

Rolling out plastic film collections to all households in England

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V0.2

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Disclaimer

The findings presented reflect the information identified during the project and are accurate to the best of our knowledge at the time of writing. As the scope was time bound, it is possible that relevant information exists which was not identified within the allocated research period, and additional or more recent data and market developments may emerge subsequently. This report should therefore be viewed as a time limited assessment based on the parameters of the commission.

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1 Executive Summary

The Simpler Recycling regulations¹ require all English local authorities to collect plastic bags and film from every household (including communal properties) by 31 March 2027.

This report quantifies the material flows and costs, assesses infrastructure readiness, and sets out the implications for councils. It draws on data from Valpak's packaging database², the findings from the FlexCollect project³, analysis of the WRAP LA Portal⁴, information from council websites, stakeholder interviews and detailed cost modelling.

To assist the reader, a glossary of plastics terms and acronyms is provided in Appendix A, with a more general glossary and list of acronyms in Appendix B.

1.1 Key findings

Current UK reprocessing capacity is insufficient to handle the step-change in tonnage that will arise when plastic film collections are required to be introduced under Simpler Recycling from end March 2027.

- 1. Scale:** An estimated 770 kt of film is placed on the market annually in England, including both household and commercial sources, and 392 kt enters household waste streams (51 per cent of the total). An estimated 14 per cent of household film is non-packaging film.
- 2. Recycling:** Currently, an estimated 15 kt (4 per cent) is collected for recycling from households by councils and less than 5 kt (1 per cent) from front of store recycling. Under Simpler Recycling, initial household capture by councils is estimated to rise to 96 kt (24 per cent), with further rises in future years. This equates to an average yield of 3.8 kg per household per year.

¹ Defra (13 May 2025), [Simpler recycling: household recycling in England - GOV.UK](#).

² Valpak (5 June 2020), [The Uniqueness of our EPIC Database](#).

³ [Flexible Plastic Fund](#) (2022 to 2025), [Household collections — Flexible Plastic Fund](#).

⁴ WRAP (2021-24), [WRAP LA Portal](#). Provides access to data on local authority recycling and waste schemes in the UK, including performance benchmarks for kerbside dry recycling and residual collections.

3. **Recyclability:** Approximately 51 per cent of film collected in household waste streams is estimated to be recyclable, with a further 25 per cent potentially recyclable, depending on format, and 24 per cent is not recyclable.
4. **Infrastructure:** Approximately 145 kt of film sortation and 139 kt reprocessing capacity exists in the UK, although it is generally not dedicated to household film, with commercial sources providing larger sheets and higher quality, cleaner and more homogeneous film. It may also be used for rigid plastics rather than flexibles. Planned additional reprocessing capacity may reach up to an estimated 290 kt, but this is uncertain and many operators may continue to prioritise recycling of commercial film or rigid plastics.
5. **Collections:** Film collected in bags facilitates simpler separation from other recycled materials and reduces wind-blown litter, particularly for multi-stream (kerbside sort) collections involving kerbside boxes. Some materials recovery facilities (MRFs) can now extract loose film from commingled streams at scale, but capability varies geographically and contractually.
6. **Costs:** Indicative England-wide total costs for collection, sorting and disposal range from £82m to £301m per year. This includes estimated charges that will apply under the Emissions Trading Scheme (ETS) from 1 January 2028 and which significantly increase incineration costs for film (and other plastics) left in residual waste. If film is collected for recycling but not recycled, this will increase costs further.
7. **Markets:** Commercial film competes with and often displaces household film at plastic sorting and reprocessing facilities due to quality and homogeneity; domestic end markets for post-consumer film remain limited.
8. **Policies:** Current policies have been insufficient to close the viability gap for recycling of household film, leading to recycling infrastructure not being developed or closing.

1.2 Implications for councils

- Mandatory household film collections will add significant costs to local authorities. These additional costs may not be fully offset by EPR payments, particularly for non-packaging films, which make up 14 per cent of film in household waste arisings.

- Bagged systems are the most reliable approach for collection of plastic film, especially for kerbside sort, but supplying bags is expensive and adds additional film to the stream.
- Existing contracts and availability of MRFs in a convenient location will determine the practical feasibility of collecting film loose rather than bagged.
- There is a high likelihood that there will be insufficient recycling infrastructure to handle the additional film collected for recycling from end March 2027. This has reputational risks for councils as well as cost risks.
- Securing contracted access to plastic film sorting and reprocessing infrastructure expansion is essential to avoid needing to send film collected for recycling to disposal instead, further adding to costs.
- ETS extension to waste incineration from 1 January 2028 strengthens the case for recycling, although not sufficiently to make it more expensive than recycling, and ETS increases the financial cost for any plastic not recycled that has to be sent to incineration instead.
- Councils collecting commercial waste should consider the additional cost implications that recycling of plastic film will incur, and the disposal costs particularly after ETS is extended to waste incineration from the start of 2028.
- Ongoing monitoring of markets, recycling technology, MRF capabilities, and policy is critical while councils procure and implement services.

1.3 Points for councils to consider ahead of the deadline

- Choose between bagged and loose film collections based on collection type and capability of the contracted MRF or of accessible MRFs during procurement.
- Consider procuring sacks with recycled content for film collection and other council services, preferably tied to a processing contract for collected film.
- Prepare for MRF contract variations and potential pass-through of costs.
- Seek a secure outlet for collected plastic film via the MRF or PRF contractor.
- Ensure fibre quality is protected where loose film is collected in commingled streams that include fibres.
- Budget for ETS-driven disposal costs.
- Invest in clear resident communications and contamination control.

1.4 Recommendations

- Success of plastic film recycling depends on rapid expansion of UK sorting and reprocessing capacity and stable, long-term policy signals that support viable end markets.
- A plan is needed for dealing with the shortfall in recycling capacity in 2027, to avoid delays to the roll-out of film recycling.
- Council cost modelling needs to take account of the extra cost of flexible plastics, particularly the unfunded non-packaging film.
- Clear mandatory recyclability labelling on packaging would provide improved guidance for residents, promote recycling and reduce contamination with non-target materials.
- A combination of mechanisms may be required to help close the viability gap for recycling of household films:
 - A significantly higher EPR fee for flexible plastics when a separate fee is set in 2027.
 - Consider setting separate targets for PRNs for recycling of flexible and rigid plastics.
 - Increase Plastic Packaging Tax to incentivise use of recycled content; ensure imported packaging does not undercut UK recyclers unfairly with false claims of recycled content.
 - Consider strategic support via capital investment, through existing programmes, targeted grants or co-investment, to help accelerate the development of UK sorting and reprocessing capacity
- Producers should continue to move towards more recyclable film formats, which will reduce their modulated EPR fee payments, and use clear recyclability labelling even when not mandatory.
- Producers should consider making long-term commitments to use UK-recycled polymers to help de-risk future infrastructure.
- Retailers can complement kerbside systems by retaining front-of-store collections for the more difficult to recycle multi-layered films.
- Recycling sorters and reprocessors should continue to work with PackUK to ensure the Recyclability Assessment Methodology and ratings align with practice.

2 Introduction

2.1 Context

The Simpler Recycling regulations require councils in England to collect plastic film and bags for recycling from 31 March 2027. In 2023/24, only 45 (15%) of 294 waste collection authorities (including unitary councils) in England collected plastic film from some or all households.

Ten of these authorities were operating trial schemes that were funded as part of the FlexCollect project⁵. These tested different types of collection, frequencies and containment and across varying demographics, with findings published in the final FlexCollect report in September 2025⁶. This report builds on the findings of that project, testing out its findings with local authorities, MRF operators, plastic sorters and reprocessors to build a guide specifically for a local authority audience.

A clear problem is the current low levels of recycling infrastructure and end markets for post-consumer plastic film in the UK, with plastic recycling facilities closing rather than opening due to lack of financial viability in current market conditions.

The cost to local government of household plastic film recycling will be funded by payments from packaging producers, through the packaging Extended Producer Responsibility (pEPR) scheme. Payments to councils are calculated through the government's Local Authority Packaging Cost and Performance (LAPCAP) model. Defra does not expect to provide any additional funding to councils for duties relating to packaging on top of the EPR payments. Councils have concerns about costs that will be passed back to them from contractors and third parties as a result of this change in the law.

This report quantifies the amount of plastic film collected by local authorities in recycling and residual waste and the subsequent costs for sorting and processing recycle and disposing of residual waste to inform discussions with Defra.

⁵ [FlexCollect](#) project.

⁶ Flexible Plastic Fund FlexCollect Project (September 2025), '[The future of recycling flexible plastic packaging in the UK](#)', Final report and blueprint.

2.2 Aim and components of this report

This report was commissioned to analyse the impact on local authorities in England of the roll out of flexible plastic recycling under Simpler Recycling. This included reviewing existing data and evidence, identifying and analysing gaps in data and assessing the risks the data gaps create for councils in planning, operations, and costs.

The components of the report cover:

- **Volume and composition** (Sections 4.1 and 5.1): how much packaging material is used in the UK and how much is likely to end up in household recycling and in household residual waste.
- **Recycling capacity and market** (Sections 4.2 and 5.2): an assessment of the current and planned plastic film recycling infrastructure in the UK and abroad and the end markets, and the role that government, industry and other stakeholders could play in creating end markets.
- **Costs** (Sections 4.3 and 5.3): comprehensive modelled costs of collections, handling, sorting and recycling for local authorities in England. This includes costs of disposal if sufficient infrastructure is not available to recycle plastic film. For film sent to energy from waste, RDF or SRF, this also takes account of the carbon price of the film under the extension of the carbon emissions trading scheme to the waste sector from 1 January 2028.
- **Implementation** (section 6): practical guidance is provided for councils on how to prepare for mandatory collection and treatment of plastic film.

Gaps in data were probed through engagement with local authorities and the waste industry to sense check existing data and identify factors that could have a significant impact on costs. Remaining gaps and data uncertainties are noted in this report under the relevant sections and highlighted in the report conclusions.

It should be noted that the findings presented are accurate to the best of our knowledge at the time of writing. Infrastructure and costs will continue to change as film collections roll out and the market develops.

3 Background

3.1 Simpler Recycling and the types of plastic film to be collected at the kerbside

Under Simpler Recycling, plastic film packaging and plastic bags must be collected from all households in England, including flats, from 31 March 2027. This is required by the Separation of Waste (England) Regulations 2024⁷, which amends the Environmental Protection Act 1990, specifying which materials must be collected at the kerbside. An extract of the parts relevant to plastic film is provided below.

Part 4 Recyclable household waste and recyclable relevant waste within the plastic waste stream

4.—(1) ...the prescribed descriptions of recyclable household waste and recyclable relevant waste in the plastic waste stream are...

(e) polyolefin plastic film packaging and plastic bags which contain a minimum of 90% by weight of mono-polyethylene, mono-polypropylene, or both.

(2) Paragraph (1)(e)—

(a) includes any polyolefin plastic film that has been metallised through vacuum or vapour deposition;

(b) does not include any polyolefin plastic film which contains aluminium foil or paper.

(3) The descriptions of waste prescribed in sub-paragraph (1) do not include—

(a) any plastic which contains any pigment which prevents the item from being near-infrared detectable;

(b) any item which does not measure a minimum of 40mm by 40mm.

Citation, commencement and extent

1.—(5) In Part 4 of Schedule 1, paragraph 4(1)(e) comes into force on 31st March 2027.

⁷ [Separation of Waste \(England\) Regulations 2024, Schedule 1, Part 4](#), (SI 2024/666).

Polyolefins include both polyethylene (PE) and polypropylene (PP), which are produced mainly from oil and natural gas by polymerisation of ethylene and propylene, respectively. Flexible plastic packaging forms include variants such as LDPE, LLDPE, HDPE, OPP and BOPP. LDPE forms a very soft, flexible, slightly stretchy plastic that does not spring back when scrunched and is used for carrier bags and bread bags. HDPE tends to be used for thicker flexible plastic including cereal box inner bags (as well as for rigid plastics such as milk bottles). PP film can be easily ripped and tends to audibly crinkle when scrunched, feeling less soft than LDPE and HDPE. PP is typically used for plastic film packaging with crimped ends such as wrappers for salads and fruit punnets, pasta and noodles packs, snack bars and crisp packets, with the latter tending to be metallised with a thin aluminium layer.

The regulation does not require the collection of other flexible plastic polymer types such as PET or PVC, unless they form less than 10 per cent of the weight of the packaging and at least 90 per cent is polyolefins. This would thus exclude typical multi-layer films with a PET outer layer, such as many pouches, sachets and snack packaging, as well as ready meal tray lids, which tend to be made of PET, and PVC cling film; consumer cling film is now to be made of LDPE, but PVC cling film is still used in catering and may end up in domestic streams if used around sandwiches and other goods taken home.

Film that has been metallised through vacuum or vapour deposition is specifically included, as long as the film is polyolefin; typical examples are crisp packets and some snack packets. However, film which contains aluminium foil is excluded; this includes many pouches and sachets, coffee packs, and some snack packaging such as for nuts.

Table 1 provides a summary of plastic film packaging types, their typical uses, the requirement for collection or not under Simpler Recycling, and their current recyclability in the UK based on discussions with PRF operators and reproprocessors and taking into account guidance under the Recyclability Assessment Methodology⁸ for packaging EPR payments (see also section 3.11) and RecyClass Design for Recycling Guidelines⁹.

⁸ Defra (4 September 2025), [Recyclability assessment methodology: assessing materials - GOV.UK](#).

⁹ RecyClass (2026), [Packaging Design for Recycling Guidelines](#).

Table key:

✓: accepted

?: depends

X: not accepted.

Materials with ✓ in the recyclability column can be recycled, but whether they are actually recycled will depend on market economics. Materials with X in the recyclability column will most likely be disposed in residual waste (e.g. to SRF) if they reach reprocessors rather than recycled, although some may be downcycled into products such as plastic lumber.

Table 1: Summary of plastic film packaging types and recyclability

Material	Example uses	Simpler Recycling	Recyclability
Mono-material clear/ lightly printed PE film	Bags for fresh vegetables; bubble wrap	✓	✓
Jazz (coloured) PE/ printed PE film	Carrier bags; bags for bread, cereals, frozen food and deliveries	✓	✓
Mono clear PP/ lightly printed film	Wrappers for salads and fruit punnets	✓	✓
Jazz (coloured) PP/ printed PP film	Multi-pack bags; pasta and noodles packs	✓	✓
Metalized PP film	Crisp packets; some snack bar packaging	✓	?
Film with EVOH barriers/ coatings ^a	Cheese packets, bacon packets	✓	? ^a
Small film items (<40mm x 40mm)	Sweet wrappers, bottle film seals	X	X
PP nets	Fruit nets	X	X ^b
Black film	Bin bags	X	X
PET film	Ready meal lids, tamper-proof seals	X	X
PVC film	Cling film (some)	X	X
Multi-layer film with PET layer	Clear and metallised pouches, sachets and snack packaging	X	X
Film with aluminium foil layer	Stiff 'silver' pouches ^c , sachets, coffee packs and snack packaging, blister packs	X	X
Film with paper layer	Paper pouches used for a premium 'rustic' or supposedly 'eco' finish	X	X

Material	Example uses	Simpler Recycling	Recyclability
Oxo-degradable, biodegradable or compostable film	Kitchen caddy liners, some carrier bags	X	X

Table notes:

^a Red rated under the Recyclability Assessment Methodology if the EVOH barriers/coatings exceed 10 per cent of the weight of the packaging.

^b Due to metal clips as well as risk of nets snagging on equipment.

^c Some drinks pouches (e.g. Capri Sun) have transitioned to mono-material polypropylene, while most are made from laminated layers of PET (outer), aluminium (barrier layer) and PE (inner).

