

UK Household Plastics Collection Survey



A publication to outline the collection
of household plastics in the UK.

2016

UK Household Plastics Collection Survey 2016

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 full support of LARAC (Local Authority Recycling Advisory Committee).

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 can accept no responsibility or liability for any errors or omissions. Opinions expressed and recommendations provided herein are offered for the purpose of guidance only.

The 2016 Survey has been:

Researched by Steve Morgan, RECOUP Technical Manager & Kerry Campbell, RECOUP Project Officer

Written by Steve Morgan, RECOUP Technical Manager



REcycling of Used Plastics Limited (RECOUP)

Registered Charity No: 1072029 & Company Registration No: 2435729

1 Metro Centre, Welbeck Way, Woodston, Peterborough, UK, PE2 7UH

t: +44 (0)1733 390021 e: enquiry@recoup.org w: www.recoup.org

RECOUP is a leading authority on plastics recycling, providing expertise and guidance to a wide range of organisations and members across the plastics supply, use and recycling chain. Established in 1990, RECOUP is a registered charity and not for profit organisation built on a network of members.

RECOUP deliver research, project management and policy review activities for members and clients, working to maximise plastics recycling by stimulating the development of sustainable plastics waste management practices. This includes the improvement of plastics design, collection, sorting and reprocessing activities across the UK, undertaking bespoke research to identify good practices and remove barriers to the adoption of efficient recycling systems.



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Key Data

Plastics Packaging Placed on the Market

- **2,260,000** plastics packaging placed on the market
- Of this **1,119,000** tonnes of rigid plastics packaging consumed by households – **594,000** tonnes of plastic bottles and **525,000** tonnes of plastic pots, tubs and trays

Plastics Packaging Collections Data

- Reported collection levels have **slowed down**
- **499,625** tonnes collected for recycling - an overall **1.4%** increase
- **340,160** tonnes of plastic bottles - a **0.8%** increase
- **159,465** tonnes of plastic pots, tubs and trays - a **2.8%** increase

Scheme Type and Plastic Format

- Bottles make up **68%** of household plastic packaging collections - pots, tubs and trays make up **32%**

Household Plastics Packaging Collection Rates

- **57%** Plastic bottles
- **30%** Plastic pots, tubs and trays
- **45%** Rigid plastics packaging overall

Kerbside Plastic Collection Service Provision

- Reduction in number of Local Authorities in the UK – changing from **406** to **391**
- Number of new collection services **slowing down**
- **385 (98%)** Local Authorities offer a kerbside recycling collection service that includes plastic bottles - just **6** do not offer a kerbside collection service for plastic bottles
- **290 (74%)** Local Authorities in the UK collect plastic pots, tubs and trays
- **80 (20%)** Local Authorities collect plastic film as part of their kerbside collection service
- Planned new kerbside services for 2016/17 – **1** for plastic bottles, **17** for plastic pots, tubs and trays, and **7** for plastic film



Facts & Stats

- Nearly **7.5 BILLION** plastic bottles were recycled in 2015 - that's over **20 million** bottles every day
- **5.5 BILLION** plastic bottles were not collected to be recycled by UK households - that's over **15 million** plastic bottles every day!
- An average UK household uses nearly **500** plastic bottles a year, but only recycles just over **half** of them
- Since 1994 there has been over **63 BILLION** plastic bottles collected for recycling - that's almost **3 million** tonnes
- Since 2007 there has been nearly **850,000 tonnes** of plastic pots, tubs and trays collected for recycling

HWRC & Bring Collection Services

- **152** Local Authorities confirmed the HWRC service in their area collects plastic bottles for recycling, **108** collect plastic pots, tubs and trays, and **31** plastic film
- **89** Local Authorities confirmed the HWRC in their area collects non-packaging plastic for recycling, **71** collect plastic paint pots, and **66** accept plastic plant pots
- Over **50%** of Local Authorities offer a bring collection service

Performance Rate - Average Collection Rates per Household per Year

- Plastic bottles - **11.93 kg**
- Pots, tubs and trays - **7.95 kg**
- Plastic bottles and pots, tubs and trays - **19.88 kg**

Kerbside Nation and Region Collection Levels

- The South East collected the largest quantity of plastic bottles with over **48,000** tonnes - 15% of the UK total
- London collected the highest quantity of pots, tubs and trays with over **20,000** tonnes - 14% of the UK total

Key Data

Kerbside Collection - Containers & Frequency

- **Single units** make up a high proportion of kerbside collection container provision (**56%**) – down from **70%** in 2013
- **Dual bins** increased from **25%** to **38%** since 2013
- Wheel bins are the most common container used for collection from kerbside (**58%**)
- Fortnightly recyclables collections are most popular (**76%**) with **59%** alternating weekly with residual collections
- **Three weekly collections** of residual and recycling starting to increase, with **four weekly** collections also being considered

Treatment of Residual Waste

- **97%** of Local Authorities are aware of what happens to their residual waste
- Reported destination of residual waste - **34%** to landfill, **34%** to EfW, **16%** to RDF and **16%** to recycling

Recycled Plastic Markets

- Average mixed plastic bottle price in 2015 was **£79** per tonne
- The un-recycled household plastic bottles have a potential average value to reprocessors of over **£20m** and cost nearly **£26m** to dispose of
- Average price of a clear and light blue PET bale **£127**, and Natural HDPE bale **£364**
- Costs for disposal of pots, tubs and trays not collected for recycling between **£37m** and **£53m**
- Contractors receive or partly receive the largest slice of the funding of revenue from the sales of collected plastics (**65%**)
- **32%** of Local Authorities reported they found UK based end destinations for their collected plastics, with **15%** exported and **53%** to unknown end destinations

Plastics Recycling in the EU

- *Plastics – The Facts 2015* reported plastics recycling and energy recovery reached **69.2%**: **29.7%** recycling, **39.5%** energy recovery and **30.8%** landfill
- There has been a **64%** increase in recycling, **46%** increase in energy recovery and **38%** reduction in landfill from 2006-2014



Brexit & the Future

- The UK recycled **891,141 tonnes** of plastic packaging for all sectors in 2015 – a recycling rate of just under **40%**
- A **new circular economy package** was announced in 2015
- An overall **plastics recycling and “preparation for re-use” target** for **2025** was set at **55%**
- It remains **unclear** when the new circular economy package will be agreed and adopted for the EU, and following **BREXIT** if the UK will adopt the package and how formal this agreement will be

Harmonisation – The Way Forward?

- **52%** of Local Authorities believed recycling collections were aligned with other authorities - **35%** responded no and **13%** didn't know
- **80%** of Local Authorities stated alignment of material or plastic types collected, showing that the key target for improvement focusses on standardising the material collected
- A **case study** from South Tyne and Wear Waste Management Partnership (STWWMP) included the benefits they've seen from aligning services and also the issues for plastics they are jointly contending with
- Somerset Waste Partnership stated the savings from their single collection contract is believed to be at least **£1.5m** per year

Consumer Communications

- Pledge 4 Plastics '**The Secret Life of Recycled Plastics**' received **200,000 views** and a social media reach of over **1 million**
- Pledge 4 Plastics and Recycle Now worked in partnership to produce a new **Plastics Recycling Resource Pack**
- **40%** of Local Authorities reported they were planning a communication to their householders about plastic recycling
- **70%** reported **transformation resources** engage the public fairly well or very well
- **87%** stated they have **not received budget cuts** to deliver communications to householders about waste and recycling
- There are two **case studies** – from Castle Point Borough Council and from the R-Generation Plastic Recycling Schools Education Programme



Welcome to the Survey

The RECOUP UK Household Plastics Collection Survey is a specialist research-based report for those working across the plastics supply and recycling chains who have responsibilities or interests in developing sustainable plastics recycling.

A set of key questions about many aspects of plastics collections are distributed online to all involved in waste collection in the UK, whether it be Borough, District, City or County Councils or Waste Partnerships. These cover core data such as service provision, and current plastics packaging collection levels and recycling rates, but also other key areas that directly effect the collections such as partnership working between Local Authorities, the status of the markets for the collected material, and how residents are engaged through consumer communications.

So pulling these distinct but connected areas the Survey provides a comprehensive review of the collection of household plastics for recycling in the UK, and the challenges and opportunities Local Authorities face on a daily basis.

Also included in the 2016 report are views around the current UK position and the future of waste management in general after UK's vote to leave the EU. There are also some case studies included to show some practical 'on the ground' examples which could be directly relevant to Councils and those involved in waste management.

As with every edition of this report, RECOUP always ensures that the most robust data is used. There is new data around the quantity of plastics packaging that is placed on the market, through the Valpak and WRAP *2014 Plastic Packaging Market Study*. This is key data as the collection rates are compared against the placed on the market data to calculate the percentages of plastics that are recycled.

A THANK YOU FROM RECOUP

We would like to thank the many Local Authority waste management and recycling scheme managers, officers and their service contractors who took the time to respond to the Survey and continue to make the research comprehensive and worthwhile.

The Survey is also supported by LARAC, which is a key consideration when engaging, collecting data and opinions and reporting the results.

RECOUP continue to have strong Local Authority and waste management presence in its membership, with LARAC, NAWDO and the biggest waste management companies in the UK being represented on the RECOUP board.

Wider Survey Coverage

Increasingly this document is being picked up outside the UK, as different countries seek to understand the picture in the UK and how it is developing. As the Survey is made available for free download on the RECOUP website, we are able to track the readership reflecting wider interest in the environmental debate.

With some hard hitting anti-litter campaigns the facts and success story of plastic recycling is more important now than ever to provide a balanced and informed view of the use and recycling of plastics.

Viewpoint - Stuart Foster, RECOUP CEO



Stuart Foster, RECOUP CEO, is adamant that the opportunity exists to take plastics recycling to the next level, but not without a refresh of policy and business direction ...

From uncertain post Brexit impacts on markets and legislation, company acquisitions and reprocessor administrations, to intensifying packaging scrutiny, wider collection system reviews, and continued lack of investment in consumer education; plastics recycling is in transition. By extending the targets set from 2017 to 2020, DEFRA recognised the need for additional time to install and improve the necessary infrastructure alongside changing recycling behaviours. But that now needs to happen.

The Building Blocks

Creating the building blocks is essential, and outcomes from projects such as DEFRA examining ways to bring greater consistency to household waste and recycling collections in England could have tangible benefits. The quantity and quality of the material from the collection systems needs support and funding, and with ongoing budget restrictions this could be harder to achieve.

Creating the right balance of legislative drivers and positive long term business conditions should allow for a viable and resilient system to be established to meet future increased plastic recycling targets and maximise best use of plastic resources. The EU provided a policy landscape in this sector that was relatively stable and effective for business and environmental development, with game changing directives on the horizon. If a circular economy package together with more recycling is a good idea, we now look to UK and devolved governments to make sure a robust strategy is not just implemented but also financially backed. There is also a real need to ensure plastic circular economy thinking goes beyond recycling.

Supporting Markets

Markets need to be supported and stimulated. Green procurement initiatives need to ensure much wider use of recycled plastics in the manufacturing of new products. This will also involve a mandate for recycling systems to provide the ongoing quantity and quality of plastics needed to meet manufacturing sector requirements, within sensible and justifiable business arrangements. Work on recycling more plastics from other sectors including bulky household plastic products, waste electrical and electronic equipment (WEEE) and end of life vehicle (ELV) is also important and represent good opportunities.

The Next Year

The potential for more recycling and better use of resources is undeniable, and RECOUP and its network are determined to work together to take plastic recycling to greater heights. There is a real opportunity to review and bolster the foundations which will allow plastic resource efficiency and recycling to grow and prosper into the next decade or more, but I expect this will be realised or lost by decisions and actions that are taken in the next year.

We need your support to continue taking plastics recycling to greater heights!



RECOUP - Our Voice

We are a leading authority on plastics resource management and recycling. Our vision is to lead and inform the continued development of sustainable plastics recycling and protect plastic resources.

A registered charity and member based organisation we have supporters and members from all sectors of the plastic packaging supply and recycling chain. We use the knowledge and expertise of our network both in the UK and Europe to deliver insight, research and projects, often free and accessible to all.

Our Message for 2016

With the necessity for this generation to take greater environmental responsibility, the work of RECOUP is more important than ever before. The direction is absolutely right with a fundamental shift toward better long term use of resources and the development of circular economy models. But it is imperative that the practical business case for maintaining and increasing plastic recycling is robust, and more companies recognise and support the valuable work of RECOUP in achieving these aims.

There are many practical benefits for Local Authorities to become RECOUP members – understanding the supply chain to maximise material prices, engagement with collaborative initiatives such as Pledge 4 Plastics, or bespoke research or innovation projects that can develop and add value to council services.

Our Local Authority members are:



Our Trustees

RECOUP is underpinned by the strength of its team and its trustees.

The Board of Trustees meets quarterly to represent their sector and develop RECOUP's strategy and direction. The Trustees are supported by a team of professional advisors with specific expertise in recycling, finance and legal issues. Trustees are all senior managers and directors, providing valuable input and expertise on issues affecting the plastics recycling industry. They bring particular knowledge of their sector areas, ensuring that the financial and operational activities of RECOUP serve the best interests of plastics recycling, providing value for members.



RECOUP - Our Voice

RECOUP's Other Valued Members



A Future without Rubbish



PAPER AND PLASTIC PACKAGING



The Healthy Hydration Company™



Contact the RECOUP team if you would like to talk about the benefits of membership!

Data, Calculations & Reporting

The approach to the collection data and how it is used and calculated is important in understanding what the Survey can report and how it arrives at those figures.

RECOUP always use the most robust data available to calculate plastics packaging placed on the market and collection quantities, and using a tried and tested methodology RECOUP are confident that this is the best dataset to report household plastics packaging collections.

Calculating Collection Quantities

Calculating collection quantities is not simply adding up sequentially reported tonnages as there are many variables that can affect the reported quantities from Local Authorities. Even if an overall total of plastics collected can be provided, it is often not possible for Local Authorities to provide plastics collection quantities broken down by collection scheme or plastic format.

Collection Scheme & Mixed Plastics

Accurate and audited collection data is reliant on the necessary resources and processes, and the data reported is defined by the time and operational processes in place.

Plastics fractions are increasingly being reported as part of commingled totals, often as a percentage estimate based on compositional analysis by the Local Authority or Materials Recovery Facility (MRF) provider. Collection tonnage provided might not only be for plastics, but a combination of dry recyclables.

There are also other variables to consider. With the increasing trend to collect commingled materials from the kerbside and bring schemes, bring sites are serviced as part of the kerbside collection route, and the collection quantities reported are for kerbside and bring schemes and for all dry recyclables collected for recycling.

Once the data is reported clarification might also need to be sought on the different interpretations of 'mixed plastics packaging' to identify whether this means plastic bottles, pots, tubs and trays and /or plastic film. With a number of Local Authorities claiming to collect 'all plastics packaging', it has been found that, in many cases, this means only rigid plastics packaging and not plastic film.

Validating the Data

The submitted data and information for the Survey is always checked, but it might need to be followed up, or varied methods used to ensure the final dataset to establish service provision and collection quantities is as accurate as possible.

If there is no collection data or partial data, the estimated dataset is completed based on this service provision and then applying reasonable assumptions based on those services. This is completed in one of two ways. Either using one of the previous two years'

responses to the Survey, or average performance data using the number of households in that authority against the average that can be expected to be collected for these households (kg per household per year).

Checking the Websites

In addition to the Survey responses every Local Authority website was checked to see what collection services are provided, and if there was any conflicting information on the website, the Local Authority was contacted to ensure the information used is accurate.

Assessing Survey Responses

Although a high proportion of the data and analysis in the Survey is based on actual responses only, analysing and measuring performance indicators is not a straightforward process.

There is a well-established number of performance indicators provided for plastic collections, but there are many factors that can influence a scheme's collection performance, operational efficiency and cost, including types and quantity of other materials collected, types of housing collected from and their locations (urban / rural), demographics (population make up), and how the scheme is communicated to residents.

All data has been analysed to provide a high probability confidence interval - i.e. data that is considered to be incorrectly reported has been either omitted from the dataset or re-estimated using appropriate available data and known variables and are therefore provided for indicative purposes only.

This approach is particularly relevant for the *UK Household Plastics Collection Data* section to analyse performance indicators such as average collections per household per year (kg per household per year), frequency of collection and collection containers used.

Response Rate

The responses in the 2016 Survey was provided by over 70% of collection authorities in the UK and is based on data and information in the 2015 calendar or 2015/16 financial year data.



Data, Calculations & Reporting

WasteDataFlow

WasteDataFlow - Local Authority Recycling Performance Data vs Plastics Recycling Levels

WasteDataFlow (www.wastedataflow.org) is the web based database for UK Local Authorities to report municipal waste data to the government.

It has been established there are limited obvious links between plastics collections and Local Authority recycling rates reported by WasteDataFlow. The same issues Local Authorities have in reporting quantities for material specific data in this RECOUP Survey also exist in completing WasteDataFlow. Again, this can be due to the data reported for WasteDataFlow is for all dry recyclables, and there is limited or no plastic specific data available.

Q100 Questions

WasteDataFlow are using the new “Question 100” to replace the various existing questions, which was introduced on a voluntary basis in April 2014 to a limited number of Local Authorities to report their waste management data in 2014/15. In April 2015 Q100 became mandatory Local Authorities in England.

WasteDataFlow states Q100 provides a more flexible structure that has enabled Local Authorities to report a more complete representation of the complex waste treatment practices that occur and also provides opportunity to report in more detail the further treatment and disposal of certain waste types.

Due to the changes with Q100 when the 2016 Survey was written there was only available data from WasteDataFlow Q1 (January-March) 2015, and RECOUP was informed a final publication for the 2015 data will be before the end of 2016.

For these reasons the collection data element in the RECOUP Survey is still valid and therefore appropriate research. RECOUP continues to monitor the most accurate and effective methods, including WasteDataFlow and the reporting from Q100 for all UK nations, in order to report the best dataset to monitor household plastics packaging collections.

HWRCs, Plastic Film and Non-Packaging Plastic

The collection quantities reported in the Survey do not include plastic film, non-packaging plastics and collections from HWRCs. As with previous Surveys, efforts have been made to gain more data about these collections, but there is still not enough data to estimate a UK wide total tonnage. However, with kerbside collection of plastic bottles and pots, tubs and trays making up the majority of the collected tonnage, RECOUP believe the quantities from these collections would not significantly impact the overall total tonnage collected for recycling in the UK.

