected for recycling in 2020, 3kt more than in 2019
- This breaks down as **1 kg** of plastic film collected per household (out of an average of **11 kg** Placed on the Market)
- This was a **8%** collection rate for plastic film
- **20** of the 49 Local Authorities who collect plastic film only accept carrier bags

Collection Methods

- **72%** of Local Authorities collect recyclables on a fortnightly basis, **22%** weekly, and the remaining **6%** 3-or-4 weekly
- **75%** of Local Authorities use wheel bins to collect plastic for recycling at kerbside with **blue** the most common bin colour
- Other kerbside collection methods include bags and boxes
- **50%** of Local Authorities collect recyclable materials in co-mingled streams, whilst the other **50%** use some form of source separated collection (e.g. separate glass, paper)
- **78%** of Local Authorities reported a noticeable impact to their collection services due to the COVID-19 pandemic
- Of those reporting an impact, **59%** said that their dry mixed recycling was affected
- Provision is in place in some Local Authorities for the collection of other plastics, including plant pots, dark and/or coloured plastics and waste electronics
- **12%** of Local Authorities communicate that they collect plastic plant pots at the kerbside for recycling

Actual Recycling Rates

- Collection data does not reflect actual recycled material quantities with yield losses meaning Material Recovery Facility input quantities are between **15 to 50% higher** than the reprocessing output quantities
- Local Authorities reported reject rates of **up to 40%**, with an average of **13%**

Treatment of Residual Waste

- Residual waste treatment continues to be a key subject in recovering post-consumer plastic packaging, sourcing new sources of material to capture for recycling, and also in reducing gate fee costs for energy recovery and landfill
- The treatment processes reported for general waste were **65%** to energy recovery and **35%** to landfill
- **14%** of Local Authorities reported that they actively investigate or recover recyclables from their residual waste stream

UK Recycling Infrastructure

- **71** Local Authorities said they are aware of planned building and expansion of infrastructure in their areas. Whilst many are Energy from Waste facilities, there is capacity factored in for new and growing sorting and reprocessing sites for household materials, including plastics
- There are challenging commercial conditions and fine profit margins in the reprocessing sector - this is the greatest barrier to producing recycled plastic the UK
- **Chemical Recycling** is cited as a future solution for hard to recycle plastics and it should be used to complement current mechanical recycling, not to replace it

Waste Crime

- **73%** of Local Authorities reported fly-tipping to be a greater problem in their area than litter
- **55%** of Local Authorities who shared an opinion felt that their area was 'predominantly free of litter and refuse apart from small items'
- **43%** of Local Authorities reported an increase in litter and/or fly-tipping in 2020
- Of those who have seen an increase in both litter and fly-tipping in 2020, **65%** said both have increased as a direct result of the COVID-19 pandemic

Recycled Plastic Markets

- **Turkey** is the main destination for UK exports despite changes to their import requirements
- **59%** (688,000 tonnes) was exported and **41%** (486,000 tonnes) recycled in the UK This is a **3%** increase on material recycled in the UK compared to 2019
- It remains a challenge to audit material market flows. Precise information and **transparency** about end destinations of exported materials should be high on the agenda for the UK, as it shapes its strategy for the future
- In 2020, PRN prices averaged around **£150 per tonne**. These **ranged from £8 to £350** across the financial year
- These extremes highlight the complex and potentially volatile nature of export markets and how any reform to the packaging producer responsibility system needs to control and stabilise any future version of PRNs
- In 2020, **£230m** was generated from PRNs and PERNs, with **£149m** of this being attributed from plastics
- In the first half of 2021, around **49%** of the UK's plastic packaging was exported for recycling
- On 1 January 2021, amendments to the *Basel Convention* came into force, determining what is to be defined as 'green list' waste, what can be exported for recycling, and to where

Communications

- **66%** of Local Authorities reported they had undertaken a communication campaign to residents in the last 12 months
- Of these, the main focus for communications to residents was **reducing contamination (46%)** followed by the **introduction of a new service (11%)**
- **28%** of Local Authorities ask residents to keep lids on plastic bottles when disposing of them. **18%** ask residents to remove lids. **41%** of Local Authorities had no guidance when it came to the method of disposal of bottle lids
- **73%** of Local Authorities ask residents to empty, rinse or wash plastic packaging before disposal
- **46%** of Local Authorities ask residents to flatten and squash bottles before disposal. **52%** had no clear message, and **2%** specifically ask residents not to squash bottles
- **17%** of Local Authorities who responded reported planning changes to their collection frequency or target materials in the next 12 months
- **5%** of Local Authorities use polymer codes to communicate to residents what plastics can and cannot be recycled at kerbside

Pledge2Recycle Plastics

- Pledge2Recycle Plastics is RECOUP's citizen behaviour initiative, working to reduce consumer confusion around plastic recycling
- A resource pack is available to provide Local Authorities, businesses and educational establishments with content to help citizens be more confident when recycling. This, and other resources, can be downloaded for **FREE** from the Pledge2Recycle Plastics website
- In 2021, Pledge2Recycle Plastics launched the *Kent UP* project, funded by UK Research & Innovation's (UKRI) *Smart Sustainable Plastic Packaging Fund* (SSPP). This is an industry-led communications and behaviour change research project in Kent aiming to understand the connection between communications and plastics recycling. Kent UP is connecting over 673,000 households across Kent over 12 months, to gain citizen insights, deliver plastics recycling messages and evaluate the resulting tonnage and contamination data.
- If you are planning a plastics communication campaign, please contact the Pledge2Recycle Plastics team via www.pledge2recycle.co.uk

Policy and Regulation

- The policy and regulation of UK's waste and recycling, particularly around plastic packaging, continued to develop in 2021 ahead of major changes in the coming years
- In late 2020, Defra published the packaging waste recycling targets for businesses. These are targets placed on the producer value chain and were **57% in 2020**
- Reform of the *UK Packaging Producer Responsibility System*, otherwise known as *Extended Producer Responsibility*, is due to take place in the coming years. This will fund the full net cost of managing the collection, transport, sorting, reprocessing and disposal of used packaging
- In Summer 2021, responses to Defra's *Consistency in Household and Business Recycling in England* consultation were submitted. This policy aims to set a consistent set of materials recyclable across England, including plastic films and flexibles
- HMRC's *UK Plastic Packaging Tax* is due to be implemented from April 2022. This will require predominantly plastic packaging to contain **30% recycled content** or pay a **£200 per tonne** tax. Discussion around evidence of recycled content and a need for a Recycled Content Verification System are ongoing
- Consultations have taken place around the implementation of a *Deposit Return Scheme* in England, Wales and Northern Ireland
- Scotland's plans to implement it own independent *Deposit Return Scheme* have been delayed indefinitely
- The Scottish and Welsh Governments have issued consultations around single-use plastics, both in line with Article 5 of *the EU Single-Use Plastics Directive 2019/904*
- In November 2021, England and Northern Ireland have opened consultations on their own single-use plastic bans
- Northern Ireland will adopt the *EU Single-Use Plastics Directive* from January 2022 as per the *Northern Ireland Protocol*
- The *European Green Deal* is a set of policy initiatives from the European Commission with the overall objective to make Europe carbon neutral by 2050 whilst also being competitive economically and improving people's quality of life.
- In January 2021, a *Plastic Waste Levy* on EU member states for plastic packaging that goes unrecycled was brought in at **€0.80 per kg**. The estimated €6-8 billion raised through this levy will go to the European Commission as part of the *Coronavirus Recovery Fund*

RECOUP – Opinion

The future of the UK's waste and recycling system, in terms of its aims, how it's governed, managed, funded and delivered, is all being played out in a complex and diverse set of potentially high impact policies.

The Policy Whirlpool

There are a multitude of various policies floating around and they're all going to come together at different times and provide different dynamics. Like a whirlpool, they're going to be thrown together, probably at speed, and how they settle will direct the capability of the UK to manage our waste and recycling systems, possibly for a generation.

This includes reforming the *Packaging Producer Responsibility System* [4] [5] , *Consistency in Household and Business Recycling in England* [6] , use of *Deposit Return Schemes* (DRS) [8] [9] , the *Plastic Packaging Tax* [7] , and changing policy and positions on the export and import of waste.

As we look ahead to navigating our way through the many aspects of policy strategy and development, there are two key words we all need to keep in mind – **evidence**, and the **context** in which it's presented, something which has been highlighted more so than ever since the start of the COVID-19 pandemic. When it comes to waste and recycling, particularly plastic, the rhetoric can be fixed or adjusted too easily to alter the desired outcomes.

"Plastics Recycling Doesn't Work" – Really?

Evidence presented in a clear way with the appropriate context should generate the right messages, but sometimes, the messages can get lost or misinterpreted. When answering children's questions ahead of the COP26 Climate Change Conference [10] , it's fair to say Boris Johnson probably didn't mean to get across *"recycling plastic doesn't work"* or that *"reusing plastics doesn't begin to address the problem"*, or even what products he was referring to when saying *"we've all got to cut down our use of plastic"*.

He's right in part, we should reduce our consumption of materials where we can, and recycling and reuse are not the primary answers to the threats of unprecedented climate change. Something more culturally and systemically driven is behind the climate crisis.

The UN Environment Programme (UNEP) has reported that the extraction and processing of natural resources (such as through mining and farming) contribute to over 90% of biodiversity loss and water stress, and half of total global greenhouse gas emissions – and that is even before accounting for any fuel that is burned [11] . The situation is of course escalating.

UNEP also says resource extraction has more than tripled since 1970, including a 45% increase in fossil fuel use, and if the global population continues to grow as predicted it could require the equivalent of almost three planets to provide the natural resources needed to sustain current lifestyles.

The situation is complex. We know the need for change, but how do we go about it?

Sustainable Use of Resources

The Government followed up on Boris Johnson's statements by saying that its policy wants to increase recycling as it results in lower carbon emissions in comparison to manufacturing products from virgin materials. That is to be applauded if we develop well-designed and effective waste and recycling systems. However, we also need to consider two other parts of the waste hierarchy: **reducing** the creation of waste in the first place, and how **reuse** models can be adopted.

Our current consumption habits prioritise convenience and low cost, as well as planned obsolescence. This is a concept where a product is no longer maintained or usable even though it is still functioning correctly and/or still in full working order, effectively limiting its lifespan and creating an eventual need for disposal by its design.

Good examples of this can be seen with clothing and electrical goods. It's a complicated market though. Paying more for something that is designed to last longer than a cheaper version can be effective in reducing resource consumption and create a more 'circular' product, but that's not always the case. Many choose to pay high-end prices for smart phones, and while they may be smart by name, they are not intrinsically smart by design when looking at use of precious materials and how they are recovered and reused once they become waste.

Selling products is of course good for the economy but maximising their primary use **AND** retaining those valuable materials into secondary and maybe even multiple uses after their initial use are central to developing circular products. Yes, we need to reduce consumption of the world's resources, but we need to flip the commercial narrative to incorporate maximising the life of those materials in both their initial use, and when they become waste, whether it's through reuse, repair or recycling.

Sustainable use of plastics continues to have a strong role in changing this dynamic. This is both environmentally (through preservation of food and reduction of food waste, a major contributor to global greenhouse gas (GHG) emissions) and in human and animal health through safe and hygienic use of medicines and medical equipment. Of course, these benefits need to be complemented by far better management of waste materials, including plastic, by recovering more of what's used, recycling where possible, and reducing illegal activities around these materials such as organised waste crime, fly-tipping and littering.

It is fair to say the trend of 'plastic free' in its entirety would lead to damaging environmental and health impacts, and this call to action needs to change to reflect both the practical and environmental needs. Use of refillable and reusable packaging, for example, should be applauded if it's design and use measures favourably with any carbon impact analysis against other options. Choice of materials should also be based on environmental factors to make sure the item can be collected and recycled – changing from a fully recyclable plastic packaging to a non-recyclable multi-material version should never happen to satisfy the 'plastic free' message. This is where objective and informed Life Cycle Analyses (LCA) can support making decisions based on sure-footed foundations and sound evidence.

A Leading Role for Plastics Recycling

We as individuals cannot make any significant impact to reduce climate change, but our collective actions can. Despite waste and recycling not being given the attention it clearly deserves in order to meet net-zero targets at the COP26 Climate Change Conference [10] , given the wider environmental context, recycling of plastic packaging has, and will continue to have, a leading role to play.

Material collections provide the foundations. Sourcing enough material, and of the right quality for plastic reprocessors, is essential to grow the UK plastic recycling infrastructure. This is not only to provide solutions to the need to include recycled content and the *Plastic Packaging Tax* [7] , but to give businesses and investors the confidence they need to justify the build, set up and operational costs to meet the ever-increasing recycling needs in the UK.

UNEP estimated 11.2 billion tonnes of solid waste is collected worldwide [11] . Coming back to the UK, when the first RECOUP Household Plastics Collection Survey report was published in 1994, a mere 425 tonnes of plastic bottles were estimated to be collected for recycling – this figure is now over 580,000 tonnes.

How we use and treat plastic to maximise its benefits and mitigate negative outcomes is something Governments and policy makers, businesses, and every consumer can contribute to. This could be through policy makers getting eco-modulation right in the reform of the *Packaging Producer Responsibility System* [4 5] , businesses investing to improve material sorting or reprocessing technology, or you and I using the correct bins to dispose of waste or taking it home when we're out and about.

There is a phrase *"the whole is greater than the sum of its parts"*, and regardless how this came about through the Greek philosopher Aristotle's musings, it shows we need collaboration, both throughout the plastics value chain and in well-designed policy to guide and integrate new or changing systems. In all of this, we must not forget the consumer. The call to action to them must be clear, consistent and plentiful, and communications and behaviour change programmes such as RECOUP's Pledge2Recycle Plastics initiative should have the investment and support to enable this challenging transition.

The Role of the RECOUP Survey

As mentioned previously, **evidence** and **context** should be central to our strategies, discussions and communications as we navigate this whirlpool of policies to engage with policymakers and contribute to well informed policy for the future. RECOUP aims to provide both evidence and context in this report to assess how plastics recycling in the UK is performing, and where the efforts need to be placed, particularly around the estimated £2.7 billion raised through the reform of the *Packaging Producer Responsibility System* [4 5] .

A major part of measuring performance in the past has been about getting every Local Authority to collect plastic bottles as part of their kerbside collection schemes. Now all of them do, and as great achievement as it is, this is only one small part of a recycling supply chain that must be in place to be able to achieve the ambitions in the UK's resources and waste strategies.

- Steve Morgan, Head of Policy & Infrastructure, RECOUP

RECOUP – Our Role

RECOUP is a charity and leading authority built on a network of members, that provides expertise and guidance across the plastics recycling value chain committed to securing circular solutions for plastic resources.

RECOUP is a membership organisation which represents the whole of the plastics value chain. Members include retailers, brands, packaging producers, waste management companies, and Local Authorities, among other organisations. RECOUP receives no Government funding, is independent and seeks the best environmental outcomes.

RECOUP's vision is to lead and inform the continued development of plastics recycling that is sustainable, protects resources and helps the sector as a whole to achieve circularity and carbon reduction goals.

RECOUP is supported by members from all parts of the plastics packaging and recycling value chain. Working across all sectors, in all formats of plastics, RECOUP aims to help drive plastics recycling and resource management.

Members of RECOUP have access to a wealth of technical information on plastics, enabling a greater understanding of the complex issues at each point of the value chain, thus assisting in future-proofing provisions. It is important that the practical business case for maintaining and increasing plastics recycling is robust.

RECOUP aims to assist its Local Authority and waste management company members through stakeholder engagement, including through the RECOUP Conference [31] . In 2021, the Conference was held in a hybrid format for the first time, allowing delegates to attend in person or remotely.

Through the work of RECOUP, its members, the Board, and communication channels, we can influence policy, strategic development, and change. RECOUP would like to acknowledge the support from all its valued members which has allowed us to cover the costs of completing the *2021 RECOUP Survey*.

Governance

RECOUP is the only truly independent organisation representing the whole plastics value chain and wider stakeholders, and its Board of Trustees meet regularly to contribute to the development of RECOUP's strategy and direction. Trustees are nominated and elected by RECOUP members and each provide specific expertise in plastic resource management and recycling, including finance and legal issues. RECOUP therefore serves the shared interests of the plastics resource and recycling value chain and offer best value for members.