It was determined for this report (see section 5.1.5) that approximately 51% of film collected in household waste streams is estimated to be recyclable, with a further 25% potentially recyclable, depending on format, and 24% is not recyclable.

Note that, since the definition of flexible plastics in the Separation of Waste (England) Regulations 2024 is “plastic film packaging and plastic bags”, this does not appear to include nets. They would also tend to be excluded under “any item which does not measure a minimum of 40mm by 40mm” since when empty they typically occupy less than this space in at least two out of three dimensions. Nets also risk being snagged on sorting equipment, and the metal clips typically used lead to them being rejected by sorting equipment.

Note that some plastic film is sold as a product rather than being packaging around products – examples are bin bags, cling film and freezer bags. Packaging EPR does not apply to these products so fees are not collected from producers for these for passing on to local authorities.

Figure 1 provides WRAP’s recommended list of flexible plastics to be collected for recycling, from its template kerbside instruction leaflet¹⁰. WRAP describes the collections as “plastic bags and wrapping recycling”.

¹⁰ WRAP (24 October 2025), [Kerbside plastics bag collection guidance & templates](#).

Figure 1: WRAP's recommended list of plastic bags and wrapping to be collected for recycling

	All plastic bags carrier bags salad/fruit/vegetable bags frozen food bags bread bags cereal bags flower bags		Cheese, fish, and meat wrapping
	Confectionary wrappers chocolate sweets biscuits cakes ice cream and chewing gum wrappers		Outer layer bags and wrapping multipack toilet and kitchen roll magazine and newspaper wrapping
	Foil lined packaging crisp/snack packets coffee bags		Plastic film and sleeves removeable film lids plastic sleeves for bottles and jars
			Bubble wrap and cling film
			Fruit and vegetable net bags

Local authorities may choose to not include foil-lined packaging (e.g. coffee packs), net bags and removable film lids (which tend to be PET), as collection of these is not required under Simpler Recycling. However, packaging with a metallised layer such as crisp packets are required to be collected. Small wrappers (<40mm x 40mm) can be excluded, such as chewing gum wrappers.

The kerbside instruction leaflet also includes a list of items that will not be accepted, as shown in Figure 2¹¹. (This guidance is for bagged collections.) Note that pouches, sachets, blister packs, compostable or biodegradable bags and wrapping and disposable gloves are listed for exclusion – none of these are mandated for collection under Simpler Recycling. Balloons and disposable gloves do not need to be collected as they are neither plastic film packaging nor plastic bags.

¹¹ WRAP (24 October 2025), [Kerbside plastics bag collection guidance & templates](#).

Figure 2: WRAP's recommended list of items that will not be collected for recycling in a collection of plastic bags and wrapping



3.2 Recycling film from commercial sources

Simpler Recycling legislation also applies to commercial and industrial premises that produce waste that is similar in nature and composition to household waste, such as offices, shops, cafes, restaurants, hotels, food and drink manufacturing, and public transport. Non-domestic premises such as schools, universities, hospitals and residential homes are also required to comply with Simpler Recycling requirements.

The requirement to collect film applies to these premises from 31 March 2027, the same date as for households. Thus recycling companies will be dealing with an influx from film from commercial and household sources at the same time.

Plastic sorters and reprocessors prefer commercial film due to its larger size, homogeneity, more easily recycled polymer types (PE and PP), and low levels of contamination, so plants have tended to be developed to deal with film from commercial streams rather than from household streams. Thus local authorities may be out-competed by commercial film and struggle to find outlets willing to take household film, unless spare capacity is available that can manage it.

3.3 Recycling of plastic film in local authority collections

3.3.1 Stages of recycling

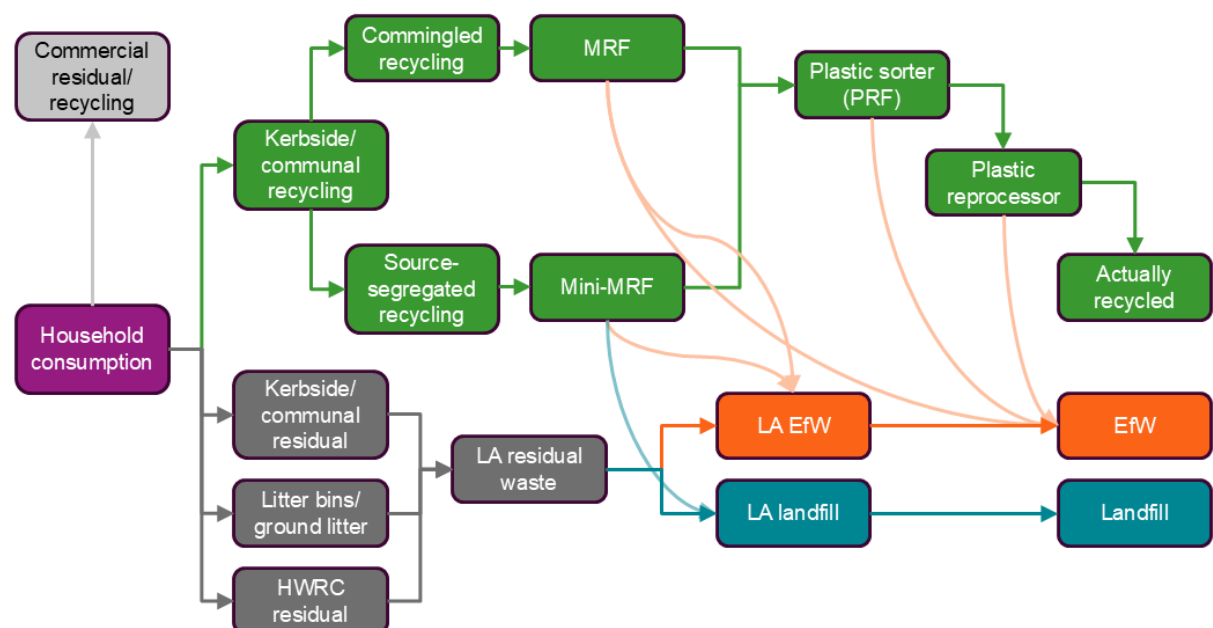
Figure 3 shows the recycling pyramid for consumer plastic film when it is collected for recycling by local authorities. The stages are described below.

Plastic film is used to package consumer goods that are placed on the market (POM). These goods are purchased and consumed and the packaging is then discarded as part of local authority collected waste (including in kerbside or communal collections and in litter bins and ground litter) or in commercial streams (e.g. if disposed in the workplace or during travel on public transport).

Where kerbside or communal recycling collections are available, a proportion of the film is separated for recycling by householders and placed in kerbside recycling containers, where it is collected for recycling by the council. The plastic film is separated from other recycling streams in a MRF (for commingled collections) or a mini-MRF (at the depot, for segregated collections). The mixed film is sent to a PRF (plastic recovery facility), which sorts, grades, and prepares the plastic into separate fractions or polymers for onward use at reprocessors, usually in the form of a pellet. This is counted as post-consumer recycled content for the purposes of the Plastic Packaging Tax (see Glossary for further information on PCR and the Plastic Packaging Tax).

At each stage, losses can and do occur, as indicated by the pyramid, although it is merely representational and not proportional to the amounts at each stage.

This is shown as a flow of materials in Figure 4. Consumer behaviour dictates the flow of materials: whether materials end up in recycling or residual waste. Plastic film recycling from household sources will need to compete with film from commercial sources for recycling capacity – sorting of recyclates in MRFs, plastic sorting at PRFs, and at plastic reprocessors.

Figure 3: Consumer recycling pyramid for plastic film**Figure 4: Flow diagram for consumer film**

3.3.2 Options for adding flexible plastic to household collections

Previous work conducted via the FlexCollect project concluded that the best way to collect plastic film for recycling is to provide single-use plastic collection bags to all households, who fill them and tie the tops and deposit in recycling collections.

Through discussions with MRF operators and local authorities that are negotiating with them, it is evident that MRFs are increasingly able to deal with loose plastic film and segregate it from the commingled recycling stream rather than requiring film to be bagged. Some MRFs use automatic sorting involving Optical Near-Infrared (NIR) scanning to identify the target polymer type and use air jets to selectively move material. Manual picking, where operatives are employed to carry out a visual check and remove items by hand, is also used, at the front end and on the fibre line, to ensure a clean fibre stream. Both manual picking and automatic sorting may be used. MRFs that have not been targeting plastic film for recycling already remove it from the recycling stream, usually via manual picking, since many householders deposit film in their recycling stream as wish-cycling (hoping that it will be recycled) or because they genuinely believe it is a target material. Thus the changes required at MRFs are to deal with the volume of plastic film likely to end up in the recycling stream rather than as a new material to be segregated out. Many MRFs are investing in automatic sorting equipment to deal with this volume effectively and to help them win local authority contracts.

Plastic bags will need to be provided by local authorities for commingled collections if they are not able to access MRFs that can segregate out film sufficiently from commingled streams, either since they are under contract to a MRF without this capability, or there are none within a reasonable distance if procuring a new contract.

Where local authorities operate multi-stream (kerbside sort) collections, they will likely need to provide single-use plastic collection bags, since loose plastic film would likely be blown from kerbside boxes while awaiting collection and while being emptied into collection vehicles. Although lids are often provided for boxes, these tend to be lost or break or not clipped on tightly enough to prevent wind blowing out light materials.

For multi-stream collections, the recommendation is to collect the bags of plastic film in the plastic and metals compartment, since that has a large volume and light

compression can be used. The collection bags will need to be separated from this stream, either at the mini-MRF when the metals are separated from the rigid plastics, or at the PRF, after being baled with rigid plastics.

3.3.3 Sorting at PRFs

After separating out collection bags containing film or extracting film from a commingled stream, the film must be sent for sorting at a PRF to separate it into key material grades for onward recycling. For film from household sources, while clear PE film is the most desirable, it is often sorted by PRFs into a mixed PE film category with coloured (jazz) PE, since it cannot compete financially with clear film from commercial or industrial sources. The latter tend to be in large pieces, have no or very little printing, and be collected in a homogenous clean stream with no or little contamination. In contrast, clear PE film from household sources is often in very small pieces and likely to be contaminated, either with residue left on by householders or via cross-contamination when collected with other materials. This is particularly the case if film is collected in commingled streams and compacted in a refuse collection vehicle, which squeezes liquid deposits out of containers onto other items.

3.4 Processing capacity and economics

There is as yet not much plastic film sorting and reprocessing capacity in England, or the rest of the UK. This is mainly because it is not yet able to compete financially with film made from virgin sources, i.e. oil. This is particularly the case for plastic film that will come into contact with food, which requires a very high degree of purity with no contaminants that would be harmful to health. This cannot be obtained from mechanical sorting alone but needs dissolution recycling or chemical recycling to reduce it to its constituent polymers or monomers and remove contaminants. Dissolution recycling and chemical recycling plants are only just being developed at commercial scale, with mass balance for chemical recycling only recently approved for recognition of post-consumer plastic recycling in the Plastic Packaging Tax from April 2027 (see section 3.11).

For post-consumer film recycling to be viable financially requires:

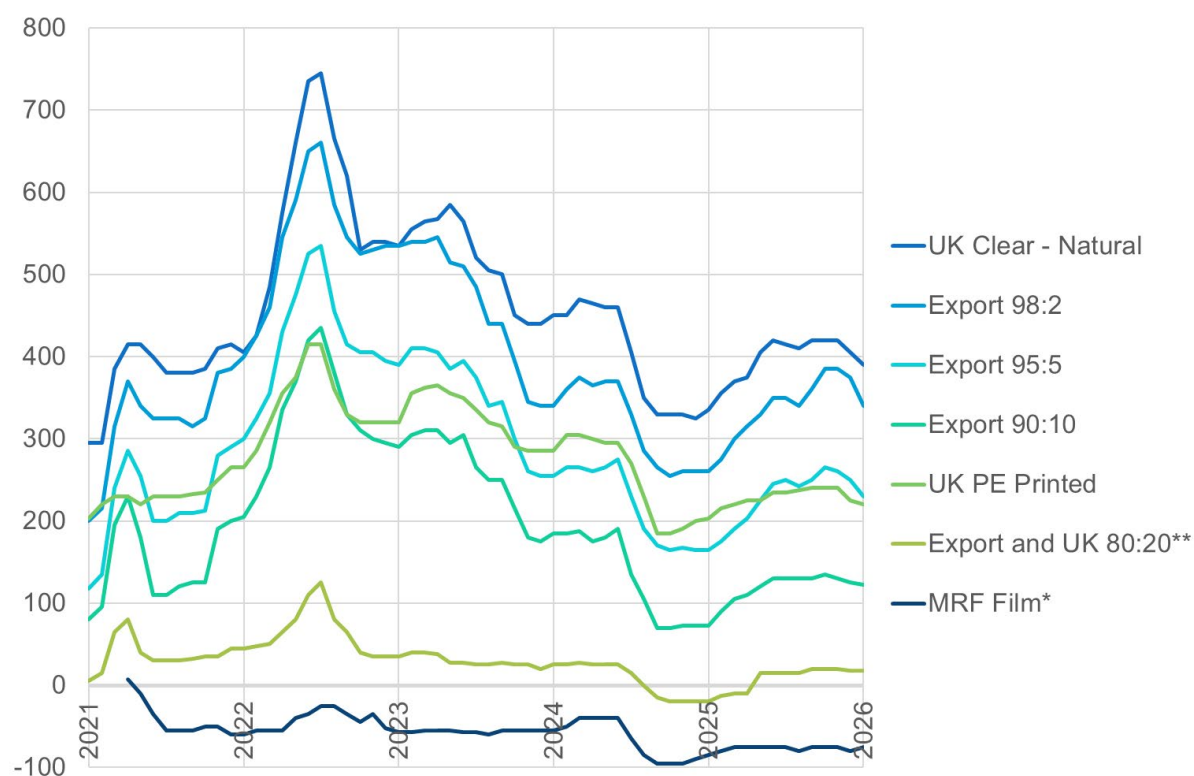
1. Capacity at MRFs to separate out plastic film, whether using bags or not (manual pickers, optical/AI sorters, chutes, storage bays).
2. Capacity at plastic film sortation facilities (PRFs) to sort efficiently into the required grades.
3. Capacity at plastic reprocessing plants to clean further and produce pellets or products.
4. Demand in the market for recycled products.

The three types of facilities need to be able to process the film cost-effectively so that the output recycled plastic pellets or products can compete pricewise with pellets and products made from virgin sources. However, recycled plastic still tends to be more expensive than virgin plastic, resulting in consumers needing to pay a premium for products made with recycled content, or producers needing to be incentivised to use recycled content or charged more for using virgin plastic, such as via the Plastic Packaging Tax.

Figure 5 shows the monthly average spot prices for plastic film over the last five years, obtained from LetsRecycle¹². MRF film refers to film that has been sorted at a MRF but not at a plastic sorting plant (PRF). It can be seen that MRF film has a negative price – sorters/reprocessors must be paid to take it for sorting and reprocessing. This contrasts with incomes provided by the sale of other recyclates from a MRF and will be reflected in net costs paid by local authorities to MRF operators – incomes will decrease and net costs will increase when film is added to commingled streams.

The other categories shown in Figure 5 are for film that has been sorted by polymer type at a plastic sorting plant (PRF), with the export grades indicating the maximum amount of non-target polymer allowed in the bales. The sorted grades can achieve high prices, with clear PE achieving the highest price and the prices for other grades depending on the non-target content. Prices can be volatile, depending on oil pricing (used to create virgin plastics), demand for plastic, the demand for recycled plastic in particular, and PRN prices (see section 3.11).

¹² LetsRecycle.com (2026) [Plastic Film](#).