Non-Household Sectors

The Survey only reports data from households in the UK and does not include plastics from non-household sectors such as commercial and industrial, construction and demolition, agriculture, and plastics from ELV (End of Life Vehicles) and WEEE (Waste Electronic and Electrical Equipment). Although some Local Authorities do offer commercial and industrial plastics collection schemes it is not possible to provide data without extensive research. It is identified though that an unknown volume of ‘household like’ plastics from non-household sources will enter household recycling systems, for example, when consumed in the workplace or ‘on the go’.

Terminology & Acronyms

The main terminology used in this report is as follows.

Collection scheme:

- Kerbside – recyclables collected from householders’ doorsteps
- Bring – containers placed in central public locations such as supermarket sites and car parks
- HWRC – Household Waste Recycling Centre
- Recycle on the go – units placed in public areas

Plastic formats:

- Plastic bottles
- Non-bottle rigid household plastics packaging – referred to as Pots, Tubs and Trays (PTTs)
- Plastic film

Acronyms that could be used in this report have, in general, been spelt out unless they are specifically referred to many times in one section.



Plastics Collection Services

The service provision provided by Local Authorities in the UK to collect plastics from households has been the cornerstone of the quantities we're now seeing collected for recycling.

For every RECOUP Survey a comprehensive review is completed to establish the service provision for plastics packaging collections across the UK. This is based on three research routes - the actual Survey responses, checking every Local Authority websites, and calling the Local Authorities to check any conflicting information.

Numbers of Local Authorities in the UK

Since April 2015 the number of Local Authorities in the UK has reduced from 406 to 391 due to mergers in Northern Ireland which has reduced the number of Local Authorities from 26 to 11. There are now:

- 326 in England
- 32 in Scotland
- 22 in Wales
- 11 in Northern Ireland

Kerbside Collection Schemes

It can be confirmed that from the 391 Local Authorities in the UK:

- 385 provide a kerbside scheme to collect plastic bottles (98%)
- 290 of those also collect pots, tubs and trays (74%)
- 80 provide a collection for plastic film (20%)

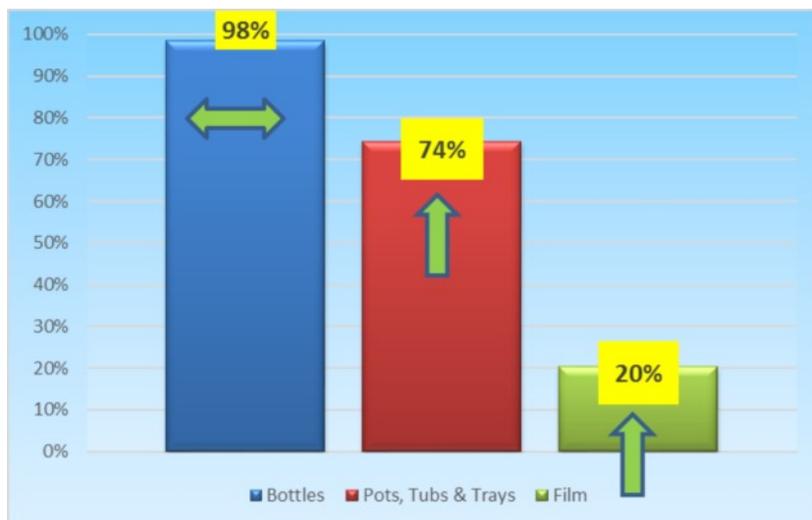


FIGURE 1 - LOCAL AUTHORITY KERBSIDE PLASTICS PACKAGING COLLECTION PROVISION – 2015

There were increases in collection services, albeit modest ones, since the 2015 Survey.

A total of 21 Local Authorities reported they collect non-packaging plastics as part of their kerbside collections. These could include small Waste Electronic and Electronic Equipment (WEEE) and plastic items such as toys. It has not been possible to investigate this further and look at the detail of what is collected and how, and this work could be undertaken by RECOUP if funds were made available.

Plastics Collection Services

New Collection Services

There have been significant increases in the collection infrastructure across the UK for plastics packaging in recent years, although there is a relatively low number of new services being reported since the 2015 Survey.

Plastic Bottles

None of the 6 remaining Local Authorities not offering a kerbside collection service for plastic bottles have introduced a service, although it was reported one of these, [Forest of Dean District Council](#), will be introducing a kerbside collection for plastic bottles in late 2016.

Plastic Pots, Tubs & Trays

[Another 6 Local Authorities have reported they added plastic pots, tubs and trays to their collections in 2015](#). The number of new services to collect pots, tubs and trays are slowing down, with a total of [82 Local Authorities adding a service in between 2011 and 2015](#) (41 in 2011, 27 in 2012 and 14 in 2013).

Based on current [On Pack Recycling Label \(OPRL\)](#) criteria if one more Local Authority collects plastic pots, tubs and trays the message could potentially change from 'Check local recycling' (when 20%-75% of Local Authorities offer a kerbside collection service) to 'Widely recycled' (over 75% offering a service) for this plastic format.

It was reported in the 2016 Survey that [17 Local Authorities plan to add pots, tubs and trays to their collections](#), although the planned implementation dates were in 2016 or 2017.

Plastic Film

[Only 1 additional Local Authority reported they are collecting plastic film in 2015](#). Like with plastic pots, tubs and trays, the number of new services for collecting plastic film is slowing, with 10 Local Authorities adding a new service between 2011 and 2015.

It has been reported that [7 Local Authorities are planning a new service across 2016 and 2017](#). With 133 Local Authorities stating they do not plan to introduce a kerbside collection service for plastic film provides a strong indication that the collection of plastic film from households will not significantly change in the near future.



Plastics Collection Services

Kerbside Service Provision Developments Since 2010

Figure 2 shows the percentage of Local Authorities in the UK offering a collection service for each plastic format since 2010, and demonstrates the slowing down of new collection services being introduced.

Although the overall number of Local Authorities collecting plastic pots, tubs and trays has only increased from 285 to 290 since the previous Survey, the relatively large percentage increase from 70% to 74% was partly due to the mergers of Local Authorities in Northern Ireland.



There have still been significant increases in the collection infrastructure over this time:

- **90%** of Local Authorities provided a kerbside service to collect plastic bottles in 2010, but now nearly 100% offer a service (only 6 Local Authorities do not offer a service)
- The biggest increase has been in the collection infrastructure for plastic pots, tubs and trays, with **114** Local Authorities offering a collection service in 2010 and 290 Local Authorities offering a collection service by March 2016. Therefore there has been **176 new services introduced in 6 years!**
- There was a significant increase in the number of kerbside collections of plastic film between 2010 and 2011, but since then there is only **10 more Local Authorities that offer a collection services**

With collection services for plastic bottles being provided by nearly 100% of Local Authorities in the UK, considering the relatively limited markets for non-bottle material it is expected the implementation of new collection services will continue to be a gradual process.



FIGURE 2 - LOCAL AUTHORITY KERBSIDE PLASTICS PACKAGING COLLECTION PROVISION SINCE 2010

Plastics Collection Services

Service Provision & Number of Households Covered

If a Local Authority offers a kerbside collection service it does not mean that every household will actually benefit from a collection service. This might be due to the type of property it is (for example flats or apartments), the location of the property (it might not be viable practically or financially to provide a service for households that are in remote locations), or the property might be empty for long-periods such as holiday lets or second homes. It also might be due to a collection scheme that is in a trial period and is gradually being rolled out to the households in that area. Considering this level of detail, it is not possible to accurately report how many households receive a service on a UK wide level.



To provide an estimate, an assumption can be made based on whether the percentage of Local Authorities that collect a plastic format as part of their kerbside collection service:

- (a) provides a typical representation of the average number of households per Local Authority in the UK (with at least one usual resident within a Local Authority i.e. the household has a regular kerbside collection [*]);
- (b) every household in these Local Authorities are able to place their plastics in the recyclables collection container

[*] The sources for the number of households are the: *Office for National Statistics - 2011 Census: Population and household estimates for England and Wales; National Records of Scotland - Estimates and Dwellings in Scotland, 2014; and Northern Ireland Statistics & Research Agency - Census 2011, Population and Household Estimates by Local Government District for Northern Ireland, September 2012.*

This then provides the maximum number of households that receive a kerbside collection in each nation. It should be noted it is assumed the plastic bottle schemes are fully established and it is more likely the maximum estimated number of households stated is accurate; for non-bottle plastics a number of schemes are in their infancy and / or used on a trial or restricted basis, and therefore actual figure of households covered will be less than the estimated maximum number.

A summary of the kerbside infrastructure in the UK for England, Scotland, Wales and Northern Ireland to collect plastic is shown in Figures 3, 4 and 5. This includes the total number of Local Authorities in each nation, the number and percentage of Local Authorities that provide a collection scheme, and using the methodology described above the maximum number of households that could receive a kerbside collection service.

Plastic Bottles - If every household was able to make use of the kerbside service in the 98% of Local Authorities that collect plastics bottles as part of their kerbside collection scheme, the plastic kerbside infrastructure in the UK covers a maximum of 26 million of the 26,439,375 households in the UK.

Kerbside Schemes - Plastic Bottles				
Nation	Total Number of Local Authorities in the UK	Number of Local Authorities Collecting Plastic Bottles	% Local Authorities Collecting Plastic Bottles	Maximum Number of Households Covered
England	326	321	98%	21,725,004
Scotland	32	31	97%	2,344,298
Wales	22	22	100%	1,302,700
Northern Ireland	11	11	100%	703,275
Total	391	385	98%	26,075,277

FIGURE 3 – KERBSIDE COLLECTION SCHEMES BY NATION – PLASTIC BOTTLES

Plastics Collection Services

Pots, Tubs and Trays – the 74% of Local Authorities collecting plastic pots, tubs and trays covers a maximum of just over 19.5 million households.

Kerbside Schemes - Plastic Pots, Tubs and Trays				
Nation	Total Number of Local Authorities in the UK	Number of Local Authorities Collecting Plastic Pots, Tubs & Trays	% Local Authorities Collecting Plastic Pots, Tubs & Trays	Maximum Number of Households Covered
England	326	239	73%	16,175,315
Scotland	32	24	75%	1,814,941
Wales	22	18	82%	1,065,845
Northern Ireland	11	10	91%	639,341
Total	391	291	74%	19,695,442

FIGURE 4 – KERBSIDE COLLECTION SCHEMES BY NATION – PLASTIC POTS, TUBS & TRAYS

Film - with 20% of Local Authorities collecting plastic the maximum number of households that could receive a service is just over 5 million households.

Kerbside Schemes - Plastic Film				
Nation	Total Number of Local Authorities in the UK	Number of Local Authorities Collecting Plastic Film	% Local Authorities Collecting Plastic Film	Maximum Number of Households Covered
England	326	64	20%	4,196,107
Scotland	32	7	22%	444,375
Wales	22	9	41%	414,495
Northern Ireland	11	0	0%	270
Total	391	80	20%	5,055,247

FIGURE 5 – KERBSIDE COLLECTION SCHEMES BY NATION – PLASTIC FILM

Bring Schemes

Bring schemes are containers located in public locations (such as supermarket sites and car parks) where the public can place their recyclables.

Use of Bring Schemes

With the majority of plastics now collected from kerbside schemes, bring schemes are generally used by Local Authorities alongside kerbside schemes to supplement their recyclables collection provision. With the drive to increase recycling collections and reduce landfill costs, where funding allows, a bring service can be a useful service provision to provide. This is particularly true where a plastic format is not collected as part of the kerbside collection service, or where the kerbside service is not available to all residents, such as in rural communities or high rise property areas.

A Service Change?

If Local Authorities are thinking about the decision to introduce, retain or withdraw a plastics bring scheme, there are many considerations to factor in alongside any cost-benefit analysis of the overall plastics collection schemes operated.

The reasons cited by Local Authorities for retaining a bring scheme included support kerbside collections, meeting resident needs, public demand for the service, and also an overflow for households who have limited kerbside collection container capacity and cannot fit all their plastic items in the kerbside collection container.

Plastics Collection Services

Service Provision

In the 2016 Survey it is estimated **203 (52%)** of the 391 collection Authorities in the UK reported they provide a bring scheme to collect plastic bottles. This is based on data from the 2016 Survey being supplemented with data from 2014/2015 when a comprehensive review was completed after it was established there were inaccuracies in the reporting about bring schemes, either through confusion with HWRC services or out of date information on Local Authority websites.

Bring Schemes			
Nation	Total Number of Local Authorities in the UK	Number of Local Authorities Providing a Bring Service	% Local Authorities Providing a Bring Service
England	326	164	50%
Scotland	32	22	69%
Wales	22	12	55%
Northern Ireland	11	5	45%
Total	391	203	52%

FIGURE 6 – BRING COLLECTIONS SCHEMES BY NATION

From the total of 203 Local Authorities that offered a bring service, **105 (52%)** collect plastic bottles only with **98 (48%)** of those also collecting pots, tubs and trays.

It was reported that **20** Local Authorities collected non-packaging plastics as part of their bring service such as Waste Electronic and Electronic Equipment (WEEE) and small plastic items (e.g. plastic toys), although more research is needed to indicate whether this is an opportunity for collection services across the UK.

Removing Bring Services for Plastics Packaging

It was reported that **13** Local Authorities removed their bring scheme in 2015. Generally bring services are steadily declining due to collection and maintenance costs, or focussing resources purely on kerbside and HWRC collection services.

There are a small number of planned new bring services reported – 1 for plastic bottles; 4 for pots, tubs and trays; and 1 for plastic film. With 76, 97 and 135 respectively for each plastic format reporting they were not planning to introduce a scheme, it provides further evidence that bring services will continue to be removed for packaging.

Recycling on the Go

An effective scheme can generate good quality material and also reduce litter, and there can be clear benefits for encouraging positive behaviour change, both on the go and taking those positive behaviours home.

A question was asked in the 2016 Survey whether Local Authorities provide a recycle on the go service. There were 132 responses to this question, with **49 (37%)** stating they offer a service and **83 (63%)** stating they do not. It is expected there is a higher percentage of Local Authority managed schemes in place across the UK and further research is needed to establish the infrastructure in place.



Plastics Collection Services

Household Waste Recycling Centres (HWRCs)

Household Waste Recycling Centres (HWRCs) are available to the public for the disposal, recycling or re-use of a wide range of household materials and items. These public sites are often under the responsibility of the Waste Disposal Authority (WDA), which tends to be managed by the County Council and not the individual collection Local Authorities.

They offer supplementary collection points for plastics which are collected at kerbside, and are the primary point for those plastic items not compatible with kerbside services such as non-packaging plastics including small and large WEEE items and bulky goods such as plastic furniture.

It is the third year questions for HWRCs were asked, and the service provision for the UK is developing. There are information gathering issues when trying to build up UK wide service provision data as a service can be managed by the WDA or the collection authority.

Many of the HWRC sites provided collections for plastic packaging and non-packaging plastic formats. The reported service provision for the UK is shown in Figure 7.

Due to the complexities of collating collection data from HWRCs this is based on accumulative reported data from the 2015 and 2016 Surveys. There is a possibility some services may have changed between the two reporting periods, but this approach provides a more comprehensive review of service provision.



Local Authorities Providing HWRC Collection Service	2015 / 16
Plastic Bottles	152
Plastic Pots, Tubs and Trays	108
Plastic Film	31
Non-Packaging Plastics	89
Plastic Paint Pots	71
Plastic Plant Pots	66

FIGURE 7 – HWRC COLLECTION SCHEMES BY PLASTIC FORMAT

PLASTIC PAINT POT PILOT PROJECT

RECoup have completed a cross sector consortium pilot project to evaluate the commercial and practical recyclability of plastic paint pots. A detailed report is being developed, and a case study will be available soon. Please contact RECoup if you would like to find out more information.

Plastic Paint Pots

Plastic paint pots are inherently valuable both in terms of any paint that can be recovered (through the Community Repaint Initiative), and the pots themselves which are ideal for recycling when empty. A total of **71 Local Authorities** confirmed they have a paint pot collection scheme in place. However, it should be noted that many of these actually collect the paint and not the plastic pot itself.



Plant Pots

The plant pots, also commonly referred to as flower pots in consumer communications, are being collected in **66 Local Authorities** at HWRC sites. As these are mainly manufactured from Polypropylene, and if this fits in with the feedstock requirements of the MRF and reprocessor (and potential associated issues with soil contamination), they can be added to existing plastic pot, tub and tray collections.

Household Plastic Collection Data

The quantities and measurement indicators provides a status of the overall performance for the collection of plastics from UK households.

Total Plastics Packaging Collected for Recycling from UK Households

In 2016 Survey RECOUP can confirm the total plastics packaging collected from households in the UK is **499,625 tonnes**:

2015 / 16 (Tonnes)	Plastic Bottles	Pots, Tubs and Trays	TOTAL
	340,160	159,465	499,625

FIGURE 8 – QUANTITY OF HOUSEHOLD RIGID PLASTICS PACKAGING COLLECTIONS

This represents a slowing of collections levels:

- Only an overall modest increase of **7,002 tonnes (1.4%)** rigid plastics packaging
- An additional **2,713 tonnes (3.5%)** of plastic bottles
- Additional **4,289 tonnes (12.1%)** of pots, tubs and trays

	2014/15	CHANGE		2015/16
		Tonnage	% Change	
Plastic Bottles	337,447	▲ 2,713	▲ 0.8%	340,160
Pots, Tubs and Trays	155,176	▲ 4,289	▲ 2.8%	159,465
TOTAL	492,623	▲ 7,002	▲ 1.4%	499,625

FIGURE 9 – CHANGES IN HOUSEHOLD RIGID PLASTICS PACKAGING COLLECTIONS

This lower than estimated quantity followed progressive overall increases of rigid plastic packaging of 28,000 tonnes in 2014 and 24,000 tonnes in 2013.

Plastic bottle collections continue to slow following **3%** increases for the previous 2-year reporting periods. A **2.8%** increase represents the smallest increase for plastic pot, tub and tray collections in recent years following increases of 11% and 12% in 2013 and 2014. Collection levels for plastic film, non-packaging plastics and plant pots are covered on page 27.

Household Plastics Recycling Over the Years

Each RECOUP Survey gives an indication of the growth in plastics recycling. It has told a successful story and Figure 10 is heavily used to represent both the past successes and challenges for the future.