What We Do

Understanding the supply chain

It is increasingly important for citizens to be reassured that what is claimed as being placed for recycling, is actually being recycled. Expanding knowledge for citizens and businesses alongside maximising the quantity and quality of material captured helps to create viable end markets.

Packaging recyclability testing

RECOUP provides design guidance as well as assessing the credentials for packaging, ensuring compatibility with collection, sorting and recycling infrastructure. This is done through live tests, certification and verification of recyclability in plastic packaging through work alongside On-Pack Recycling Label (OPRL) [12] and with RECOUP as the UK auditor for RecyClass [13] .

Bespoke research and innovation projects

RECOUP focuses on the supply chain and challenges and opportunities around all plastic recycling, including hard-to-recycle plastics. This includes plastics in medical applications, small items and agricultural plastics, among other areas.

Communicating the message

RECOUP's citizen facing brand Pledge2Recycle Plastics aims to cut citizen confusion on what and how to recycle plastic packaging at the kerbside. This is done through providing resources and actively engaging with the public in order to educate, inspire and encourage positive behaviour change.

Plastics as a Resource

Green Growth and the Circular Economy

In recent years, there has been a growing demand for change from all areas of the plastic industry, media, Government and the general public. Whilst plastics should not be allowed to leak into the environment, neither should reducing the use of plastics be seen as an absolute solution. Plastic allows for packaging to be light, durable, and has qualities that enable greater carbon reductions, particularly when increasing shelf life of perishable food and reducing food waste.

It will be beneficial to restrict and reduce the use of plastics in applications which are genuinely unnecessary and represent significant environmental impact. With growing solutions including compostable plastics and reuse and refill options, it is important to consider the overall environmental impact.

The potential for real growth, innovation, and evolution across all parts of the plastic resources and recycling chain remains. There is a genuine confidence that we as a sector are collectively stepping up to the challenge of a plastic circular economy.

Hard-to-recycle plastics

RECOUP works on specific activities relating to circular solutions for hard-to-recycle plastics, including both polymers and formats which largely go unrecycled at present in the UK. This includes schemes including retailer front-of-store collections of plastic films and flexibles, how they can be collected and research into viable end markets and applications.

2020: COVID-19 and Brexit

Both COVID-19 and the UK's exit from the European Union continue to impact the UK's plastic supply chain, as well as longer-term ambitions relating to legislation and targets.

The pandemic and 'Brexit' have created new challenges relating to the transfer of materials and staffing. In 2021, further disruptions have continued to take place due to multiple factors. For example, the shortages in heavy goods vehicle (HGV) drivers in the UK impacting on some Local Authority bin collections, along with other associated challenges.

The Government has previously stated that the UK will *"build back better"* once normal life resumes, with green industrial development at the heart of future plans. Further focus was drawn to the UK late in 2021, as Glasgow hosted the COP26 Climate Change Conference [10] . The UK has the opportunity now to become a world leader in plastic resource management and recycling, and only time will tell if their ambition can become a reality.

Methodology & Reporting

The approach taken to collect the data and how it is calculated is important in understanding what can be reported and how these figures are generated and used, as well as ensuring an accurate comparison year-on-year.

Plastic Packaging Placed on the Market

The quantity of plastic packaging that is Placed on the Market (POM) is important for measuring the UK's collection rates. RECOUP always uses the most robust data available which for a number of years has been Valpak's *PlasticFlow2025* and subsequent *Covid-19 Impact* reports [14] .

In 2020, changes in supply and demand in relation to plastic packaging, primarily as a result of the COVID-19 pandemic, meant that overall quantities, as well as the split between formats, were noticeably impacted. As such, year-on-year comparisons show an additional variable. In the *2021 Survey*, this will mean a greater focus on collection quantities to provide proportionately comparative year-on-year figures.

Estimating Collection Quantities

Estimating the composition of household plastics collected at kerbside is challenging due to the inconsistencies in both the collection and reporting of data by Local Authorities. This may be due to a number of reasons such as differences between reporting times, contractual arrangements, and the co-mingling or source separation of different materials. Due to these variables, collection quantities cannot be calculated by adding up provided collection data sequentially. Accurate and audited estimated collection data is reliant on the processes in place, and these vary by Local Authority.

The reported collection and service provision data provided by Local Authorities is checked and followed up where required to ensure that the final dataset is as accurate and as representative as possible.

In instances where there is only partial or no collection data reported, the estimated dataset is completed based on the service provision and then applying reasonable collection quantities based on those services. This is completed by either using previous *Survey* responses with adjustments based on overall received data, or average performance data using the number of households against the average that can be expected to be collected for these households (kg per household, per year).

RECOUP has also received confidential data from its waste management company members helping to estimate the composition of collected plastic to provide the best possible and most realistic representation of the data.

Collection of Mixed Plastics

Plastics packaging is often reported as 'mixed plastics', and clarification is often needed on the different interpretations and composition of this fraction. Compositions can vary considerably between Local Authorities depending on the target outputs and the efficiency of the Material Recovery Facility (MRF). Some facilities only segregate certain plastic bottles like clear PET and natural HDPE bottles, and leave others in with the plastic pot, tub and trays (PTT) or 'mixed plastics' fraction. These then go for further sorting or export. Other facilities leave all plastic packaging together to try to ensure a positive value for all outputs. It should be noted that where there are large quantities of material to process, or for the faster sorting facilities, more bottles can end up in a PTT or 'mixed plastic' fraction.

Dry Mixed Recycling (DMR)

Plastic packaging quantities are increasingly being reported as part of co-mingled totals for all DMR. Therefore, plastic packaging quantities are calculated by using percentage averages dependent on the variety of plastic formats collected in that individual scheme.

Plastics Packaging Only

Plastic packaging-only quantities can be reported by Local Authorities operating source separated collection schemes. A percentage is also sometimes estimated based on compositional analysis by the Local Authority or waste management provider, or through specific percentage composition recommended to be used by *WasteDataFlow* [15] . It is often not possible for Local Authorities to provide plastics collection quantities broken down by format.

Multiple Collection Schemes

Local Authorities can report collection quantities from all services they provide, including from kerbside and bring collections, recycling 'On-the-Go' schemes and Household Waste Recycling Centres (HWRC). Many of these schemes' bins are serviced as part of the kerbside collection route, and this is accounted for when calculating collection quantities.

Collection Service Provision

A Local Authority's service provision is defined by whether or not they communicate to their residents that they collect certain plastic formats or products as target items at kerbside.

There are plastic formats or products that can be accepted by the waste management provider sorting facility but that are not communicated as target items. This may be due to a number of reasons, be it contractual, logistical or economical. In these instances, the Local Authority is categorised as not providing a collection scheme as they are not communicating them as a target item to residents.

This research is primarily based on cross-checking each Local Authority's website to see what collection service provision is communicated as being provided. This is then checked against *Survey* responses where required.

There are cases where messages can be conflicting due to inconsistency in language used to describe the same plastic items and formats. For example, a Local Authority may report collecting one type of 'film', but not another (e.g. targeting carrier bags but not cling film). In these cases, further research and investigation is carried out to clarify results where necessary.

Confidence Interval

Although a high proportion of the data and analysis in the *2021 Survey* is based on actual responses only, analysing and measuring performance indicators is not a straightforward process. There are a well-established number of performance indicators provided for plastic collections, but there are many factors that can influence a scheme's collection performance, its operational efficiency and cost. These include: the types and quantity of other materials collected, the type of location it is collected from (urban or rural), housing types, socio-demographics, and how the scheme is communicated to residents. All data is analysed to provide a high probability confidence interval (i.e. data considered to be incorrectly reported is omitted or re-estimated using appropriate available data and averages).

Response Rate

The response rate of collection authorities responding to the *RECOUP Survey* is usually around 70%. Despite the impact of COVID-19 and the greater pressures exerted on public sector resources, the 2021 *Survey* saw a response rate of **67%**.

Survey 2021 Platform

For the *2021 Survey*, RECOUP used a new platform and system to circulate the online questionnaire. This was chosen with the aim of enabling RECOUP to create a more streamlined and user-friendly experience.

We would appreciate any feedback respondents may have to the new process, as well as any relevant ideas on how we may improve the *Survey* for 2022.

Plastics Collection Services

Collection is the foundation to recycling plastics, ensuring it is kept within circular economy models and not littered. The RECOUP Survey provides a comprehensive review of Local Authorities service provisions to collect household plastics from kerbside, bring schemes, recycling 'Away from Home' and Household Waste Recycling Centres.

As required by the *Household Waste Recycling Act 2003* [66] , all Local Authorities in the UK provide at least two types of kerbside collection. This prevalence and maturity of kerbside collections means that there are limited changes to the number of new services being introduced in the UK.

The introduction of legislation including *Deposit Return Schemes* [8] [9] (DRS), Consultation on *Consistency in Household and Business Recycling in England* [6] and *Extended Producer Responsibility* [5] (EPR) are likely to have a significant impact, not only on the contents of the kerbside waste stream, but also the way in which Local Authorities are funded with regards to waste management, collection and communications to residents.

Beyond the *Consistency in Household and Business Recycling in England* [6] legislation, the devolved administrations have their own guidance. The Scottish Government and the Convention of Scottish Local Authorities (CoSLA) have a *Household Recycling Charter* [23] , Wales has its established *Collections Blueprint* [47] ,and Northern Ireland has its *Waste Management Plan* [48] .

Local Authorities in the UK

As of April 2020, there were **379** Local Authorities in the UK:

- **314** in England
- **32** in Scotland
- **22** in Wales
- **11** in Northern Ireland

The total number has reduced from 382 in the *2020 RECOUP Survey* [19] due to instances of Local Authorities merging in England. As of April 2021, this has dropped further to 374 Local Authorities.

Kerbside Collection Schemes

In the UK, the majority of the plastic quantities collected for recycling are from kerbside collections. The breakdown of these resources, by plastic format, currently show the following provisions for collections across the UK:

Plastic Bottles

All **379** UK Local Authorities collect plastic bottles as part of their kerbside recycling service.

Plastic Pots, Tubs & Trays (PTT)

87% of UK Local Authorities accept PTT as part of their kerbside collection schemes. This is up from 85% recorded in the *2020 RECOUP Survey* and marks the eleventh consecutive annual increase. This can be attributed to both strategic and consumer pressure to drive towards consistent material collections.

Polypropylene is largely the only polymer that has economically viable and sustainable end markets in the PTT stream. As with all recycling schemes, gaining the critical mass of material is essential to incentivise the investment in developing further recycling solutions and end markets, and this is particularly true for this material stream.

Plastic Film

The number of Local Authorities collecting plastic film as part of their kerbside collection service has once again declined, with only **13%** now accepting this provision compared to 14% in 2020, and 16% in 2019.

RECOUP found significant variations around Local Authority collections of plastic film, and the associated messages. Plastic film has a broad range of applications, including single-use carrier bags, bread and cereal bags, cling film, bubble wrap and shrink wrap. Of the **49** Local Authorities collecting film in the *2021 Survey*, **20** only accept carrier bags. The remaining **29** Local Authorities collect more than one type of film, however in many cases there are still film types they will not accept, with multiple Local Authorities stating no bubble wrap or no cling film.

Instances where dry recyclables are collected in plastic bags at kerbside, this does not necessarily mean the bags themselves are recycled, or that the Local Authority accepts or targets other types of plastic film.

Non-Packaging Plastics

Non-packaging plastics could include small Waste Electrical and Electronic Equipment (WEEE). Other small plastic items such as toys may also be collected. These items are most commonly targeted by Household Waste Recycling Centres (HWRC), though some Local Authorities collect them from kerbside separately to other recycling, often in clear plastic carrier bags.

The *2021 Survey* saw **12%** of Local Authorities report they collect plant pots (or flowerpots), a 2% decrease from 14% in the *2020 Survey*. 47% gave direction that they do not accept plant pots, and the remaining 41% did not mention them in any communications to residents.

Plant pots are mainly manufactured from polypropylene, and if this fits in with the feedstock requirements of the MRF and reprocessor, they can be added to existing PTT collections. Challenges to Local Authorities and waste management providers if plant pots are included in kerbside collections are around contamination through residual soil, garden waste, and other unwanted garden products such as seed trays and ceramic pots being wrongly included in the recycling stream.

Consistent Collection Challenges

Due to the variations in the wide scale of products that are categorised under 'non-packaging plastics', including WEEE, further research is required in order to acquire a robust total for how many Local Authorities collect which item types. Despite the reduction in Local Authorities targeting and collecting plastic film as a recyclable material, plans as part of the *Consistency in Household and Business Recycling in England* [6] legislation propose that plastic film and PTT are included as a target material to be collected alongside other recyclables by 2025-26.

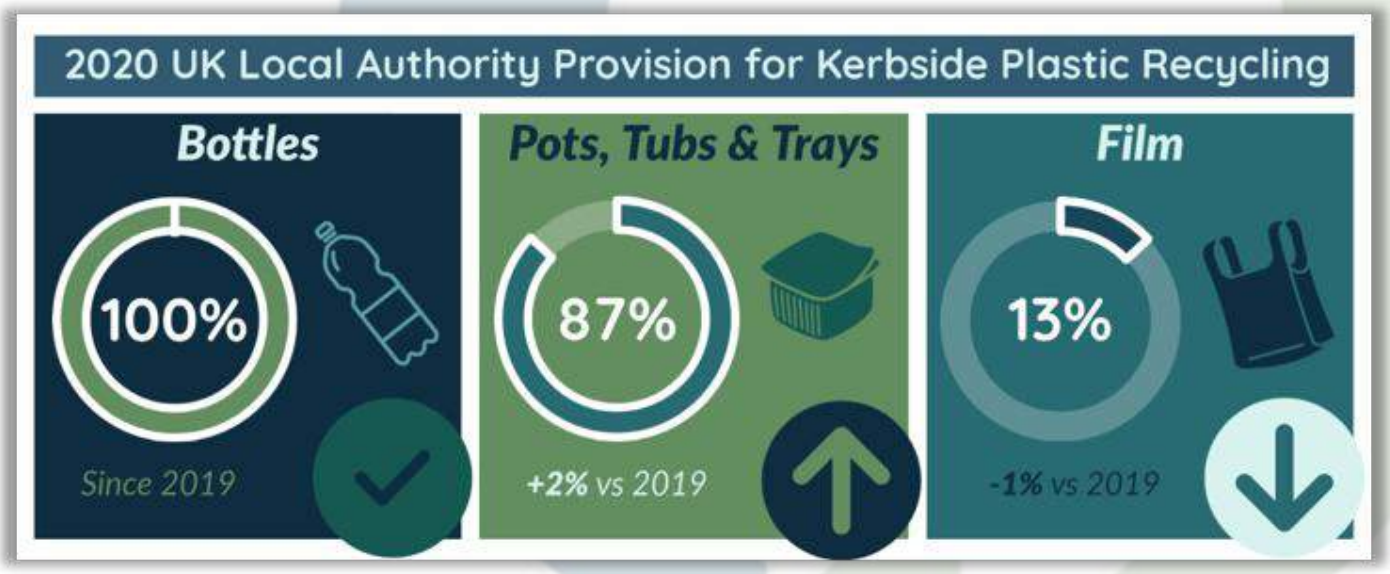
Whilst this encourages the collection of a large stream of material, the challenges to Local Authorities and waste management companies must still be addressed. These include:

- Communication to residents to ensure that correct types of plastic packaging are disposed of, and that it is presented correctly and free from contamination. As such, householders need clear and concise guidance.
- Practical barriers which prevent plastic film being compatible with many existing UK collection and Material Recovery Facility (MRF) systems, including the risk of contaminating established plastic bottle bales and paper lines, and the potential to clog sorting equipment.
- Availability of economically viable and sustainable end markets for the material. Currently, the majority of the collected household plastic film is baled and exported for reprocessing or used as feedstock in Energy from Waste (EfW) facilities.