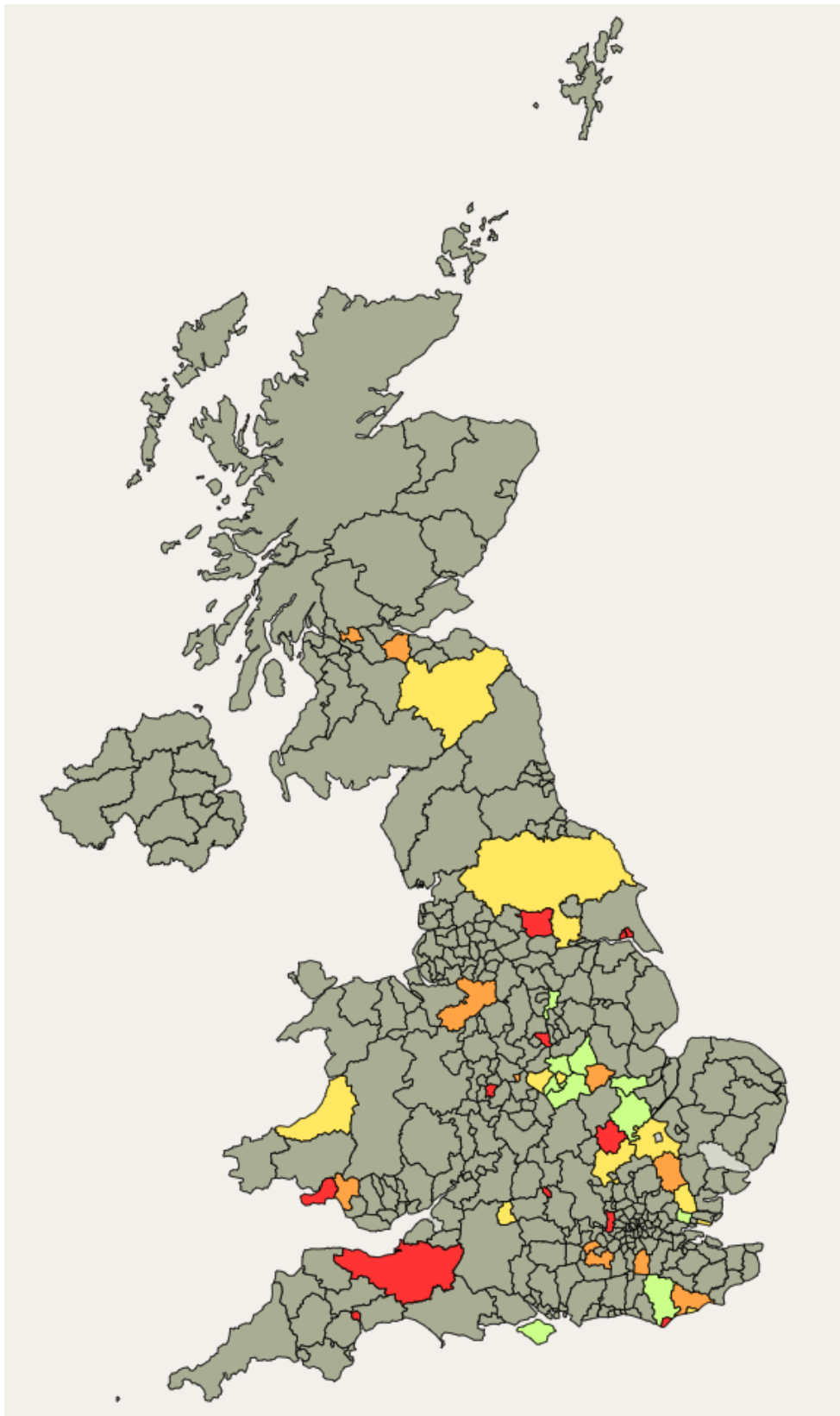
Figure 5: Prices for plastic film (£ per tonne)

3.5 Current plastic film collections by local authorities

The map in Figure 6 is the local authority performance heatmap from WRAP's LA Portal¹³ for councils in the UK recorded as providing plastic film collections to residents in 2023/24 (the latest currently available). Councils are shaded as follows:

- Green for those in the top 25 per cent for plastic film yields compared with councils across the UK.
- Yellow for those in the top 50 per cent (but not top 25 per cent).
- Orange for those in the bottom 50 per cent (but not bottom 25 per cent).
- Red for those in the bottom 25 per cent.
- Grey for councils recorded as not providing collections of plastic film in 2023/24.

¹³ WRAP [LA Portal heatmap](#) for plastic film recycling in 2023/24.

Figure 6: Councils providing plastic film collections in 2023/24

Source: [WRAP LA Portal Heatmap](#) for plastic film recycling in 2023/24.

UK nations other than England are included in this map to indicate the current levels of plastic film recycling and the potential for competition for infrastructure capacity as film collections are rolled out. All four nations have committed to require recycling collections of plastic film and flexible packaging from both households and businesses by 31 March 2027.¹⁴

According to information extracted from the WRAP LA Portal¹⁵ and subsequently corroborated using council website pages, combined with details from the FlexCollect project, in the UK in 2023/24 there were 72 household recycling collection schemes which accepted plastic film, in 52 local authorities. (Many authorities operate more than one recycling collection scheme, for example both kerbside and communal.) Of these, 63 schemes were in England, in 45 local authorities (87 per cent of the total waste collection and unitary authorities). This includes the 10 authorities operating trial schemes as part of the FlexCollect project. More detailed information is provided in Table 2, for the UK overall and for England. The number of households provided with plastic film collections is also shown.

Table 2: Summary of plastic film recycling schemes in 2023/24

2023/24		UK	England
Local authorities*	Total	360	296
	Film accepted (in at least one scheme)	52	45
	Per cent of authorities	14.4%	15.2%
	Film not accepted	308	251
Recycling schemes	Total	683	555
	Film accepted	72	63
	Per cent of schemes	10.5%	11.4%
	Film not accepted	611	492
Households	Total	30,089,645	25,288,820
	Film accepted	3,260,470	2,757,829
	Per cent of households	10.8%	10.9%
	Film not accepted	26,829,175	22,530,991

¹⁴ Scottish Government (2026), [Duty of Care: Code of Practice for managing controlled waste \(2026\) consultation](#).

¹⁵ WRAP (2026), [Scheme Search | WRAP LA Portal](#).

The schemes in operation which did accept plastic film had the breakdown in terms of collection type shown in Table 3. Definitions for the different collection types are provided in the Glossary in Appendix B.

Table 3: Summary of schemes accepting plastic film by collection type

2023/2024	UK			England		
	Kerbside	Communal	Both/ Unknown	Kerbside	Communal	Both/ Unknown
Commingle						
Schemes	14	8	22	14	8	20
Households	535,547	58,540	1,490,382	535,547	58,540	1,425,528
Two-Stream						
Schemes	6	2	8	4	2	4
Households	265,218	4,982	387,829	127,241	4,982	199,019
Multi-Stream						
Schemes	9	3	-	8	3	-
Households	486,200	31,772	-	375,200	31,772	-

Because “plastic film” and “flexibles” are umbrella terms covering a range of formats, there was a wide variation in what local authorities stipulated could be included in household plastic film collections. This is summarised in Table 4.

Table 4: Plastic film and flexible plastic types accepted in local authority collections

Packaging type	UK		England	
	Schemes	Households	Schemes	Households
Plastic film	72	30,089,645	63	25,288,820
Carrier bags	71	3,167,253	63	2,757,829
Food film	63	2,772,973	54	2,270,332
Bubble wrap	47	1,981,564	41	1,609,724
Cling film	47	1,812,852	41	1,441,012
Fruit nets	40	1,360,877	36	1,193,254
Confectionary wrappers	20	779,832	17	648,969
Crisp packets	19	712,433	16	581,570

WRAP's recommended list of materials to be accepted¹⁶ is shown in Figure 1 and discussed in section 3.1.

3.6 FlexCollect project

3.6.1 Overview

The Flexible Plastic Fund ran the FlexCollect Project¹⁷ to understand how flexible plastic packaging can be collected and recycled at scale through kerbside recycling services. It ran for 3.5 years and involved 10 pilot local authorities, with the aim of providing guidance on how best to collect flexible plastics. The project produced a summary report¹⁸ on its findings.

3.6.2 Pilot programme

The ten participating councils covered urban, rural and suburban areas, and representing all major collection system types:

- Commingled (with all recycling in one combined stream).
- Twin-stream (with one stream commingled and one material type collected separately, usually paper/card or glass).
- Multi-stream (source-segregated, with plastics and metals collected together and other streams collected separately).

Councils trialled using dedicated single-use printed collection bags or, in some cases, loose inclusion within commingled recycling, depending on their MRF capabilities.

The pilots collectively tested:

- operational feasibility
- resident participation

¹⁶ WRAP (24 October 2025), [Kerbside plastics bag collection guidance & templates](#).

¹⁷ [FlexCollect project](#).

¹⁸ Flexible Plastic Fund FlexCollect Project (September 2025), '[The future of recycling flexible plastic packaging in the UK](#)', Final report and blueprint.

- material quality and composition
- sorting performance
- end-market recycling options.

3.6.3 Key findings

1. Collections

- Flexible plastics can be added to all collection systems with minimal disruption.
- Collection bags are the most reliable method, isolating the material and simplifying sorting.
- 40-micron bags are recommended for commingled systems; 20 micron bags can work for source-segregated collections due to lower compaction and handling.
- Residents should not self-supply bags – this led to contamination, lower participation, and inappropriate bags being used.
- Weekly collections produced the highest yield (86 g per household per week), but all systems collected useful quantities.

Projected UK tonnages

Based on pilot results and demographic modelling:

- 150,000 tonnes expected from households in 2027.
- Rising to 200,000 tonnes per year by 2030.

Material quality

Across all pilots, the composition was:

- 82 per cent target plastic bags and wrapping
- 9 per cent non-target recyclable
- 7 per cent non-target non-recyclable
- 2 per cent collection bag material.

The material was generally clean, dry and free of residues, indicating strong resident compliance.

2. Sorting and MRF impacts

- Many MRFs can handle bagged flexible plastics with minor changes such as:
 - additional picking lines
 - extra bays, conveyors, or extraction systems.
- Loose flexibles require significant upgrades, especially where paper and card are present in the DMR stream, to avoid contaminating the fibre stream.
- Evidence from the Sherbourne MRF shows full commingled processing with loose film is possible but less efficient, with greater losses.

Future market shifts may favour loose collection if MRFs invest in advanced sorting technologies.

3. End-markets

Trials showed:

- Mechanical recycling can recover >80 per cent of the material.
- Collected flexibles can be turned into:
 - coloured (jazz) PE and PP pellets
 - rigid PP products
 - flexible PE applications
 - 100 per cent inclusion in plastic lumber.

Small-scale trials indicated suitability for chemical recycling, though commercial capacity did not exist during the trial.

Capacity gap

UK domestic recycling capacity is currently insufficient for projected 2027 demand.

However, multiple new mechanical and chemical recycling facilities are planned or under construction, and spare European capacity may help bridge the gap.

3.6.4 Costs

Example annual cost per household for a 75,000-household authority:

Activity	Cost per household per year
Collection	£3.14 (£1.96 from year 2)
Sorting (picking)	£0.81
MRF modifications	£0.06
End-markets	£2.55
Total	£6.56 (£5.38 from year 2)

Costs per tonne:

Collection + sorting	£1,021
End-markets	£650
Total	£1,671

With 215 billion stock keeping units (SKUs) of plastic film placed on the UK market annually, the cost equates to 0.12p per SKU.

3.6.5 Conclusions

The FlexCollect project report concludes that in their view:

- **Operational feasibility:** Flexible plastics can be integrated into existing recycling systems without major disruption.
- **Resident behaviour:** Residents engage well, producing clean and mostly target materials.
- **Sorting and MRF integration:** Bagged collection is the most viable, though investment will improve MRF performance for loose flexibles.
- **Recycling end markets:** High-quality recycling outcomes are possible, but UK capacity is currently insufficient to meet the demand expected in 2027.
- **Policy readiness:** The project provides a useful evidence base for UK authorities preparing for mandated kerbside collections of flexible plastics.

3.7 Front of store collections of plastic film

Most supermarket chains in the UK currently provide front-of-store take-back collections at their larger stores.^{19,20} These are available during opening hours for any member of the public, without needing to make a purchase, to deposit their flexible plastics for recycling. Current rates of collection are low, estimated for PackFlow to be less than 5,000 tonnes, due to the lack of convenience and hence motivation required of householders to collect and return their flexible plastics. Once collections are widely available at the kerbside, front of store collections are likely to be phased out, unless they are retained to deal with formats that are more difficult to recycle such as pouches and film with foil layers.

3.8 Open-loop/downcycling vs closed-loop recycling

Open-loop recycling is when a material is recycled into a different product or application than its original use. This can sometimes be referred to as downcycling, since the new product is generally of lower quality, value or functionality than the original.

For food-contact film, this typically means film is converted into non-food contact film via mechanical recycling, such as to manufacture bin bags or agricultural films.

Conversely, materials which are recycled back into a product of a similar quality and function, or back into raw materials of a similar quality, may be considered closed loop. Examples are food-contact film which is converted back into food-contact grade plastic film. Closed-loop recycling, while more desirable from a sustainability perspective, is more difficult to achieve than open-loop, particularly for plastic film. This is due to several obstacles such as the prevalence of contamination in post-consumer film, and high costs associated with more advanced recycling technologies²¹.

Chemical recycling is one method by which closed-loop recycling may be more achievable in future. Current technologies consist of solvent-based purification of

¹⁹ The British Plastics Federation (BPF) (updated July 2024), [Consistent Collections of Flexible Plastics](#).

²⁰ WRAP, [Recycle Now recycling locator tool](#).

²¹ Plastics Technology, [Innovations in Closed Loop Systems Revolutionizing Plastic Recycling Technologies](#).

individual polymers, chemical depolymerisation (also known as chemolysis), and feedstock recycling (including pyrolysis and gasification)²². However, each of these technologies faces limitations. For example: purification requires good sortation of plastic into individual polymer types; depolymerisation is only possible on certain polymers such as PET, not PE, PP or PVC; and feedstock recycling is limited by the quality of input materials²³.

3.9 Export requirements – Green List

Some plastic film is currently exported for recycling, although legislative requirements are stringent. Prior to export, plastic film must be sorted sufficiently prior to ensure it consists only of PE, PP and PET, and is not contaminated with PVC or other contaminants. It therefore needs to be sorted in a PRF, or a MRF capable of sorting films, prior to export.

Detailed guidance for exporting waste plastic is available on the UK government website: <https://www.gov.uk/guidance/importing-and-exporting-waste-plastic>.

This states that for shipping waste plastic for recovery in EU and OECD countries, plastic can only be shipped under Article 18 controls (known as ‘green list’) if it meets the requirements of the Basel code B3011. To do this, the waste plastic must be:

- a single polymer plastic or the allowed mixture of polyethylene (PE), polypropylene (PP) and polyethylene terephthalate (PET)
- almost free from contamination and other types of waste, including other waste plastics
- recycled by R3 (recycling or reclaiming organic substances that are not used as solvents without harming the environment).

Contractual or official documentation must be kept to evidence compliance.

Mixtures of plastic can be exported for recycling if it consists only of PE, PP and PET, but only if each material will be recycled separately by R3 without harming the

²² <https://www.bpf.co.uk/plastipedia/chemical-recycling-101.aspx>

²³ <https://www.sciencedirect.com/science/article/abs/pii/S0165237019308241>

environment and the mixture is almost free from contamination and other types of waste (such as PVC).

Further information is provided on the government webpage

<https://www.gov.uk/guidance/importing-and-exporting-waste#import-or-export-article-18-controls> and The Recycling Association have also issued useful guidance.²⁴

For non-OECD countries, the rules for export of waste plastic for recovery vary greatly and specific guidance should be sought.