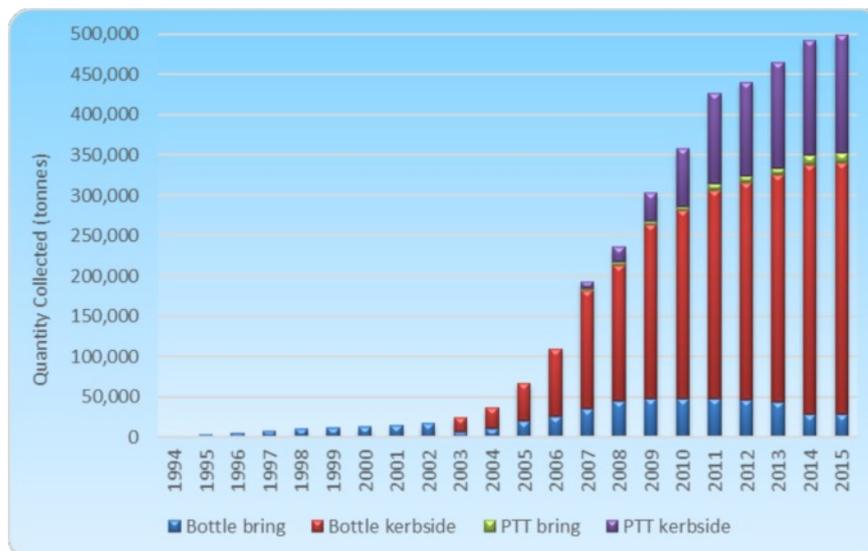


FIGURE 10 – GROWTH IN HOUSEHOLD RIGID PLASTICS PACKAGING COLLECTION

Household Plastic Collection Data

Plastic Bottles

Only **425 tonnes** of plastics were collected from bring schemes when collection data was reported in the first RECOUP Survey in 1994 – the equivalent of **9.3 million plastic bottles**. By 2003 it was reported that 24,000 tonnes of plastic bottles were collected for recycling - **just over 500 million bottles**. This included 18,000 tonnes from kerbside schemes – which was now over three times more than from bring schemes. At this time the collection of commingled dry recyclables from households became more common.

The infrastructure for collecting plastic bottles from kerbside collection schemes started to see significant increases around 2003-2005 which was mainly attributed to many new services being launched and existing schemes being expanded and becoming more efficient.

The total number of plastic bottles collected each year is shown in Figure 11. In total there has been over **63 billion plastic bottles** collected since 1994 - that's almost **3 million tonnes**!

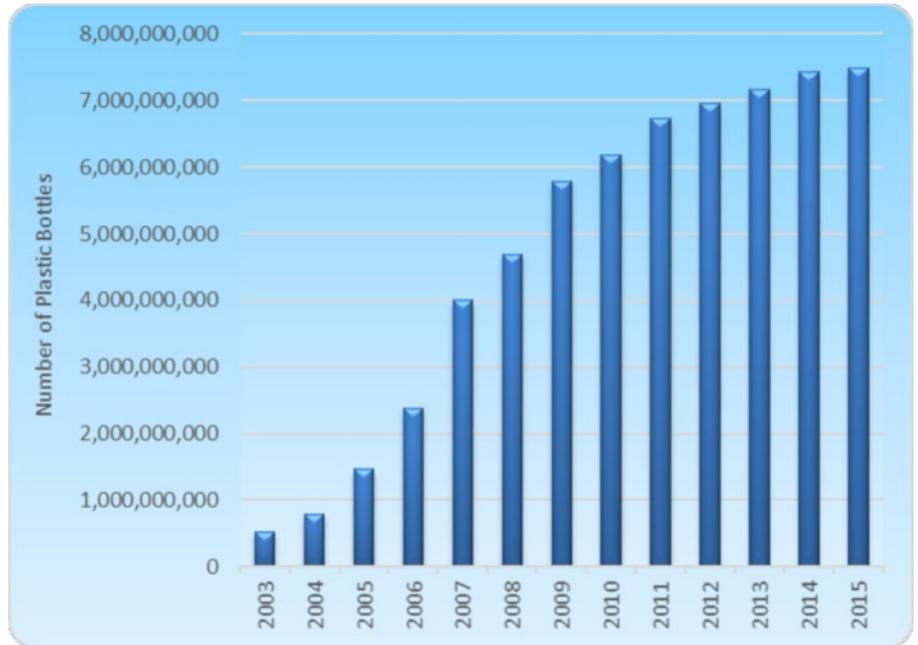


FIGURE 11 – GROWTH IN NUMBER OF HOUSEHOLD PLASTIC BOTTLES COLLECTED

Pots, Tubs & Trays

Since kerbside collection data for plastic pots, tubs and trays started to be reported in 2007 there has been steady and significant increases in collection quantities of this plastic format (see Figure 12).

There were just over **9,000 tonnes** being collected in 2007 when collections levels were first reported, and this has now reached nearly **160,000 tonnes** in 2015. In total there has been nearly **850,000 tonnes** collected since 2007!

The increases continue to be predominately from kerbside collections, although there is service provision from bring and HWRC facilities schemes across the UK that were either introduced because the kerbside collection service did not include pots, tubs and trays, or the they were introduced to complement the kerbside scheme.

With 100 Local Authorities not collecting plastic pots, tubs and trays (see page 16), this is where the biggest opportunity lies to increase collection levels. With limited end market destinations for some plastic pot, tub and tray fractions the business case is still to be proven for some Local Authorities.

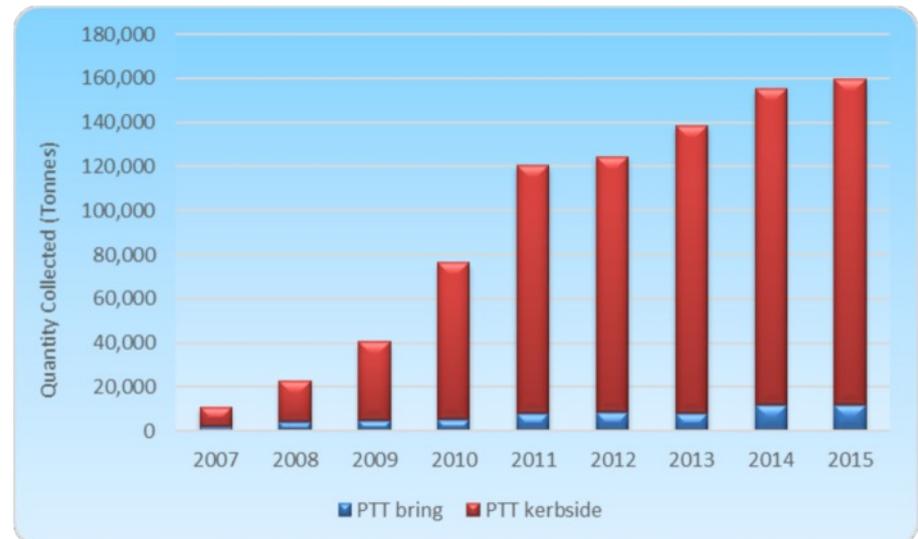


FIGURE 12 – GROWTH IN HOUSEHOLD PLASTIC POT, TUB & TRAYS COLLECTION

Household Plastic Collection Data

New Household Plastics Packaging Collection Rates

Collection rates are based on the percentage of plastics packaging placed on the market that is collected for recycling. These rates are an effective way of providing an indication of how well the UK is performing in collecting plastics packaging for recycling.

To calculate these percentage collection rates and ensure that the rates are as accurate as possible RECOUP always use the best available estimate of plastics packaging placed on the market (POM) and packaging trends (% growth per year) to compare against the reported collection quantities.

With relatively small increases in collection quantities the only change from the 2015 Survey is the overall recycling rate for rigid plastics packaging which has increased from 44% to 45%. The plastic bottle and plastic pots, tubs and trays recycling rates remain the same at 57% and 30% respectively.

Plastic Bottles	
Consumption Tonnage	594,000
Collection Tonnage	340,160
Collection Rate	57%

Pots, Tubs & Trays	
Consumption Tonnage	525,000
Collection Tonnage	159,465
Collection Rate	30%

Overall Rigid Plastic	
Consumption Tonnage	1,119,000
Collection Tonnage	499,625
Collection Rate	45%

FIGURE 13 – HOUSEHOLD PLASTICS PACKAGING COLLECTION RATES

With variations to the POM data, the plastic bottle percentage has remained in the high 50 percent for the past 3 years. This puts some clarity around the plastic pot, tub and tray collection rate, it was around the 20% level from 2011 to 2013, and 15% in 2010.

PLASTIC BOTTLE USE & RECYCLING

Based on 594,000 tonnes of POM for plastic bottles, estimated average of 22,000 plastic bottles per tonne, over 26 million households in the UK and the plastic bottle recycling rate of 57% (340,160 tonnes recycled and 253,840 tonnes not recycled), the plastic bottle used and collected can be calculated .

Plastic Bottles Used

- Over **13 BILLION** plastic bottles are used each year in the UK - that's **36 MILLION** plastic bottles every day

Plastic Bottles Recycled

- Nearly **7.5 BILLION** plastic bottles were collected for recycling in 2015 - that's over **20 MILLION** bottles every day

Plastic Bottles Not Recycled

- Over **5.5 BILLION** household plastic bottles were not collected to be recycled from UK households - that's over **15 MILLION** plastic bottles every day!

Average UK Household

- Average UK household uses nearly **500** plastic bottles a year, but only recycles just over half of them (**280**)

Household Plastic Collection Data

Carbon & Energy Use

There are a number of ways to translate the quantity of plastics packaging collected for recycling into the wider carbon and energy benefits, to put some context around the quantity recycled and to engage the consumer to recycle more.

Carbon

One example is recycling 1 tonne of plastic bottles saves $\frac{3}{4}$ of a tonne of Carbon, which is the equivalent of travelling nearly 2,500 miles in car/taxi/motorcycle (www.recyclenow.com). If the 340,160 tonnes of plastic bottles collected for recycling in 2015 is applied to this fact then the is the equivalent of **travelling around the world nearly 40,000 times**.

Energy

An example that involves energy use is recycling one plastic bottle saves enough energy to power a light bulb for 6 hours (www.BPF.co.uk). If the 340,160 tonnes of plastic bottles collected for recycling in 2015 is applied to this fact then the plastic bottles would save enough energy to **power all the light bulbs in all the households in the UK for 1 month**.

Please contact RECOUP if you'd like to find out about more examples.

Reported Quantities from Non-Kerbside Collection Services

There is an increasing trend to collect commingled materials from the kerbside and bring schemes, with bring sites, recycle on the go units and even Household Waste and Recycling Centres (HWRCs) units serviced as part of the kerbside collection route. This means individual material weights for these services are not recorded separately.

Increasingly plastics collected for recycling are being reported as a plastic total or the total for all dry recyclables. Up until the 2014 Survey plastics collected via kerbside and bring schemes were reported separately, with 10,000 tonnes allocated from recycle on the go collections as part of the total collected from bring schemes. The quantities collected from bring schemes have also stabilised over time with small decreases reported year on year from 2010 onwards.

To reflect the increasing reporting trends from Local Authorities and the relatively stable collection quantities from bring schemes, as with the 2015 Survey, a set quantity of 40,000 tonnes has been allocated to collections from bring and recycle on the go schemes. It is expected that some of the bring and recycle on the go quantities reported are in the kerbside collection quantities, and this is accounted for.

The 40,000 tonnes have been separated by plastic format using estimated material composition data:

- 70% (28,000 tonnes) plastic bottles
- 30% (12,000 tonnes) plastic pots tubs and trays

Composition of Plastics Collected for Recycling

Collections of plastics from Local Authorities in the UK can be categorised into 4 plastic formats – plastic bottles, plastic pots, tubs and trays, plastic film and non-packaging plastics. However, it has not been possible to collate a dataset that can be considered robust enough for a representative sample for the UK for plastic film and non-packaging plastics (for more information see page 27), and therefore the composition of plastics collected for recycling includes plastic bottles and pots, tubs and trays only.

It can be confirmed the ratio of pots, tubs and trays against plastic bottles continues to grow, with nearly a third now pots, tubs and trays (see Figure 14):

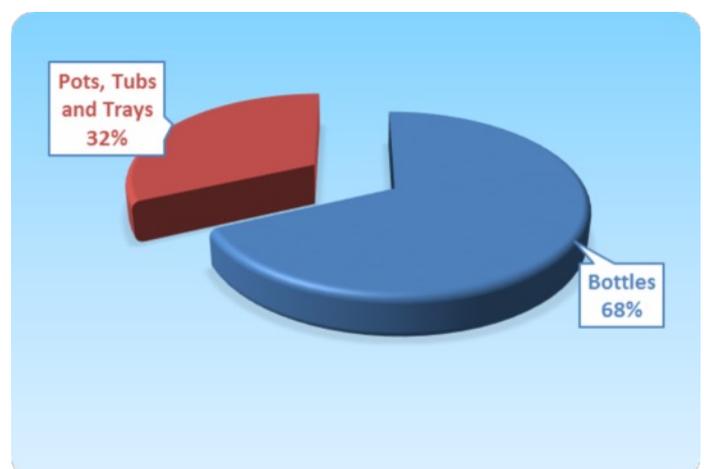


FIGURE 14 - COMPOSITION OF PLASTICS PACKAGING COLLECTED FOR RECYCLING

Household Plastic Collection Data

Plastic Packaging Collections by Nation & Region

Collections of rigid plastics packaging can be reported by UK nation and region.

Plastic Bottles

By Nation & Scheme

With 98% of Local Authorities collecting plastic bottles the 0.8% increase from the previous year demonstrates that collection quantities are slowing. There has only been an **11%** increase from the **306,000 tonnes** of plastic bottles collected by kerbside and bring schemes 5 years ago in 2011, with an overall **340,160 tonnes** being collected in 2015/16. The 2015/16 quantity consisted of **312,160 tonnes** through kerbside schemes and an estimated **28,000 tonnes** from non-kerbside schemes.

The collection data by scheme and nation is shown in Figure 15:

Nation	Quantity of Plastic Bottles Collected 2015/16 (Tonnes)
UK	340,160
Total Kerbside	312,160
England	258,863
Scotland	24,203
Wales	19,806
Northern Ireland	9,288
Bring & RotG	28,000

FIGURE 15 – QUANTITY OF COLLECTIONS BY NATION - PLASTIC BOTTLES

By Region - Kerbside Schemes

There was an increase of **2,713 tonnes** of plastic bottles from kerbside schemes, increasing from 309,446 tonnes in 2014/15 to **312,160 tonnes** in 2015/16. The highest total kerbside plastic bottle tonnage collected was from the South East of England with **over 48,000 tonnes**, representing **15%** of the total UK plastic bottles collected from kerbside schemes. Figure 16 provides a breakdown of kerbside plastic bottle collection by nation and region.

The data indicates that England accounts for **nearly 83%** of kerbside plastic bottle collections in the UK, with Scotland, Wales and Northern Ireland representing **7.8%**, **6.3%** and **3%** respectively.

These proportions are broadly in line the UK population split, although based on averages Wales is collecting above the UK average per household.

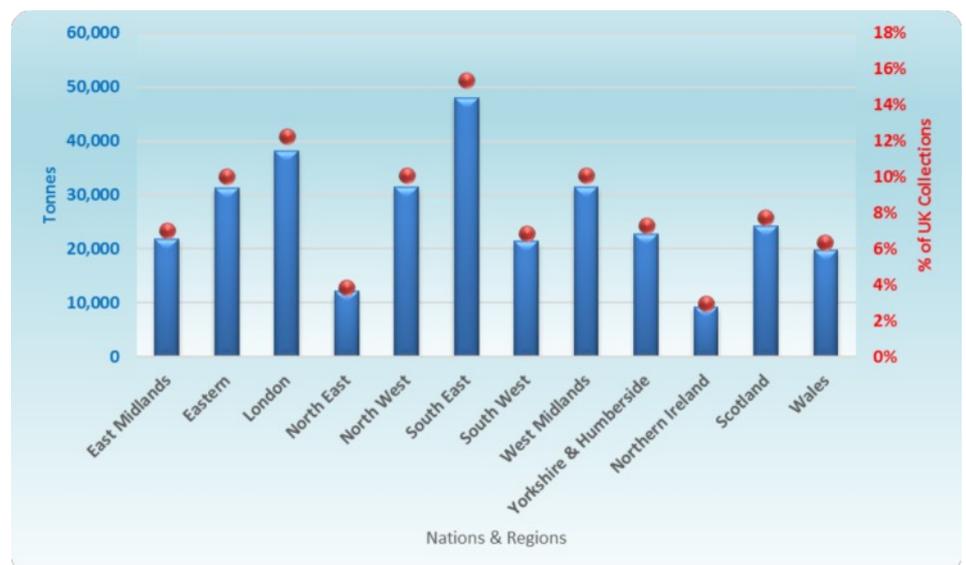


FIGURE 16 – QUANTITY OF KERBSIDE COLLECTIONS BY AVERAGE COLLECTED PER HOUSEHOLD BY NATION & REGION – PLASTIC BOTTLES

Household Plastic Collection Data

Pots, Tubs & Trays

By Nation & Scheme

With an overall increase of **33%** in collection quantities in the last 5 years, pots, tubs and trays are estimated by RECOUP to continue to increase their proportion of the total household plastics packaging collected for recycling. This is shown in Figure 17:

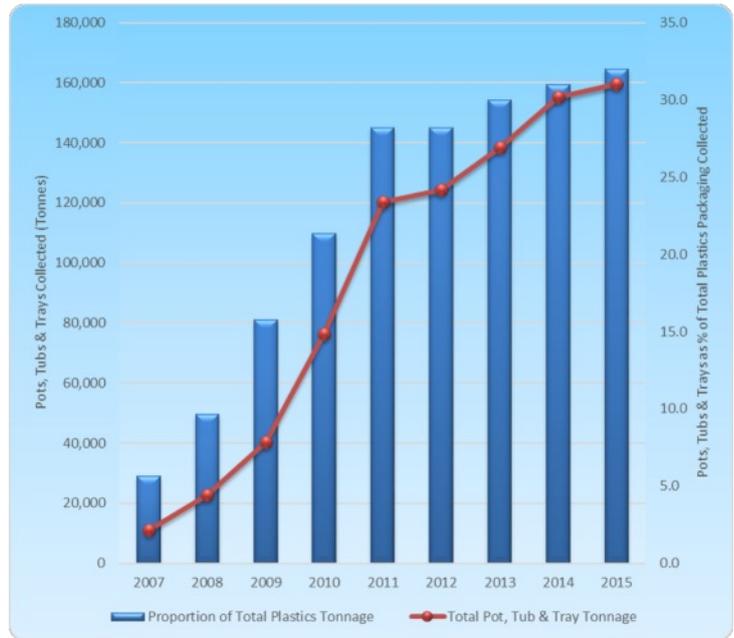


FIGURE 17 - COLLECTION QUANTITY AND PROPORTION OF PLASTICS PACKAGING COLLECTED – PLASTIC POTS, TUBS & TRAYS

With schemes becoming more established and fewer new schemes being introduced the reported collection quantities for plastic pots, tubs and trays may start to slow. This is reflected, for 2015/16 (see Figure 18), with the overall **2.8%** increase from the previous year. The **159,465 tonnes** collected in 2015/16 consisted of **147,465 tonnes** through kerbside schemes and an estimated **12,000 tonnes** from non-kerbside schemes.