Kerbside Summary by Nation

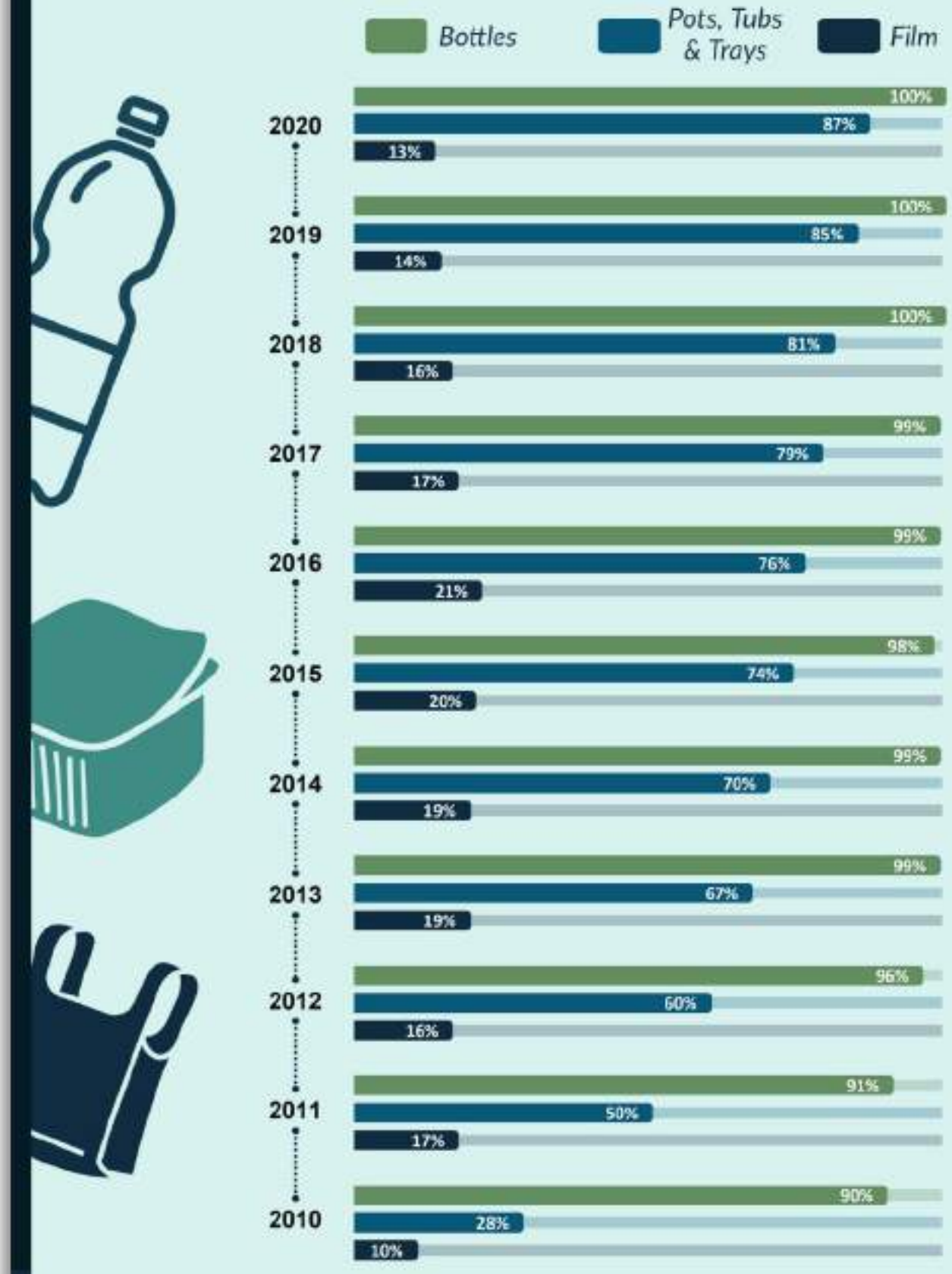
Collection provision across the nations in the UK varies due to a number of reasons, including differing population densities, infrastructure and legislative requirements. Whilst consistency is often cited as a challenge for achieving a positive recycling rate for the UK, this is further complicated across the different countries.

There are around **28 million** households in the UK [16], but the exact number of households that receive a service in a certain area can vary substantially. While a Local Authority may communicate a collection in a certain area, it does not mean all households in that area are included. This is because, whilst a Local Authority may offer a kerbside collection to households, there may be reasons that complete coverage is not possible. This might be due to the type of property (i.e. flats, apartments), the location of the property (i.e. rural, inaccessible locations), or collection schemes that are in a trial period and are gradually being rolled out over a wider area.



Service Provision History

History of Local Authority service provision for kerbside recycling of plastics



Other Kerbside Services

Other plastic collection services provided by Local Authorities focus on 'Away from Home' collections. These can be used effectively at specific sites where dedicated trips are made to take waste and recycling, or at convenient points or areas of high footfall when citizens are out and about. These types of collection include:

- 'On-the-Go' Recycling
- Bring Schemes
- Retailer Front-of-Store Collections
- Household Waste Recycling Centres (HWRCs)

Recycling 'On-the-Go'

Recycling 'On-the-Go' schemes involve the placement of units in public places for the collection of used packaging. These are often twinned with general waste bins. In the *2020 Survey*, **50%** of Local Authorities stated that they provided 'On-the-Go' recycling bins.

Due to the impact of COVID-19, there is reason to believe that the provision and use of these units has been heavily impacted with fewer people consuming goods away from home, and a lack of resources to collect these bins separately.

Under normal circumstances, a well designed and maintained recycling 'On-the-Go' scheme can potentially generate good quality material and also reduce litter. There are clear benefits for encouraging and reinforcing positive recycling behaviours, both 'On-the-Go' and by consumers taking and applying those positive behaviours at home. However, high levels of contamination are consistently an issue. In order to tackle this, clear and concise bin signage and language should be used, along with communications to residents and visitors through all available routes. Regular collection is also important to avoid overfull bins. The messages and approaches may differ, but engaging the public to have pride in their local community and using emotive anti-litter messages can help to provide an effective service.

Bring and Front-of-Store Schemes

Due to the almost complete coverage of kerbside recycling collections in the UK, the popularity of traditional bring schemes has stagnated over time, with a gradual decline in use. However, the UK has seen an increase in collections of some types of material not commonly collected for recycling at kerbside including drinks cartons and plastic films.

These schemes include traditional bring back styles such a bottle bank and other receptacles in public places, as well as the increasingly common retailer front-of-store collections. Front-of-store collections in particular have become more common recently, as a way of capturing plastics films, flexibles and sometimes other 'hard to recycle' post-consumer packaging, in the absence of a kerbside recycling collection scheme for this material [33] .

Deposit Return Schemes (DRS)

There is now strong momentum for DRS to be used across the UK in order to collect a variety of drinks containers. Trials of reverse vending machines (RVMs) [17] have already taken place, including some retailers using them in their stores.

Scotland intends to implement a DRS independent of the rest of the UK [9] . This is planned to be launched in July 2022, following delays as a result of the COVID-19 pandemic. England, Wales and Northern Ireland are in the consultation process for introducing a DRS scheme in the rest of the UK [8] .

Throughout 2020 and 2021, a Digital Deposit Return Scheme (DDRS) has been discussed as a way of utilising existing collection schemes. DDRS would mean that citizens could dispose of their beverage containers in their kerbside recycling bins as they do at present, but claim back the value of the deposit by verifying its disposal at home using innovative technological solutions [18] .

Household Waste Recycling Centres

HWRCs are available to the public for the disposal, recycling or reuse of a wide range of household materials and items, including plastics. These public sites are often under the responsibility of the waste disposal authority, which tends to be managed by the county council and not the individual Local Authority.

64% of Local Authorities collect plastics separately at Household Waste Recycling Centres. Of these, **73%** collect plastic bottles, **57%** hard plastics and **31%** other plastic packaging. This is in addition to items not compatible with kerbside services, such as expanded polystyrene packaging (EPS), non-packaging plastics (including WEEE) and bulky goods such as plastic furniture.

In 2020, RECOUP released its *Plastic Management and Recycling at Household Waste Centres in England* report [19] which estimated that around **45kt** of plastic material is captured at the **550** HWRC sites across England annually, and **54kt** across the whole of the UK. As with other bring schemes, HWRCs were heavily impacted by the COVID-19 pandemic. All sites saw closures through the initial lockdown in 2020 and staffing shortages, booking procedures, and other disruptions that took place impacted how these sites operated and the volumes and types of material they collected.

Kerbside Collection Variables

Local Authority approaches to the collection of materials from kerbside services can differ considerably. Many variables impact on their approach, including housing types, urban or rural geographical areas, and socio-demographics, which all need to be considered in order to provide the most efficient and economically viable service.

Major themes are consumer confusion and consistency in material collection. Consistency is not only in terms of materials and the way in which they are collected, but also how this is communicated to residents. This confusion can be caused by the use of different language to describe the same items (e.g. plant pots and flowerpots, plastic film and wrappers, carrier bags and plastic bags), as well as variation in instructions around how items should be presented (e.g. tops on or tops off bottles).

The *2021 RECOUP Survey* looked at a number of variables that highlight the differences in Local Authorities approaches. These include:

- Container types
- Frequency of collections
- Co-mingled vs source separated collections
- Container colours

Kerbside Collection Container Types

There are **3** main types of kerbside collection container used for dry recyclables in the UK. These are wheel bins, boxes and bags, and some use a combination of more than one of these. The most common container for kerbside recycling collection is a wheel bin. However, in recent years, adoption of alternative units has become increasingly common, in part due to the greater number of Local Authorities who have begun source separate collections of certain materials.

It was observed that 'two stream' or 'multi-stream' collections, which use more than one container or container type, are being used to allow for separate collections of specific materials. This could be particularly important where glass is collected, for example, to meet input and contractual requirements from MRFs and reprocessors, or to satisfy kerbside conditions where wheel bins cannot be utilised.

Despite the significant variations around containers used by Local Authorities across the UK, in 2021, **75%** of units used to collect plastics at kerbside were **wheel bins**.

Frequency of Collections

The frequency of recycling collections is an important factor in the effectiveness of a kerbside recycling scheme. This can range from weekly and bi-weekly recycling collections (alternating with the residual collection), to fortnightly, 3-weekly or 4-weekly collections. The *2021 RECOUP Survey* can report that **72%** of Local Authorities collect recyclables on a fortnightly basis, **22%** weekly, and the remaining **6%** 3-or-4 weekly.

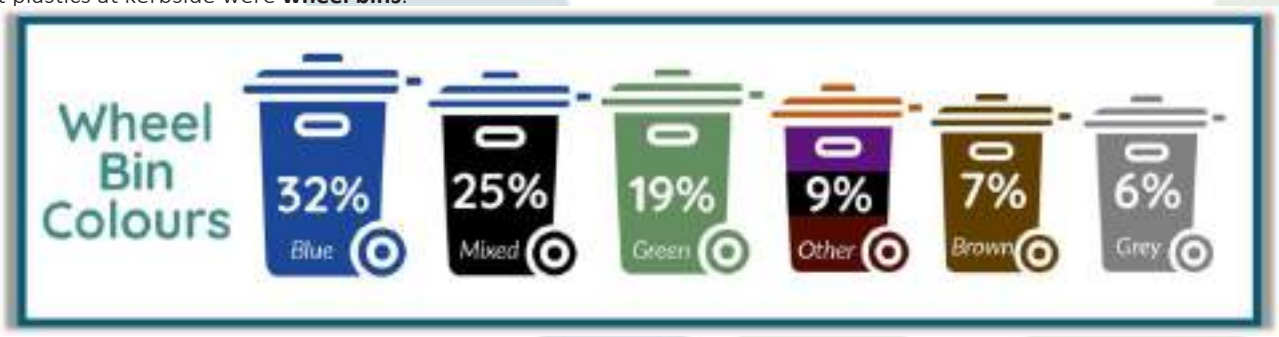
Co-mingled vs Source Separated

Using answers from the *2021 RECOUP Survey* alongside Local Authority website communications, it can be reported that **50%** offer a co-mingled collection for recyclables with different types and formats collected together in the same unit.

The other **50%** of Local Authorities use the source separated method where more than one container is used to segregate recycling materials for collection, often by singling out specific materials such as paper or glass. With an increasing focus on material quality, cost benefit analyses need to be carefully utilised when comparing the additional costs of kerbside sorting versus the costs to sort co-mingled material at a MRF.

Kerbside Collection Wheel Bin Colours

The *2021 RECOUP Survey* has once again researched the variety of colours of collection containers that are used by Local Authorities across the UK. Looking at just the 75% of Local Authorities that use wheel bins for collecting plastic, the most popular colour is **blue (32%)**. Other colours include green, brown, grey, purple, black and burgundy. **25%** use a wheel bin where the body and lid are two different colours.



Treatment of Residual Waste

Residual waste treatment continues to be a key subject in recovering post-consumer plastic packaging. This is particularly important when seeking new sources of material to capture for recycling, and also helps in reducing gate fee costs for energy recovery and landfill.

Energy Recovery

Energy recovery, otherwise known as Energy from Waste (EfW), generates energy (heat or electricity) from a residual feedstock and can provide sustainable and cost-effective energy supplies. The UK's capacity for energy recovery has grown exponentially in recent years and is expected to continue to do so. Responses to the *2021 RECOUP Survey* report that **65%** of Local Authorities use energy recovery as a treatment solution for their residual waste. However, increasing gate fees along with the need for circular solutions for plastic waste highlight how, ideally, it should only be used when a recycling end destination cannot be achieved.

Landfill

Despite being the bottom of the waste hierarchy, landfill is still the only viable option for a number of Local Authorities disposing of non-recyclable materials. **35%** of Local Authorities stated they use landfill as a treatment solution for residual waste. However, with progress being made in the growth of alternative end of waste options, and increased reliance on energy recovery, actual quantities of material disposed of at landfill has reduced year-on-year over the last two decades.

Other Treatments

Other residual waste treatments include Mechanical Biological Treatment (MBT) to produce products like Refuse Derived Fuel (RDF), and Anaerobic digestion (AD) to produce biogas to generate heat and power and digestate which can be used as a fertiliser.

Recovery of Plastic Packaging

The *2021 RECOUP Survey* can report that **14%** of Local Authorities stated that they currently recover plastic packaging from the residual waste stream that would otherwise go to energy recovery or landfill.

The definition of recovery from residual waste streams raises questions as to whether these quantities are included in household recycled quantities recovered by Local Authorities. This material may still find its way into the recycling stream at a stage whereby it is eligible for and recorded as part of Packaging Recovery Note (PRN) data, and therefore counted as part of the overall quantity of plastic packaging that is reported as recycled each year. Some Local Authorities report that material quantities are included within the collection data, but there is not enough information available to be able to estimate a figure for the UK.

Although financial and technological barriers limit what plastics can and cannot be recovered from the general waste stream, it will be interesting to see how the dynamics around this develop as technology and potential financial investment from *Extended Producer Responsibility* [5] (EPR) change over time.

Case Study: Plastics in Scotland

As a Case Study for this year's Survey, RECOUP has chosen to do a deep dive looking specifically at Scotland and the challenges facing Scottish Local Authorities going forward. As part of this, RECOUP spoke with Stephen Gilfillan, Waste Strategy Support Officer at West Lothian Council and Local Authority Recycling Advisory Committee (LARAC) Scotland Representative.

Much like other Local Authorities across the UK, the operational barriers facing Local Authorities in Scotland, are around the likes of funding, contracts, infrastructure, contamination, legislation and political engagement. However, with it, comes some unique challenges and opportunities.

Geography

The landscape in Scotland is vast and diverse, with some of the most remote areas in the UK. According to Office for National Statistic (ONS) data, in mid-2019, the population density (number of people resident per km²) in Scotland was 70, compared to Wales at 152, Northern Ireland at 137, and England which was 432 [21] . Due to this, certain Local Authorities in Scotland can face unique challenges. RECOUP were keen to understand more about this, and Stephen advised that rural authorities may have to alter their collection systems to take account of the geographic factors they face. They also have to accept that costs are likely to be higher and material value lower than other authorities with similar numbers of households, for a variety of reasons, including the potential need for infrastructure that deals with smaller tonnages than is standard, which impacts on their operational and capital costs.