3.10 Extended producer responsibility (EPR) for packaging

3.10.1 EPR fees

Under packaging EPR, packaging producers (brands and importers) are charged a fee to pay local authorities for the management of household packaging. Producers (brands and importers) pay fees based on tonnages placed on the market – i.e. packaging used for items they sell. Fees apply to packaging likely to end up in a household waste stream and to be handled by local authorities. This includes some ‘dual use’ packaging, for instance packaging used in the hospitality industry, where it may be purchased for off-site consumption (e.g. in drive-throughs) or delivered or taken to customers homes (e.g. takeaways) or it may be consumed on site and ending up in commercial waste and recycling.

The fees collected under packaging EPR are calculated based on costs for local authorities to deal with it, whether as recycling or residual waste, modelled using the LAPCAP model. EPR funds are redistributed to local authorities based on their modelled costs under LAPCAP.

Producers also pay additional fees on top of the core fees for scheme administrator costs, communications and bad debt provision, which together add about 6 per cent to fees. The fees shown below are core fees only.

²⁴ The Recycling Association (2022). Guidance for accredited plastic waste exporters on the requirements to be able to issue PERNs, <https://www.therecyclingassociation.com/wp-content/uploads/2022/12/Recycling-Association-Guidance-for-accredited-plastic-packaging-waste-exporters-Jan-202275.pdf>

Different fees are charged for each packaging material type based on modelled costs for that material. These take into account different handling and processing costs as well as differing incomes from the sale of materials. As shown in Table 5, the fee for plastic packaging placed on the market in 2025, payable in 2026/27, is £423 per tonne.

Table 5: Packaging EPR fees for 2025/26 (£ per tonne)

Material	2025/26 base fee
Aluminium	266
Fibre-based composite	461
Glass	192
Paper and board	196
Plastic	423
Steel	259
Wood	280
Other	259

Currently, there is only one core fee for plastic, whether rigid or flexible. From 2027/28, for plastic placed on the market from 2026 onwards, there will be different fees for rigid and flexible plastics, but the fee rates are not yet known.

EPR fees cover only packaging materials, so the cost of local authorities dealing with non-packaging plastic film is not covered. Non-packaging items are those purchased by consumers as products rather than being supplied as packaging around a product. Examples for film include bin bags, which make up most of this category, as well as cling film, freezer/food bags (purchased as packs of bags) and dog waste bags. Calculations made for this report indicate that an estimated 14 per cent of plastic film packaging in the household waste stream will be from non-packaging sources.

Each year, the EPR fees will be adjusted based on the modelled costs to local authorities of dealing with each packaging material. It is not yet known how the LAPCAP model will be adjusted to take account of mandatory collections of flexible plastic or the fees for flexible plastic. Early engagement of PackUK and Defra with local government is desirable.

3.10.2 Modulated EPR fees and the Recyclability Assessment Methodology

For payments from 2026/27, fees will be modulated under EPR to account for their recyclability. Materials are rated using the Recyclability Assessment Methodology (RAM). Items collected for recycling at the kerbside by more than 75 per cent of councils in the UK, as recorded on WRAP's LA Portal, and subsequently recycled, are rated green. Materials collected for recycling at the kerbside by between 50 per cent and 75 per cent of councils in the UK, or collected under takeback schemes accessible to more than 75 per cent of the UK population, and subsequently recycled, are rated amber. Materials where these thresholds for collection are not met or which are not or cannot be recycled are rated red.

Plastic film is thus currently classified as either amber (collected and recycled via front of store take-back) or red (not recycled) in RAM. Once collections have been rolled out by at least 75 per cent of councils in the UK, plastic film types will be classified as either green (recycled) or red (not recycled/ cannot be recycled). Currently, only clear and coloured (jazz) PE film is consistently recycled from front of store collections, with recycling of PP film depending on additional payments to make it economically viable for plastic reprocessors. Recycling of PE and PP film at scale will depend on development of infrastructure and suitable market conditions. Multi-layer film such as sachets and pouches will likely not be recycled and will stay as red unless extensive dissolution or chemical recycling plants are developed.

Under fee modulation, the modelled average cost of dealing with each material will be used to set the fee for amber rated materials. Materials rated red will be charged 20 per cent more in 2026/27, 60 per cent more in 2027/28 and 100 per cent more (i.e. twice the fee) in 2028/29. Additional fees collected for materials rated red will be pooled and used to discount fees for green materials by the same percentage amount regardless of material. The core (amber) EPR fee for plastic in 2026/27 is currently estimated to be £455 per tonne; the red fee will be 20 per cent more, £545, and the green fee is estimated to be about 9 per cent less at £415. These are shown in Table 6. Estimates for subsequent years are not yet available.

Table 6: Fees in years 1 and 2 of packaging EPR (estimates for year 2)

Year	Assessment Year	Red modulation factor	Green	Amber	Red
Year 1	2025/26	1.0	423	423	423
Year 2	2026/27	1.2	415	455	545

3.10.3 EPR fees for flexible plastics

Fees for flexible plastics are currently the same as for rigid plastics, but from 2027/28 there will be separate EPR fees for rigid and flexible plastics, although it is not yet known what the fee differential will be. Table 7 provides fees from European EPR schemes in € per tonne and the UK 2026/27 modulated fees in € for comparison. In all three comparator countries, the fees for rigid plastics are higher than the 2026/27 fees in the UK for all plastics, apart from HDPE in Spain. In Belgium and Spain, the EPR fees for flexibles are 160-190 per cent the fees for rigid plastics in their schemes, although in France the fees for films are either the same or only slightly higher than for rigid plastics. While EPR fees are assessed using different methodologies from the UK, these indicate that when the UK sets separate EPR fees for rigid and flexible plastics from 2027/28, the fees for flexible plastics may well be considerably higher than current fees.

Table 7: Modulated fees in European EPR schemes (€ per tonne)

Format	Polymer/ category	Fost Plus Belgium	Citeo France	Ecoembes Spain	PackUK UK
Film	PE	€ 1,284	€ 770.10	€ 1,243	
	PP	€ 1,954	€ 840.10	€ 1,243	
	Other	€ 1,954	€ 1,400.10	€ 1,243	
Rigid	PE	€ 801.90	€ 770.10	€ 748	
	PP	€ 1,016.10	€ 770.10	€ 748	
	Clear mono PET	€ 1,154.60	€ 840.10	€ 659	
	Opaque mono PET	€ 1,193.10	€ 840.10	€ 659	
	HDPE			€ 285	
Plastic UK 2026/27	Green				€ 477
	Amber				€ 523
	Red				€ 627

3.11 Other factors affecting recycling of plastic film: PRNs, Plastic Packaging Tax, ETS and labelling requirements

There are several other policy interventions that impact on plastic film recycling:

- Plastic Packaging Tax.
- PRNs – Packaging Waste Recovery Notes.
- ETS – the extension of the Emissions Trading Scheme to waste incineration.
- Labelling requirements for packaging.

These are covered below.

3.11.1 Plastic Packaging Tax

One form of market support mechanism is the Plastic Packaging Tax in the UK, where UK manufacturers of plastic packaging and importers of plastic packaging into the UK must pay a tax of £228.82 per tonne of packaging (2026/27 rates) if it does not contain at least 30 per cent recycled content.²⁵ From April 2027, only post-consumer recyclate will count towards recycled content. In addition to plastic from households, this also encompasses plastic from "commercial, industrial or institutional facilities in their role as end-users of the product" including "returns of plastic from the distribution chain."²⁶

There are several issues with the Plastic Packaging Tax as a driver for plastic film recycling:

- It is very difficult to audit the recycled content of plastic that is imported into the UK, thus fraudulent importers can avoid paying the tax despite their plastic packaging not containing 30 per cent recycled content, giving them an unfair advantage over UK producers of recycled plastic packaging.

²⁵ Valpak (05/11/2024), Understanding the UK Plastic Packaging Tax: Key changes and future implications, <https://www.valpak.co.uk/understanding-the-uk-plastic-packaging-tax-key-changes-and-future-implications/>.

²⁶ Finance Act 2021, Chapter 26, Section 49, paragraph (6), <https://www.legislation.gov.uk/ukpga/2021/26/section/49#section-49-6>.

- As discussed above, film suitable for food-contact packaging cannot be made by mechanical recycling and requires either dissolution recycling or chemical recycling, which are not yet available at scale in the UK or abroad.
- The tax level is not sufficient to incentivise use of 30 per cent recycled content over 100 per cent virgin material – producers and many importers are tending to just pay the tax.
- There is no differentiation between household and commercial sources of recycled plastic.
- The income from the tax is not ring-fenced for or allocated to supporting development of recycling, for instance through supporting recycling infrastructure development.

3.11.2 Packaging Waste Recovery Notes (PRNs) and Packaging Waste Export Recycling Notes (PERNs)

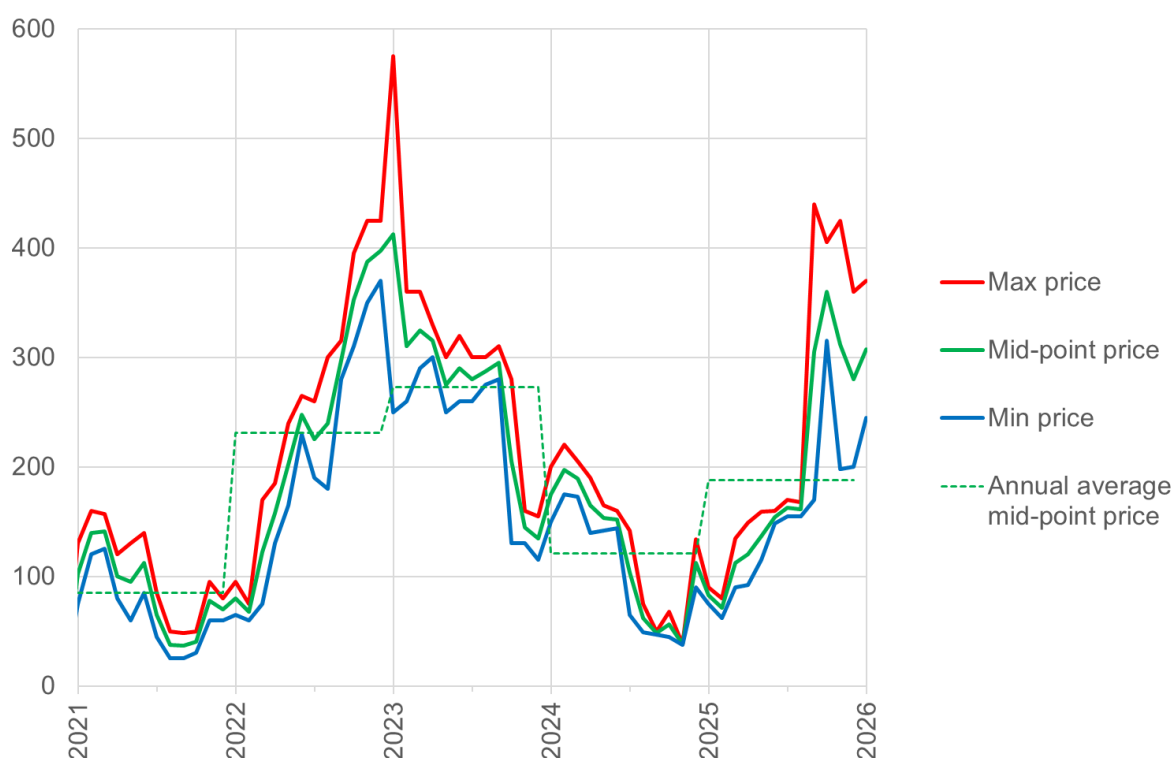
Another form of market support for recycling is Packaging Waste Recovery Notes (PRNs) and Packaging Waste Export Recycling Notes (PERNs).²⁷ PRNs are tradable certificates issued by accredited reproprocessors and exporters to demonstrate that a specific amount of packaging waste has been recovered and recycled/ exported for recycling. Targets are set for recycling for each packaging material. Businesses that handle packaging and meet certain thresholds are required to obtain PRNs (or PERNs) to cover the recycling target for the amount they place on the market. When recycling is below target, the PRN/ PERN price goes up, and vice versa when it is above target.. The revenue generated from PRN sales is intended to support recycling infrastructure – funding collection, sorting, and reprocessing activities to meet national recycling targets. It is not, however, ringfenced for this purpose.

As illustrated by Figure 7, the PRN market price fluctuates based on supply, demand, and regulatory developments. Currently, however, there is only one recycling target for plastic and therefore one PRN market price for plastic, regardless

²⁷ Valpak (10/02/2025), Packaging Waste Recovery Notes (PRNs) and Extended Producer Responsibility (EPR): What producers need to know, <https://www.valpak.co.uk/packaging-waste-recovery-notes-prns-and-extended-producer-responsibility-epr-what-producers-need-to-know/>

of packaging type or polymer. Since rigid plastic can be recycled more easily than film, PRNs will tend to incentivise rigid plastic recycling, unless there is difficulty reaching the plastic recycling target without recycling more film.

Figure 7: PRN prices (£ per tonne)



3.11.3 Emissions Trading Scheme extension to waste incineration

The UK Emissions Trading Scheme (ETS) is a cap-and-trade system in which businesses in specific energy-intensive sectors are allocated emissions allowances, which they can sell them to others if they emit less carbon than they are allocated, or must buy more allowances if they emit more than they are allocated. The ETS will be expanded to cover energy from waste and other waste incineration operations from the beginning of 2028. Since the ETS involves trading allowances, the prices are not known in advance.

Operators of energy from waste plants will pass on ETS costs for any plastic in their input stream. This incentivises diversion of plastic from residual waste streams to recycling. For local authorities, this will rely on having effective collection systems

and recycling outlets for collected plastic and achieving high engagement, participation and capture by residents.

3.11.4 Labelling requirements

Currently, many brands use voluntary OPRL labelling, with the RecycleNow roundel, to indicate whether packaging is recyclable or not – or whether it can be recycled at front of store. The UK government was due to make labelling mandatory, but has postponed this until EU PPWR labelling requirements are finalised, to avoid brands needing to redesign packaging multiple times in a short space of time. EU labelling may be adopted rather than mandating OPRL style labelling to avoid multiple and potentially contradictory labels. Once mandatory labelling is introduced, this should make it clearer to residents what can and cannot be recycled at the kerbside.

4 Methodology

4.1 Volume and composition

4.1.1 Assessing plastic film placed on the market

Plastic film tonnages were determined using both primary and secondary data as part of Valpak's internal PackFlow 2025 project²⁸, which analysed packaging for the 2024 calendar year, the most recent available. Total film placed onto the market is split into consumer and business²⁹ sectors.

In the context of this report, 'consumer' is defined as a person or a group who intends to order or use purchased goods, products or services primarily for personal, social, family, household and similar needs, not directly related to entrepreneurial or business activities. 'Business' covers all non-household consumption, including commerce, industry, agriculture, construction and demolition, and institutions such as central and local government, hospitals etc.

Within the consumer sector, film is split further into grocery (supermarkets and other food shops) and non-grocery (all other retail). Within the business sector, film is split into commercial & industrial, construction & demolition, and agriculture. Commercial & industrial totals are further split into hospitality (including wholesale & takeaway), retail back-of-store, and manufacturing & other. For consumer retail and business wholesale plastic film, these calculations were broadly informed by polymer-level and format-level information and sales data from Valpak's EPIC database of over 60 million SKUs^{30,31}.

²⁸ Published Valpak PackFlow reports are available from <https://packflow.co/packflow-reports/>. The PackFlow 2025 reports have not yet been published.