Nation	Quantity of Plastic Pots, Tubs & Trays Collected 2015/16 (Tonnes)
UK	159,465
Total Kerbside	147,465
England	121,850
Scotland	10,146
Wales	12,396
Northern Ireland	3,073
Bring & RotG	12,000

FIGURE 18 - QUANTITY OF COLLECTIONS BY NATION – PLASTIC POTS, TUBS & TRAYS



Household Plastic Collection Data

By Region

There was a total increase of **4,288 tonnes** of plastic pots, tubs and trays from kerbside schemes in 2015, increasing from 143,177 tonnes in 2014 to **147,465 tonnes** in 2015.

The highest total kerbside pot, tub and tray tonnage collected was from London with over **20,000 tonnes**, representing **14%** of the UK collections from this scheme type. Figure 19 provides a breakdown of kerbside plastic pots, tubs and trays by nation and region.

England accounts for **over 82%** of total UK pots, tubs and trays kerbside collections, with Scotland, Wales and Northern Ireland, representing **6.9%**, **9%** and **2.1%** respectively. Although these proportions are broadly in line the UK population split, it should be noted that as with plastic bottles Wales are collecting above the UK average per household.

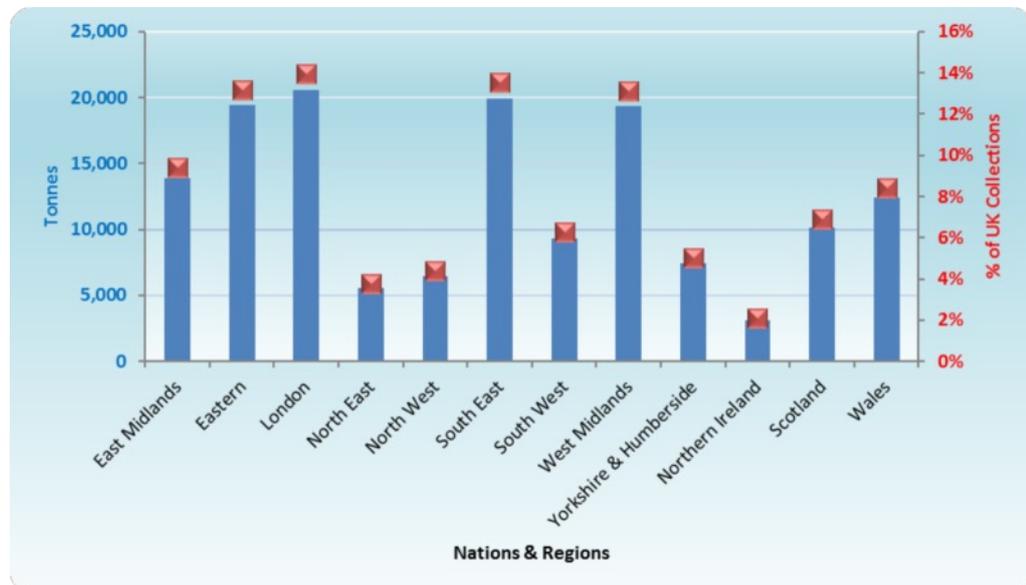


FIGURE 19 – QUANTITY OF KERBSIDE COLLECTIONS BY AVERAGE COLLECTED PER HOUSEHOLD BY NATION & REGION – PLASTIC POTS, TUBS & TRAYS

Average Kerbside Collection Rates

As covered in the *Plastics Collection Services* section the number of households that receive a kerbside collection for dry recyclables can be estimated. When combining this assumption with the collection quantities, it is possible to calculate the average kerbside collection rates (kg per household per year).

Plastic Bottles

Using these assumptions, it can be confirmed the average kerbside collection rate of plastic bottles per household is **11.93 kg**.

Plastic bottle collections continue to experience modest average collection rate per household increases since the substantial rise seen between 2005-2009, with the average rate of **11.57 kg in 2010** representing an overall **3.1%** increase in the last 5 years (as shown in Figure 20). To provide some context about potential collections per household, if all the plastic bottles that were consumed in UK households were collected the average plastic bottle collection rate per household would be **over 22 kg**.

Pots, Tub & Trays

Where a service is provided the average material collection rate is **7.95 kg**. This figure has fluctuated with the rolling out of service provision across the UK, and the average collection rate being reported (as shown in Figure 21). There could be a number of reasons for this, mainly being around the effectiveness and maturity of the schemes and actual number of households covered. However, where a Local Authority collects plastic bottles and pots, tubs and trays, RECOUP expects the ratio to be **60% plastic bottles to 40% pots, tubs and trays**.

As with plastic bottles, to provide some context about potential collections per household, if all the plastic bottles that were consumed in UK households were collected the average pot, tub and tray collection rate would be **nearly 20 kg** per household.

Total Plastics Packaging Collected per Household

The 11.93 kg for plastic bottles and 7.95 kg makes a total average of **19.88 kg** of rigid plastics packaging collected per household.

Household Plastic Collection Data

Kerbside Collection Scheme Parameter Trends

It is possible to combine key performance indicators for kerbside collections, which includes total collected quantities, average quantity collected per household, and number of households serviced. Although it does not provide direct comparisons as each dataset uses a different value scale, it can be an effective reference point for mapping kerbside collection development over time.

Please note that the primary axis (left) refers to the total quantities (k tonnes), whilst the secondary axis (right) refers to the other indicators – average quantity (kg) collected per household and total households serviced (millions).

Plastic Bottles

Appropriate data has been reported for plastic bottles over the last **10 years**. There is an upward trend for each indicator which slows in recent years, discounting the 2009 households serviced data anomaly which was corrected for 2010.

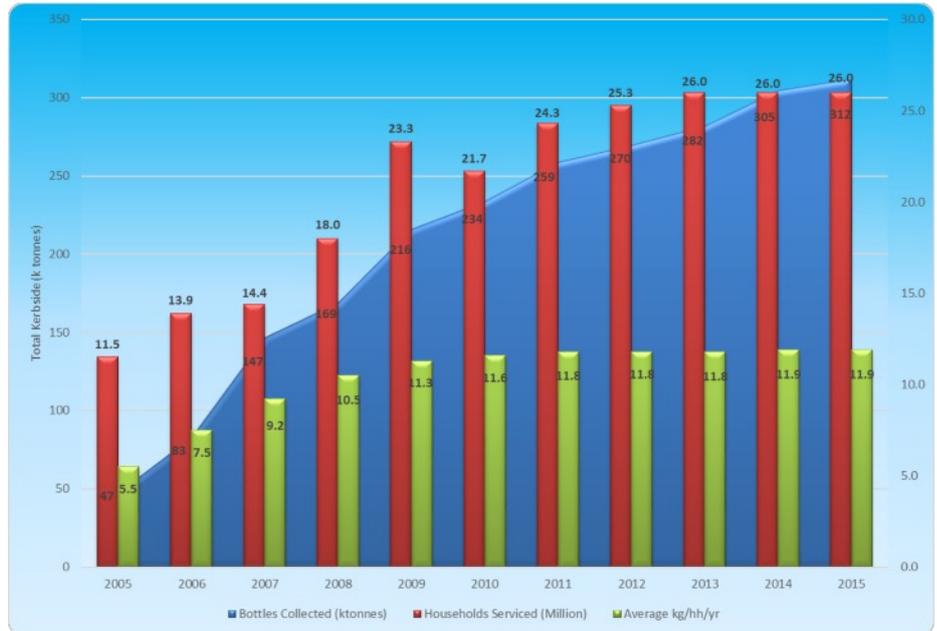


FIGURE 20 - KERBSIDE COLLECTION PARAMETER TRENDS - PLASTIC BOTTLES

Pots, Tubs & Trays

Appropriate data has been reported for the last **5 years** for plastic pots, tubs and trays, and the increases in collection service provision and quantities collected can be seen. The larger than expected rise in 2011 due to reported collection estimates was adjusted in 2012.

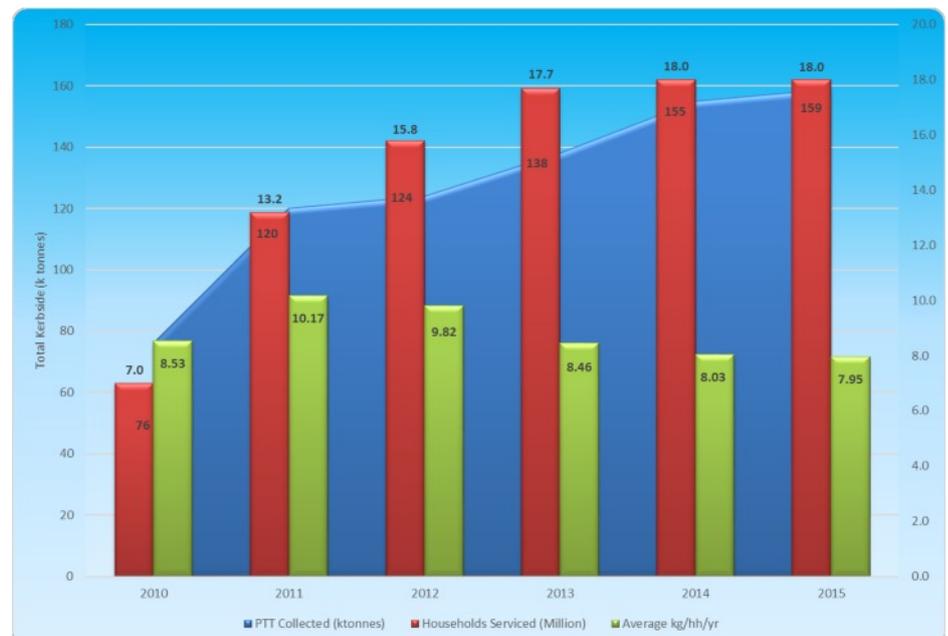


FIGURE 21 - KERBSIDE COLLECTION PARAMETER TRENDS - PLASTIC POTS, TUBS & TRAYS

Household Plastic Collection Data

Plastic Film

With **80** Local Authorities reporting they collect plastic film as part of their kerbside recyclables collection service (see page 16), RECOUP continue to try to establish household collections levels in the UK.

As has been referenced in the Methodology for the Survey (see pages 10-11), many Local Authorities report collection quantities for all recycled materials or all household plastics packaging, and there is no substantial evidence to suggest there is large enough quantities of plastic film in these totals to extract accurate data to represent a UK wide dataset.

In the 2017 Survey RECOUP plan to complete research to establish the plastic film content in dry recyclable materials both through the analysis of new collection data and investigations through material compositional analysis at appropriate MRFs and PRFs.

What Film is Generally Target Material?

It has been established that the majority of these schemes only accept carrier bags or Polyethylene (PE) bags plastic film, such as:

- Bread bags
- Bags around newspapers and magazines
- Toilet paper and kitchen roll packaging
- Fruit and vegetable bags
- Multi-pack packaging

For many collection schemes what is considered to be dirty plastic film packaging (e.g. heavily contaminated film lids used in ready meals), cling film and biodegradable bags is not target material.

Export Market

RECOUP believe much of the collected household film is baled and exported for reprocessing or used in Energy from Waste facilities. If a Local Authority is considering the collection of film through their kerbside collections, it requires thorough communications throughout the recycling chain for anyone handling, selling or disposing of the material. There are a number of practical barriers which prevent film being compatible with many existing UK collection and MRF systems. It can contaminate established plastic bottle bales and paper lines, and clog sorting equipment. RECOUP supports any activities and research in this area, as long as it does not interrupt existing collection and reprocessing activities.



Plant Pots

Plant pots have not traditionally fitted in the main categories of rigid items of plastic collected from kerbside schemes, although with many plant pots being made from Polypropylene they could be accepted by MRFs that handle plastic pots, tubs and trays from kerbside collections. Of all the polymers in the pot, tub and tray fraction, Polypropylene is the most recyclable and has the strongest values, although colour needs to be considered.

There is evidence that plant pots are being collected as part of some Local Authority plastic pot, tub and tray collections - in the 2015 Survey it was reported 27 Local Authorities stated they include plant pots as part of their kerbside collection scheme, although there was no indication of the quantities collected.

There is confusion about whether plant pots are classified as non-packaging or not depending on what the pots function is. The current ruling from the Environment Agency is that plant pots are classified as packaging except when they are sold containing a plant intended to stay in the pot, for example, a house or patio plant. Pots sold separately with no plants included are always classified as a product and not packaging. So, using current classifications, they could be either packaging or non-packaging.



Non-Packaging Plastics

Through monitoring of kerbside collection services by RECOUP it is evident that what can be termed as non-packaging plastics service provision is being offered by a number of Local Authorities. Non-packaging plastics can include plastic items such as small Waste Electrical and Electronic Equipment (WEEE) such as kettles, toasters and MP3 players, and items such as plastic toys or cutlery.

In the past two years it has been reported that 43 Local Authorities stated they offer a service for non-packaging plastic. However, on further investigation RECOUP found there was confusion around this term and cannot verify this reported data, and will investigate this fraction in more detail in the 2017 Survey.

Kerbside Collection - Containers & Frequency

Each Local Authority needs to have an appropriate approach to how it collects materials from kerbside collections, with different housing types, an urban or rural geographical area and demographics all playing a part.

With consistency of collections a major theme and the ongoing projects, blueprints and charters in place across the UK nations to examine ways to bring greater consistency to household waste and recycling collections (see page 46), there is a great deal of focus on the opportunities to standardise collection containers and the frequency of collections.

Putting the materials collected to one side, the 2016 Survey looks at two key areas when tackling consistency – the collection containers used and the frequency of collections.

Kerbside Collection Containers

There are three main types of kerbside collection container for dry recyclables – wheel bin, box and bags (disposable and re-usable) – and questions about the use of containers, whether it is the only container used or a combination of these was asked in the 2016 Survey.

There were responses from 130 Local Authorities to these questions. Since 2007, the most popular kerbside recyclables collection container has been a wheel bin, and their increased popularity is a reflection of the increase in commingled collections, the wider adoption of fortnightly or 3 weekly collections, and the need for larger capacity units.

Although these figures only represent a sample, RECOUP believe the sample is large enough to be representative.

Number of Units

The combinations of containers are being used to allow for separate collections of specific materials, and this could be particularly important for glass. This could be, for example, to meet input and contractual requirements from MRFs and reprocessors, or to satisfy kerbside conditions where wheel bins cannot be utilised.

There is a noticeable increase in dual unit combinations to collect dry recyclables, increasing from 25% 2 years ago to 38% with single units reducing from 70% to 56% in the same period. The use of triple unit combinations has remained the same.

Container Combinations

There has been a reduction in the use of boxes in the last 2 years with the wheel bin and box combination increasing from 10% to 14%, the box and bag combination reducing from 4% to 2%, with only 3% using box only in 2015/16.



Container Type	% Use - 2013/14	% Use - 2015/16
Single Unit	70%	56%
Dual Unit	25%	38%
Triple Unit	5%	6%

FIGURE 22 – KERBSIDE COLLECTION CONTAINERS – NUMBER OF UNITS

Container Combination	% Use - 2013/14	% Use - 2015/16
Wheel bin only	49%	45%
Wheel bin & Box	11%	23%
Wheel bin & Bag	11%	13%
Wheel bin, Box & Bag	5%	6%
Box only	11%	3%
Bag only	9%	8%
Box & Bag	4%	2%

FIGURE 23 – KERBSIDE COLLECTION CONTAINERS – UNIT COMBINATIONS

Kerbside Collection - Containers & Frequency

Container Use

Although there has been changes to the number and combination of units used, there have been minimal changes to the overall container use between 2013 and 2015, with the use of wheel bins increasing slightly and a small reduction in the use of bags.

If these results are representative across the UK and a maximum of just over 26 million could receive a kerbside collection that includes plastic bottles (see page 15), over 15 million households use a wheel bin to collect dry recyclables, nearly 6 million use a box and nearly 5 million use a bag.

Container Type	% Use - 2013/14	% Use - 2015/16
Wheel bin	55%	58%
Box	23%	23%
Bag	22%	19%

FIGURE 24 – KERBSIDE COLLECTION CONTAINERS – UNIT USE

Frequency of Recyclables & Residual Waste Collections

The frequency of the recyclables collection is an important factor in the effectiveness of a kerbside recycling scheme. This can typically range from weekly, alternate weekly with the residual collection, fortnightly, three weekly, or monthly.

Although the number of Local Authorities providing each service frequency has been fairly consistent in recent years, there has been a marked increase in alternate weekly services with the residual collection, going from **38%** in 2010 to **59%** in the 2016 Survey. Overall fortnightly recyclables collections are most popular, covering **76%** of Local Authority areas with a kerbside plastic bottle collection, with **20%** on weekly collections. Moving to fortnightly recycling collections has had many reported benefits, reaping rewards financially through logistical efficiencies and route optimisation.

There were nearly 200 responses to these questions in the 2016 Survey, which makes this a good representative sample, and the results are shown in Figure 25.