"I would agree that our processing costs can be greater than central belt authorities. Due to the inclusion of haulage in a lot of our contracts, it can significantly increase the overall cost."
- Aberdeenshire Council

Deposit Return Scheme (DRS)

Scotland is due to be the first country in the UK to adopt a DRS . Stephen explained that LARAC's view is largely supportive of a DRS, with the projected reduction in littering a very positive output. However, the capture rate of 90% indicated by the Scottish Government [22] is seen as optimistic, and the diversion of materials from kerbside collection systems is a concern. It is also thought that it would be better to implement any scheme after the introduction of *Extended Producer Responsibility* [5] (EPR). He advised that LARAC believes mature collection systems already in place would have been an obvious method of collection rather than introducing new routes such as Reverse Vending Machines (RVMs), and that LARAC broadly supports the idea of a digital DRS. In November 2021, it was announced that the Scottish DRS was to be indefinitely delayed due to the impacts of the pandemic, the UK leaving the EU, and complications relating to HMRC and the impact of VAT on deposits for food and drink products [67] .

Consistent Collections

Legislation on *Consistency in Household and Business Recycling in England* [6] has been the topic of consultations in 2021, but is only due to be implemented in England, and not the wider UK. Instead, Scotland has a *Charter for Household Recycling* [23] and an associated *Code of Practice* [24] that have been in place since 2015 and are agreed by the Scottish Government and the Convention of Scottish Local Authorities (COSLA). In addition, the *Code of Practice* [24] document has recently been reviewed to ensure it continues to reflect best practice and takes account impacts of imminent policy changes. However, the aims and objectives of these documents are very similar to the recent consultation on consistent collections in England.

Plastics Placed on the Market

Packaging is the main source of plastic consumed in the UK. Collecting data around how much we use is essential, not only to calculate recycling collection rates, but also to highlight areas which require focus and investment within the UK's waste management chain.

For a number of years, the *RECOUP Survey* has used the best available data when it comes to plastic packaging tonnages Placed on the Market (POM), and its breakdown by polymer and volume. This has come from Valpak's *PackFlow 2025* report, and the subsequent updates and amendments through its *PackFlow Covid-19 Impact* reports [14] . This breaks plastics down into two separate categories:

Consumer sources

This is plastic packaging sold to consumers, primarily for use and consumption in household environments. For example, packaging used in food, drink, groceries, body care, clothing and DIY products sold by supermarkets and retailers.

Non-consumer sources

This is plastic packaging that is mostly commercial and industrial material, with nearly half from 'manufacturing and other' environments. It is made up of: food and drink from retail environments; textiles; wood and paper publishing; power and utilities; chemicals/non-metallic minerals manufacturing; metals manufacturing; machinery and equipment (other manufacturing); transport and storage; and other services. Back-of-store plastics packaging discarded by retailers and that used by the construction, demolition and agricultural sectors make up a sizeable portion of the remainder of this material.

The "Other Plastics" Fraction

Since 2019, a significant portion of the pots, tubs and trays (PTT) POM figure has included an 'other' fraction made up of predominantly rigid plastics. This includes a variety of items that have not traditionally been categorised in the bottle, PTT or film formats.

In 2021, RECOUP worked with Valpak to gain a greater understanding of this material, which is in excess of 100kt. Breaking the composition of this material down, it is possible to apply some of them to the main bottle, PTT and film POM figures. However, more research is needed to ensure a robust and consistent approach can be used year-on-year. As such, the use of the POM data used in previous years has been applied in the *2021 Survey*.

2020 Data

The impact of the COVID-19 pandemic caused unprecedented changes to material supply and demand, with a significant increase in consumer packaging POM, with less packaging used in commercial environments. Valpak's *PackFlow Covid-19 Impact* [14] reports predict that POM quantities will increase in 2021, broadly returning to pre-COVID levels by 2022.

In 2020, there was also a shift in the formats used, with bottle quantities increasing proportionately more than other fractions. These changes mean that the plastic packaging POM in the UK in 2020 is reported to be **1,412kt**.

Calculating the Collection Rate

Understanding the quantity of household plastics packaging POM is essential when measuring recycling collections and performance, as well as opportunities to collect more material.

Whilst estimates can be made and trends understood, plastic packaging POM figures are subject to change. Consequently, depending on the POM data, the percentage collection rates can go up or down irrespective of changes in collection quantities. This was particularly apparent in 2020, where the impact of COVID-19 on the supply chain meant that: 1) collection quantities had increased; 2) changes in amounts placed on the market decreased; and 3) quantities of plastic packaging disposed of in non-kerbside schemes decreased.

Household Collection Performance

Since 1994, each RECOUP Survey has reported growth in plastics collected for recycling, and the Survey data is used extensively to represent both past successes and challenges for the future. This is shown by the increase in quantities since kerbside collection data was first reported in 2003.

Composition of Plastics Collected

The *2021 RECOUP Survey* data has seen a number of changes and challenges this year, in part due to:

- Revised Placed on the Market (POM) data from the Valpak *PackFlow Covid Impact: Phase I* and *Phase II* [14] reports
- An improved understanding of the composition of data reported as 'mixed plastics'
- Changes in non-kerbside collection schemes and its impact on the waste stream, including more widespread front-of-store plastic film collections at retailers
- Increase in population and changes in the number of household across the four UK nations
- The impact of COVID-19 and respective restrictions and lockdowns on both citizens and collections in terms of material quantity and quality

These are all significant variables to integrate into collection data calculations, and are especially important when estimating the composition of plastics packaging collected for recycling.

Plastic Bottles

Only **425 tonnes** of plastic bottles were collected when data was reported in the first *RECOUP Survey* in 1994. This is the equivalent of 9.3 million plastic bottles, and these were mostly collected from bring schemes. As collection schemes widened, by 2003, it was reported that **24,000 tonnes** of plastic bottles were collected for recycling. This is over 500 million bottles. This coincided with the collection of co-mingled dry recyclables from households, with 18,000 tonnes collected through kerbside schemes; over three times more bottles than were being collected through bring schemes.

The infrastructure for collecting plastic bottles from kerbside collection schemes started to see significant increases in the mid-2000s. This was mainly attributed to many new services being launched as well as existing schemes being expanded and becoming more efficient.

Since 2019, kerbside collections of **plastic bottles for recycling is offered by all UK Local Authorities**.

Plastic Pots, Tubs and Trays (PTT)

Since kerbside collection data for PTT started to be reported in 2007, there has been a steady increase in collection quantities. Around **10,000 tonnes** were collected in 2007, rising to an estimated **170,000 tonnes** in 2020.

Despite increasing each year, around **13% of Local Authorities still do not collect PTT**. This offers an opportunity in the effort to increase the UK's collection rates. With a drive towards consistent collections, particularly in England where legislation is due to come into place in the coming years, every Local Authority in the UK should be working towards collecting PTT in their kerbside recycling schemes. However, at present, viable end markets have only been proven for the PP fraction, and end market development is still needed for PET pots and trays in particular.

Plastic Film

Plastic film has been present in the household plastic packaging recycling stream ever since co-mingled collections were introduced. However, it is only recently that interest in the significant volume of material potentially available has begun to draw focus, with a number of retailers introducing bespoke front-of-store schemes for collecting it. It is also being included in proposals as part of *Consistency in Household and Business Recycling in England* [6] legislation, with a staged implementation for its inclusion expected by 2025-26.

With the support of Local Authority and waste management company data and insight, the *2021 RECOUP Survey* has been able to estimate approximately **25,000 tonnes** of plastic film was collected for recycling in 2020. However, this is just **8%** of the film that was POM in the same timescale.

Since 2016, the UK has seen a reduction of Local Authorities collecting plastic film at kerbside, with it peaking at **21%** in 2016, compared to just **13%** in April 2020.

The Mixed Data Challenge

Estimating household plastics packaging collected for recycling relies on a number of measurement indicators as outlined in the *Methodology & Reporting* section of this report. Every Local Authority, waste management provider, Material Recovery Facility (MRF) and Plastic Recovery Facility (PRF) can have a different approach to this depending on operational decisions and the end market availability at that time.

The 'data challenge' is mainly due to plastic packaging fractions increasingly being reported as 'mixed plastics', a co-mingled total for all dry mixed recycling (DMR). This mixed fraction can vary considerably between Local Authorities depending on a number of factors. This includes the target output and the speed and efficiency of material sorting at the MRF. It is more likely that, where the material quantities are bigger than average or where the sorting facilities are operating faster, more bottles end up in a PTT or 'mixed plastics' fraction.

Also, some facilities only segregate certain plastic bottles like clear PET and natural HDPE bottles, and leave others in the PTT or 'mixed plastics' mix for further sorting or export.

The splits of the different plastic formats are never precise and there is never a uniform composition, with the total quantities of plastic bottles and PTT potentially containing other non-target plastic formats.

There was evidence from both the reported collection data and from confidential material composition analysis of kerbside schemes shared with RECOUP, that quantities of plastic bottles and film were going into the PTT stream. It is also widely acknowledged that PET trays are mixed with PET bottles in order to help find an outlet for this material.

To validate the composition of reported collection data from Local Authorities, RECOUP has worked with waste management company members, to provide the best and most realistic representation of the data.

Collection Quantities

After analysis of the reported quantities collected for recycling, the *2021 Survey* estimates **584,000 tonnes** of plastics packaging collected for recycling from UK households in 2020. This is an overall increase of **24 kt** in collection quantities compared to 2019.

RECOUP will continue to engage with Local Authorities and waste management companies to further understand and reflect the composition of household plastics packaging. Whilst it seems inevitable that figures will be nuanced due to the significant impact of the COVID-19 pandemic, plans to continue consultations and implementations of *Consistency in Household and Business Recycling in England* [6] and *Deposit Return Schemes* [8] [9] (DRS) mean that robust and accurate data is essential to understand their impact and success.

Collection rates are the percentage of plastics packaging POM that is subsequently collected for recycling and is an effective way of assessing overall performance.

To ensure these collection rates are as accurate as possible, RECOUP uses the best available plastic packaging POM data to compare against the reported collection quantities.

All data considerations in the *2021 RECOUP Survey* use the revised POM data calculated from the Valpak *PackFlow COVID-19 Impact Phase II* [14] report. This helps in understanding the impact of the pandemic on collections, quantities and composition of material collected at kerbside.

As well as actual data received from respondents to the *2021 Survey*, collection quantities (tonnes / number of units) and rates (%) for plastic bottles collected are calculated based on an estimated average of **22,000 bottles per tonne** and there being around **27 million households** in the UK.

Although the number of variables makes it difficult to accurately reflect future collections, it does give a scale of the challenge and performance needed from schemes in the UK. This is further impacted by the COVID-19 pandemic, as well as the anticipated use of *Deposit Return Schemes* (DRS) across the UK [8] [9] , *Consistency in Household and Business Recycling in England* [6], increased funding through the reform of the Packaging Producer Responsibility System and *Extended Producer Responsibility* [5] (EPR), and future financial investment in collection infrastructure.

Actual Recycling Rate

Collection data does not reflect the actual quantity of material that is being recycled. The figures estimated in this *Survey* relate to what is collected for recycling. This is before the process of recycling takes place and therefore material sorting and reprocessing yield losses need to be factored in. MRF feedstock input quantities are typically anywhere between **15% to 50%** higher than the reprocessing outputs depending on the quality of the feedstock collected for recycling and presented to the facilities.

Household Plastic Packaging

The *2021 RECOUP Survey* can report that the overall collection rate for all household plastics packaging is **41%**. The collection rate for all rigid plastic packaging only is around **51%**.

Overall UK Plastic Collection	
Kerbside	557,000 tonnes
Non-kerbside Schemes	27,000 tonnes
Collection Rate	***41%***

Plastic Bottles

The UK has seen steady increases in plastic bottle quantities collected through kerbside recycling schemes over the last decade. This is both due to provision for plastic bottle collection for recycling at kerbside being **100%** since 2019, and is also in line with increases in the amount POM each year. However, whilst estimated collection levels continue to grow year-on-year, annual increases are unremarkable.

The *2021 RECOUP Survey* can report that an estimated **390,000 tonnes** of plastic bottles were collected for recycling in 2020, a collection rate of **61%**. This is a **13,000 tonne increase** on 2019.

Plastic Bottles	
Kerbside	370,000 tonnes
Non-Kerbside Schemes	20,000 tonnes
Collection Rate	***61%***

Drinks vs Non-Drinks Bottles

There is a significant difference in the collection and recycling rate of plastic bottles for drinks, and those of non-drinks. Whilst both types include the use of PET or HDPE, their use, purpose and contents vary significantly.

The non-drinks bottle fraction is made up of packaging which is often used in other environments around the home. This includes kitchen and bathroom products, cleaning fluids and those used for outdoor applications. As such, these are more likely to contain more harmful substances and at a greater risk of being contaminated, or becoming a contaminant in the recycling process.

The *2021 RECOUP Survey* estimates that the collection rate for plastic non-drinks bottles, a combination of HDPE, PET and other polymers, is **around 45%**. This does not include mixed-material packaging such as fibreboard cartons.

Plastic Pots, Tubs & Trays (PTT)

Despite variations in the POM data in recent years, collection rates for PTT have increased since 2013 when it was at 20%. The *2021 RECOUP Survey* estimated that in 2020, around **170,000 tonnes** of PTT was collected, giving a collection rate of **36%**.

Plastic Pots, Tubs & Trays	
Kerbside	164,000 tonnes
Non-Kerbside Schemes	5,000 tonnes
Collection Rate	***36%***

As of April 2021, **87%** of Local Authorities provide a kerbside collection scheme that includes PTT. This is up from 85% in the *2020 RECOUP Survey*. New schemes are being introduced as the UK moves towards consistent collections, and therefore quantities should continue to increase.

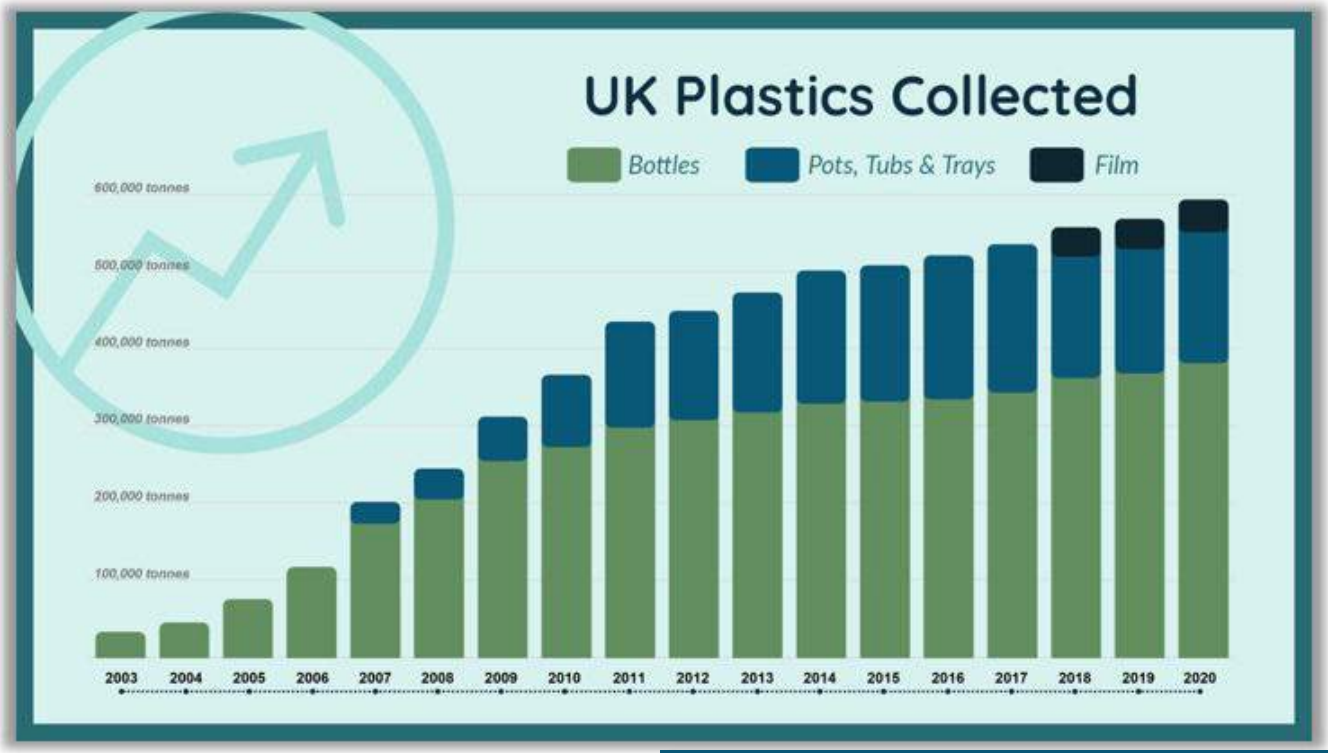
Plastic Film

The *2021 RECOUP Survey* can report that the overall quantity of plastic film collected at kerbside has increased slightly to **25,000 tonnes**, 3,000 more than in 2019. This gives a collection rate of **8%**.