²⁹ 'Business' is referred to as 'Non-Consumer' in the PackFlow reports.

³⁰ SKUs are stock keeping units, which have a unique number or code used to reference products and keep track within warehouses or databases.

³¹ Valpak's bespoke software Environmental Product Information Centre (EPIC) database contains information from its compliance members for each product they sell, referenced by SKU, including weights of packaging by material and sales data. The data is based on information collected direct from suppliers as well as information sourced internally, meaning that it holds a wide coverage of information across multiple product ranges. Product specific data collection is completed through site visits, supplier mailings and weighing in-house (purchasing

For other sectors where tonnage information was not available from the EPIC database, secondary research was used to determine the total plastic POM within that sector, then indicative splits were applied to the total film tonnages by polymer type and format. These polymer percentage splits have been previously signed off by multiple industry stakeholders for Valpak's PackFlow reports and are considered robust.

Consumer plastic film

Grocery film tonnage was calculated by extracting sales and packaging data from the Valpak EPIC database, and determining what proportion of the dataset was assigned to plastic film. Data from several retailers was combined, representing 62 per cent of the grocery retail market by value in 2024. The extracted data was then scaled up to 100 per cent for an estimate of the total UK grocery film tonnage, then scaled down by population to reflect England's total film tonnage.

Non-grocery film was determined using the tonnage from sales and purchases data of Valpak clients in the non-grocery retail sector (excluding petrol retailers from the sample to avoid distortion), along with their reported turnover and ONS retail sales data. Non-grocery products from within the supermarket dataset were then used as a representative sample of products typically sold within the non-grocery sector. From this non-grocery dataset, polymer and format proportional splits were obtained. This proportion was applied to the calculated non-grocery tonnage total to determine the tonnages for film placed onto the market in the UK, which was then scaled down by population to reflect England's total film tonnage.

Business plastic film

Within the business sector, film is split into commercial & industrial, construction & demolition, and agriculture. Commercial and industrial film is broken down into hospitality (including wholesale & takeaway), retail back of store, and manufacturing & other. For plastic film removed by retailers at back-of-store, this was calculated using film quantities and type data provided by Reconomy Group member Eurokey,

product and collecting used product from staff). All data goes through a comprehensive checking process on receipt before storing. Valpak (5 June 2020): [The Uniqueness of our EPIC Database](#).

which processes this stream for their retail customers. These figures were then scaled to represent the tonnage placed on the market in 2024 using market share information.

Non-packaging plastic film

Valpak's EPIC database deals mainly with packaging data, therefore determining the amount of non-packaging plastic film placed onto the market required a different approach. Non-packaging film includes products such as clingfilm, bin bags and sandwich bags that are purchased as products for use by the householder, rather than being supplied around a product. Examples of each were weighed to determine approximate average weights. Where weights were not available for a particular size of product, estimates were made based on packaging data. Using sales data held within EPIC on the plastic and paper packaging around these products, the sales and estimated weights could be multiplied to determine the approximate tonnes placed onto the market for these items.

4.1.2 Assessing plastic film arisings in household waste and recycling

Consumers dispose of their waste and recycling in a variety of settings: in household waste streams dealt with by local authorities such as kerbside and communal collections, council litter bins, ground litter and HWRCs; or in commercial waste streams such as in offices or gyms, or on public transport. To reflect this, the consumer plastic film tonnages determined in 4.1.1 were partitioned into household and commercial waste streams using methodology developed for the PackFlow³² suite of reports. This was to deduce the likely amounts and associated costs of plastic film that end up in household waste streams.

Business plastic packaging film (that is, plastic film packaging destined for non-household applications, such as agriculture, construction and demolition, retail back-of-store, manufacturing and hospitality) was assumed to be disposed of exclusively in commercial waste streams. There is likely to be some 'leakage' of business waste

³² Valpak, PackFlow reports: <https://packflow.co/packflow-reports/>.

into the local authority household waste stream, particularly for film used for takeaways, but this is difficult to quantify.

Note also that this report does not consider commercial waste collected by local authorities. Councils collecting commercial waste should consider the additional cost implications that recycling of plastic film will incur, and the disposal costs particularly after ETS is extended to waste incineration from the start of 2028.

Consumer packaging film was considered in terms of grocery packaging and non-grocery packaging, as outlined in 4.1.1.

The proportion of grocery plastic packaging film ending up in the household waste stream was estimated using insight from a consumer behaviour survey conducted by Valpak as part of the PackFlow Refresh 2023 project. This survey asked respondents where they most recently disposed of the packaging around specific product groups, be it at home, in litter bins, at work, or elsewhere. Product groups likely to contain plastic film were identified and household/commercial splits applied to the respective tonnages. A household split of 80 per cent was applied to the remaining grocery product groups which were not covered by the survey, this being the proportion of grocery plastic packaging (of all types, not just film) estimated to be disposed of in the household waste stream in the PackFlow Refresh 2023 report. As such, it was assumed that plastic packaging in general and plastic film packaging in particular are disposed of in the same way.

The proportion of non-grocery plastic packaging film ending up in the household waste stream was modelled as 93 per cent: this was the proportion of non-grocery plastic packaging (of all types, not just film) estimated to be disposed of in the household waste stream in the PackFlow Refresh 2023 report.

Non-packaging consumer plastic film – as determined in 4.1.1 – was allocated entirely into the household waste stream.

4.1.3 Assessing plastic film captured with kerbside and communal recycling collections

Recycling capture was estimated using a bottom-up approach, aggregating modelled yields for every recycling scheme in the UK to provide a total tonnage of plastic film

collected from households for recycling in 2023/24 and once Simpler Recycling is in effect. While this is not an exact match to the 2024 calendar reporting year used to calculate amounts placed on the market, it was the most recent year available at the time of writing this report.

Model inputs

The modelled yields were informed by several data sources. The primary underlying data source was WRAP's LA Portal³³, which provided detailed information on each recycling scheme operated by councils in the reporting year 2023/24 (the most recent year available), as well as annual per-household yields of plastic film recycled (where relevant and available). The LA Portal dataset was complemented and corroborated using council websites, interviews with local authority officers, and the FlexCollect report.

Councils typically operate more than one recycling scheme, to accommodate differences between communal and kerbside properties, geographical areas and/or materials. The LA Portal provides the number of households serviced by each scheme, as well as the collection frequency, scope of materials included (including plastic film), and collection type (commingled, two-stream or multi-stream). It also shows, for each council, the overall demographics (rurality and deprivation), the average yield of plastic film (in kg per household per year) and the total number of households in each council area. With the exception of one council which already included FlexCollect trials in its reported schemes on the LA Portal, details of the remaining FlexCollect trial schemes (in their most mature phases) were added to the dataset. The key datapoints and their sources are outlined in Table 8.

³³ WRAP LA Portal: <https://laportal.wrap.ngo.uk/>.

Table 8: Key data points used for film collection modelling, and their sources.

Datapoints and sources	1. Recycling Scheme	2. Council	3. England
Number of households	LA Portal FlexCollect	LA Portal	<i>*Aggregation</i>
Demographics		LA Portal	
Per-household yield of plastic film	<i>*Assumptions</i> <i>*FlexCollect</i>	LA Portal	
Total yield of plastic film	<i>*Assumptions</i>	<i>*Aggregation</i>	<i>*Aggregation</i>
Whether plastic film is collected	LA Portal Council websites		
What kinds of plastic film are collected	Council websites		
Collection type (commingled/ two-stream/ multi-stream)	LA Portal FlexCollect		
Collection frequency	LA Portal FlexCollect		
Whether bags are used	Council websites		
Whether the scheme is for communal or kerbside properties	<i>*Assumptions</i>		

Data verification and enhancement

Where information on the LA Portal indicated that a scheme accepted plastic film but no average yield for the material was provided, this was checked with reference to the council's waste and recycling web pages. Similarly, where it was indicated on the LA Portal that the scheme did not accept plastic film but a yield was provided, the discrepancy was resolved using the website guidance as definitive. Where the website provided no evidence that film was accepted (or indeed evidence to the contrary), it was presumed that the yield provided represented the amounts of plastic film separated from commingled streams at a MRF (and sent for recycling) in spite of guidance to residents not to include plastic film in their recycling.

For every scheme which accepted plastic film, online council recycling guidance was consulted to identify the types of plastic film included. This included carrier bags, bubble wrap, fruit nets, crisp packets, confectionery wrappers, food-contact film, and cling film.

Schemes were classified as servicing kerbside, communal, or both types of property, using the scheme name as an indicator; in many cases, schemes were explicitly named on the LA Portal based on the type of property they serviced (for example, 'Kerbside Properties').

While the LA Portal provides detailed service information for each collection scheme level, average yields are provided only on a council level. The overall council average yield was disaggregated over the council's schemes by holding the total council yield constant while assuming that the average yield from communal properties was half that from kerbside properties. This assumption was drawn from experience in local authority waste management and sense-checked with current waste management officers.

There were 44 councils in the UK which reported yields of plastic film on the LA Portal in 2023/24, of which 31 operated schemes accepting plastic film; 13 did not inform residents that plastic film could be recycled, but extracted film for recycling at the MRF. Nine additional councils reported yields through the FlexCollect project.

For schemes which did not have a reported average yield – either because the scheme does not yet accept plastic film, or because the data was not available – an estimated yield was applied for modelling yields under Simpler Recycling. The estimated yield was the mean of the yields of the closest matching schemes which accepted plastic film for which there was data. The closest match was determined based on property type (kerbside, communal or both), collection frequency and type, and council rurality and deprivation.

For the 13 councils that reported a plastic film recycling yield but did not inform residents that plastic film could be recycled, it was assumed that their yields would increase once this happened, so their modelled yields were derived in a similar way to others based on closest matching schemes.

Where there was a gap between the number of households currently provided with recycling collections and the total number of households in a local authority area, it was assumed that these would most likely be provided with communal collections under Simpler Recycling, including for plastic film. For the purposes of modelling future yields of plastic film, such households were allocated evenly across any

communal schemes operated by the council (in terms of collection type and frequency) and modelled yields applied based on closest matches.

Current recycling capture

The total tonnage of each scheme was calculated as the product of the modelled average yield for that scheme in kg per household per year (including any yields for schemes which do not claim to accept film), divided by 1000, and the number of households serviced by the scheme. The total tonnage for the UK was the sum of the tonnages of all schemes; the total tonnage for England was the sum of the tonnages of the schemes operated by councils in England.

Future recycling capture

The total tonnage of each scheme was calculated as the product of the modelled average yield for that scheme in kg per household per year, divided by 1000, and the number of households serviced by the scheme. The total tonnage for the UK was the sum of the tonnages of all schemes; the total tonnage for England was the sum of the tonnages of the schemes operated by councils in England.

4.1.4 Assessing commercial recyclability by type of plastic

Commercial recyclability was assessed using the Recycling Assessment Matrix (RAM) guidance³⁴ provided by the UK government, complemented with discussions with PRF operators and plastics reprocessors, and used to build up the information shown in Table 1 in section 3.1. Mono-material clear and lightly printed PE film, coloured (jazz) or printed PE film, and mono-material clear PP film are considered recyclable. Coloured (jazz) PP and metallised PP were considered as ‘may be recyclable’ depending on markets. Small items (<40mm x 40mm), PP fruit nets, black film, PET film, PVC film, multi-layer film containing PET or aluminium foil or paper, any film with greater than 10 per cent by weight EVOH, and any compostable, biodegradable or oxo-degradable films were considered to be not recyclable, in line with the RAM guidance. These classifications were applied to consumer film splits by

³⁴ <https://www.gov.uk/government/publications/recycling-assessment-methodology-materials-and-outputs/recycling-assessment-methodology-assessing-materials#plastic-flexibles>

polymer to model how much plastic film could potentially be recycled, subject to reprocessing capacity and markets.

4.2 Recycling capacity and market

4.2.1 Current sortation and reprocessing capacity for film recycling

To determine how much plastic film can currently be recycled in the UK, desktop research was performed to establish the information publicly available for UK-based film reprocessing capacity. Where public information was not available, primary research was conducted in the form of interviews with sortation facilities (PRFs), plastics reprocessors, and other industry stakeholders.

Determining the film-specific sortation and reprocessing capacity is fairly difficult, as facilities often process both film and rigid plastics and do not report on these separately. Sorters and reprocessors may also vary throughputs based on favourable market conditions: ability to compete with market prices of raw materials, favourable PRN/ PERN prices, availability of inputs at an economic income level, and low contamination levels.

4.2.2 Future sortation and reprocessing capacity for film recycling

Future sortation and reprocessing capacities were determined predominantly through stakeholder interviews, with some information gained via publicly available press releases and desktop research. In some cases, the future capacity is from existing facilities that might be willing or able to take more film tonnage in future if market conditions were favourable, particularly an end market with a suitable market price.

4.3 Costs

Costs for local authorities were considered for each stage of the system for which they will pay, from council collection to the MRF (or mini-MRF) to the PRF (plastic recovery facility) for the recycling stream, or from collection to the waste treatment facility for plastic film in residual waste.

Three scenarios were modelled for recycling collection, handling and segregation: firstly where film is collected loose in commingled or two-stream recycling; secondly where it is collected in single-use bags within a commingled or two-stream recycling collection; and thirdly where it is collected in single-use bags within a multi-stream (kerbside sort) collection.

4.3.1 Assessing costs of collecting plastic film

The modelled costs of collecting plastic film were derived largely from the FlexCollect project report, with additional insight from interviews with local authority officers, MRF and PRF operators and plastic reproprocessors.

Costs of collection of film for recycling were subdivided into the following aspects: purchase of initial bags, distribution of initial bags, communications, ongoing purchase of additional bags, ongoing distribution of additional bags, and additional collection time.

The three recycling collection methods were modelled: loose in commingled/two-stream collections, where plastic film is added loose to the commingled recycling container, with no bag used; bagged in commingled/two-stream, where plastic film is amassed in a collection bag by householders and placed in the commingled recycling container; and bagged in multi-stream, where plastic film is amassed in a collection bag and placed in the recycling stream relevant to plastics (which tends to be a mixed plastics and metals stream). The FlexCollect project found that a thicker bag was required in for commingled and two-stream recycling in order to withstand compaction in collection vehicles and handling at MRFs, whereas a thinner bag was sufficient for multi-stream recycling, which involves less compaction and handling. The purchase cost of a bag scales closely with its thickness.

The cost of communications to residents regarding rolling out plastic film collections was not included in the model. Discussions with local authorities indicated that many intended to use primarily digital media and to time communications alongside other correspondence regarding council tax or wider changes to recycling collections. Where separate communications campaigns are run, their costs will vary considerably, so local authorities intending to carry out significant communications campaigns should add this cost to their estimates, particularly for roll-out.

Low, mid and high end cost estimates were modelled for each aspect of recycling collection. The low end used the cheapest costs provided in the FlexCollect report and/or the lowest modelled participation level of 20 per cent and low bag usage. The high end assumed the highest costs, the highest participation level of 60 per cent and high bag usage. The central estimate used an average of the high and low costs, a 40 per cent participation level (the typical participation observed in FlexCollect trials) and moderate bag usage.

A small allowance was made for the mid and high-end cost estimates for the additional time which may be required to collect bags in multi-stream recycling, given that a FlexCollect pilot authority reported that rounds took slightly longer when bags were added (an average of 15 seconds per household).

These costs per household were then scaled up to England based on the number of households expected to be receiving each collection type, based on their current collection system.

For indicative system-level costs, it was assumed that all authorities not currently operating plastic film collections would follow FlexCollect recommendations, using a thin collection bag for multi-stream collections and a thick bag otherwise.

Costs are also provided per household to allow local authorities to assess indicative costs based on their intended collection scenarios.