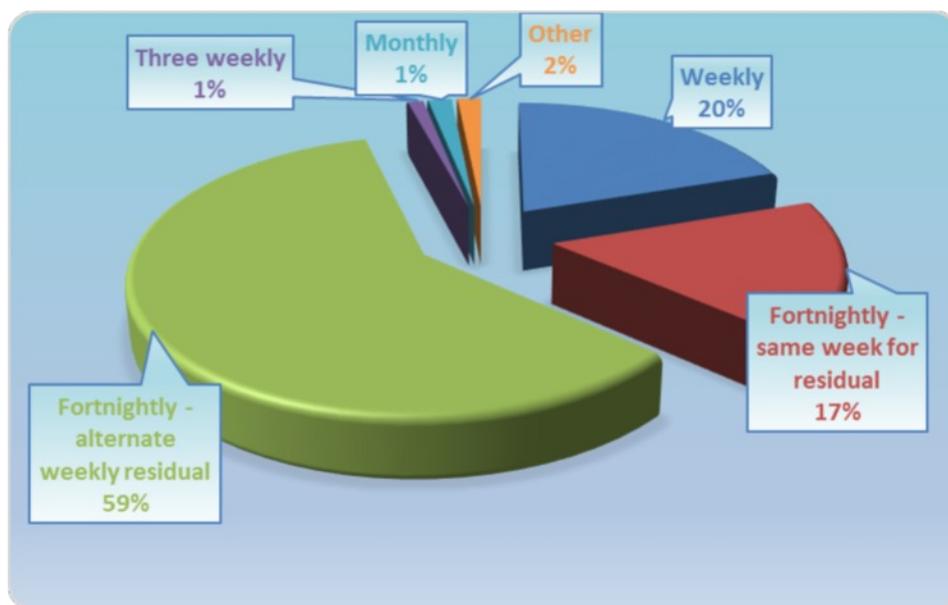


FIGURE 25 - COLLECTION FREQUENCY OF HOUSEHOLD RECYCLABLES FROM KERBSIDE COLLECTIONS

Kerbside Collection - Containers & Frequency

Three Weekly Collections

The 2016 Survey asked whether there has been a change in collection frequency in the past year, and from 135 responses only 3 said they had changed. This might be about to change.

More Local Authorities are investigating and looking to move to 3 weekly collections to reduce costs even further and drive up recycling performance by restricting residual waste capacity. This could be through 3 weekly recycling and / or residual collections, depending on projected savings. This will depend on the appetite for change within the Local Authority management structure, and the general acceptance by residents to make the change.

Recycling performance aside, the key driver for this is reducing costs, but this doesn't stop the negative press and feedback from residents despite the obvious benefits.

It is the collection frequency of residual waste that has been most controversial in the last two years, which has made local and national headlines, and managing this through planned and effective communications is a key part of making a successful transition.



Local Authorities Making the Change

Two of the first Local Authorities to change to a three weekly collections, Bury Council and Falkirk Council, have seen a number of benefits for making the change, are some key data for each of them is provided below.



CASE STUDY - BURY COUNCIL

In October 2014 Bury Council were one of the first Local Authorities in England to change to a 3 weekly residual collection for both residual and mixed dry recycling. with the Council saying they have seen a significant increase in recycling rates and reduction in residual waste. Data for the first full year showed an increase of **9%** for commingled recycling and residual waste reducing by 16% - adding another **466 tonnes of plastic bottles**, and metal cans and tins. At the end of the second full year a further increase of **6%** of commingled recycling was reported.

Bury Council have confirmed they were successful in achieving their target of **£800,000** of savings, which demonstrates a great success for their forward thinking and drive to put their new collection infrastructure in place.

For more information contact: David Pascoe, Bury Council (0161 2537010 / d.j.pascoe@bury.gov.uk)

Kerbside Collection - Containers & Frequency



Falkirk Council

CASE STUDY - FALKIRK COUNCIL

There are a number of Local Authorities who are implementing or running a trial for 3 or 4 weekly collections.

One of the first Local Authorities in the UK to introduce three weekly collections was Falkirk Council, who made the change to two weekly recyclables collections and three weekly residual collections, which was supplemented by separate two weekly collections for glass, weekly food waste, and four weekly garden waste collections. Communications were delivered to provide all information to enable residents to make the correct disposal choices.

The decision to do this was taken after budget savings were needing to be made after the introduction of weekly food waste collections in 2012. The service change was a success, achieving savings of **£300,000** a year, with indications that recycling has increased without any increase in contamination.

Building on this Falkirk Council are now implementing a **four weekly residual collection** in October 2016, with the only other additional change to the current collection scheme being the introduction of fortnightly collection of nappies. The four weekly collection of residual waste is estimated to save the Council an additional **£400,000** per year – an estimated combined total savings of **£700,000** per year from before the three weekly residual collections were implemented.

For more information contact: Robin Baird, Falkirk Council (robin.baird@falkirk.gov.uk)

Summary

With more Local Authorities across the UK making the change to (Rochdale, Gwynedd, Anglesey, Clackmannanshire, East Ayrshire amongst others), and results and data of the changes starting to be made available to build a business case for others to follow, it looks like the switch to three or four weekly collections will continue to increase in the same way fortnightly collections have done.



Treatment of Residual Waste

There have been many treatment techniques and technological advances in the waste and recycling sectors in recent years, which are increasingly providing opportunities to recover and use residual waste that would otherwise go to landfill.

There is varying data about how much plastics are in the residual waste, but whatever the actual figure there are large quantities that do not get collected for recycling and end up in the residual waste stream. RECOUP wanted to find out about the treatment of residual waste and destinations of where the material goes.



Understanding of the Treatment of Residual Waste

There was a comprehensive knowledge of the treatment of residual waste collected by Local Authorities. From nearly 200 responses 97% stated they knew about the treatment of the waste, and only 3% not understanding how this material was treated.

2015/16	Yes (%)	No (%)
Do you know the treatment method for residual waste collected in your Local Authority?	97%	3%

FIGURE 26 – KNOWLEDGE OF TREATMENT OF HOUSEHOLD RESIDUAL WASTE

Destination of Residual Waste

A selection of the main treatment options were provided. This included landfill, recycling, Energy from Waste (EfW), and Refuse Derived Fuel (RDF). Local Authorities were asked to choose as many options that were applicable for them.

Landfill

It is unsurprising that landfill and EfW were the highest destinations for residual waste. With residual treatment options in their infancy landfill (34%) is the only viable option for many Authorities.

What is the destination of the residual waste collected in your Local Authority?	Yes (%)	No (%)
Landfill	34%	18%
Recycling	16%	30%
Energy from Waste (EfW)	34%	20%
Refuse Derived Fuel (RDF)	16%	32%

FIGURE 27 – DESTINATION OF RESIDUAL WASTE

EfW

EfW generates energy (heat and/or electricity) from the treatment process and can provide sustainable and cost-effective energy supplies, and with the EfW infrastructure increasing in the UK in recent years the same percentage was reported as landfill (34%). However, the materials are ultimately lost which may not fit with longer term resource ambitions.

RDF

Refuse Derived Fuel (RDF) is produced by processing facilities and can be used as a fuel. MBT is where waste is stabilised through biological treatment through mechanical separation of the recyclable and / or readily combustible material from the remaining organic or lower grade material. An RDF destination was reported by 16% of Local Authorities.

Recycling

It is the recycling destination which provides the most intriguing result. As recyclable material is being recovered the question to ask is end destination of these materials and how the quantities are being reported. Are they being reported in the household recycling fraction and contributing to increasing recycling rates, or are they classified as a landfill fraction but in real terms still finding their way into the recycling stream and included in Packaging Recovery Notes (PRNs) and part of the overall quantity of plastics packaging that is classed as recycled each year? Also, could this a contributor to the issue of material quality supplied to markets?

These results provide a positive message to the industry and consumers alike about what happens to material that is seen by many to end up in landfill. The recycling result in particular raises many questions, and RECOUP will investigate these results in order to gain an understanding about the end destinations of this material and how this fraction is reported.

Recycled Plastic Markets

The highest values for collected plastics are when plastic bottles are sorted into their main fractions – clear and light blue PET, natural HDPE and mixed HDPE – with mixed bottles retaining relatively stable but lower prices. Although collections for pots, tubs and trays have increased significantly in recent years, their inherent recyclability and end market options they are not generally attracting positive values.

Value of Plastic Bottles

Plastic bottles mainly consist of PET drinks bottles and HDPE milk bottles, but there are small amounts of other bottle types such as DIY, bathroom and cosmetic products, which can be made from PP, coloured HDPE and PET, and also PVC.

Using the Lets Recycle material price index (www.letsrecycle.com) 1 tonne of mixed plastic bottles typically attracted an average price of **£79 per tonne** in 2015, therefore the 340,160 tonnes collected for recycling represented a potential total value of around **£27 million**, about the same as 2014. The real prices for 2015 ranged from £60-£99 resulting in a total value range of **£20m-£34m**.

Sorted Plastic Bottles

It should be highlighted that these prices are for mixed plastic bottles, which can vary depending on the levels of clear and light blue PET and natural HDPE bottles. To give a comparison of the prices for a tonne of clear PET and natural HDPE bottles, according to *Lets Recycle*, average prices ranged from:

- Clear and light blue PET - £109-£145, with an average of **£127**
- Natural HDPE - £340-£388, with an average of **£364**
- Mixed HDPE - £143-£153, with an average of **£148**

This demonstrates the potential additional value of sorted plastic bottles, although of course this needs to be balanced against the additional sorting costs incurred to achieve these higher values.

As an example the average values of the HDPE plastic fractions can be compared to the price of a bale of mixed plastic bottles:

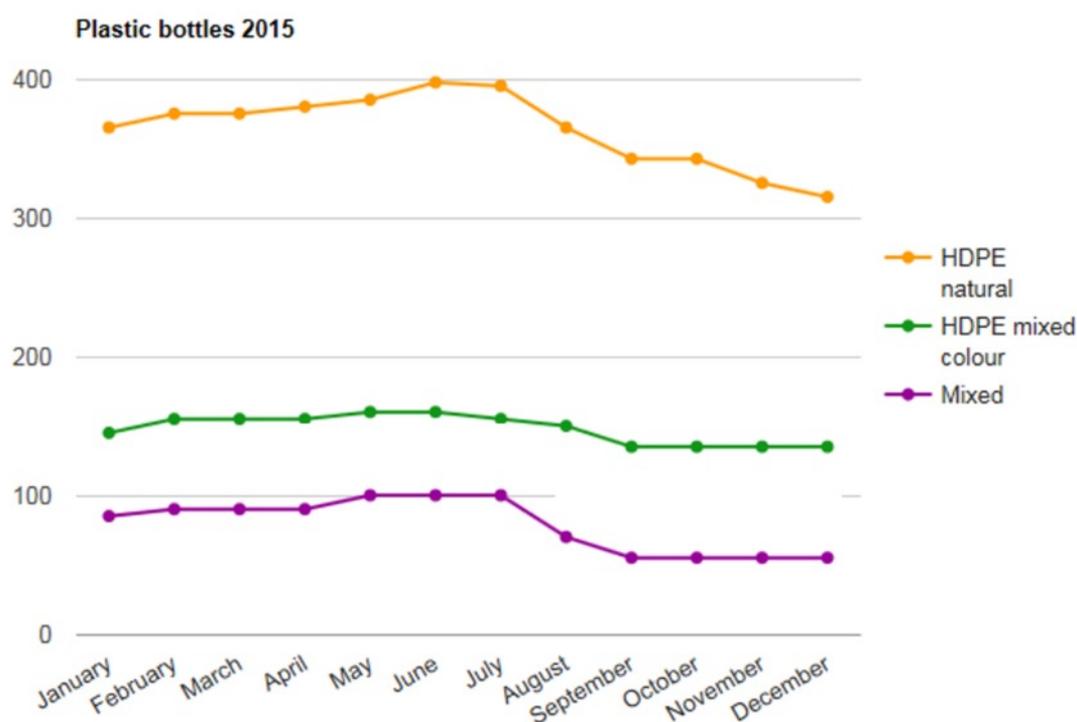


FIGURE 28 - AVERAGE VALUES OF PLASTIC BOTTLE FRACTIONS (SOURCE: LETS RECYCLE)

Recycled Plastic Markets

The Value of Plastic Bottles Not Recycled

A total of 253,840 tonnes of plastic bottles from UK households were not collected for recycling in 2015/16. This means:

- Using the average **£79** per tonne mixed bottle value, the unrecycled bottles would have a potential value to reprocessors in 2015 of over **£20m**
- Based on the median landfill tax and gate fee for non-hazardous material of £102 per tonne, these bottles would cost nearly **£26m** to dispose of (approx. £102 per tonne based on an average landfill tax for 2015 of £81.95 and a the median MRF gate fee in the current survey is £20 per tonne – taken from *WRAP Gate Fees Report 2015*)

It should be noted a quantity of bottles disposed of in the residual fraction will go to Energy from Waste, but processing costs have been assumed to be in line with landfill costs for the purposes of this calculation.

Although the following calculation would be providing an unlikely view of the financial implications, if there was a 100% bottle collection rate, and by combining the potential value of the currently un-recycled plastic bottles and the landfill costs, there would be an additional **£46m** benefit to disposal Authorities in the UK versus the current situation today. This is only on the basis the extra material is integrated into the existing collection service at no extra cost.

Value of Plastic Pots, Tubs and Trays

The value of pots, tubs and trays depends primarily on the level of contamination and Polyolefin content (PP and PE plastics). As a mix the pots, tubs and trays does not attract positive values but may still be favourable compared to landfill or EfW. Any positive prices reported are likely to refer to material that also includes plastic bottle content, which inflates the value, or are subjected to several appropriate sorting processes to extract the valued sorted Polyolefin plastics, particularly PP.

It is not realistic to put a potential figure on the benefit of collecting the 525,000 tonnes entering the household waste and recycling systems. With the values not yet realised for the 159,465 tonnes of pots, tubs and trays that were collected for recycling in 2015/16, some examples of the benefits of avoiding landfill for this material are:

- If all the estimated 525,000 tonnes of pots, tubs and trays consumed were disposed of in 2015/16, based on the median landfill gate fee for non-hazardous material of £102 per tonne, the disposal costs would be nearly **£54 million per annum**
- If the estimated 366,000 tonnes of pots, tubs and trays that were not collected for recycling in 2015/16, based on the median landfill gate fee for non-hazardous material of £102 per tonne, would incur disposal costs of **£37 million per annum**

Therefore, the actual cost of disposal is somewhere between **£37m** and **£54m**!

Material Quality

Material specification and quality dictates the value of plastics and is vital for sorting and reprocessing facilities to function on a commercially viable basis.

To get an overview of the monitoring levels and quality assurance processes, Local Authorities were asked about how they monitor the quality of the plastics collected. From nearly 200 responses to this question, **49%** Local Authorities monitor the quality of the plastics that are collected whilst **51%** do not (see Figure 30) – a 5% increase for those who monitor the quality of the plastics collected than the previous year.

With the implementation of the MRF Code of Practice and for general quality monitoring and assurance purposes it should be noted the majority of those who do not monitor quality are passing responsibility to their service contractor.

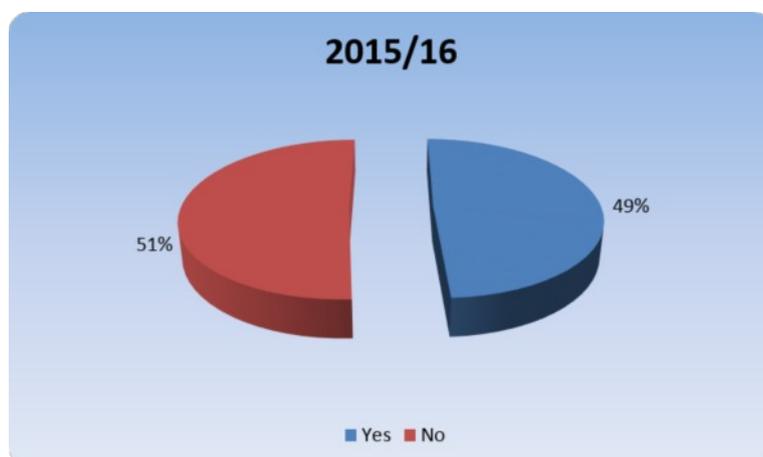


FIGURE 29 - LOCAL AUTHORITIES MONITORING THE QUALITY OF HOUSEHOLD PLASTICS COLLECTIONS

Recycled Plastic Markets

Material Sales

A strong driver for improving quality for those in the recycling chain can be who receives the revenue generated from the sales of collected plastics. Moving forward, tapping into this revenue stream is also an opportunity for Local Authorities to increase funding to their collection services.

From nearly 200 responses it was found contractors receive or partly receive the largest slice of the funding of revenue from the sales of collected plastics (65%), with the Local Authority receiving or partly receiving 46%. Local Authorities solely receiving 14% of the revenue, with other options or unknown making up 22% of the total responses. Where the value goes to the contractor only it is anticipated that the revenue value will be worked into the net cost of service provision.

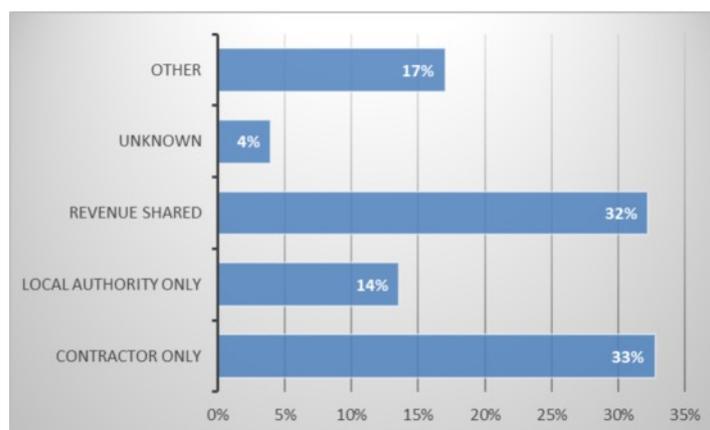


FIGURE 30 - WHO RECEIVES THE REVENUE FROM SALES OF COLLECTED PLASTICS

End Markets - UK or Export?

To understand the flow of plastics that are collected and their end markets, Local Authorities were asked to indicate where their plastic material was sold. End markets are referring to where plastics are reprocessed into granules, pellets or flakes in preparation for use as a raw material in second life applications.

From nearly 200 responses, across all plastic formats there appears to be small shift towards an increase in exports or unknown destinations with now 57% (bottles), 40% (pots, tubs and trays), 13% (film) and 20% (non-packaging plastics) finding a UK based destination.