Plastic Film	
Kerbside	23,000 tonnes
Non-Kerbside Schemes	2,000 tonnes
Collection Rate	***8%***

This is despite year-on-year drops in provision for collection of plastic film by Local Authorities, which has reduced to **13%** in 2020. However, it is understood that a combination of bespoke flexible collection schemes (including retailer front-of-store), accounts for some of this.

The *2019 RECOUP Survey* was the first to estimate a collection quantity for plastic film. This was around 20,000 tonnes in 2018.



What Plastic Films Can Be Recycled?

Collection rates for plastic films are low due to a number of factors, including technological challenges in processing them, disproportionately high levels of contamination with the material, and limited end markets. In order to be recycled, plastic film needs to be presented for recycling by the consumer as clean as possible. Discussions around inclusion of plastic film within the *Consistency in Household and Business Recycling in England* [6] legislation creates a significant opportunity to capture a large amount of potentially recyclable plastic material.

Of the kerbside collection schemes that currently target plastic film, the majority only accept certain types or formats. These often include: carrier bags or PE bags; bread bags; toilet paper and kitchen roll packaging; fruit and vegetable bags; and multi-pack packaging.

Other materials that are generally considered difficult to recycle, or unrecyclable, include aluminium pouches, metallised packaging such as crisp packets, PVC film, plastic netting and compostable bags.

Non-Packaging Plastics

Non-packaging plastics include the likes of small Waste Electrical and Electronic Equipment (WEEE), as well as other small plastic items such as toys. Though these items are often more suited to be collected at Household Waste Recycling Centres (HWRCs), a number of Local Authorities offer collection at kerbside separately from other recyclables.

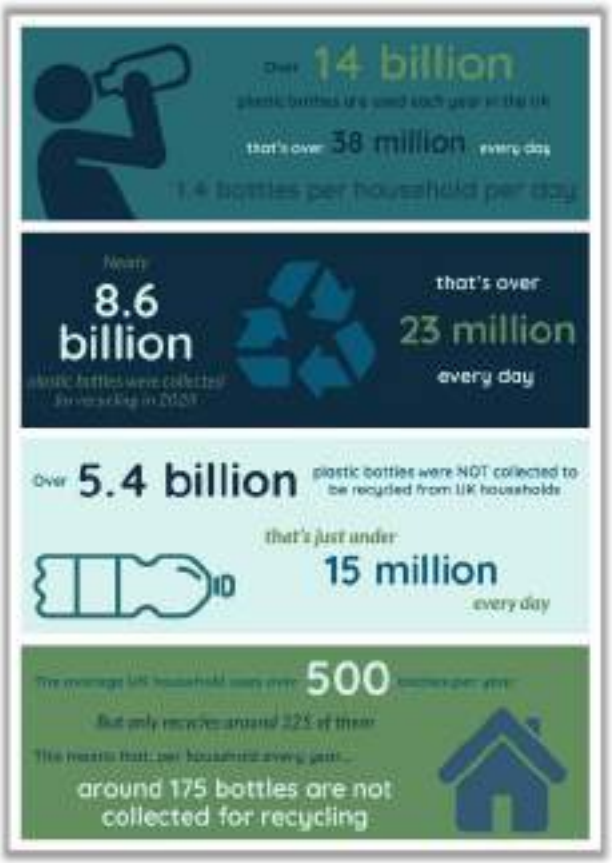
Due to the variable composition of these items, it is not possible to report on the plastic quantities that could be recovered. This has been further impacted due to the widespread closures and changes in operations at HWRCs, and changes in priorities of kerbside collections as a result of the COVID-19 pandemic.

Non-Kerbside Collection Schemes

In the UK, a number of alternative schemes are in place to collection materials and formats that are not currently captured through the primary kerbside collection schemes.

These 'away from home' schemes are where people make dedicated trips to bring their waste and recycling material to bespoke services (e.g. bring schemes, HWRCs). They are often serviced as part of the kerbside collection route, or directly from retailer store schemes. This generally means that specific weights of material collected by Local Authorities from these services are not recorded separately.

2020 and 2021 saw significant disruption to 'Away from Home' collection schemes, both in terms of Local Authorities' abilities to service them, and the significant increase in time that residents spent at home, generating higher quantities of waste. HWRCs were also widely closed or accepted limited types and quantities of material for significant durations. To reflect this, **27,000 tonnes** has been estimated as being collected from away from home locations, a drop of around a third from 2019. This has been split by packaging format.



Household Collection Rates

Total per Household

The kerbside collection rate of plastic bottles and PTT makes a total average of **20kg of rigid plastics packaging collected per household**. Including plastic films, which only 13% of Local Authorities collect for recycling, this increases the **total plastic packaging collected per household to 21kg**.

The average amount of rigid plastic packaging consumed by UK households each year amounts to **40kg**. For all plastic packaging, including films, this increases to over **51kg**.

Plastic Bottles

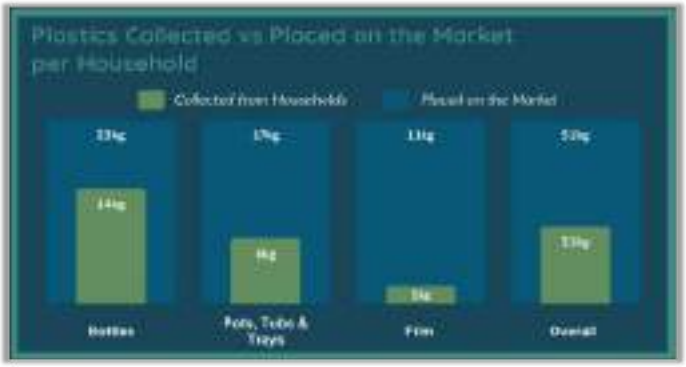
The estimated kerbside collection rate of plastic bottles per household in 2020 was just over **14kg**. To provide some context about potential collections per household, if all the plastic bottles POM were collected, the kerbside plastic bottle collection rate per household would be over **23kg**.

Plastic Pots, Tubs & Trays (PTT)

The average kerbside collection rate for PTT in 2020 was around **6kg**. If all the PTT consumed in UK households was collected, the collection rate would be almost **17kg** per household.

Plastic Film

The average kerbside collection rate for plastic film in 2020 was just under **1kg**. If all the plastic film consumed in UK households was collected, the collection rate would be over **11kg** per household.



Building Successful Collections

There are several factors that affect the performance of collection schemes. Variables include different housing types (houses, flats, etc.), urban or rural areas, and socio-demographics. These all provide logistical and practical challenges to waste and recycling teams. For example, heavily populated areas, particularly those in major cities, have a higher proportion of flats and apartments, making kerbside collections more challenging. Due to this, areas with greater population density generally have poorer recycling rates.

With *Extended Producer Responsibility* [5] due to impact Local Authority funding available for delivering services, the *2021 RECOUP Survey* asked where Local Authorities would prioritise spending in relation to kerbside waste collection to ensure a more successful and efficient service. 170 Local Authorities responded, with **36%** ranking **infrastructure and capacity as** their highest prioritised. 19% thought cost of complying with regulations was most important perhaps due to the upcoming impact of EPR. Only 9% chose developing communication strategies as their highest priority.

Material Reject Rates

In response to a question in the *2021 Survey* about the challenge of contamination, Local Authorities gave details on their reject rates and residual waste outputs for recycling material collected at kerbside.

Over 100 Local Authorities responded to this question and there was an average of **13% reject rate** across all material collected. The range was hugely variable, being **as low as 1% and as high as 40%**. These examples are the extremes and not considered to be commonplace, though the overall level of contamination leading to material being rejected at MRFs is a serious concern.

Whilst COVID-19 restrictions and lockdowns saw material disposed of at the kerbside increase significantly (sometimes **as high as 30%** as reported in RECOUP's *COVID-19 Impact* [14] report), contamination rates were anecdotally reported as being lower than expected. However, it's important to note that in instances of staff shortages, or challenges in transit of material, some areas were reducing collection frequencies, or stockpiling collected material to move on a later date. Using current data, and assuming that neither the POM or collection figures change year-on-year, it is possible to estimate the amount of plastic collected in the future. Whilst not a true representation, it gives an idea of the scale of plastic still available for capture.

Future Estimates

Using current data in combination with assumptions that neither POM nor collection quantities were to change, it is possible to estimate how much plastic packaging will be placed on the market, and collected in the future.

Whilst not a true representation due to inevitable changes in quantities consumed, and the impacts of legislation and other drives increasing capture rates for these items, these figures give an indication of the scale of plastic packaging available to be captured for recycling.

Performance by Nation

It has always been productive to contrast and compare the different approaches and associated recycling performance across the four separate UK nations. The *2021 RECOUP Survey* has estimated the relative performance of each nation by measuring both the number of households and overall collection rates.

Collection rates for each nation are estimated based on a combination of collection quantities and actual data provided from the *2021 Survey*, and estimations of plastics packaging POM and non-kerbside collection quantities split between each nation based on the number of households.

	England	
	Tonnage	Collection Rate
Plastic Bottles	324 kt	*61%*
Plastic Pots, Tubs & Trays	139 kt	*36%*
Plastic Film	21 kt	*8%*
TOTAL	**484 kt**	*41%*

	Scotland	
	Tonnage	Collection Rate
Plastic Bottles	31 kt	*53%*
Plastic Pots, Tubs & Trays	13 kt	*31%*
Plastic Film	1 kt	*5%*
TOTAL	**45 kt**	*35%*

	Wales	
	Tonnage	Collection Rate
Plastic Bottles	24 kt	*78%*
Plastic Pots, Tubs & Trays	13 kt	*55%*
Plastic Film	2 kt	*10%*
TOTAL	**39 kt**	*56%*

	Northern Ireland	
	Tonnage	Collection Rate
Plastic Bottles	11 kt	*65%*
Plastic Pots, Tubs & Trays	5 kt	*40%*
Plastic Film	1 kt	*6%*
TOTAL	**17 kt**	*44%*

Household Recycling Infrastructure

Despite legislative changes and recycling targets, the UK must fund and support its waste management and recycling infrastructure in order to achieve its sustainability goals.

Sorting and Infrastructure Report

To inform and provide context around UK infrastructure, specifically in its ability to meet the 30% recycled content targets to be required by HMRC's Plastic Packaging Tax [7] , RECOUP produced a report in 2020 which outlines the current infrastructure in the UK to sort and reprocess household plastic packaging [25] .

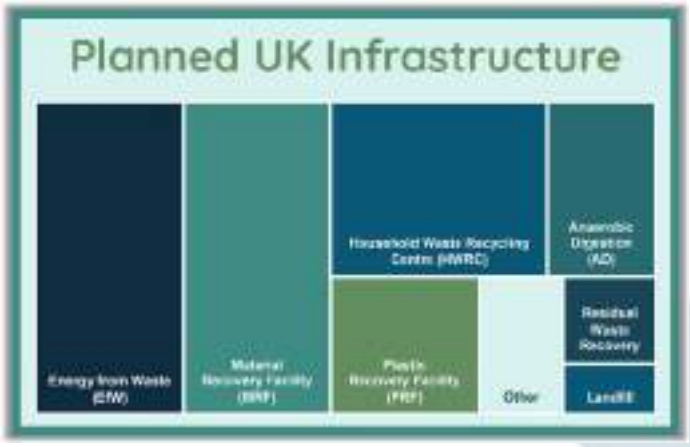
Due to barriers in collating often commercially sensitive data and the lack of a 'go-to' list of UK facilities, the capture and analysis of this data is an ongoing activity for RECOUP.

With around **60%** of plastic packaging waste currently exported for recycling every year, and the growing limitations of options for destinations, the infrastructure in the UK to sort plastic packaging to the required quality and reprocess this material needs to increase in order to handle the additional quantities. These are primarily from:

- Increasing recycled content target requirements
- To service the ever-increasing ambitious commitments by brand leaders to increase circular and environmentally sustainable manufacturing, including recycled content
- Manage the potential impact of current and future export market restrictions.

Expansion and Development

In 2021, the infrastructure across many areas of waste and recycling is developing rapidly. The *2021 Survey* can report that **71** Local Authorities are aware of planned building and expansion of infrastructure in their areas, and that whilst a considerable number of these are Energy from Waste (EfW) facilities, there is capacity factored in for new and growing sorting and reprocessing sites for household materials, including plastics.



Material Sorting

According to available sources, an estimated **1,174kt of plastic packaging was reported to have been recycled in 2020** and **486kt** of this was reprocessed in the UK. Looking at the data outlined below, material sorting capacity at both MRFs and PRFs, by quantity at least, is not considered to be a barrier to meeting current recycling targets.

Material Recovery Facilities (MRF)

MRFs are sites which receive and separate household mixed dry recycling (DMR). The mixed material is fed into the system and separated into streams using magnetic, ballistic, and near infra-red technology (NIR). Each fraction is baled and prepared for shipment on to a PRF, reprocessor or for export.

RECOUP estimates that there are around **110 MRFs** in the UK that have the capability to sort household plastic packaging from other material streams. It should be noted that this does not differentiate between plastic packaging formats or colours, and it is assumed that the majority of these MRFs will be focused on sorting rigid polymers.

It is estimated that UK MRFs have an annual sorting capacity of around **1,600,000 to 1,900,000 tonnes** of plastic packaging from household sources each year. After factoring in commercial drivers and actual throughput, this amounts to around **825,000 to 1,000,000 tonnes** actually being sorted.

Plastic Recovery Facilities (PRF)

PRFs receive baled plastic from a MRF where it is subject to further sorting in order to increase the quality of material. PRFs generally consist of many NIRs and colour sorters with paper and metal removal systems which take mixed plastics from MRFs for further processing.

There are **7 PRFs** in the UK that sort household plastic packaging. The estimated PRF operational sorting capacity is approximately **350,000 tonnes** each year. However, due to these facilities processing other materials, a total permitted capacity for plastics cannot be estimated.

Plastic Reprocessing Facilities

This is the point at which plastics (often having been sorted again to remove any impurities) are shredded and washed to remove items including labels, adhesives, dirt, and other contaminants and non-plastic fractions. Polymer types are then separated accordingly. The resulting regrind or flake may then be sold at this point, or it may be melted and converted into pellet.

There are **16** reprocessors in the UK that manufacture washed flake derived from household plastic packaging. The reported UK plastic reprocessing capacity for these is estimated to be approximately **440,000 tonnes**, with an estimated current actual operational output of **230,000 tonnes**.

As with MRFs and PRFs, measuring capacity to reprocess plastic packaging is never exact, so the difference between estimated operational output and reported capacity is an important distinction. In addition to this there is a significant difference between these two figures due to the quality of input material (feedstock) and natural material yield losses through the washing and flaking processes.