4.3.2 Assessing costs of handling, sorting and recycling plastic film

The costs of handling, sorting and recycling plastic film were considered from a local authority perspective. As such, these included the cost of bulking, storing and transport of collected recycling; the costs of handling and separating the plastic film at a MRF or mini-MRF; and the PRF gate fee. This information drew largely on the experience of MRF operators, but also incorporated figures from FlexCollect and the latest annual WRAP Gate Fees report.

The cost modelling for the recycling stream ends at the gate fee (including transport) for the PRF, since this cost will be passed on by the MRF contractor as part of a basket of prices charging model. It does not include the cost of sorting at the PRF or the cost of recycling at the reprocessor, as these will be compensated by the sales

price for recycled polymers, with the PRF gate fee reflecting the difference between the subsequent costs and income.

These costs per tonne were then scaled up to England based on the expected total tonnages from schemes of each collection type, as determined in 5.1.3 and 5.1.4 from the methodology described in 4.1.3.

It is assumed that any plastic film in the recycling stream that is not sorted into the recycling fraction at the MRF and instead disposed of, most likely as SRF, will not be charged back to the local authority by the MRF operator, since the operator should be ensuring it is separated for recycling. However, this may not be the case.

An alternative scenario is also modelled (in section 5.3.5) where a MRF operator has to dispose of all collected film to SRF if they cannot secure a recycling route for it. It is assumed that ETS costs will be passed on for plastic film (and other fossil-based materials) in SRF.

For an authority where the MRF operator passes on SRF costs for film that is not sorted into the recycling fraction at the MRF, the costs per tonne from the alternative scenario can be applied to that proportion.

4.3.3 Assessing costs of plastic film in residual waste

The total tonnage of plastic film collected for recycling was subtracted from the total tonnage of film arising in household waste (per 4.1.2) to estimate the total tonnage of film going to a residual waste treatment route. This was then partitioned into incineration (energy from waste), landfill, or other (including MBT), in the same proportions as reported by English local authorities on WasteDataFlow.

Incineration and other treatments that culminate in incineration of the plastic fraction (such as MBT) will be subject to charges under the Emissions Trading Scheme (ETS) from 1 January 2028, just 9 months after plastic film collections become mandatory. Due to the short time period when ETS charges will not apply, the ETS costs are included in the core modelled costs. The ETS cost per tonne of film incinerated was estimated using the government's modelled carbon market price for

2028³⁵, and the fossil carbon emissions associated with incinerating plastic film from the Ecoinvent database³⁶.

It is assumed that ETS costs from incineration of RDF (produced by MBT processes) will be passed on to local authorities, as well as ETS costs for mass burn energy from waste incineration.

Other costs associated with residual waste treatment methods include bulking, storing and transport to the waste facility, and gate fees. These were modelled using figures from the latest WRAP Gate Fees report³⁷.

These costs per tonne were then scaled up to England based on the expected total film tonnage in residual waste.

4.3.4 Identifying data gaps and limitations including factors with significant impacts

Data gaps and limitations were identified as they arose throughout the modelling process. Factors with significant impacts were considered in terms of those within the control of local authorities (to a greater or lesser extent), such as the use of bags and distribution methods, and those which are uncertain external factors, such as the traded carbon price and the market value of recycled plastic and the amount of plastic film likely to end up in MRF or PRF rejects.

Different scenarios were considered in order to broadly quantify the potential impact of key factors.

³⁵ [Traded carbon values used for modelling purposes, 2025 - GOV.UK](#)

³⁶ Ecoinvent 3.11 (EN15804 compliant)

³⁷ <https://www.wrap.ngo/resources/report/uk-gate-fees-report-2024-25>

5 Results

5.1 Volume and composition

5.1.1 Plastic film placed on the market

Consumer film placed on the market in the UK

The total amount of consumer film placed onto the market (POM) in the UK in 2024 was determined as 453 kt. Film constitutes 34 per cent by weight of total consumer plastic packaging POM (i.e. including rigid plastics) – even though it is light, the high usage of plastic film, particularly for packaging of food items, makes it a significant part of overall plastic packaging consumption. The polymer split for consumer film and total consumer plastic is detailed in Table 9.

Table 9: Consumer film POM and total consumer plastic POM in the UK (kt)

Thousand tonnes (kt) 2024	Plastic polymer								Total
	HDPE	LDPE	Other	PE	PET	PP	PS	PVC	
Consumer film	9	103	70	92	32	145	0	1	453
Total consumer plastic	198	113	91	127	455	323	8	4	1,318

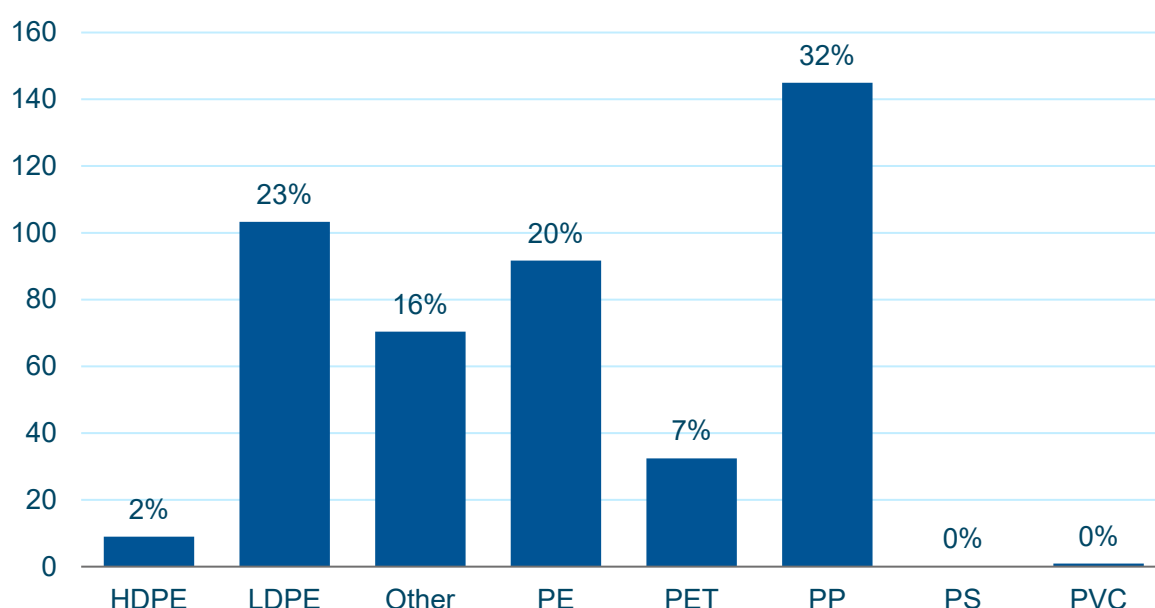
Figure 8 shows the percentage splits of consumer film by polymer type.

Polypropylene makes up the largest proportion by weight of consumer film at 32 per cent, with LDPE and PE the second most prominent. In this context, 'PE' refers to plastic film whose polymer type could not be accurately determined past 'PE', either because the packaging was a multi-layer construct containing PE, or where the polymer is recorded simply as 'PE' in the dataset as no additional detail was available.

'Other' plastic film refers to any polymer not grouped into the main plastic polymer types; this may include less commonly used polymers such as ABS, EVOH or biodegradable/compostable plastic. Oriented polypropylene (OPP) is also included in this category.

LDPE is a soft plastic film with uses including bread bags and carrier bags, and HDPE is a thicker film used for grouping products and sturdier bags and pouches. PP is a 'crinkly' type of plastic used for salad bags and punnet wraps and other packaging with crimped edges, and when metallised is used for crisp packets. PET is used for lidding film on ready meals. PS and PVC film are very seldom used and have been mostly phased out of the UK domestic market.

Figure 8: Polymer distribution of consumer film in the UK (kt and percentage splits)



Business film placed on the market in the UK

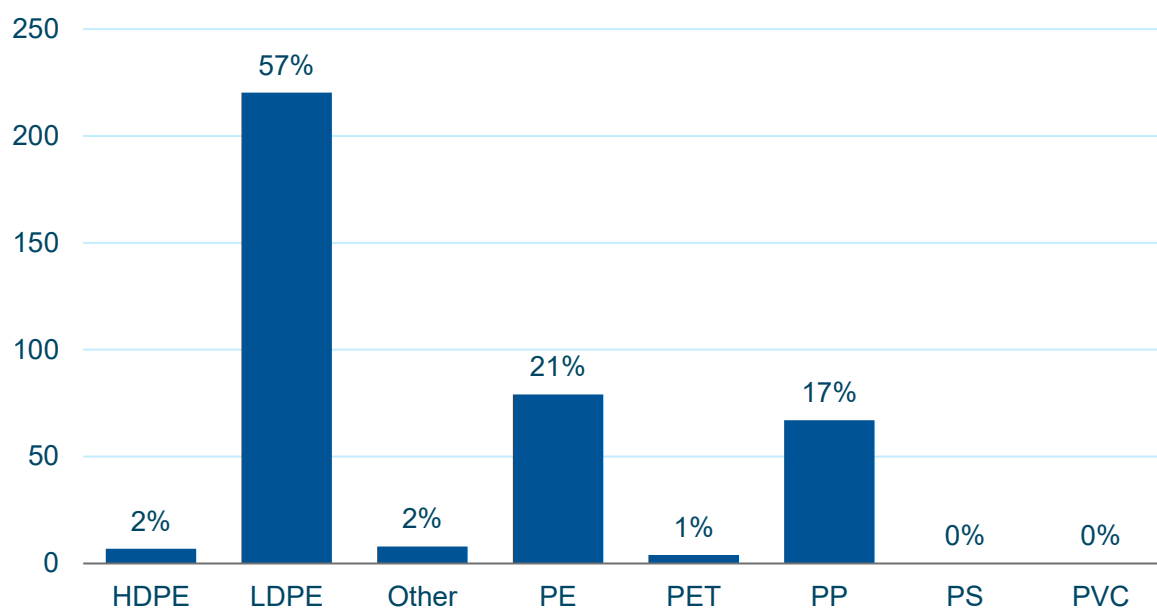
The total amount of film placed onto the market in the UK and used by businesses was determined as 385 kt. Film constitutes 44 per cent by weight of total business plastic packaging POM – i.e. including rigid plastics. The polymer split for business film and total business plastic is detailed in Table 10.

Table 10: Business film POM and total business plastic POM in the UK (kt)

Thousand tonnes (kt) 2024	Plastic polymer								Total
	HDPE	LDPE	Other	PE	PET	PP	PS	PVC	
Business film	7	220	8	79	4	67	0	0	385
Total business plastic	274	221	11	84	97	162	23	1	872

Figure 9 shows the percentage splits of business film by polymer type. LDPE makes up the largest proportion of business film at 57 per cent. LDPE is typically used for pallet wrap and shrink wrap used to transport and group goods. Shrink wrap can also be made from HDPE. PET, PS and PVC films are rarely used.

Figure 9: Polymer distribution of business film in the UK (kt and percentage splits)



Non-packaging film placed onto the market in the UK

Film is classed as non-packaging when it is sold as a product rather than used as packaging material around a product. Packaging EPR fees are not paid by producers of these products since they are not classed as packaging.

The total amount of non-packaging film placed onto the market in the UK was determined as 72 kt, shown in Table 11. These are all in the consumer grocery sector. The largest proportion is consumer bin bags, which make up approximately 82 per cent of the total non-packaging plastic film.

Table 11: Total non-packaging film POM in the UK (kt)

Item	Typical polymer	Potential destination*	Scaled total POM (kt)	Percentage by weight of POM
Bin bags	(L)LDPE	Residual	59.1	82%
Cling film	PVC/ (L)LDPE	Recycling	2.6	4%
Dog waste bags	Other	Residual	1.7	2%
Freezer/ food bags	LDPE	Residual	8.9	12%
Total			72.3	100%

* This is potential destination with council recycling collections in place, depending on residents participating.

Total film placed onto the market in England

The tonnages for consumer, business and non-packaging film POM in England are summarised in Table 12, obtained by scaling the UK figures by population. (The columns are also rearranged to show PE polymer types first, then PP, PET, PVC, PS and Other.) The total film POM in England in 2024 was determined to be 770 kt.

Table 12: Total film placed onto the market in England (kt)

Thousand tonnes (kt) 2024		Plastic Polymer								Total
		LDPE	HDPE	PE	PP	PET	PVC	PS	Other	
Packaging	Consumer	87	8	78	123	27	1	0	60	383
	Business	186	6	67	57	3	0	0	7	326
	Total	274	13	145	179	31	1	0	66	709
Non-packaging	Total	59	0	0	0	0	1	0	1	61
Total		332	13	145	179	31	2	0	68	770

5.1.2 Plastic film arisings in household and commercial waste in England

It was estimated that 392 kt out of the 770 kt of plastic film placed onto the market in England in 2024 was likely to end up in household waste streams, and therefore dealt with by local authorities, rather than commercial waste streams. This equates to 51 per cent of the total POM. Table 13 summarises the composition of this split by polymer; the same information is displayed in Figure 10 for visual comparison.

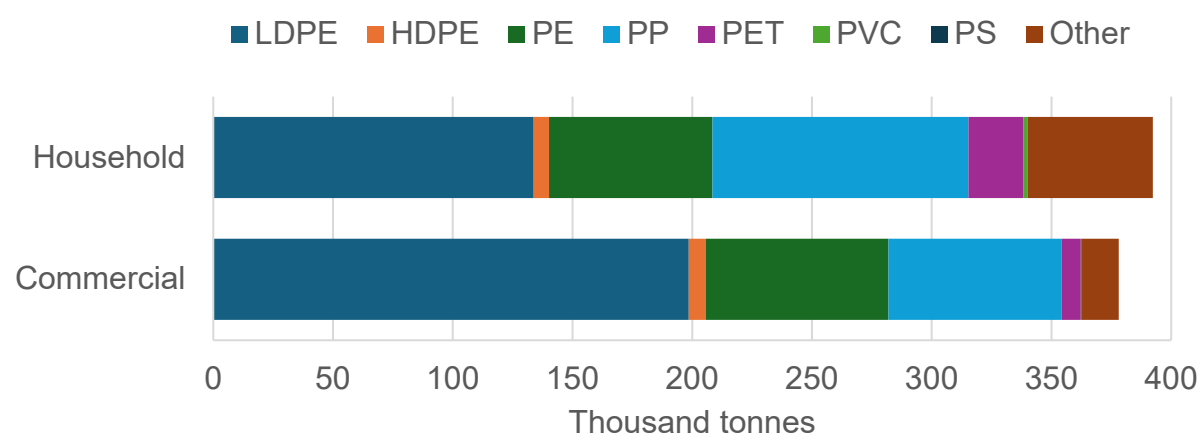
Plastic film in household waste streams was determined to be predominantly (approximately 80 per cent) PE³⁸ and PP. This aligns broadly with the findings of a recycling composition analysis performed as part of the FlexCollect project which found that 69 per cent by weight of plastic films collected for recycling were mono unmetallised PE or PP³⁹. Differences between the two figures are expected, as householders are likely to include certain packaging formats in their film collections more than others.

Of the total amount of plastic film in household waste, 51 kt (13 per cent) is estimated to be bin bags and dog waste bags, which are typically used for residual waste and should not be in recycling streams.

Table 13: Plastic film waste arisings in England, by polymer and stream (kt)

Stream	LDPE	HDPE	PE	PP	PET	PVC	PS	Other	Total
Household	134	6	68	107	23	2	0	52	392
Commercial	199	7	76	72	8	0	0	16	378
Total	332	13	145	179	31	2	0	68	770

Figure 10: Plastic film waste arisings in England, by polymer and stream



Bags provided to householders for use with plastic film collections were not included in the POM workings for 2024. Analysis for this project estimates that 92 tonnes of

³⁸ HDPE, LDPE or PE, as listed in the table.