End Market Destination	UK	Export	Unknown
Bottles	57%	12%	31%
Pots, Tubs & Trays	40%	18%	42%
Film	13%	17%	71%
Non-Packaging Plastics	20%	12%	68%

FIGURE 31 - END MARKET DESTINATIONS OF HOUSEHOLD PLASTICS COLLECTIONS

If these totals were collated across all four plastic formats:

- 32% UK based destination (36% in 2015)
- 15% exported (14% in 2015)
- 53% unknown end destination (50% in 2015)

As expected, there are considerable unknown destinations for all plastic formats, particularly for film and non-packaging plastics. The reported high unknown percentages is realistic because it can be difficult to audit market flows, especially where intermediate traders are used.

According to the National Packaging Waste Database (NPWD), 63% of the 891,141 tonnes of plastic packaging recycled in 2015 was exported. Therefore if the 53% unknown end destination was also assumed to be export it would align the export percentages.

Recycled Plastic Markets

Struggling to Find End Markets?

The 2016 Survey has received many comments about the volatility of the markets and a stable and reliable outlet for collected plastics is key to move the material, avoid landfill costs, and ideally generate revenue.

Plastic Format	Yes	No
Bottles	4%	96%
Pots, Tubs & Trays	19%	81%
Film	45%	55%
Non-Packaging Plastics	41%	59%

FIGURE 32 - LOCAL AUTHORITIES STRUGGLING TO FIND END MARKETS

Plastic Bottles Strong UK and export markets meant only **4%** of Local Authorities struggled to find end markets for plastic bottles - the real issue with plastic bottles is getting the best price and the quality of material sold to market.

Pots, Tubs and Trays **81%** of Local Authorities did not struggle to find a market, however, it is expected that a significant proportion will be intended to be sold as a lower grade of plastic bottles, and baled together and exported to non-EU markets for sorting and reprocessing. UK developments in plastic sorting infrastructure are also helping to provide auditable markets for this fraction.

Film and Non-Packaging Plastic There are similar fractions for plastic film and non-packaging plastics with just over **50%** of Local Authorities struggling to find a market for each respectively.



Consumer Communications

Effective consumer communications about Local Authority recycling services are an essential part of increasing capture rates and lowering contamination.

As with the common national media coverage about contamination rates 'recycling' is often an easy target and poorly informed articles can have a negative effect and disengage the consumer to make the effort to recycle effectively.

This part of the 2016 Survey provides range of information and data that can inform and help Local Authorities plan their approach to deliver plastics recycling communications to their residents. This includes an update on the national plastics recycling initiative, Pledge 4 Plastics, Local Authorities' response to a range of communication related questions, and two examples that might help feed into future Local Authority communication activities.

Pledge 4 Plastics – An Update

RECOUP lead the national plastics recycling initiative, Pledge 4 Plastics, and has continued to work hard with supporting partners to provide resources and act as a catalyst to support plastics recycling consumer communications by across the UK.

It is supported by a cross sector group, which is made up of Coca-Cola, M&S, Nestle Waters, Nestle UK, RPC, Valpak, PlasticsEurope and Surrey County Council.

Two key activities have been delivered since the 2015 Survey was published - The Secret Life of Plastics Animation and a Plastics Recycling Resource Pack.

The Secret Life of Plastics Animation

The Pledge 4 Plastics consumer message is about showcasing the transformation of plastic packaging into new recycled products and the diverse range of things they could become afterwards – for example, that a juice drinks bottle can be recycled into a football shirt, or a yoghurt pot into a car bumper.

It was established there was no central generic social media friendly video to promote this message, and Pledge 4 Plastics worked to develop a set of animated resources to demonstrate how everyday household plastics can be transformed after they are recycled and therefore encouraging people to recycle more.

Reach and Coverage

The animation was universally well received, with over **200,000 views** and a **social media reach of over 1 million**, through a combination of organic and paid for posts through the Pledge 4 Plastics social media channels (Twitter, Facebook and YouTube) and supporting partner's social media and websites, including many Local Authorities.

It also secured coverage in the Daily Express and Guardian, which lead to a plastics recycling factsheet to be promoted through the Guardian Teacher Network.

pledge 4 plastics



Consumer Communications

The Resources

The animation shows a family recycling everyday plastic items as they go about their day, with the items making unexpected transformations. Dad starts his recycling journey in the bathroom, where a shampoo bottle transforms into a plastic chair.

Other plastic household items are reborn throughout the video including a butter tub turning into a table, a milk bottle becoming a toy rocket and a fruit punnet morphing into kitchen utensils.

These resources consisted of:

- The main **60 second** video shows the recycling transformations of plastic bottles, pots, tubs and trays
- A **30 second** 'bottles only' version
- Plus ... Five **6 second** short video Vine clips, which can be added to social media channels to give people a taster of the video

This is supplemented by:

- A **template press release**, which can be filled in to make it more relevant to your local area - this can then be published on Council websites and sent out to contacts at local media outlets
- Example **social posts**, which can be published on Twitter, Facebook and Instagram to direct local people to watch the video on YouTube, or embed onto Council websites
- **Screen grab images** taken from the video itself, which can also be shared on social media to encourage local people to watch it
- **Communications Guidance** shows how to make the most of Pledge 4 Plastics' animated video

Pledge 4 Plastics also put forward its top 5 recycling facts to demonstrate the need for everyone to recycle. All these resources are available for **FREE** on the Pledge 4 Plastics Resource Library, and we encourage as many Local Authorities and businesses as possible to use them!



Consumer Communications

Plastics Recycling Resource Pack

In early 2016 Pledge 4 Plastics and the multi-material recycling campaign in England, Recycle Now, worked in partnership to produce a new consumer communications resource pack.

Replacing the original Pledge 4 Plastics Communications Toolkit, the new pack aims to support Local Authorities and businesses by providing a comprehensive set of resources needed to run a successful consumer communications campaign all in one place.

It includes all the key plastic recycling resources from Pledge 4 Plastics and Recycle Now, and so it promotes an aligned and consistent set of resources for plastics recycling in the UK. It includes digital resources, posters, pull-up banners, leaflets, and videos. The materials can be customised by partners, allowing them to add their own plastic recycling collection information.

The resources are **FREE** and we encourage Local Authorities and businesses to download and start using them, with all downloads available on both the www.pledge4plastics/resourcelibrary and the Recycle Now website (<https://partners.wrap.org.uk/assets/9933/>).

Plastics Recycling Resource Pack



Brought to you by Pledge 4 Plastics and  recycle

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Introduction

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Consumer Communications

Information from Local Authorities

The 2016 Survey asked a number of communication related questions which provides a snapshot of how Local Authorities are approaching and planning plastics recycling communications - many of which are very useful for future Pledge 4 Plastics activities. The information below provides an overview of the responses received.



Local Authorities Planning a Communication

Question: *Is your Local Authority planning a communication to householders about plastics recycling, either as an individual authority or part of a wider county or partnership campaign?*

Answer: There appears to be an increase in Local Authorities with **83 (40%)** saying they were planning a communication (Responses – 206)

The reason to run a communication about plastic recycling could include increasing capture of target plastic material and introducing a new service. From the comments in the 2016 Survey increasingly it is now to improve the quality of the material placed for recycling. This is two-fold, to reduce non target material, but also to provide information and influence the consumer to present the plastics in the right way. This could include removing residue food from the packaging, rinsing, or keeping the tops on plastic bottles, depending on the needs of the waste management chain handling the material (see information on DEFRA's consistency project on page 50).

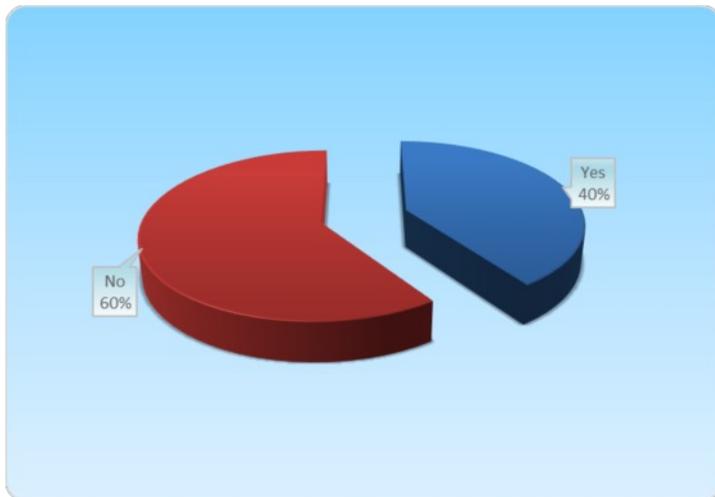


FIGURE 33 - LOCAL AUTHORITIES PLANNING A COMMUNICATION TO HOUSEHOLDERS ABOUT PLASTICS RECYCLING

Plastic Recycling Resources

Question: *Have you used transformation visuals or messages from the Plastics Recycling Resource Pack, Pledge 4 Plastics toolkit or Recycle Now website in 2015/16?*

26 Local Authorities (**14%**) said they had used the resources (Responses – 184)

Question: *If you've used the resources, how have they been used?*

This was mainly through written communications, and many Local Authorities used multiple channels when using the resources

Question: *If you've not used the resources, why not?*

43 Local Authorities (**62%**) stated lack of budget and **26 (38%)** were not aware they were available (Responses – 69) – this is useful feedback and RECOUP will review the communication channels available to raise awareness and promote the Plastics Recycling Resource Pack and future communications are planned.

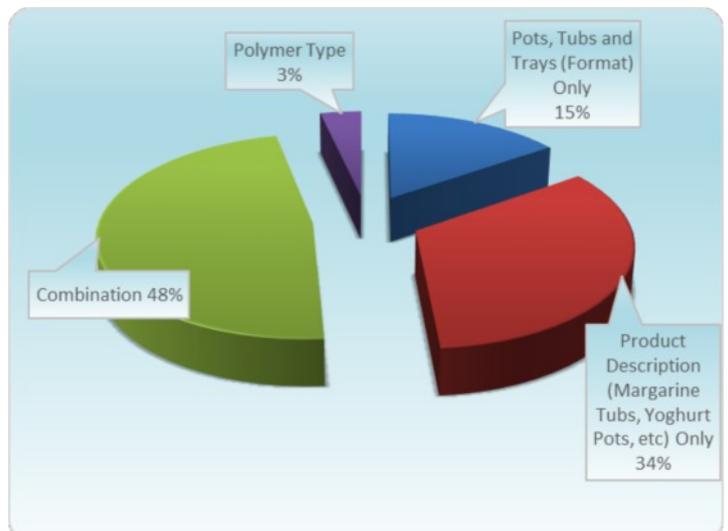


FIGURE 34 - LOCAL AUTHORITIES USE OF TRANSFORMATION RESOURCES

Consumer Communications

Response	UK
Very well	10%
Fairly well	60%
Not very well	5%
Not at all	0%
I don't know	25%

FIGURE 35 - HOW WELL TRANSFORMATION RESOURCES HAVE ENGAGED THE PUBLIC

Question: How well do you feel that the transformation resources engage the public regarding recycling plastics?

70% stated they felt the transformation resources engaged the public very well or fairly well, with only 5% saying not very well; 25% did not know – RECOUP continue to believe showing the public what their plastics can be recycled into is the most effective way of engaging the public.

Question: Were you aware the Pledge 4 Plastics animation had been developed?

50% say they were aware and 50% say they were not (Responses – 200) – as with the Plastics Recycling Resource Pack future communications to raise awareness and promote the animation are planned.

Question: Did you use or promote the Pledge 4 Plastics animation?

26 (15%) Local Authorities said they used or promoted the animation (Responses – 176) – this provides a strong indication there are significant opportunities to promote the animation through more Local Authorities, and further investigation will take place about how the animation could be better utilised.

How do Local Authorities Refer to Plastic Pots, Tubs & Trays?

Question: How does your Local Authority specify the plastic pots, tubs and trays?

Three options were given to this question:

- By format – plastic pots, tubs and trays
- Product description – e.g. margarine tubs, yoghurt pots
- Polymer type

48% (81 Local Authorities) use a combination of plastic format (pots, tubs and trays) and product descriptions, which appears to be a popular way of describing non-bottle plastic packaging. 57 Authorities (34%) use product descriptions only and 26 (15%) use plastic format only, a sharp reduction from previous years. Only 6 Local Authorities (4%) use the polymer codes, which RECOUP do not recommend using as few people refer to the polymer type when deciding to place an item for recycling or not, and it causes confusion as one polymer code can be used across many packaging types e.g. PET bottles and PET trays, or it is not used at all. (Responses – 170)

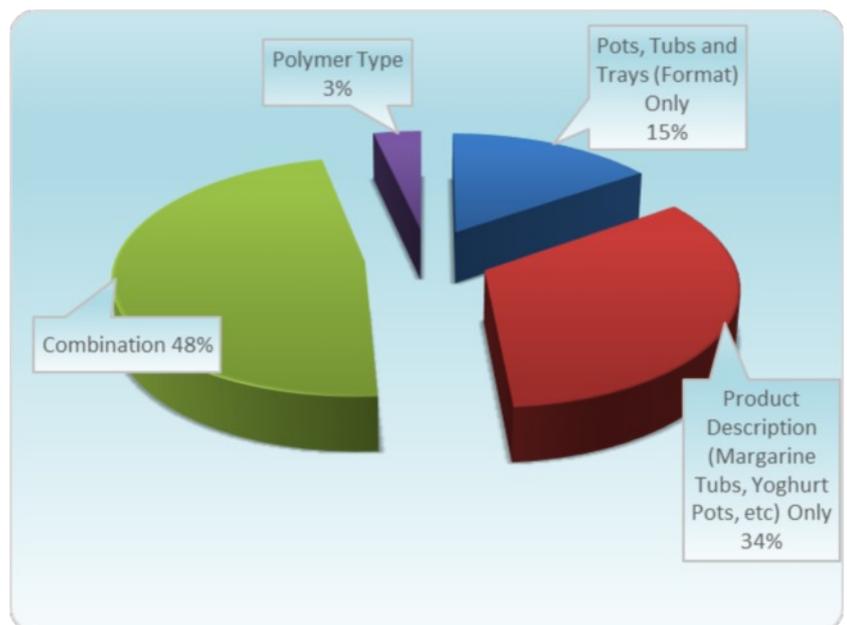


FIGURE 36 - HOW LOCAL AUTHORITIES REFER TO PLASTIC POTS, TUBS & TRAYS

Consumer Communications

Budget Cuts

Question: Has your Local Authority received budget cuts to deliver communications to householders about waste and recycling?

13% of Local Authorities stated they received budget cuts and 87% stated they did not (Responses – 187) – whilst there is a belief that there have been budget cuts to communications in order to prioritise core Council services, this assumes there was a communications budget allocated before any budgets cuts. A number of Authorities did not want to comment here, but it does provide any indication communications budgets are still given a level of priority to reduce the landfill and gate fee charges from target recycling ending up in the residual collections or reducing contamination levels in the material that is placed for recycling.

Communications Delivery Examples

There are many examples of how effective communications have been delivered, but with every Local Authority having different logistics, demographics and needs, a one size fits all approach doesn't often work in practice.

In the following pages two examples are provided which shows how two different communications programmes were approached. The first is how Castle Point Borough Council tackled increasing levels of contamination in their recycling material, with many plastics related issues having to be communicated to residents. The second example shows how a cross sector partnership developed and delivered a plastics and plastics recycling education programme to Primary and Secondary schools in Buxton.

Contacts points are included if you would like to find out more information about both examples.



Consumer Communications

Case Study – Castle Point Borough Council

Castle Point Borough Council had an issue with contamination levels in their commingled collections, the contamination rates up to 18%, and load rejections and disposal costs were rising.

There were a number of reasons that could have contributed to this. A change in MRF contractor, a drop in market prices, and a reduction in consumer communications being carried out by the Council.

Location: Situated on the coastline of south-east Essex on the northern side of the Thames Estuary

Area: 17.3 square miles

Population: approximately 86,000 people in 37,770 households

Recycling container: Pink sacks for rigid plastic packaging, aluminium and steel cans, paper and cardboard (glass collected separately)

Contaminated Plastics

There were some significant issues with the plastics packaging:

- Not rinsing plastic, or simply putting containers still full of food within the pink recycling sacks – which had two detrimental effects:
 1. The contaminated plastic packaging could not be recycled
 2. The food waste contaminating other items within pink sacks and other non-related plastics, so other materials could also not be recycled
- Bubblewrap and polystyrene being left in cardboard boxes, or put out for collection

To address this, they developed a multi-channel campaign to reduce contamination levels. This included:

- Leafleting all residents twice on how they could reduce contamination
- Training of collection staff to spot contamination more effectively and sticker contaminated sacks
- Social media promotion
- Additional publicity to residents with communal bin areas, including door knocking
- Door knocking residents who had badly contaminated sacks

The Result

The campaign was successful and reduced contamination to 8%. Further communications are needed, but it has reduced contamination levels to a manageable level.

For more information contact: Tim Read, Castle Point Borough Council (01268 882318 / recycling@castlepoint.gov.uk).



Consumer Communications

Case Study – R-Generation Plastic Recycling Schools Education Programme



Recycle Cycle is a partnership between Nestlé Waters, national recycling charity RECOUP, environmental education provider Wastebuster, High Peak Borough Council and Staffordshire Moorlands District Council, which aims to change people's attitudes towards recycling and show that recycling can make a real difference.

The R-Generation plastics recycling educational programme was developed for schools in its 'Recycle Cycle' recycling scheme in Buxton to educate about plastic and plastic recycling.

Education Packs

There are Education Packs for both primary and secondary schools. Linked to the National Curriculum, the packs include content for exciting multi-media assemblies, films, lesson plans and teacher's notes, alongside enterprise and pledge competitions with exclusive prizes.

The aim was for the programme to be delivered in both a cost and resource effective way so it can be used in other areas outside the Buxton scheme.

Primary Schools

The Primary School Education Pack aimed to help students understand the recycling journey of plastic bottles, with a "Pledge 4 Plastics" competition inviting pupils, teachers and their families to pledge to recycle one more plastic bottle every week through the project's pledge-o-meter to win Baby Bustas, the UK's first 100% rPET soft toy, made from five recycled plastic bottles.

Secondary Schools

The Secondary School Education Pack explored plastic as a material, innovations in recycling and the psychology behind our attitudes and behaviour towards recycling. It encourages students to think differently about plastic and use creative, enterprise and innovation skills to encourage better use of plastic recycling facilities in their school, at home and 'on the go'. The competition asked students to come up with ideas to engage the public to recycle, with the winning students receiving a prize and their idea potentially being used in future R-Generation and plastics recycling engagement activities.