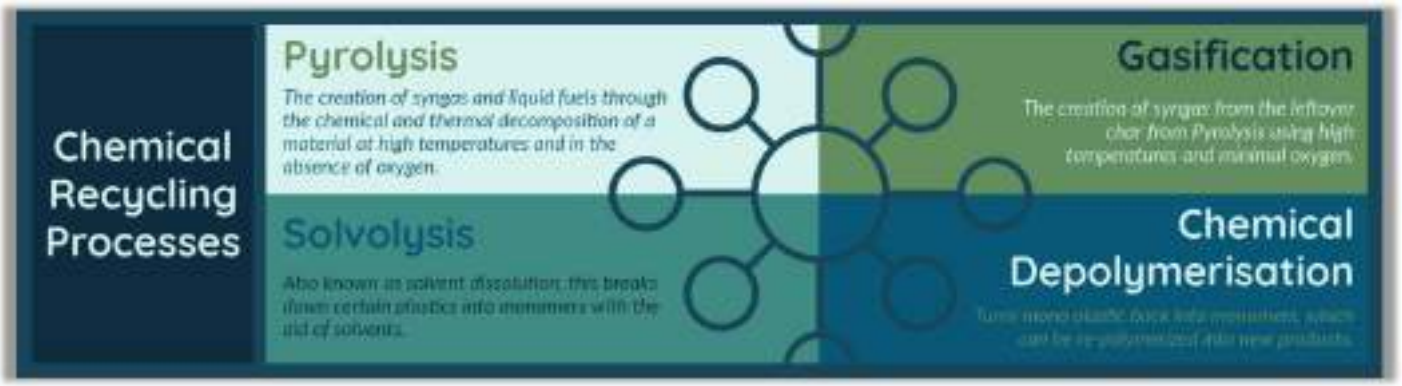
There are significant shortfalls in the UK's reprocessing capacity and there are very specific operational and technical challenges around reprocessing plastic film, non-bottle PET and food grade packaging, particularly PP. There are challenging commercial conditions and fine profit margins in the reprocessing sector, indeed if profits are delivered at all. This is where financial investment is needed to build technological solutions and operational business cases for this sector to make them commercially viable.

Chemical Recycling

Chemical recycling (or non-mechanical recycling) are processes which change the chemical structure of waste plastics by converting the material back to a shorter molecular chain. This is then used to make fuels, or even converted back to produce new 'virgin-like' raw materials.

It is not a one-size-fits-all model for plastics recycling and should be used to complement current mechanical recycling processes, not to replace them. As with mechanical recycling processes, the right feedstock is required, all-be-it with different target materials and contaminants. Whilst dry organic material may not be an issue, contaminants can include PET, PVC, water and wet material, and non-plastics.

As of October 2021, the status of chemical recycling with regards to policy is still being debated. Whilst it is considered recycling, there are concerns around the practical elements of the legislation to enable it to be counted as recycled content. Similar discussions are taking place in the EU where, currently, it is not classified as recycling.



Plastic Waste Crime

Waste crime is a global issue commonly seen in many of the negative environmental news stories about plastics and the effects it has on nature. Waste crime can come in many forms, including illegal sites, fly-tipping and littering.

Local Authorities and Waste Crime

The main challenges for Local Authorities with regards to waste crime is that of litter and fly-tipping. These can both take place on small scales, such a domestic litter, or on a commercial scale through material dumping. Local Authorities are largely responsible for the removal of litter and fly-tipping due to the *Duty of Care* [26] legislation for the safe management of waste, so tackling waste crime is always a priority.

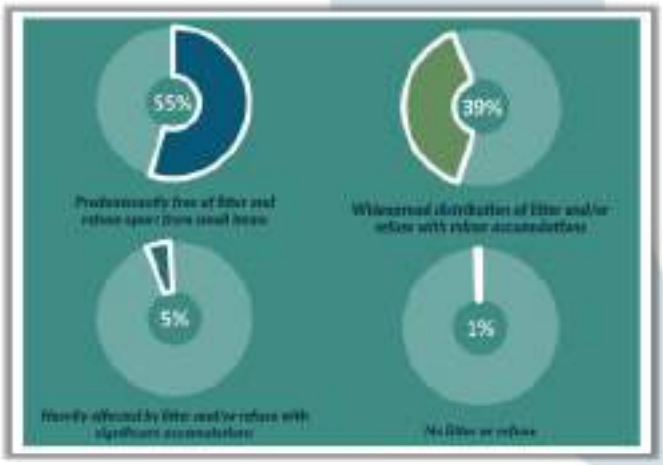
It has been estimated that, in England alone, keeping the country's streets clean cost Local Authorities almost £700 million in 2018 and the cost of fly-tipping to Local Authorities is nearly £60 million per year [27] . Further to this is the value of the littered material itself which is not being captured for recycling.

Litter

The *Litter Strategy for England 2017* [28] report stated that living in a littered environment can have negative consequences on people's mental and physical health, creating further strain on local services, this is otherwise known as litter disamenity. Poor local environmental quality can also discourage inward investment and may suppress property prices, damaging local economic growth. The report estimated that the impact was valued at £986 million, and although this was considered by some to be subjective and high, it does give an indication of the wider impacts of litter, which are both seen and unseen.

Local Authority views on litter are largely perceptive and not an exact science. Furthermore, local areas vary significantly, and clean-up of litter and refuse can depend on Local Authority priorities and geographical characteristics, such as population densities and rurality.

The *2021 RECOUP Survey* can report that out of those Local Authorities that shared an opinion, **55%** felt that they were **predominantly free from litter**, whilst **45%** reported **heavy or widespread distribution of litter**.



Fly-tipping

The *2021 RECOUP Survey* found that **73%** of Local Authorities consider fly-tipping a greater problem than litter, a slight increase on data received in the *2020 Survey* [32]. Whilst exact figures are not possible to ascertain, in previous years Local Authorities have reported that they believe material is more prevalent from domestic sources, but that commercial and industrial waste is in greater quantities. Commercial waste could be waste that is illegally disposed of by businesses, offices or small traders placing their waste in black sacks without a waste contract and leaving it in streets or parking areas.

The COVID-19 pandemic saw widespread disruption to waste collections, particularly the likes of Household Waste Recycling Centres (HWRCs). Of those Local Authorities that have seen an increase in both litter and fly-tipping in 2020, **65%** said both increased as a direct result of the COVID-19 pandemic.

Illegal Plastic Exports

One of the material streams commonly connected to waste crime is that of recycling exports. The use of export markets has played a central role in the development of UK plastic packaging recycling for many years, with around **60%** exported in 2020.

Exports are a vital option for the UK to meet recycling targets and offer many viable and environmentally beneficial options for material not currently able to be recycled in the UK. However, instances have been seen of material irresponsibly and illegally shipped to non-OECD (Organisation for Economic Co-operation and Development) countries for the exploitation of cheap labour and less environmentally responsible control. This is often seen in the media and can be one of the key reasons for the negative perception of export as a responsible method of managing waste.

In terms of Local Authorities and waste management providers, exporting material poses a greater risk of it ending up in uncontrolled recycling or waste sites.

In order for the UK to gain the critical mass required to meet auditable recycled content targets for plastic packaging, there is a need for more domestic recycling in the UK. In the coming years, the *Plastics Packaging Tax* [7] specifying the need to include 30% recycled content to avoid paying the £200 per tonne tax creates a greater market for recycled plastics in the UK, whilst *Extended Producer Responsibility* [5] (EPR) is expected to generate more funds for UK infrastructure to manage the material.

Environment Agency

When material is exported from the UK, the responsibility is on the Environment Agency (EA) to ensure that appropriate legal guidance is followed and appropriate notifications and evidence are provided. The EA also undertake checks of material destined for export, ensuring that what is being exported has been correctly described and is not subject to intentionally or unintentionally high levels of contamination or other materials.

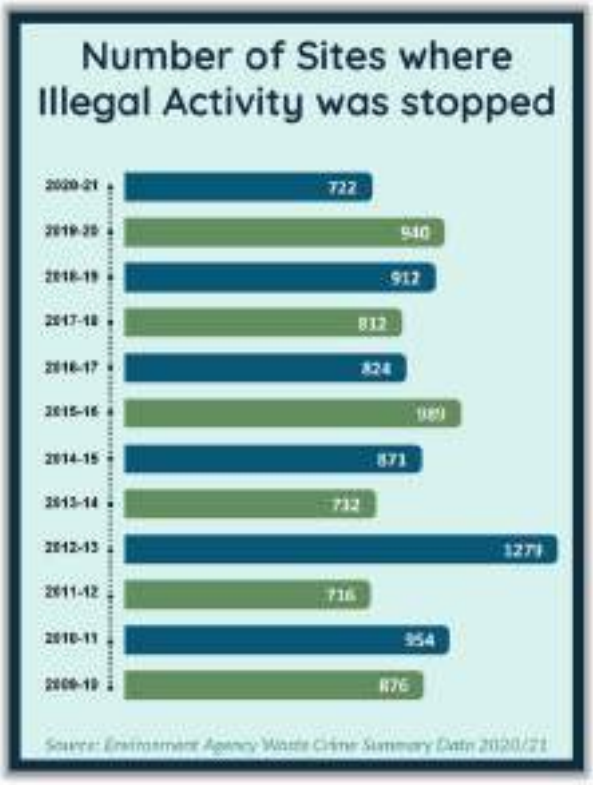
It has been reported that, anecdotally, the EA has been unable to conduct the same level of checks as it has in previous years due to challenges relating to site access and staffing numbers as a result of the COVID-19 pandemic. None-the-less, significant quantities of material are stopped each year.

More needs to be done, however, as in the last few years numerous examples of illegal export have been seen from major media outlets, something which has given a negative impression of plastics recycling and the industry as a whole.

In the UK, the EA also monitor and investigate waste sites and enforce, where appropriate, legal proceedings to prevent illegal activity.

In 2021, the EA released the *Waste Crime Summary Data to 2020/21* [29] which highlighted the extent of the challenges when it comes to illegal operations in the UK.

Whilst down on previous years due to the aforementioned challenges, it was reported that there was almost 500 illegal active waste sites, whilst there were over 700 instances of illegal activity being stopped.



Waste and Compliance Taskforce (WACT)

The UK's Waste Compliance Taskforce (WACT) [30] launched in October 2020 and is a partnership of organisations identifying and seeking to tackle waste crime.

WACT brings together organisations from across the public and private sector, including regulators, trade associations, landowners, businesses, and charities. The taskforce aims to raise awareness of waste crime and work towards combating it by helping businesses and organisations to be compliant.

Stuart Foster, RECOUP CEO and Chair of WACT said:

"Waste crime is the scourge of our industry. It's estimated that it costs the UK economy around £1 billion a year but it also potentially puts lives at risk and erodes the public's trust in the waste and recycling sector. It's crucial that we all come together now to tackle this from every angle so that the organised criminals who are making money out of illegal activities involving the UK's waste are stopped once and for all".

Citizen Communications

Communication to citizens is crucial in the effort to drive up collection quantities and reduce contamination. The reform of the UK's Packaging Producer Responsibility System should increase funding for strategic citizen communications and behaviour change activities that can relate what can and cannot be recycled, and how.

Focus for Communication Campaigns

Due to political and business incentives, there is an increasing need to recycle more plastics in the UK, as well as increase recycled content in plastic packaging. In order to achieve this, contamination needs to be reduced, and quality of recyclate improved at the first stage of the recycling process. How the consumer performs is the important first building block to producing a high performing recycling sector in the UK, as reduction of contamination not only increases the amount of recyclable material that is captured correctly, but increases the quality of all recyclate through the absence of non-target materials.

Local Authorities continue to report through the *RECOUP Survey* that reducing contamination is an area of considerable focus and priority for communication campaigns and future investment. In 2021, not taking into account communications relating specifically to the impact of COVID-19, **66%** ran a communications campaign in the last 12 months, and of these **just under half** reported that **reducing contamination** was their main area of focus.

Increasing material quality is a key area of interest for RECOUP and it is the primary strategic Pledge2Recycle Plastics communication message. The reasons for running a plastics recycling campaign could include increasing capture of target plastic material, reducing contamination, or introducing or changing a service. As plastics are in the public's conscious, more so now than ever before, Local Authorities are showing an increased interest in running communication campaigns to their residents.

Instructions to Residents

Consistent collections are not only about the range of materials collected from households and businesses, but how they are presented for recycling. For the *2021 RECOUP Survey*, research was carried out to understand the instructions being communicated to residents through Local Authority websites.

Messages on Local Authority websites vary across the UK, often down to the language used and instructions given. This is particularly evident when looking at whether Local Authorities ask residents to leave lids on plastic bottles or remove them.

The *2021 RECOUP Survey* found that **28%** ask for **lids on**, and **18%** ask for **lids off**, with further variation in whether the separated lids can be recycled or not.

Although there may be operational issues at Material Recovery Facilities (MRFs) around the equipment being able to pierce bottles before they are compacted and baled, there are benefits to collecting bottles with their lids attached. If citizens squash a bottle and re-attach the lid it gives the lid a chance of being recycled with the bottle, reduces the volume of the item, and helps to prevent possible liquid contamination from the bottle leaking onto other recyclables.

Whilst the majority of Local Authorities have moved away from describing their target and non-target recycling materials by polymer codes, **5%** of Local Authorities still **use polymer codes** in their communications to residents. Considering the range of polymers that can be used for packaging formats, including mixes of multiple plastics and other materials, RECOUP recommends that polymer codes are not used in communications to residents.

Pledge2Recycle Plastics

Pledge2Recycle Plastics is RECOUP's citizen behaviour initiative, working to reduce consumer confusion around plastic recycling. This is done by explaining the recycling process and demonstrating products made from recycled plastics, presented via live events, educational downloads, podcasts and social media.

RECOUP and the team at Pledge2Recycle Plastics continue to be questioned daily by residents and local community groups on the basic principles of kerbside recycling.

Similar questions are raised around the recyclability of pots, tubs and trays (PTT) with concerns around how clean they need to be when presented for recycling, along with the usual question of whether different colours of tray are accepted.

Many citizens also make assumptions as to whether items are recyclable or not, particularly those which are not currently not widely collected at kerbside for recycling, such as crisp packets.

As we move towards a more uniform range of plastic packaging being collected kerbside, and as RECOUP and others continue to drive recyclability through packaging design, the exceptions to the rule will diminish. It is important to keep building on the message as citizens begin to take onboard recycling principles and help to give context as to why individual behaviour is so crucial to collective success.

Trust and Education

Misleading media headlines can cause citizens to question whether what is claimed as being recycled actually is. Building trust is key to sustained behaviour change, and citizens are open to the idea of making the right environmental choices and are becoming wise to any greenwash. This includes embarking on conversations to reduce unintended consequences of alternative material choices that can have a higher carbon impact or lead to increased food waste.

Media rhetoric around plastics led to a surge in plastic-free groups. RECOUP and Pledge2Recycle Plastics often connect with such groups to challenge their perceptions and beliefs around the use and recycling of plastic packaging. The media reports of recycling material ending up in other parts of the world and abandoned in the natural environment does little to convince the public that their waste is being recycled. It is therefore important that industry and Local Authorities are committed to ensuring that the materials are traded and recycled ethically, in the UK where possible, or at least within Europe and developed Organisation for Economic Co-operation and Development (OECD) countries.

Householders remain unsure about the recycling process and what their items are turned into. Through Pledge2Recycle Plastics, the team engage with citizens to inform and educate on the plastics recycling journey and have a range of resources and workshops to aid citizen understanding and cut through their confusion.

Kent Understanding Plastics Live-Lab

RECOUP secured a grant from UK Research & Innovation to co-fund an industry-led communications and behaviour change research project in Kent. Bringing together key industry partners including Kent Resource Partnership, Veolia, Viridor, Ocado, Ecosurety, British Plastics Federation, Plastics Europe and PPS Recovery Systems, this ground-breaking research aims to understand the connection between communications and plastics recycling. The advice on plastics recycling has been pre-agreed with all Kent councils, Veolia and Viridor to provide a consistent message, using the Pledge2Recycle Plastics 'Cutting the Confusion' resource pack which is aligned with the WRAP Plastic Pact and Recycle Now social norming messaging.

RECOUP's Pledge2Recycle Plastics is connecting over 673,000 households across Kent over 12 months, to gain citizen insights, deliver plastics recycling messages and evaluate the resulting tonnage and contamination data. The project is the first of its kind to both deliver and measure the impact of different recycling communications methods on behaviour change. It is expected that the insights collected will provide evidence to support future plastics recycling engagement strategies.