³⁹ p63 (Fig 33).

plastic bags are used annually for this purpose currently⁴⁰. In future, this could rise to over 4,300 tonnes if all councils which do not currently collect plastic film were to adopt the FlexCollect recommendations in terms of providing bags to residents rather than collecting film loose. Collection bags are usually made of LDPE.

5.1.3 Plastic film captured with kerbside and communal recycling collections

It was estimated that 15 kt of plastic film was collected from English households in 2023/24⁴¹. The estimates for plastic film collected broken down by collection type is shown in the '2023/24' column in Table 14.

Table 14: Modelled total amounts collected (kt) from recycling schemes in England, split by property and collection type

Property type	Collection type	2023/24	2027/28
Kerbside	Commingled	4	16
	Two-stream	1	12
	Multi-stream	4	14
	Total	8	42
Communal	Commingled	0	3
	Two-stream	0	2
	Multi-stream	0	1
	Total	0	6
Both / unknown	Commingled	3	20
	Two-stream	3	22
	Multi-stream	0	5
	Total	6	48
Total	Commingled	7	40
	Two-stream	3	36
	Multi-stream	5	21

⁴⁰ This figure includes disposable plastic bags used to contain collections of mixed recycling in which plastic film is accepted. This is under the assumption that these bags could be recycled alongside the film within them.

⁴¹ This includes the weight of collection bags themselves (but not any collection bags which were distributed but not used for the film recycling collections).

Property type	Collection type	2023/24	2027/28
	Total	15	96

When averaged over the number of households receiving plastic film collections, this equates to a yield of 4.2kg per household. Estimated yields by collection type are shown in the '2023/24' column in Table 15. Two-stream and multi-stream collections appear to generate significantly higher average yields than commingled collections, although there is more variation within collection types than between them, which may be due to frequency of collections and demographics. The number of councils collecting plastic film is still relatively low so it is not possible to draw robust conclusions for these variations.

Table 15: Modelled average yields (kilograms per household) from recycling schemes in England, split by property and collection type.

Property Type	Collection Type	2023/24	2027/28
Kerbside	Commingled	3.4	3.6
	Two-Stream	3.6	2.9
	Multi-Stream	10.1	8.5
	Average	5.5	4.1
Communal	Commingled	1.2	2.1
	Two-Stream	2.4	3.0
	Multi-Stream	5.9	5.1
	Average	2.8	2.6
Both / Unknown	Commingled	2.0	3.1
	Two-Stream	10.1	4.3
	Multi-Stream	-	5.6
	Average	3.1	3.8
Total	Commingled	2.5	3.1
	Two-Stream	7.5	3.7
	Multi-Stream	9.8	7.3
	Average	4.2	3.8

Once council schemes are aligned with Simpler Recycling requirements for film, the amount of plastic film collected from English households annually could initially rise to 96 kt (equivalent to 117 kt for the UK as a whole); a breakdown is provided in Table 14 in the '2027/28' column. This agrees closely with the FlexCollect estimate of 100 kt in England in 2027/28. (FlexCollect estimate 152 kt for the UK, based on much higher yields in Scotland than have been modelled for this report.).

According to the model developed for this report, the per-household average for collections could fall to 3.8kg per household, as indicated in Table 15 in the '2027/28' column. This is because film collections are currently available disproportionately to kerbside properties in areas of mid to low deprivation, which generally have higher recycling yields than other households, so when collections are rolled out to all properties, the average yield per household is likely to fall. This does not however account for any increased participation which may result from increased awareness due to national roll-out of film collections, or increases in subsequent years from more residents participating, and participating residents recycling more of their film.

5.1.4 Plastic film in residual waste

The amount of film that will not be captured within the recycling stream and will instead be disposed of in residual waste was deduced using the figures in Table 16. It was estimated that 300 kt will be collected in household residual waste in the first year of Simpler Recycling. In subsequent years, with film collected for recycling anticipated to increase, when more residents participate and recycle more of their film, amounts in residual waste should decrease.

Table 16: Summary of plastic film in the household waste stream (kt)

	Arisings (kt)
Total film that could be collected from households	397
-- of which film in household waste	392
-- of which bin bags & dog waste bags	51
-- of which collection bags	4

Film collected and recycled (including collection bags)	96
Film NOT collected for recycling	300

Plastic film arising in household residual waste was allocated to the different disposal methods available in the proportions shown in Table 17, based on analysis of WasteDataFlow disposal data for English authorities. The 'Other' category is for residual waste treatments other than landfill and energy from waste incineration, typically mechanical biological treatment.

Table 17: Proportion of plastic film in residual waste going to each disposal route

Residual waste disposal route	Proportion
Energy from waste	60%
Landfill	8%
Other (incl. mechanical biological treatment)	32%

5.1.5 Recyclability by type of plastic

The proportion of consumer film tonnage may be commercially recyclable was assessed as outlined in section 4.1.4, and applied to known polymer splits of consumer film to determine overall recyclability, subject to reprocessing capacity and markets. Additionally, product-level tonnages (e.g. the number of crisp packet sales to determine amount of metallic film) was used to estimate the proportion of film packaging that may be commercially recyclable. All calculations are based on consumer packaging that is likely to be predominantly disposed of through household recycling streams.

It is important to note that these are very approximate estimations based on best available data, and making optimistic assumptions as to the recyclability of certain polymers (e.g. assuming no contamination and no losses). This calculation may be considered a 'best possible scenario'.

Table 18 shows the estimated commercial recyclability of consumer film by polymer type (so each column sums to 100 per cent). The recyclability of film in household waste arisings is assumed to be the same as for film placed on the market.

Table 18: Estimated commercial recyclability of consumer packaging film by polymer type

	LDPE	HDPE	PE	PP	PET	PVC	PS	Other
Recyclable	100%	100%		72%				85%
Maybe			100%	28%				
Not recyclable					100%	100%	100%	15%

Non-packaging film is assumed to be non-recyclable/ not likely to be recycled: it is mostly bin bags and dog waste bags, which are used for residual waste, or freezer bags and cling film that would rely on residents ensuring only clean film is put in recycling without food contamination.

Table 19 shows the commercial recyclability by the proportion of total tonnage, with the recyclability percentages shown in Table 18 applied to the tonnages in each category of packaging film, and non-packaging film added to the not recyclable category, then the tonnages divided by total consumer film arisings. This calculation shows that approximately 51 per cent of consumer film placed onto the market could be commercially recyclable, while 25 per cent is maybe recyclable and 24 per cent is not recyclable.

Table 19: Estimated commercial recyclability of consumer film by proportion of film in household waste

	LDPE	HDPE	PE	PP	PET	PVC	PS	Other	Total
Recyclable	19%	2%	0%	20%	0%	0%	0%	11%	51%
Maybe	0%	0%	17%	8%	0%	0%	0%	0%	25%
Not recyclable	15%	0%	0%	0%	6%	0%	0%	2%	24%
Total	34%	2%	17%	27%	6%	0%	0%	13%	100%

5.2 Recycling capacity and market

5.2.1 Plastic film sortation infrastructure in the UK

Plastic film sorting capacity in the UK was determined to be approximately 145 kt tonnes, based on publicly available information from two large plastic sortation facilities (PRFs), as shown in Table 20. Sortation infrastructure typically involves optical near-infrared (NIR) sorting to identify the target polymer type and uses air jets to selectively move material. This sortation capacity does not include the capacity from MRF facilities which sort mixed recycling streams, although some may also have the capability of sorting film by polymer type.

Plastic film being exported needs to be sorted sufficiently prior to export to ensure it consists only of PE, PP and PET, and is not contaminated with PVC or other contaminants. As such, it will need sorting in a PRF, or a MRF capable of sorting films, prior to export.

5.2.2 Plastic film reprocessing infrastructure in the UK and abroad

Current film reprocessing capacity

The UK currently has limited domestic capacity for recycling of flexible plastics. Some facilities have closed in recent years due to market pressures, while others can only accept limited quantities or require highly specified feedstock, or have a preference for film from commercial sources. The current facilities in the UK are not sufficient to recycle all the plastic film currently collected by councils; some film currently collected for recycling is sent to energy from waste.

Current plastic film reprocessing capacity was determined to be approximately 139 kt, of predominantly mechanical recycling capacity, as summarised in Table 20, which also shows sortation capacity. Mechanical recycling separates materials based on their physical characteristics, such as using washing to remove contaminants including food, ink, glue, and labels, flotation to separate materials by polymer type based on their relative densities, then extrusion and centrifuging, which removes non-target materials and other contaminants, to result in homogenous pellets ready for use in the manufacture of new products.

Although this capacity information was gathered from reprocessors who stated that they recycled film, it was not clear how much of their facilities were actually used for film compared with rigid plastics, so this figure is likely to be an upper bound based on film availability and favourable market conditions.

Future additional film reprocessing capacity

Future additional plastic film reprocessing capacity was determined to be approximately 290 kt, with 160 kt of this capacity from mechanical recycling, 10 kt from dissolution, and 120 kt from chemical recycling⁴², as summarised in Table 21. These figures were obtained through stakeholder interviews, press releases and desktop research. Much of this proposed future capacity will not be available in 2027, with some capacity not available until 2030. It may also not be dedicated wholly to film recycling, depending on economic viability of this feedstock compared with rigid plastic.

The future chemical recycling capacity is for a single pyrolysis oil plant whose output is predicted to go entirely to a European petrochemical supplier (not necessarily for plastics production). Often, pyrolysis oil is diluted with virgin naphtha oil in downstream processing to obtain a higher quality product. Insufficient information is available to determine if this will be the case for the new plant, however the output from this plant may nevertheless be considered to be a form of downcycling or open-loop recycling.

⁴² <https://www.letsrecycle.com/news/endolys-to-build-120m-plastic-film-recycling-plant-in-darlington/>

Table 20: Current maximum film reprocessing capacity in the UK (tonnes per year)

				Recycling		
Process type	UK nation	End markets	Sorting	Mechanical	Chemical	Dissolution
Reprocessor	England	rLDPE pellets (flexible packaging, collation shrink, stretch wrap), bags for Life, rPP pellets (crates, transport trays, flex labels)		100,000		
Reprocessor	England	Injection/ extrusion grade convertors, crates, buckets, wheelie bins, insulation		24,000		
Reprocessor	England	Unknown		15,000		
Reprocessor	England	Flexible recycled packaging products, rPP labels	75,000			
Sorter	England	Unknown	70,000			
Subtotals			145,000	139,000	-	-
Total recycling capacity			n/a	139,000		

Note: the letter ‘r’ in front of a polymer type indicates one made with recycled content.

Table 21: Planned additional capacity for film reprocessing in the UK (tonnes per year)

Organisation	UK nation	End markets	Sorting	Recycling		
				Mechanical	Chemical	Dissolution
Reprocessor	England	Entire output to global oil distributor for European petrochemical market			120,000	
Reprocessor	Wales	Unknown		100,000		
Reprocessor	England	Post-consumer rLDPE and rPP pellets		40,000		
Reprocessor	England	Post-consumer rLDPE: bin liners, post-consumer rPP: industrial applications (not closed loop film)		20,000		
Reprocessor	Scotland	Near-virgin quality pellet and film				10,000
Subtotals			-	160,000	120,000	10,000
Total recycling capacity			n/a	290,000		

Note: the letter ‘r’ in front of a polymer type indicates one made with recycled content.

Other reprocessing infrastructure – UK capacity

In addition to film reprocessing infrastructure, other plastic reprocessors were identified in the FlexCollect report⁴³. Many of these reprocessors took part in the FlexCollect trials, so had some capacity to reprocess film, at least on a small scale, and may be able and interested to take film in the future. UK-based reprocessing capacity is summarised in Table 22, with a summary of total potential capacity and whether or not a reprocessor took part in the FlexCollect trials. Additional infrastructure identified through discussions with stakeholders and desk-based research have been added to the table and sites that have been shut, or which only provide sorting capacity, have been removed. The table is sorted by decreasing current capacity. The total UK capacity (excluding reprocessors known to handle film currently) is 425 kt, with an additional 30 kt proposed new capacity.

Other reprocessing infrastructure – worldwide (non-UK) capacity

Plastic reprocessing capacity outside the UK was identified and summarised in Table 23, based on the FlexCollect report, with additional infrastructure added where identified via discussions with stakeholders and desk-based research and with sites removed that have been shut or that provide only sorting capacity. One of these reprocessors took part in the FlexCollect trials. Reprocessing capacity outside the UK is determined to be at least 300 kt, with an additional 290 kt capacity proposed in future. While some sites specialise in plastic film, many do not, so the reported capacity overstates the capacity to recycle film. This list is indicative of the capacity available in other countries to provide a representation of the technologies being used and should be considered non-exhaustive.

⁴³ Flexible Plastic Fund (FPF) FlexCollect report (1 September 2025). <https://flexibleplasticfund.org.uk/flexcollect-report-2025>.

Table 22: Other plastic reprocessing capacity in the UK (tonnes per year)

Company	Location	Country	Capacity		Technology	FlexCollect trials
			Current	Proposed		
Hahn Plastics	Manchester	England	74,000		Mechanical	
Monoworld Recycling	Northampton	England	55,000		Mechanical	
Jayplas	Loughborough	England	50,000		Mechanical	Yes
Bright Green Plastics	Castleford	England	40,000		Mechanical	
Impact Recycling	Peterlee	England	35,000		Mechanical	
Recycle for Future	Peterborough	England	25,000		Mechanical	
KS Plastic	Gloucestershire	England	24,000		Sorting & mechanical	
Amcor (Berry)	Derbyshire	England	20,000		Mechanical	Yes
Capital Valley	Gwent	Wales	20,000		Mechanical	
Centriforce	Liverpool	England	20,000		Mechanical	
Plastecowood	Rhyl	Wales	20,000		Mechanical	Yes
Renew ELP	Teeside	England	20,000		Chemical	Yes
ReVentas	Livingston	Scotland	10,000		Dissolution	Yes
Meplas	York	England	8,000		Mechanical	Yes
Mainetti	Wrexham	Wales	4,000		Mechanical	
Chestnut Polymers	Cheshire	England	Pilot		Mechanical	Yes
Remarkable Energy	Midlothian	Scotland	Pilot		Chemical	Yes
Repolywise	Oxfordshire	England	Pilot		Chemical	Yes
Sylatech	Yorkshire	England	Pilot		Chemical	Yes
Circular11	Christchurch	England	Demo		Mechanical	
Power Generation Midlands	Kidderminster	England		30,000	Mechanical	
Total			425,000	30,000		

Table 23: Other plastic reprocessing capacity outside the UK (tonnes per year)

Company	Location	Country	Capacity		Technology	Notes
			Current	Proposed		
Quantafuel		Denmark & Norway	100,000		Chemical	Pyrolysis
DerGrunePunkt	Eisfeld	Germany	50,000		Mechanical	
Plasta		Lithuania & Sweden	40,000		Mechanical	
Ecoo	Houthalen-Helchteren	Belgium	32,000		Mechanical	
Attero	Wijster	Netherlands	27,000		Mechanical	FlexCollect trials
CPE	Various	Asia & Greece	24,000		Chemical	Pyrolysis
Plastic Energy	Various	Spain	10,000		Chemical	Pyrolysis
Polimero	Rovigo	Italy	9,000		Mechanical	
future POST	Waiuku & Blenheim	New Zealand	6,000		Mechanical	
Enval	Cuautla	Mexico	2,000		Chemical	
Buss ChemTech	Pratteln	Switzerland	Pilot		Chemical	Pyrolysis
PureCycle Technologies	Georgia	US		140,000	Dissolution	
PureCycle Technologies	Antwerp	Belgium		60,000	Dissolution	
PureCycle Technologies	Rayong	Thailand		60,000	Dissolution	
Plastic Energy		France		15,000	Chemical	Pyrolysis
Plastic Energy		Netherlands		15,000	Chemical	Pyrolysis
Total			300,000	290,000		

Comparison of reprocessing capacity and film arisings

The estimated amount of plastic film in local authority waste streams to be collected and recycled in England in 2027/28 is estimated to be 96,000 tonnes, an increase of 81,000 tonnes on the 15,000 tonnes currently recycled from local authorities.