Helen Stamp, Headteacher at Peak Dale Primary School was enthused at the effect the competition has had: "Peak Dale Primary School children and their families have really enjoyed pledging to recycle more plastic through the Nestlé Waters Recycling Scheme. Our children are now 'ECO ambassadors' and their message is 'Everyone can help look after our planet!'."



The Healthy Hydration Company™



RECYcling Of Used Plastics Limited



ACHIEVING EXCELLENCE

High Peak Borough Council

working for our community

Consumer Communications

Education Assemblies

Primary schools delivered the assemblies and launched the competition using the education packs from R-Generation, which were designed to facilitate independent action in the schools and allow for the reach of the packs to grow.

In secondary schools, the class sizes were larger and a more advanced knowledge base was required, so RECOUP and Wastebuster attended each participating school to deliver the assemblies and launch the competition.

Use of Volunteers

To trial the resources and materials before launching R-Generation activities, having received training from Wastebuster, staff volunteers from Nestle Waters in Buxton delivered a primary school assembly.

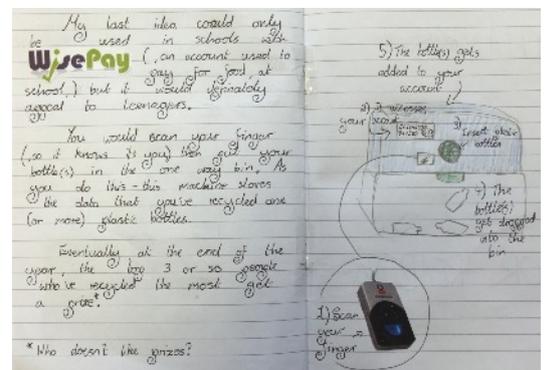


Headteacher Craig Yates commenting: *“The students have found it fascinating to explore the science, technology and engineering behind plastic production and recycling but also to understand the important role the consumer plays in 'closing the loop’”.*

Competition Winners

There were joint winners of the primary school competition - Burbage Primary had the most overall pledges and Peak Dale Primary had the most pledges per student. The competition had a ripple effect after the parent teacher committee gave their support, with families and friends of students and students in different year groups also wanting to pledge!

High quality entries were received to the secondary school competition, including: signage on recycling bins showing what products can be made from recycled plastic bottles; voting bins where you can use your used plastic bottles to cast a vote against a local or topical question; fun bins in schools; a recycling token scheme; using positive and hard hitting messages centred around a 'Green Gangster' character; and a cost effective and sustainable way to recycle at festivals.



If you would like to find out more and how you can use the resources please contact: **Steve Morgan, RECOUP** (Steve.Morgan@RECOUP.org) or **Katy Newnham, Wastebuster** (Katy@Wastebuster.co.uk).

Harmonisation - The Way Forward?

Tough questions continue to be asked as to whether Local Authorities can save more budget after several years of progressive cuts. Creating more efficiencies have to be prioritised to deliver core local services without reducing quality of service below acceptable levels.

Local Authorities appear to be a target for mainstream media following the widespread reporting of increases in contamination levels in recycling, despite in many cases Councils having well publicised and well run collection services in place. Promoting collection schemes through the positive benefits of joint working appears a logical step to provide cost savings, practical benefits, and value for money for decision makers and residents alike. Pooling resources, equipment, knowledge and expertise, ideally through centralised contract procurement all seem to hit the spot.

In the 2015 Survey questions were asked about whether Local Authorities believed waste collection services and consumer communications were harmonised with other regions, and the results made for interesting reading. Just 26% thought their collections were aligned with other Authorities, and 37% for consumer communications.

Whereas the RECOUP contacts at each Local Authority do not represent the whole Council it does provide an indication of partnership activity, or the awareness of it. Could another year of intensity around this issue continue to drive more awareness of the benefits (and associated barriers) of partnership working with other Authorities?

In the 2016 Survey RECOUP and LARAC developed a number of questions around this key area.

The question was asked again about whether Local Authorities believed their recycling collection services were aligned or harmonised. The response represents a sizeable shift from the previous year with over 50% now believing their Authorities are working with other Authorities in aligning their collections services.

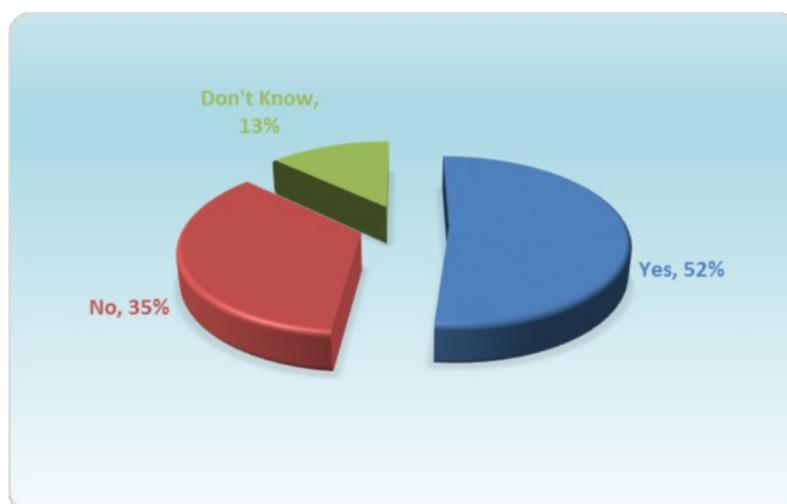


FIGURE 37 – LOCAL AUTHORITIES BELIEVING THEIR RECYCLING COLLECTION SERVICES WERE ALIGNED

How are Collection Services Aligned?	
Collection unit	25%
Service frequency	35%
Material types collected	41%
Plastic types collected	39%
Handling / sorting / facilities used / material sales / agreement / other	31%

FIGURE 38 - HOW ARE RECYCLING COLLECTION SERVICES ALIGNED?

80% of Local Authorities stated alignment of material or plastic types collected, showing that the key target for improvement focusses on standardising the material collected, with 25% stating the collection unit. There are, of course, many other areas of opportunity, with service frequency, collection unit, and handling, sorting and facilities used also referenced by 31% of Local Authorities.

The actual and perceived benefits of partnership working have been confirmed in a high number of comments in this year's Survey. This is particularly true for plastic packaging collections, both for collections and consumer communications, which is still seen as the material that causes the most confusion.

Harmonisation - The Way Forward?

Benefits

The question was asked in the 2016 Survey what the benefits of aligning the collection services and whether any details could be shared relating to the key practical or economic benefits. Here are some of the responses:



There were also positive examples reported from the Somerset Waste Partnership and South Tyne & Wear Waste Partnership.



Somerset Waste Partnership

Dave Mansell, the Development and Monitoring Manager at Somerset Waste Partnership provided the cost saving for his Authorities: "We have a single collection contract across all five districts in Somerset with the same collection services and cross-boundary working. This reduced procurement costs, increased competition for our contract and results in efficiency savings, including for contract management by a single team of officers. This is believed to result in savings of at least **£1.5m** per year. There are also considerable benefits for service communications."

Harmonisation - The Way Forward?



South Tyneside Council

Case Study - South Tyne and Wear Waste Management Partnership (STWWMP)

Gateshead Council is the Lead Partner for South Tyne and Wear Waste Management Partnership (STWWMP). Aligning collection services with South Tyneside Council and Sunderland City Council allows a number of efficiencies to be realised, in particular around joint contract procurement and subsequent contract management functions. The establishment of a joint partnership team to deliver such strategic waste management functions, has allowed back office functions and data reporting arrangements to be harmonised. This also allows information and experiences to be highlighted, enabling the team to analyse issues and provide recommendations for operational service delivery activities, as appropriate.

Aligning services has allowed a consistent approach to community engagement to be developed that includes the delivery of environmental education to ensure waste is managed appropriately within the waste hierarchy. This is being realised through the work of a purpose built Visitor and Education Centre, and includes the delivery of an extensive programme of waste awareness activities with schools, colleges, and community groups across the South of Tyne and Wear.

STWWMP has established a Joint Communications Group, which brings together communications officers from all three partner Authorities to develop co-ordinated communication activities. This utilises a variety of approaches, including social media, in-house videos, Council publication editorials, and vehicle advertisements.

STWWMP have shared some of their communications issues they are contending with the MRF contract across the partnership:

Black Plastics

- Black plastics continue to be a 'grey area' as whilst they are not specifically excluded from the specification it remains an issue, i.e. the specification just says plastic pots, tubs, and trays. Consequently, the technical limitations of the sorting machinery in terms of reading black plastics mean that residents are generally advised not to recycle black plastic pots, tubs or trays. However, the STWWMP are currently working with one of the MRF contractors and discussing the potential introduction of manually sorting black plastic materials for recycling.

Residue in Plastic Bottles

- Another significant issue for plastics communication is around plastic bottles that are presented for recycling that still include their liquid, which can contaminate commingled loads. STWWMP are also now starting to see more occurrences where the liquid in the bottles is actually hazardous, i.e. chemicals, cleaning bottles, etc, which may be linked to the additional communications we undertake around 'unknown' materials that can be recycled. We're now therefore trying to ensure that all communications very clearly state that all materials, including plastic bottles, should be empty and rinsed of their source material.

Plastic Bottle Tops

- Staying with plastic bottles, we've also seen a change in approach from our MRF contractors in terms of whether plastic bottle tops should be replaced or removed for recycling. Historically, they've always asked that they are removed (reducing liquids, increasing densities for transportation and, more technically, avoiding jeopardising bales with bottles full of air once sorted), but recent feedback suggests that plastic bottles that are completely crushed flat are classified/sorted with the 2D materials on the MRF sorting lines, and not the 3D materials. Consequently, STWWMP have developed communications messages that advise residents 'wash and a quick squash' and then replace the plastic bottle tops.

For more information contact: [Chris Wilson, South Tyne and Wear Waste Management Partnership \(0191 433 7478 / chriswilson@stwwmp.org.uk\)](mailto:chriswilson@stwwmp.org.uk).

Harmonisation - The Way Forward?

Contractor Relationship

Effective service delivery relies on the relationship between Local Authority and the contractor, and wider partnership activities aside there is a good example of the communication lines working effectively. The 2016 Survey asked whether Authorities understand all the reasons behind the instructions from the waste management operator of what plastics are target and non-target materials. From 180 responses **93%** stated they understand the reasons, with only **7%** not able to get the information they need.

Barriers to Alignment?

The question was asked in the 2016 Survey about what or where the barriers lie in aligning collection services with other Authorities. As was rightly pointed out by one Authority every Council and region has the potential to be different, and even if the will and political drivers exist, the same systems don't necessarily work for all. Different geographic, logistic and collection systems mean that the same collection services do not always work across different Council areas.

The political and operational will and drive that are needed in turn require investment of time and budget to realise the benefits. Avoiding the operational fire-fighting is key, and commitments from the political leadership and senior management team is vital to do this.

The key barrier highlighted was around the conflict in timings for the re-negotiation of contracts across different Authorities, but also not wanting to compromise or re-negotiate on contractual obligations for a service was seen as a priority in one area but not in another e.g. commingled or source separated collection, with one large Waste Partnership citing the separate collection of glass.

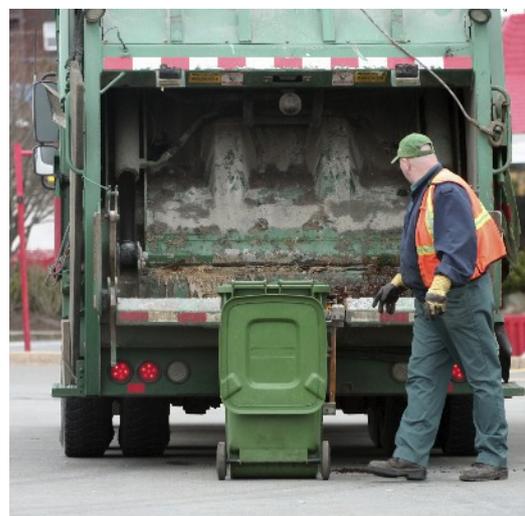
Different Authorities have access to different process facilities so collect different materials

The collection Authority pays for collection and the disposal Authority pays for disposal so any outlay in a change of service (i.e. change of vehicle, bins etc.) would not be balanced by savings made from disposal

Neighbouring Authorities are tied into contracts with the private sector so they are restricted in decisions they make about changing their service



There are also variations across the UK nations, as Scott Armstrong from Glasgow City Council pointed out: "Scottish Councils will have slightly different collection systems in place. Some may collect pots, tubs and trays in addition to plastic bottles, dependant on their MRF contractor or availability of local markets. The Scottish Government Household Charter and Code of Practice is seeking to align domestic recycling collections."



Harmonisation - The Way Forward?

Two of the more recent activities in the UK around alignment are outlined below.

Scottish Government Household Recycling Charter

The Scottish Government and the Convention of Scottish Local Authorities (CoSLA) have agreed a Household Recycling Charter to support a more circular economy in Scotland through developing more consistent and coherent waste collection services, leading to both more efficient services and increased quality and quantity of recycling collected.

The charter sets out 21 commitments from local government that will achieve the following outcomes in Scotland:

- To improve our household waste and recycling services to maximise the capture of, and improve the quality of, resources from the waste stream, recognising the variations in household types and geography to endeavour that our services meet the needs of all our citizens.
- To encourage our citizens to participate in our recycling and reuse services to ensure that they are fully utilised.
- To operate our services so that our staff are safe, competent and treated fairly with the skills required to deliver effective and efficient resource management on behalf of our communities.

More information and documents can be downloaded from:

www.zerowastescotland.org.uk/content/charter-household-recycling

Consistency Project

WRAP is delivering a project for DEFRA to examine ways to bring greater consistency to household waste and recycling collections in England.

The consistency project brings together representatives from Local Authorities, waste management contractors, recyclers, producers and the retail sector to examine opportunities for greater consistency in household collection and recycling services. It creates both the potential to rationalise collections around three main systems and an opportunity to standardise collection containers used, subject to accommodating different housing types. The first phase considered a range of scenarios, models, approaches to consistency and areas for further investigation.

These will now be taken forward by the advisory group and form the second phase, which will lead to the publication of a vision for greater consistency in collections, what this will mean for recycling in England and the opportunities it presents for stakeholders.

More information can be found at:

www.wrap.org.uk/content/opportunities-greater-consistency-collections-%E2%80%93-works-begins-phase-two

Wales also has its established Collections Blueprint. Moving forward it will be interesting to see how the approaches taken in individual UK nations develop, and where the common ground and differences lie.

The Opportunities

As well as new partnership activities being planned, the 2016 Survey also found if recycling collection services are not aligned with other Authorities, 16 (26%) of the 62 responses stated they had attempted to align recycling collection services in the past, but the partnership was no longer in place.

There are compromises - it might be practical to align specific areas of operation, but not others. However, many of the comments here were not focussed on the barriers, but a number of Joint Waste Services and Waste Partnerships informed the 2016 Survey about the opportunities they are pursuing in the coming years.

It seems there are many Authorities waiting for contract renewal before the opportunities of partnership working can be realised, with the preferred bidder having the ability to align recycling collection services.

RECOUP will continue to monitor this area on a UK wide level as it moves towards 2020 and future key target periods.

Brexit & The Future

It remains unclear how Brexit will impact the economic, business and legislative developments in the UK.

The same questions about how this will play out are being asked across all industries, and the same applies to the packaging and waste industries and the approach for plastics. It was felt by many that voters did not have sufficient information to take environmental issues into account when they cast their votes, with the respective remain and leave campaigns not addressing the environment and sustainability issues in the lead up to the referendum.

So although how the future will look is very much unclear, we can point to some key pieces of legislation that might provide us with an insight into how the direction our waste and circular economy policies will be directed as the UK currently intends to exit the European Union.



EU Circular Economy Package

The existing EU directive for waste management is the Waste Framework Directive, which was last updated 2008. It provided the overarching legislative structure for the management of waste in EU countries, including the current plastics packaging recycling rate for the EU member states of **22.5%**.

In 2014, the European Commission put forward an initial circular economy package, but in 2015 the Commission withdrew the legislative proposal on waste included in that package to make way for “a more ambitious proposal that will cover the whole of the circular economy”. A new circular economy package was announced in December 2015 which included an action plan for the circular economy, as well as legislative proposals amending a number of directives including the Waste Framework Directive and the Packaging Waste Directive.

The Circular Economy Package Proposed

- A common EU target for recycling **65% of municipal waste** by 2030
- A common EU target for recycling **75% of packaging waste** by 2030
- A binding **landfill target** to reduce landfill to maximum of **10%** of municipal waste by 2030
- An overall **plastics recycling and “preparation for re-use”** target of **55%** by 2025

The **overall plastics recycling and “preparation for re-use target” target for 2025 was set at 55%**, which the Commission’s report stated “takes into account what was technically feasible at the time of the revision of the Directive”. This was seen as an ambitious objective since the average plastics packaging recycling rate across Europe was under **40%** in 2014 (see also page 53).

A separate action plan will be set up to evaluate the future plastics packaging target depending on the progress made by individual Member States. The Commission’s report adding: “The Commission may propose revised levels of the targets for plastics for 2030 based on a review of progress made by Member States towards reaching those targets, taking into account the evolution of the types of plastics placed on the market and the development of new recycling technologies and the demand for recycled plastics.”

This points to a more informed and yet ambitious approach, which makes consistent reporting across the EU states essential if states are going to be compared on a like-for-like basis. The UK has its own packaging recycling targets, which is significantly above the current EU target of 22.5%.

It remains unclear whether this package will be agreed and adopted for the EU, let alone if the UK will adopt any package and how formal this agreement will be. Many believe the UK has benefited on an environmental and waste basis from being in the EU.

A full overview of the EU circular economy package can be found on: http://ec.europa.eu/environment/circular-economy/index_en.htm.

Plastic Recycling in the EU

Management of Post-Consumer Plastics in the EU

So where is the EU now in how it manages post-consumer plastics? To provide some context about the future it is useful to assess where the EU is now.

The most reliable source for the analysis of European plastics production, demand and waste data is *Plastics - the Facts*, produced by PlasticsEurope, the Association of Plastics Manufacturers in Europe (a trade Association of Plastics Manufacturers in Europe which includes more than 100 member companies, producing over 90% of all polymers across the EU (www.plasticseurope.org)).

The data for this publication was collected by PlasticsEurope.

(Note the EU refers to the EU 28 plus Norway and Switzerland).