Connect with Pledge

RECOUP would encourage all Local Authorities to link with Pledge2Recyce Plastics on their website. This can be done by linking both the Pledge website and connecting on social media.

www.pledge2recycle.co.uk

Recycled Plastics Markets

In recent years, attitudes towards waste and plastics have changed considerably, particularly in relation to markets and the values of plastics collected for recycling. This has created worldwide changes in regulation which are creating unique challenges.

Exports and the UK Recycling Rate

Politically in the UK, there is a continuing shift to focus investment on capacity to sort, reprocess and recycle materials domestically. However, there will need to be a robust approach to export markets to bring this change about. At present, **around 60%** of plastics considered recycled are exported from the UK, with a reliance on both Organisation for Economic Co-operation and Development (OECD) and non-OECD member countries.

The financial incentives created by the packaging producer obligation system and use of Packaging Recovery Notes (PRN) and Packaging Export Recovery Notes (PERN) to export material for recycling has historically made it more attractive to use export markets. This is despite the additional challenges of verifying and auditing outcomes of material that has been exported.

Countries from Asian markets, particularly China, who previously took high quantities of recycling materials from EU countries, have restricted or banned the import of plastic waste for recycling, or changed the quality of materials they are willing to accept. This has led to reports of household and other low-quality plastic waste stuck at ports or returned to its country of origin. Since this, we have also seen other major export markets, including Turkey (which became the largest export destination for waste from the UK [64]) enforce restrictions requiring higher quality material. Data in early 2021 suggested that, despite changes in their legislation requiring lower levels of contamination and higher quality of material, the majority of exported plastic from the UK is still going to Turkey.

Plastic Packaging Recycling Rate

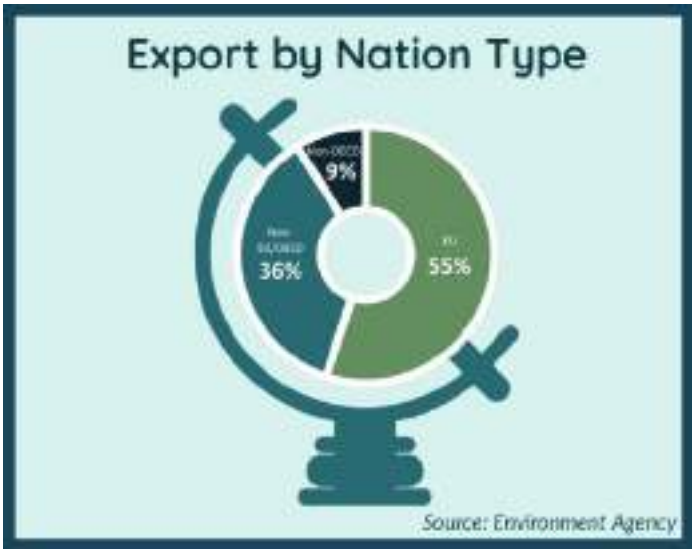
The *National Packaging Waste Database* (NPWD) [65] reports the quantities of plastic packaging recycled within the UK and what is exported for recycling.

For 2020, NPWD reported preliminary figures of **1,174kt** of plastic packaging declared as recycled from all sectors. Plastic packaging collected from households accounts for around half of the UK's total recycled plastics. In 2020, **59%** (around 688kt) of the total recycled was exported and **41%** (486kt) was recycled domestically.

Legislation

On 1st January 2021, changes were made to the *Basel Convention* [56] coding and controls for the export of waste plastics.

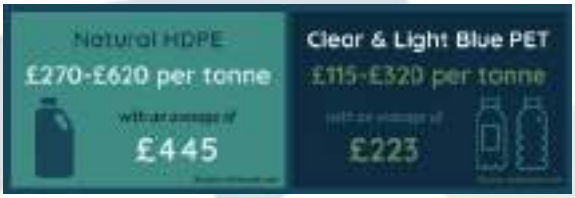
These changes mean that only plastics which are destined for recycling operations, consist of almost exclusively one type of plastic, and are almost entirely free from contamination, can continue to be exported as 'Green List' waste [58] . Mixtures of PP, PE and PET can also continue to be exported under 'Green List' controls on the proviso they are destined for separate recycling. All other plastic exports must be notified and receive specific consent for export prior to any shipment.



Market Intelligence

Plastics packaging recycling continues to provide income generation, employment and business opportunities for Local Authorities, waste management and reprocessing providers. However, they operate in tough commercial conditions, with fine or no profit margins. As such, all elements of the recycling chain must be financially viable for recycling to take place. This is something that has become increasingly challenging throughout the COVID-19 pandemic, with huge fluctuations in both oil and PRN prices affecting economic conditions and viability of using recycled content in new packaging and products. In 2020, PRN prices dropped to a nominal amount (~£5 per tonne) from highs of over £400 per tonne in mid 2019.

Plastic values also change due to market conditions. With landfill and Energy from Waste (EfW) taxes and gate fee costs in the UK, the business case to recycle plastics can be viable with the right financial support, with *Extended Producer Responsibilit*y (EPR) [5] due to play a pivotal role.



Good Export

Quality Export Builds a Circular Economy

- Prior to export, plastic materials are collected for recycling and sorted in the UK by reputable companies with clear and auditable material flows.
- The exported materials will be high-quality and support Circular Economy principles by providing valuable material that can be sold and recycled into new plastic packaging or other products.
- The type and quality of plastic fits or exceeds feedstock requirements of countries importing material.

Bad Export

Packaging Producer Responsibility System Disadvantaging UK Recycling

- Plastic materials are collected for recycling and sorted into various plastic types either in the UK or overseas.
- The current packaging producer obligation system incentivises the export of material and this disadvantages UK recycling when the material could have been reprocessed in the UK.

Ugly Export

Illegal Export of Material is Fraudulent and Causes Environmental and Health Risks

- Plastic materials are collected for recycling and exported for profit, possibly illegally, without it undergoing the necessary processes to ensure good quality material.
- This pushes the responsibility onto others to sort and recycle the material, leaving the UK open to fraud, creating potential health risks and situations where the material could even be illegally disposed of in unregulated waste sites.
- Illegal exports of poor material are a relatively small quantity, and these operation should be policed and closed.

Case Study: Recycling Insights Market Report

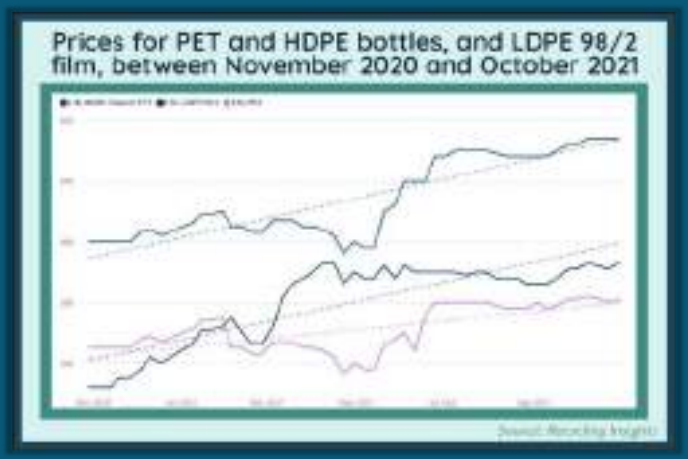
Written by Paul Sanderson, Co-Founder, Recycling Insights

Prices for most high-quality plastic grades were strong this year.

Following the upturn in global economies as COVID lockdowns eased or came to an end, and more recycled content was wanted by manufacturers, demand was strong all year.

In addition, supply was constrained by logistical issues such as container and lorry driver shortages, as well as changes to consumption patterns during lockdown periods.

As can be seen in the chart below, this led to a sustained increase in prices for PET and HDPE bottles, and LDPE 98/2 film.



Strong prices were also seen for industrial grades too. However, some lower value grades were in demand, but mixed plastic grades tended to struggle.

For packaging plastics, the PRN/PERN continued to be volatile all year. Markets hung on every bit of data coming from the National Packaging Waste Database. But there was also a great deal of uncertainty as some companies had accreditation suspended or cancelled. At the time of writing, the Environment Agency was believed to have placed 11,000 tonnes of PERNs back onto the market.

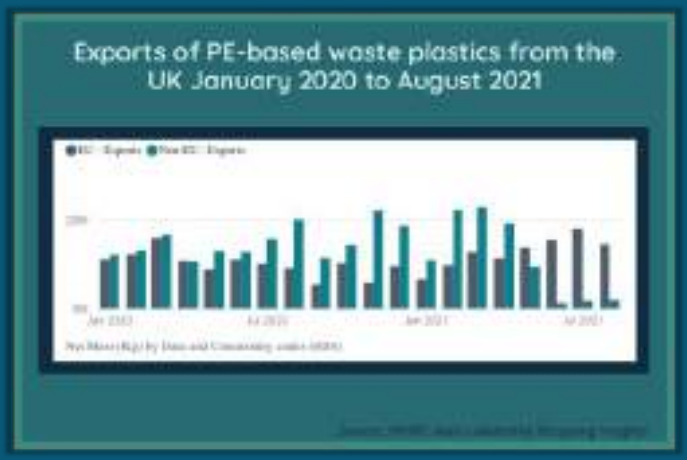
The chart below shows the continued volatility of this market.

In terms of the outlook for the 2022 market, the uncertainty is likely to continue, especially if the carry-in looks small. Destination markets for recyclate got much smaller this year. From January, the new Basel Convention rules prevented certain grades from being exported, especially mixed plastics.

However, countries also took it upon themselves to introduce tougher rules. Turkey, in particular, hit the market hard when it banned most recycled polymer grades earlier in the year, as this had become the prime export destination for UK material.

While Turkey reinstated certain imports a couple of months later after pressure from its own recycling industry, it still remained a challenge to send material there.

The impact of this has been to bring the plastic market closer to home with the UK domestic market and EU pretty much the only destinations at present, as can be seen in the below chart.



But as is also shown in the chart above, European demand has improved since the end of 2020 and has been a welcome destination for excess UK material.

However, draft rules published by the European Commission would treat the UK as an OECD country, meaning strict 2% contamination limits for UK material going into Europe – compared to 6% for intra-EU trade.

Plastics Recyclers Europe have warned that these proposed regulations would mean prior informed consent would be required to send material from the UK and EU, either making exports there impossible or requiring a great deal of paperwork.

While 2022 looks challenging for the UK plastic recycling sector, longer-term it shouldn't be forgotten that the Plastic Packaging Tax and Extended Producer Responsibility will bring great opportunities to develop a strong UK plastic recycling industry.

If you would like to find out more about Recycling Insights, including our AI-driven forecast prices and ability to compare recycling plastic prices to economic indices, visit www.recyclinginsights.com or contact paul.sanderson@recyclinginsights.com.

Policy & Regulation

The policy and regulation of UK's waste and recycling, particularly around plastic packaging, remains in a development and transformation stage in 2021 ahead of the major changes in the coming years.

The changes in policy and regulation will have a significant impact on how plastic packaging, waste and recycling is governed, managed, funded and delivered, as well as the systems and infrastructure that the various sectors in the material value chains operate within. There is little doubt this process will direct the capability of the UK to manage our waste and recycling systems for the foreseeable future.

Momentum also continues to build around wider UK, EU and global strategies to reduce the root causes of climate change and plastic in the environment, moving towards resource efficient and circular economy systems with significantly more recycling, reuse and refill infrastructure.

The various policies are complex in how they interact with each other. RECOUP has carried out extensive dialogue and submitted consultation responses for the following priority policy areas:

- The reform of the *Packaging Producer Responsibility System* – otherwise known as *Extended Producer Responsibility* (EPR) [4] [5]
- Introducing a *Deposit Return Scheme* (DRS) in England, Wales and Northern Ireland [8]
- Introducing a DRS in Scotland [9]
- *Consistency in Household and Business Recycling in England* [6]
- The UK *Plastic Packaging Tax* [7]
- Use of Single-Use Plastics (SUP) in the UK [34] [35] [36] [37] [38], and Europe [2]
- Competition and Markets Authority (CMA) on businesses making environmental claims to promote or sell their goods and services [39]
- Changing policy and positions on the export and import of waste

This section is correct at the time of writing this report in November 2021.

Parliament Passes Environment Bill

On 10 November 2021, the *Environment Bill* [40] was passed in parliament. This means the *Environment Act* [41] legislation is now UK law, allowing ministers to introduce a variety of waste reforms around EPR [5], DRS [8] [9] and consistent recycling collections in England [6]. A new independent Office for Environmental Protection (OEP) will be in charge of enforcing the changes and holding public bodies to account, with any changes being driven by new legally binding environmental targets.

Consultation Season

Now the *Environment Bill* [40] has been given royal assent, concerted effort, collaboration and expertise will continue to be needed to ensure the planned systems and schemes are well designed and managed. Throughout 2021, there has been a high number of consultations on how these policies develop. Sitting behind these has been extensive dialogue with policymakers from organisational bodies, trade associations and industry. RECOUP will continue to provide evidence and input across all of the major policy reforms taking place.

Building towards commitments set out in the *25 Year Environment Plan* for the UK [42] there has been a primary focus on three key areas – EPR [5], DRS [8] [9] and consistent recycling collections [6]. The outcomes from these consultations are likely to come in early 2022, and further consultations are expected to provide clarity and refinement ahead of their implementation. These changes should deliver significant policy interventions that will help increase recyclability of plastic packaging Placed on the Market (POM), and overall UK recycling rates.

In addition to EPR [5], DRS [8] [9] and consistent recycling collections [6], a number of other consultations have taken place, including with HMRC on the *Plastic Packaging Tax* [7], with the most recent on secondary legislation ongoing at the time of writing this report in November 2021.

Consultations also took place on the banning of SUP in Wales [35], closing in October 2020, one in Scotland [36] closed in January 2021, and one is currently live for Northern Ireland [37] in at the time of writing this report in November 2021, with one anticipated to take place in England [38] in late 2021. The CMA consultation on making environmental claims on goods and services resulted in guidance being published soon after the consultation closed [39].

Policy Outlines

The key points from each major policy area are outlined as follows.

Extended Producer Responsibility

Central to all policy changes about packaging waste and recycling is the reform of the *Packaging Producer Responsibility System* [5] , otherwise known as *Extended Producer Responsibility* [5] . The key principle is that packaging producers and those who use plastic packaging will be responsible for the full net cost of managing the collection, transport, sorting, reprocessing and disposal of used packaging, whilst also funding consumer communication campaigns and the clean-up costs of packaging litter and fly-tipping.

This funding should increase investment in recycling systems and incentivise packaging to be recyclable and recycled. The Government estimates that costs to producers will be in the region of £2.7bn in the first full year of implementation, which is broadly ten times the current estimated packaging producer costs.

Some further key points around the reform of the Packaging Producer Responsibility System include:

- A single Scheme Administrator will be responsible for administering and managing delivery of EPR, which could include all costs, setting targets and distributing funding to manage the packaging waste, including payments to Local Authorities to collect the material.
- The producer costs are to be dictated by the quantities of packaging placed on the market and, through eco-modulation, the recyclability and litter potential of the packaging. For example, the more recyclable items attract lower fees, and unrecyclable or harder to recycle items attract higher fees.
- Payment mechanisms for packaging waste collected from businesses. Three options were outlined in the consultation, including a packaging producer funded, 'free bin' approach, where all businesses would be entitled to free collection of packaging waste. This is one area which will need extensive efforts to agree an effective approach.
- Packaging to be clearly and consistently labelled to inform consumers whether it can or cannot be recycled.
- To address the export of poor-quality material, only waste that has met an agreed end of waste protocol, i.e. so it is no longer categorised as waste, should be allowed to be exported for recycling. Criteria would need to be developed for plastic packaging, which could mean not exporting unwashed and baled material, but a commodity in the form of washed flake or pellet. If this criterion is agreed there would have to be a rapid and unprecedented transformation of the recycling infrastructure to make sure the UK system is capable of delivering this.

Deposit Return Schemes (DRS)

There is still strong momentum for a DRS to be used across the UK in order to increase recycling rates and reduce littering of a variety of drinks containers. The UK Government's consultation is on introducing a DRS in England, Wales and Northern Ireland, with a proposed launch date of 2024 [8] .

Scotland are intending to implement a DRS independent of the rest of the UK [9] . In November 2021, it was announced that the Scottish DRS was to be indefinitely delayed due to the impacts of the pandemic, the UK leaving the EU, and complications relating to HMRC and the impact of VAT on deposits for food and drink products [67] .

The use of a 'Digital DRS' (DDRS) is currently being assessed. A DDRS is where consumers can claim their deposit at home by scanning their drinks containers on their smart phones when placing them for recycling, in addition to using Reverse Vending Machines (RVMs) when away from home, as is used in a traditional return to retail DRS scheme. RECOUP is part of an industry working group looking at the viability of a digital system, both from a practical and technological viewpoint. A report was commissioned to a consultancy, Resource Futures, to explore the economic impact of a DDRS, and it was found it could offer significant savings over a traditional 'return to retail' scheme [44] . The UK's first DDRS pilot was also delivered, with Polytag, along with the Welsh Government, Conwy County Council and WRAP Cymru, outlining its findings in a published report [45] .

Consistency in Recycling Collections

Consistency in household and business recycling collections in England will increase the quantity and quality of the packaging collected for recycling. This is to be achieved by having a core set of materials and products that should be presented in the same way for recycling regardless of where you live or travel to.

Devolved Governments have strategies and targets which are reflected in different policy objectives and support for increasing recycling. The Scottish Government and the Convention of Scottish Local Authorities (COSLA) have a *Household Recycling Charter* [23] . Wales has an overarching waste strategy document, *Towards Zero Waste* [46] , and its established *Collections Blueprint* [47] , and Northern Ireland has a waste management strategy, *Delivering Resource Efficiency* [48] . The devolved administrations are likely to continue with their independent policies in order to achieve their own ambitions.

Single-Use Plastics

In line with Article 5 of the *EU Single-Use Plastics Directive (EU) 2019/904* [2] , there is an ongoing process to reduce marine litter coming from the most common SUP items. This covers a broad range of items, including: plastic cotton buds, cutlery, plates, beverage stirrers, straws and balloon sticks, EPS (expanded polystyrene) food containers and EPS cups.

It is expected that exemptions will be enforced where products are deemed necessary, but any measures taken to restrict certain items should take fully into account the environmental and socio-economic impacts of doing so. This can be done through robust independent life cycle analyses and environmental impact assessments.

Alternative products may be less sustainable and could result in a continued increase in littering, it is therefore important to assess the alternatives to the products being targeted. How SUP policy dovetails with other policy interventions is important, as there is a range of measures that could also be used to decrease littering and increase the amount of post-consumer plastic waste entering the recycling stream.

A consultation on the banning of SUP items closed for Wales in October 2020 [35] , and for Scotland in January 2021 [36] . A consultation for Northern Ireland is live at the time of writing this report in November 2021 [37] , and a consultation in England is expected shortly [38] .

HMRC's UK Plastic Packaging Tax

The *Plastic Packaging Tax* is a tax on plastic packaging manufactured in or imported into the UK. The tax will apply to packaging which is predominantly plastic and is set at £200 per tonne for packaging with less than 30% recycled content [7] [49] .

It will be implemented on 1 April 2022, with the UK Government stating the key aim being to provide an economic incentive for businesses to use recycled material in plastic packaging, which will create greater demand for this material and stimulate increased levels of recycling and collection of plastic packaging waste.

In November 2021, HMRC published the first part of the full guidance [50] , which includes bringing together previously published guidance so that all information businesses need to prepare for the tax will be in one place. This update provides information such as who is impacted by the tax, the exemptions, and what needs to be considered for multi-material packaging. Further additions to the guidance will continue to the published.

The latest consultation is on the publication of the draft secondary legislation and guidance [51] , which provides the technical detail relating to the administration of the tax. This includes registration requirements, filing returns, and record keeping and evidence. This is essential for businesses to prepare properly to meet the new requirements from April 2022.

The auditing and policing of the system will be critical to its success, and RECOUP has worked with the British Plastics Federation (BPF) to research and recommend the best approaches for how recycled content verification solutions can support delivery of the tax [31] . This would help to prevent fraud and have a system in place to ensure that claims around recycled content in packaging material imported into the UK are not based on 'trust' but instead on verified and audited recycled content. RECOUP and the BPF have created a Recycled Content Verification Systems report which recommends the tax should operate within a well-designed recycled content verification framework and should include a number of focal features.

Dialogue is ongoing with HMRC, including around how evidence can be provided so chemically recycled material can be counted as recycled content.

There are ongoing considerations as to how this policy fits with EPR plans and how the infrastructure can be supported to deliver the required amount of recyclate for UK plastic packaging to meet the tax requirement. The tax is one of many being considered by multiple countries and this will have an impact on demand and costs of recycled plastic in packaging in the UK and abroad. This is already evident in late 2021 as the cost of recycled plastic is escalating.

The European and eventually global transition to the use of tax or financial incentives to use recycled content in plastic packaging will only drive the collective demand and costs to purchase this material higher. It is also safe to assume that a tax or legislative interventions to incentivise recycled content will migrate to other packaging materials and non-packaging items over time other than single use plastics.

Key Considerations

There are other dynamics and considerations for the UK.

UK Plastics Pact

The UK Plastic Pact [53] is a scheme led by WRAP (Waste and Resources Action Programme and made up of retailers, packaging companies and producers, as well Government and non-government organisations (NGOs), seeking plastic solutions in order to generate a circular economy.

A *Roadmap to 2025* [54] outlined the ambitions and targets, challenges and solutions, and actions required to meet them. The UK Plastic Pact aims, by 2025, are:

- Eliminate problematic or unnecessary single-use packaging
- 100% of plastic packaging to be reusable, recyclable or compostable
- 70% of plastic packaging effectively recycled or composted
- 30% average recycled content in plastic packaging

Integrated into the Government's legislative changes, this provides a target and incentivisation structure to work towards.

RECOUP is working alongside WRAP to provide strategic, practical and collaborative support to ensure the collective RECOUP and Pact members work in an intelligent and logical way. This will help to not only meet collective aims, but also avoid negative, unintended consequences centred around moving away from plastic as a material of environmental choice, towards alternatives that could ultimately increase carbon emissions and be an even greater recycling challenge for the UK.

UK Plastic Recycling Targets

In late 2020, Defra published the packaging waste recycling targets for businesses in 2021 and 2022 [55] . These are targets placed on the producer value chain from the polymer and packaging producers through to the retailers.

The business targets for plastic packaging recycling would rise by 2% each year. This was 57% in 2020 and will be 59% in 2021 and 61% in 2022. In real terms, actual achieved plastic packaging recycling rates are expected to be lower than this as not all plastic packaging falls within the producer obligation system.

Concessions have not been made for the COVID-19 pandemic and the associated impacts and restrictions, as there has been a fall in the quantity of plastic that has been placed on the market. This will lead to a reduced level of obligated quantities, and with continued use of export markets and developing UK reprocessing infrastructure, the targets to 2022 are likely to continue to be achieved.

Plastic Waste Exports

There is constantly changing dynamic on the export and import of waste, particularly plastics, both in terms of policy and positions that the EU and independent countries are taking.

The UK has long relied on export markets, and with typically around 60% of waste plastic packaging exported each year, the emphasis for the UK and indeed many other countries is to manage more of this material on their own shores. This both reduces the reliance on changing policy and restrictions from other countries that accepts this material and promotes the development of domestic recycling infrastructure to handle waste from where it originated.

In terms of policy and regulation a significant consideration has been changes to the *Basel Convention* [56] . The overarching objective of the Convention is to protect human health and the environment against the adverse effects of hazardous wastes. After leaving the EU, the UK is now being treated in the same way as any other Organisation for Economic Co-operation and Development (OECD) country that intends to export waste to any EU country.

After 1 January 2021, to strengthen controls for the export of waste plastics, there were new arrangements for the movement of plastic waste. These were ratified by the UK Government and have been implemented across the EU through the relevant *Waste Shipments Regulations*, with exporters from the UK to Europe required to follow EU customs guidelines and EU *Waste Shipment Regulations* [57] .

The changes meant that only plastics which are destined for recycling operations, consist of almost exclusively one type of plastic, and are almost entirely free from contamination, can continue to be exported as 'Green List' waste [58] . Mixtures of Polypropylene (PP), Polyethylene (PE) and Polyethylene Terephthalate (PET) could continue to be exported under 'Green List' controls on the proviso that they are destined for separate recycling. All other waste plastic international movements required 'prior informed consent' (PIC) from the competent authorities of dispatch, transit, and destination.

In terms of policy in the UK, as mentioned earlier in this section, to address the export of poor-quality material, the reform of the *Packaging Producer Responsibility System* [4] [5] consultation proposed that only waste that has met an agreed end of waste protocol should be allowed to be exported for recycling. This could have significant implications for what packaging waste the UK can export and will require informed and careful consideration to ensure that the UK infrastructure is developed to process material that otherwise would have been exported.

Guidance on Green Claims

The Competition and Markets Authority (CMA) held a consultation [59] to investigate how businesses are making environmental claims to promote or sell their goods and services and whether consumers are being misled.

RECOUP strongly believes environmental claims should be founded on objective data and evidence using recognised standards and best practice. A level playing field is needed for those businesses making well founded and evidence based environmental claims, and those that potentially fall short to ensure that claims are not made simply to gain a commercially competitive advantage.

The outcome of the consultation was the CMA publishing guidance [60] in September 2021. This includes:

- Six core principles environmental claims must be made around
- Examples of when environmental claims are misleading
- What Consumer Protection Law requires businesses to do
- What if businesses don't comply with this law (the CMA has powers to tackle practices that harm consumers and hinder their decision making, including taking businesses to court)

This covers both business-to-consumer claims as well as business-to-business claims to ensure that both are able to make informed purchasing decisions.

Europe

Having left the EU, the UK can now make its own policy decisions around how it manages waste and recycling. Despite this, the UK has broadly adopted a number of European policies and will continue to look at and be affected by policy changes in Europe, such as the:

- European Commission's *Circular Economy Package* [61] – addressing the high dependency on virgin fossil feedstock, low rate of recycling and reuse of plastics, and the leakage of plastics into the environment
- European Union's *Waste Framework Directive* [62] – the legislative structure for the management of waste in EU countries, which includes setting recycling and reuse targets
- The EU *Single-Use Plastics Directive* [2] – aims to tackle marine litter coming from 10 identified single use plastic products and targets to collect drinks containers

There are two specific areas which could impact how policy develops in the UK – the *European Green Deal* [63] and the EU *Plastic Waste Levy* [52] .

European Green Deal

The *European Green Deal* [63] is a set of policy initiatives from the European Commission with the overall objective to make Europe carbon neutral by 2050. It aims to transform Europe to be resource efficient whilst also being competitive economically and improving people's quality of life. This would be achieved through having: clean air, water, soil and biodiversity; healthy and affordable food; cleaner energy; better transport; and a transition to a circular economy where longer lasting products can be repaired, recycled and re-used.

EU Plastic Waste Levy

In January 2021, the EU introduced a levy on plastic waste as part of a €750 billion coronavirus recovery fund agreement [52]. A levy of €0.80 per kilogram (€800 a tonne) was applied to plastic packaging waste that was not recycled in that particular country.

Proceeds from the levy go directly to the EU, but it will be down to individual countries to decide how to fulfil the requirement.

It could come directly from central Government funds, or in the form of a tax to businesses who produce or use plastic packaging, or a combination of both. As an example, this is currently the approach being considered in Italy. The Italian Government is proposing to implement a tax on the virgin plastic content in plastic packaging, partly passing the charge onto the plastic packaging supply chain by charging them €450 per tonne of virgin plastic used, with a remaining €350 per tonne being covered by the Government.

This is a complex area. Although the overall figure of the tax in Italy matches the EU levy of €800, it measures the virgin plastic placed on the market and not the material not recycled.

Overall, the intention could be to make supply chain pay the levy, but it could disincentivise the use of plastic packaging, which could have overall negative environmental outcomes in situations where: 1) other materials that replace plastic have higher carbon impacts; or 2) increased food waste where plastic packaging is no longer used.

This should not be confused with the UK's *Plastic Packaging Tax*, which taxes those who manufacture or import plastic packaging that does not include 30% recycled content.

The tax in Italy has now been postponed due to the financial impacts on business after the pandemic, and it is now planned to be implemented in 2023. Other countries will be developing their own approaches to paying the levy, applying tax to plastic packaging placed on the market, and use of recycled content in that packaging.

Acronyms & Abbreviations

- **AD** – Anaerobic Digestion
- **AfH** – Away from Home
- **BBC** – British Broadcasting Corporation
- **BPF** – British Plastics Federation
- **CEO** – Chief Executive Officer
- **CMA** – Competition and Markets Authority
- **COP26** – United Nations Climate Change Conference of the Parties
- **CoSLA** – Convention of Scottish Local Authorities
- **COVID-19** – Coronavirus Disease
- **Daera** – Department of Agriculture, Environment and Rural Affairs
- **DDRS** – Digital Deposit Return Scheme
- **Defra** – Department for Environment, Food and Rural Affairs
- **DIY** – Do-it Yourself
- **DMR** – Dry Mixed Recycling
- **DRS** – Deposit Return Scheme
- **EA** – Environment Agency
- **EC** – European Commission
- **EEA** – European Economic Area. *As of November 2021 this is the EU countries, Iceland, Liechtenstein and Norway.*
- **EFTA** – European Free Trade Association. *List of member states as of November 2021: Iceland, Liechtenstein, Norway, and Switzerland.*
- **EfW** – Energy from Waste
- **EPS** – Expanded Polystyrene
- **EPR** – Extended Producer Responsibility
- **EU** – European Union. *List of member states as of November 2021: Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.*
- **GB** – Great Britain (England, Scotland and Wales)
- **GHG** – Greenhouse Gas
- **HGV** – Heavy Goods Vehicle
- **HDPE** – High Density Polyethylene
- **HMRC** – Her Majesty's Revenue and Customs
- **HWRC** – Household Waste Recycling Centre
- **IV** – In-Vessel Composting
- **JUWC** – Joint Unit for Waste Crime
- **KG** – Kilograms
- **KT** – Kilotonnes
- **LA** – Local Authority
- **LARAC** – Local Authority Recycling Advisory Committee
- **LDPE** – Low Density Polyethylene
- **MBT** – Mechanical Biological Treatment
- **MRF** – Material Recycling/Recovery Facility
- **NAWDO** – National Association of Waste Disposal Officers
- **NGO** – Non-Government Organisation
- **NI** – Northern Ireland
- **NIR** – Near Infrared
- **NPWD** – National Packaging Waste Database
- **OECD** – Organisation for Economic Co-operation and Development
- **OEP** – Office for Environmental Protection
- **ONS** – Office for National Statistics
- **OPRL** – On-Pack Recycling Label
- **OTG** – On-the-Go
- **PE** – Polyethylene
- **PERN / ePRN** – Packaging Export Recovery Note
- **PET** – Polyethylene terephthalate
- **PIC** – Prior Informed Consent
- **POM** – Placed on the Market
- **PP** – Polypropylene
- **PPT** - Plastic Packaging Tax
- **PR** – Public Relations
- **PRF** – Plastics Recovery Facility
- **PRN** – Packaging Recovery Note
- **PS** – Polystyrene
- **PTT** – Pots, Tubs and Trays
- **PVC** – Polyvinyl Chloride
- **RCVS** – Recycled Content Verification System
- **RDF** – Refuse Derive Fuel
- **RECOUP** – RECycling of Used Plastics Limited
- **ROI** – Republic of Ireland
- **RVM** – Reverse Vending Machine
- **Schengen Area** – European area of unrestricted movement. *List of countries as of November 2021: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, and Switzerland.*
- **SDG** – Sustainable Development Goal
- **SSPP** – UKRI's Smart Sustainable Plastic Packaging Fund

- **SUP** – Single-use Plastic
- **T** – Tonnes
- **UK** – United Kingdom (England, Scotland, Wales and Northern Ireland)
- **UKRI** – UK Research & Innovation
- **UNEP** – The UN Environment Programme **WACT** – Waste and Compliance Taskforce
- **WEEE** – Waste Electronics and Electronic Equipment
- **WRAP** – Waste and Resource Action Programme

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UK HOUSEHOLD PLASTICS COLLECTION SURVEY

2021

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