Plastics Recycling & Energy Recovery – All Plastics

Plastics – The Facts reported plastics recycling and energy recovery reached **69.2%** - this is all plastics (construction and demolition, automotive, etc), not just packaging. Figure 40 shows the recycling, energy recovery and landfill rate across the EU. The recycling rate shown is mechanical recycling i.e. recycled materials used as raw materials in second life applications and products. Energy recovery refers to creating energy and possibly heat from a process of burning waste.

In 2014 plastics recycling and energy recovery reached 69.2%

In 2014, 25.8 million tonnes of post-consumer plastics waste ended up in the waste upstream. 69.2% was recovered through recycling and energy recovery processes while 30.8% still went to landfill.

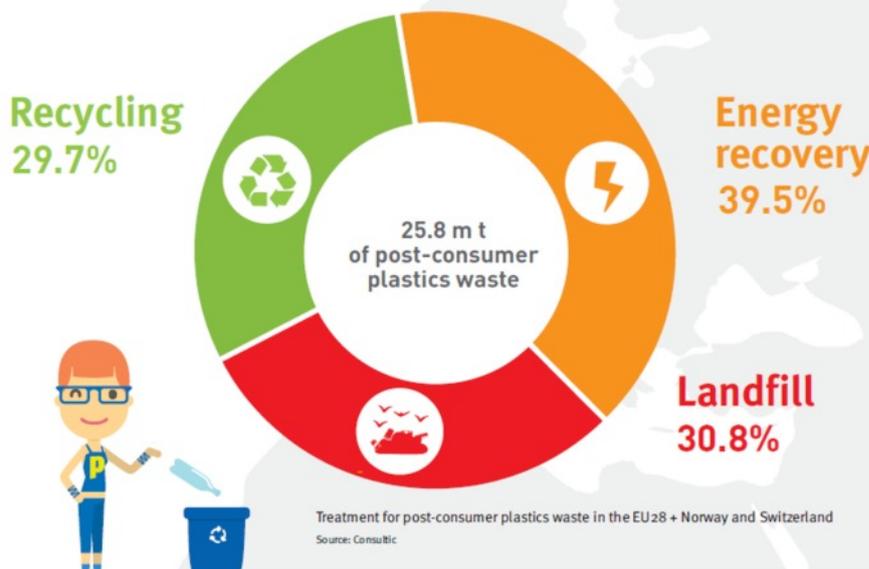


FIGURE 39 – TREATMENT OF POST-CONSUMER PLASTICS IN THE EU (SOURCE: PLASTICS: THE FACTS)

The EU landfilled **8 million tonnes (mt)** of plastics waste in 2014, recycling just over **7.5 mt**, with **over 10 mt** going through an energy recovery route.

Although recycling and energy recovery has increased in the EU in recent years (in 2012 plastics recycling and energy recovery was 62%), the challenge to reduce landfilling is a massive one globally, and not just in Europe.

Plastic Recycling in the EU

Heading in the Right Direction

There is progress across the EU, which is demonstrated in Figure 41. This shows the changes in recycling, energy recovery and landfill rates for post-consumer plastics between 2006 and 2014 across the EU, with a **64% increase in recycling** and **38% reduction in landfill**. The quantity recycled about to overtake the quantity sent to landfill. This represents all plastics uses, and in terms of performance across the different applications of plastics, plastic packaging having the highest recycling and energy recovery rates across the EU.

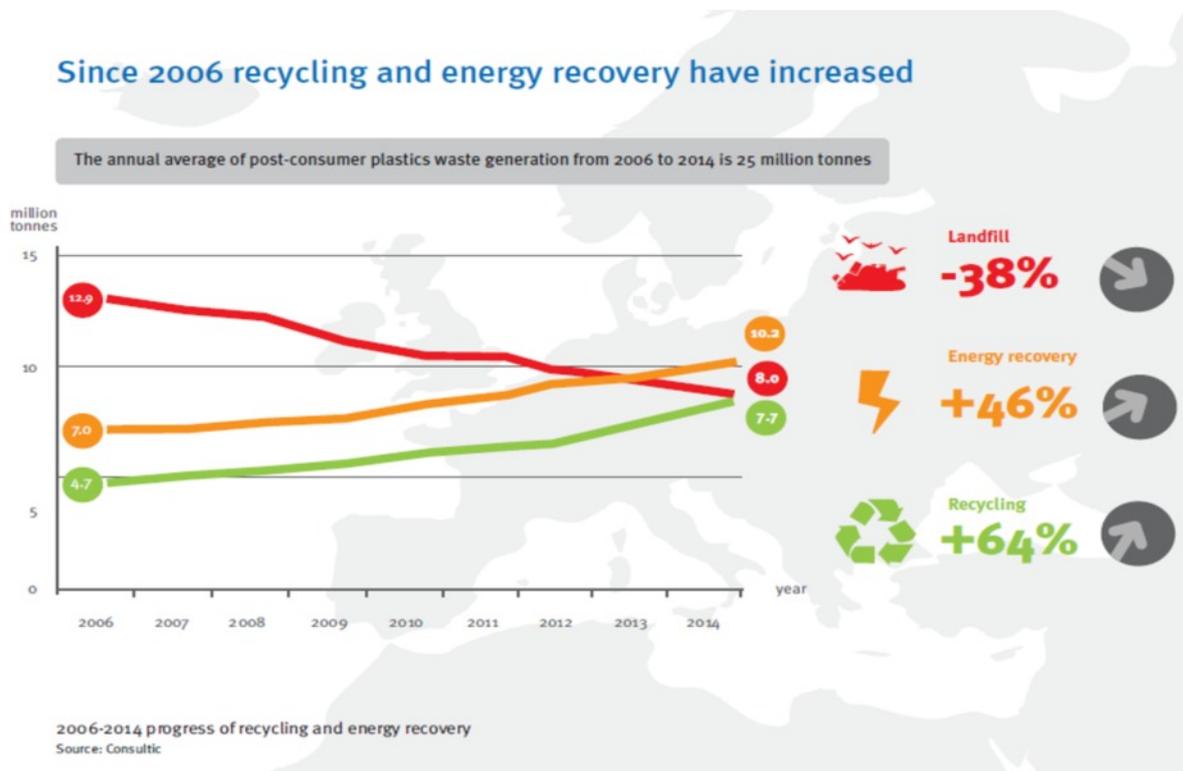


FIGURE 40 - PROGRESS OF RECYCLING & ENERGY RECOVERY IN THE EU (SOURCE: PLASTICS: THE FACTS)

Plastics Recycling & Energy Recovery – Plastic Packaging

The overall recycling rate for plastics reached **29.7%** in 2014 – the recycling result for plastic packaging of **39.5%** is better than for other plastic applications.

Of the **15.9 mt** of post-consumer plastic packaging in 2014, **6.3 mt (39.5%)** were recycled, easily surpassing the EU's minimum target of **22.5%** (except for Malta, all the EU 28+ 2 countries in 2014 exceeded the target). The recycling rate was **34.7% in 2012** so progress have been steady and positive. Each country normally having, either by law or a covenant, fixed national targets for recycling and energy recovery – the regulations being based on the EU directive on EU Packaging and Packaging Waste Directive.

While **40%** of all plastic products put on the market are packaging, packaging contributes by **62%** to all plastic waste generated and as much as **81%** to all plastics recycled. Of just over **7.5 mt** of plastic waste were recycled in 2014, of which **6.3 mt** was packaging.

Overall Plastic Packaging Recycling in 2015

So how does this compare to the UK? According to the National Packaging Waste Database (NPWD), **891,141 tonnes** of plastic packaging was recycled in 2015, and based on the current plastic packaging consumption estimate of **2.2 mt** this gives a recycling rate of just under **40%**.

Plastic Recycling in the EU

Recycling & Energy Recovery

Figure 42 shows the plastic packaging and energy recovery rate by country in 2014. Looking at the high performing EU countries recycling and energy recovery complement each other need to work hand in hand to manage plastic waste effectively. Recycling is always the preferred option, but when recycling is not the most sustainable option (both environmentally and economically), energy recovery is the alternative.

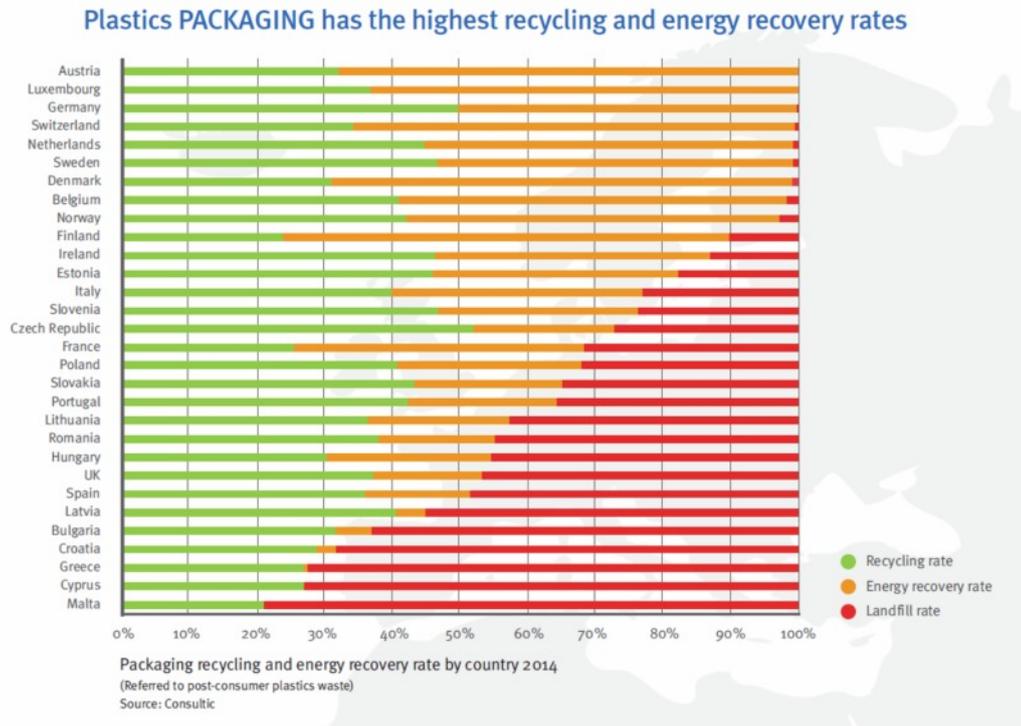


FIGURE 41 - PACKAGING RECYCLING & ENERGY RECOVERY BY EU COUNTRY (SOURCE: PLASTICS: THE FACTS)

There are still big differences on energy recovery results within Europe. Ten countries energy recovered **more than 50%** of their plastic packaging waste in 2014 and obtained a total recovery rate (recycling + energy recovery) **above 90%**. At the other end of the ranking list, some countries have little or no energy recovery. Although there is extensive use of energy recovery technologies in these countries, they do generally achieve higher recycling rates.

The UK were ranked in the lower segment of the table, however, this is due to the relatively limited use of energy recovery, although more sites are planned and gradually being built and becoming operational.

Although RECOUP does question the consistency of data reporting across the EU as there is no single reporting measurements used to compare nations on a like-for-like basis, it does provide a useful overall indicator of the approaches to managing post-consumer plastics packaging in the EU.



Plastic Packaging Placed on the Market

The UK consumption of plastics is considerable, with an estimated 3.7 million tonnes [Source: WRAP, Plastics Market Situation Report (Spring 2016)] used each year. Packaging is the main source of plastic consumed, accounting for approximately 2.2 million tonnes with non-packaging plastic estimated to be 1.5 million tonnes.

(Placed on the Market) - 'POM'

The quantity of plastics packaging that is placed onto the market and consumed in households is a key component to providing clarity on how successful collections are performing and the opportunities that exist to collect more material.

Collection rates – the percentage of available plastics packaging that is collected for recycling – provide an estimated snapshot of how well the UK are performing in collecting plastics packaging for recycling. When these rates are calculated the collection tonnage is compared against the best available estimate of plastics packaging placed onto the market (POM) and packaging trends (% growth per year). Consequently, depending on the POM data used and the collection levels this means the percentage recycling rates will change over and above the actual changes in reported collection quantities.

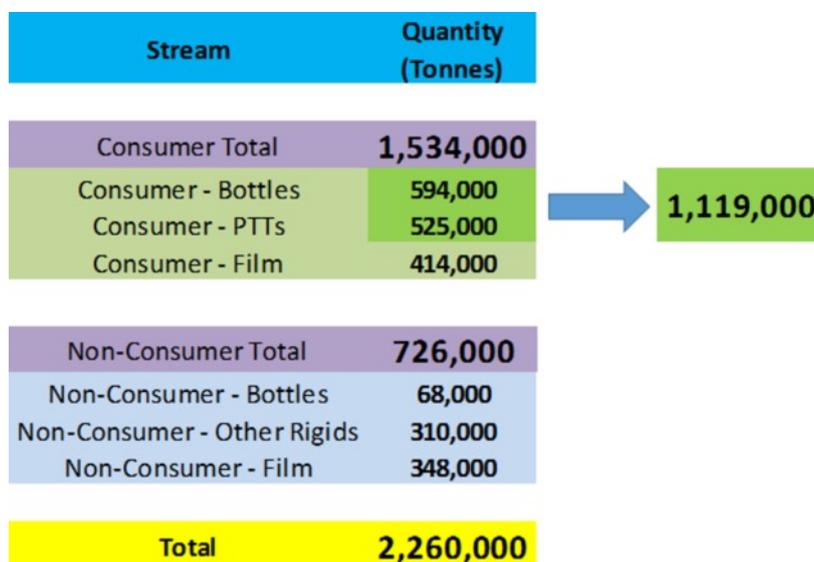


FIGURE 42 – CONSUMER PLASTICS PACKAGING PLACED ON THE MARKET (POM)

Plastic Packaging Market Study (Plastic Flow) 2014

RECOUP always use the most up-to-date best available evidence to calculate plastics packaging POM and thus the UK recycling rates for plastic packaging.

In December 2014 a project commissioned by Valpak Limited and Defra was published to provide support for plastic packaging material flow estimates in Defra's packaging policy work and also review the implications of various scenarios for future recycling rates to 2020. Titled *Plastic Packaging Market Study (Plastic Flow) 2014* and based on 2013 data, the quantities of consumer plastic packaging POM were calculated using retail sector sales data and packaging usage for plastic packaging used.

This report estimated the plastics packaging POM for the UK was **2,260,000 tonnes**, with this overall figure split between **1,534,000** by consumers (household) and **726,000** for non-consumer (non-household). This split is defined as:

- **68%** of the total quantity of plastics packaging is from household sources – food, drink, groceries, body care, clothing, DIY sold by supermarkets and retailers
- **32%** is from other sources (non-consumer) – food and drink from the hospitality sector, plastic packaging discarded by retailers back of store, and plastics packaging used by the construction, manufacturing and agricultural sectors

There is not enough data to provide a UK wide picture of recycling of plastic film, therefore the Survey focusses on rigid plastic packaging used by households in the UK. The total bottles consumed through the household stream is **594,000** for plastic bottles and **525,000** for plastic pots, tubs and trays.

	LDPE / LLDPE	HDPE	OPP	PP	PET	PS	PVC	Other	Grand Total	Grand Total (%)
Film Total	108	104	12	69	44	1	4	71	414	27%
Rigid Total	6	188	0	121	708	50	39	7	1119	73%
Bottles	1	188	0	5	397	0	2	0	594	39%
Consumer PTTs	5	0	0	116	311	50	37	7	525	34%
Grand Total	114	293	12	190	752	51	44	77	1534	100%

FIGURE 43 - CONSUMER PLASTICS PACKAGING CONSUMPTION BY FORMAT AND POLYMER TYPE

Plastic Packaging Placed on the Market

Plastics Packaging Consumption Trends

Plastics packaging POM trends are estimates and are subject to annual changes, with between 0% and 3% per annum growth typically being debated. With RECOUP agreeing with Valpak and the National Packaging Waste Database (NPWD) for the 2015 Survey there was 0% annual growth, there is no evidence to suggest this has changed.

Polymers in Plastics Packaging

The new data from *Plastic Packaging Market Study (Plastic Flow) 2014* does not break down the plastic packaging formats by polymer. However, a polymer breakdown was completed in the *Plastics Packaging Composition 2011* report, which was produced in January 2013, when Valpak and WRAP produced a suite of reports around plastics packaging POM and composition, long-term recycling and carbon footprint performance and projections for meeting the 2017 plastics packaging recycling target.

Using the data from *Plastic Packaging Market Study (Plastic Flow) 2014* and using the percentage polymer composition breakdown outlined in *Plastics Packaging Composition 2011*, it is possible to estimate the flows of polymers through the household stream using the plastic packaging POM data (see Figure 45):

It should be noted that the previous polymer composition data had two additional plastic packaging formats in addition to bottles and pots, tubs and trays – ‘consumer closures’ and ‘other’.

The components of plastic packaging can be allocated to a number of different polymers and rigid or film packaging depending on the pack. A good example is water bottle shown below:



It should be noted the plastic packaging POM data doesn't include any tonnage for residue i.e. fluid or food left in the packaging.

Acknowledgements and Figure Summary

Acknowledgements

The results and opinion from the Survey highlights areas where more work is needed. Through the work of RECOUP, its members, the Board, and through RECOUP's communication channels we can influence policy and strategic development and change. RECOUP would also like to acknowledge the support from all its valued members which has allowed us to cover the costs of completing this work.

RECOUP would like to thank all the Local Authority recycling scheme managers and their service contractors who took the time to respond to our Survey. Particular thanks for additional information and case studies provided go to Bury Council, Falkirk Council, South Tyne & Wear Waste Partnership (STWWMP), CastlePoint Borough Council, and Somerset Waste Partnership. Additional acknowledgements go to RECOUP member Nestle Waters for providing their plastics recycling schools programme case study.

The Survey is supported by the Local Authority Recycling Advisory Committee (LARAC), and RECOUP would like to acknowledge this support and influence it has in engaging with Local Authorities to produce such comprehensive data and information.



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RECYCLING OF USED PLASTICS LIMITED (RECOUP)
Registered Charity No: 1072029 & Company Registration No: 2435729
1 Metro Centre, Welbeck Way, Woodston, Peterborough, UK, PE2 7UH
t: +44 (0)1733 390021 e: enquiry@recoup.org w: www.recoup.org



@Recoup_UK
@pledge4plastics