This will need to be processed with new capacity, since the current facilities in the UK are insufficient to recycle all the plastic film currently collected by councils, with some film currently collected for recycling being sent to energy from waste.

Much of the proposed 290,000 tonnes of future capacity in the UK will not be available in 2027, with some capacity not available until 2030. It may also not be dedicated wholly to film recycling, depending on economic viability of this feedstock compared with rigid plastic.

Film from English councils will need to compete for capacity with film from councils in the other UK nations, which will also be rolling out collections in 2027. In addition, commercial recycling from businesses will need to include plastic film from end March 2027, and many reproprocessors may prefer this source. There is thus unlikely to be sufficient UK capacity to meet the expected demand from 2027 when kerbside film collections become mandatory.

5.2.3 Factors influencing film recycling in the UK

Discussions with a reprocessor illuminated the lack of a 'pull' factor in the system for improving end markets for recycled film. They commented that due to the cost of recycling plastic domestically in the UK, that often it is cheaper to import recycled plastic from overseas. Furthermore, the cost of recycled plastic (whether from rigid or flexible sources) made it difficult to compete with virgin polymer. One proposed solution was to implement a PRN target and price specifically for recycling plastic film. Currently, PRN targets and prices do not distinguish between different types of plastic, with only one PRN target set for all plastic polymer types and packaging formats.

Another influence on end markets for recycled film is the Plastic Packaging Tax. Currently, it does not differentiate between household packaging and commercial

packaging, instead defining both as ‘post-consumer’, meaning any plastic generated by an end-user – whether by households, commercial or industrial facilities – counts the same as part of the 30 per cent recycle content threshold⁴⁴. Additionally, it does not differentiate between rigid or flexible plastic sources as part of the 30 per cent recycled content. Supplementary requirements for the use of rigid or flexible plastic may be one option for consideration in future, although these would likely be difficult to audit and enforce.

5.2.4 Role for government, industry and other stakeholders in creating end markets

National and devolved governments will continue to play an important enabling role in creating viable end markets for post-consumer film. This may include refining EPR fee modulation so it better reflects true recyclability, supporting the shift towards mono-material PE and PP. A significantly higher EPR fee for flexible plastics than for rigid plastics would reflect the differences in costs of collection and processing. Separate targets for recycling of flexible and rigid plastics for PRNs could encourage increased recycling of plastic film. Strengthened confidence in the market could be achieved through enforcing transparency on recycled-content claims for the Plastic Packaging Tax and ensuring imported packaging does not undercut UK recyclers unfairly with false claims of recycled content. In addition, strategic support for capital investment, whether through existing programmes or through targeted grants and co-investment, may help accelerate the development of UK sorting and reprocessing capacity, reducing reliance on export routes and improving system resilience as mandatory collections come into force.

Mandatory recyclability labelling would provide improved guidance for residents, promote recycling and reduce contamination with non-target materials.

Across the supply chain, producers, retailers, recyclers and innovators each have opportunities to help drive end markets. Producers can continue to move towards more recyclable film formats and ensure clear, consistent consumer messaging, while long-term commitments to use UK-recycled polymers would help de-risk future infrastructure. Retailers, similarly, can play a connecting role by ensuring

⁴⁴ <https://www.gov.uk/guidance/work-out-which-packaging-is-subject-to-plastic-packaging-tax>

front-of-store collections complement kerbside systems, for instance by collecting and recycling multi-layered film such as pouches and film with foil layers, which are not mandated for kerbside collections and are more difficult to recycle. Reprocessors and innovators can build capacity and refine sorting and pre-treatment processes, working with local authorities to ensure material arriving at their facilities meets specification.

Local authorities, while not direct end-market actors, remain essential to system performance. Reliable kerbside and communal collections, supported by effective bag-delivery or equivalent systems, will help maintain participation and minimise contamination.

A collaborative approach will be increasingly important as mandatory collections drive up feedstock volumes, to give industry the confidence to invest long-term.

5.3 Cost assessment

5.3.1 Costs of collecting plastic film including bag provision

The costs of collecting plastic film are summarised in Table 24, and shown as £ per household, to three decimal places. Initial costs shown in the table are for the first 40 weeks (when the initial supply of bags is likely to run out, on average); ongoing costs are annual. As discussed in section 4.3.1, communications costs are not included as they will vary considerably according to what a council chooses to do. Costs for distribution of additional bags can be reduced to zero if collection crews delivered them as part of their rounds, particularly for multi-stream collections when they could be placed in the emptied box. For commingled collections with wheeled bins, bags would likely need to be delivered through letter boxes, so deliveries by collection crews may not be feasible.

5.3.2 Costs of handling, sorting and recycling plastic film

The costs of recycling the collected film are summarised in Table 25. These costs are presented as £ per tonne of plastic film and total costs scaled for the whole of England.

Table 24: Costs of collecting plastic film (£ per household)

		Collection type and costs (£ per household), low/ mid/ high		
Expenditure type	Timeframe	1. Loose in commingled	2. Bagged in commingled/ two-stream	3. Bagged in multi-stream
Bag type		No bag	Thick (40-micron)	Thin (20-micron)
Initial bag purchase	Initial	-	1.960 / 2.580 / 3.200	0.880 / 1.240 / 1.600
Initial bag distribution	Initial	-	0.400 / 0.400 / 1.150	0.400 / 0.400 / 1.150
Communications	Initial	-	-	-
Additional bag purchase	Ongoing	-	0.510 / 1.342 / 2.496	0.229 / 0.645 / 1.248
Additional bag distribution	Ongoing	-	0.455 / 2.080 / 5.187	0.455 / 2.080 / 5.187
Additional collection time	Both	-	-	0.000 / 0.042 / 0.083
Total	Initial	£-	2.360 / 2.980 / 4.350	1.280 / 1.682 / 2.833
Total	Ongoing	£-	0.965 / 3.422 / 7.683	0.684 / 2.766 / 6.518
Scaled to England	Initial	£-	47m / 59m / 87m	3m / 4m / 7m
Scaled to England	Ongoing	£-	19m / 68m / 153m	2m / 7m / 17m

Note: Initial costs are for the first 40 weeks (when the initial supply of bags is likely to run out, on average); ongoing costs are annual.

Table 25: Costs of handling, sorting and recycling plastic film collected from households (£ per tonne)

	Collection Type		
Cost (£/tonne) <i>low / mid / high</i>	1. Loose in commingled	2. Bagged in commingled / two-stream	3. Bagged in multi-stream
Bulking, storing and transport to MRF	12 / 23 / 25	12 / 23 / 25	-
Handling at MRF/mini-MRF	20 / 30 / 40	20 / 30 / 40	20 / 30 / 40
Sorting at MRF/mini-MRF	105 / 158 / 210	53 / 79 / 105	53 / 79 / 105
PRF gate fee (ex-works)	75 / 77 / 85	75 / 77 / 85	75 / 77 / 85
Total	212 / 288 / 360	160 / 209 / 255	148 / 186 / 230
Scaled to England	2.1m / 2.8m / 3.6m	13.4m / 17.5m / 21.3m	2.9m / 3.6m / 4.5m

For multi-stream collections, no costs are allocated for bulking, storing and transport to a MRF as the bags are separated from the plastic and metals stream at the mini-MRF at the depot/ waste transfer station and baled, and these costs are covered under 'Handling at MRF/mini-MRF' and 'Sorting at MRF/mini-MRF.' Handling costs include consumables, utility bills and fuel. Sorting costs are based on operative costs. Transport costs to the PRF are not needed as the price quoted is the ex-works price, where the PRF operator arranges and pays for transport.

5.3.3 Costs of incineration, including ETS, or landfill

The costs associated with the incineration of plastic film in household residual waste are summarised in Table 26, both per tonne of film and total costs scaled for the whole of England. ETS fees will apply from 1 January 2028, so not for the first 9 months of Simpler Recycling; the modelled cost is based on the most recently forecast carbon price for 2028, and the actual price may vary considerably from this forecast.

Table 26: Costs associated with incineration of plastic film in residual waste (£ per tonne)

Cost	Estimate (£/tonne) <i>low / mid / high</i>
Bulking, storing and transport to EfW	6 / 22 / 58
Gate fee	69 / 121 / 158
ETS cost*	63 / 110 / 149
Total	138 / 253 / 365
Scaled to England (£ total)	25m / 45m / 65m

The costs associated with the landfilling of plastic film in household residual waste are summarised in Table 27, both per tonne of film and total costs scaled for the whole of England. The landfill tax will, like other prices, increase with inflation and the cost used here is the cost for 2025/26.

Table 27: Costs associated with landfill of plastic film in residual waste (£ per tonne)

Cost	Estimate (£/tonne) <i>low / mid / high</i>
Bulking, storing and transport to landfill	9 / 17 / 42
Gate fee	16 / 26 / 59
Landfill tax	126
Total	151 / 169 / 227
Scaled to England (£ total)	3.7m / 4.1m / 5.6m

The costs associated with other treatments of plastic film in household residual waste are summarised in Table 28, both per tonne of film and total costs scaled for the whole of England.

Table 28: Costs associated with other treatment of plastic film in residual waste (£ per tonne)

Cost	Estimate (£/tonne) <i>low / mid / high</i>
Bulking, storing and transport to processing	6 / 22 / 58
MBT Processing	100 / 125 / 150
ETS cost	63 / 110 / 149
Total	169 / 257 / 357
Scaled to England (£ total)	16m / 25m / 34m

5.3.4 Total costs and comparison of streams

The total costs to English local authorities are summarised in Table 29.

Table 29: Summary of total costs to local authorities of collecting and treating plastic film in household waste streams in England

England total	Estimate (£) <i>low / mid / high</i>
Collection for recycling	21m / 75m / 170m
Handling, sorting and recycling	16m / 21m / 25m
Incineration	25m / 45m / 65m
Landfill	4m / 4m / 6m
Other treatment	16m / 25m / 34m
Total	82m / 170m / 301m
Average cost £ per household	3.20 / 6.68 / 11.80

Total costs to local authorities per tonne of plastic film are summarised in Table 30. Costs are indicative and will vary further based on how much film is collected per household. Current yield data indicates that multi-stream collection systems have the highest yield; as such, the cost per tonne of film is lower.

Table 30: Total costs (£ per tonne) of plastic film for various collection approaches

£ per tonne of plastic film <i>low / mid / high</i>	Collected for recycling			Collected as residual		
	No bag	Bagged in commingled/ two-stream	Bagged in multi-stream	Incinerated	Landfilled	Other treatment
	No bag	40-micron bag	20-micron bag	No bag supplied	No bag supplied	No bag supplied
Collection	-	290 / 1028 / 2309	101 / 409 / 964	-	-	-
Handling, sorting and recycling	212 / 288 / 360	160 / 209 / 255	148 / 186 / 230	-	-	-
Disposal	-	-	-	138 / 253 / 365	151 / 169 / 227	169 / 257 / 357
Total	212 / 288 / 360	449 / 1,237 / 2,564	249 / 595 / 1194	138 / 253 / 365	151 / 169 / 227	169 / 257 / 357
Cost rank (1=cheapest)	4	6	5	2	1	3

5.3.5 Data gaps and limitations including factors with significant cost impacts

Estimates of collection yields rely on reported yields from schemes which are already in place, or FlexCollect trials. These schemes are not fully representative of the makeup of English councils in terms of property types and demographics. For instance, very few trials have been conducted that service communal properties, although some are currently being undertaken in Wales. Yields which have been reported show a very high level of variability, ranging from 0.6 to 15.1 kg per household per year.

The traded carbon price under the ETS is also a figure of considerable uncertainty and impact. During the course of this project, the DESNZ forecast for the ETS price in 2028 halved, impacting on the relative costs of EfW and other treatments resulting in incineration compared with landfill and recycling.

It is impossible to say at this point in time the extent to which capital costs incurred by MRF operators in adapting to be able to handle the larger volumes of plastic film coming through will be passed onto local authorities, and how much will be absorbed by MRF operators as a necessary investment to protect the value of and market for fibre streams which will otherwise experience higher levels of contamination from plastic film.

There may be an impact on the price achieved for the fibre stream separated by a MRF if contamination by plastic film rises once this is collected for recycling and the MRF is not able to separate it effectively. This may be more of an issue for MRFs handling loose film, particularly if paper mills have a preference for fibres from MRFs handling bagged films, similar to their preference for fibre streams from MRFs that handle commingled streams that exclude glass. Local authorities collecting two-stream with fibre separate, as recommended under Simpler Recycling, should not be impacted by this, unless residents contaminate the fibre stream with plastic film.

The future development of plastic film sortation and recycling infrastructure in the UK is unknown and will depend on there being a sustainable market for post-consumer film and the willingness of investors to take a risk on this. Some technologies are still at pilot stage and need to be scaled up to development plants then full sized plants capable of handling tens of thousands of tonnes of plastic film. Some of these plants

currently anticipate taking rigid plastics initially, and only adding a film recycling line if the market supports this. There will always be a preference for film from commercial sources, since it is much more homogenous, in larger pieces, and less contaminated than film from household sources. Simpler Recycling mandates the roll out of commercial collections of plastic film at the same time as households, so this competition for sorting and reprocessing facilities will increase and councils may need to pay a premium for household films to be processed. This implies a need for EPR pricing for plastic film at a sufficient level to bridge the gap with post-commercial film; EPR fees apply to materials likely to end up in household streams so would be a driver of this. Post-commercial film counts alongside post-household film under 'post-consumer' film under the Plastic Packaging Tax, so this will not be a sufficient driver.

A worst case scenario was modelled in which none of the additional recycling collected by councils in England is recycled due to lack of additional recycling capacity, or being out-competed by commercial film from the mandated roll out of recycling collections of film from businesses at the same time. This would save on reprocessing costs of £75 to £85 per tonne, but add incineration gate fees of £69 to £158 per tonne and ETS costs of £63 to £149 per tonne – a net additional cost of £57 to £222 per tonne. If this is applied to all the additional recycling collected, approximately 81,000 tonnes, the costs would increase by £5 to £18 million, taking the total for England to £86 to £318 million. Average costs per household would increase to between £3.39 and £12.51 per household, and average costs per tonne of film in household waste arisings would increase to between £218 and £804 per tonne. The costs for individual authorities unable to recycle collected film would increase more than this, as the average cost includes the 15,000 tonnes that are recycled and do not need to be sent to EfW with ETS costs also paid.

6 Implications for local authorities

6.1 Operational and service impacts including infrastructure requirements

6.1.1 Considerations for councils operating commingled or two-stream collections

Figure 11 provides an overview of considerations for councils operating commingled and two-stream collections and subsequent sorting requirements.

The starting assumption is that it is preferable to collect film loose (within the wheeled bins provided for other recyclates) due to the ongoing cost of supply and delivery of bags. Other downsides of bag provision are: it can be difficult to encourage householders to only put plastic film in the bag; householders may put film loose in commingled recycling anyway; householders may treat the bags as a free supply and use them for other purposes such as for bin liners for household residual waste bins; and there may be criticism of the provision of bags made from plastic film in order to collect plastic film for recycling, especially if the film cannot then be recycled.

Loose film is less likely to be blown from lidded wheeled bins than from kerbside boxes, although there is still some risk of loose film being blown by the wind when tipping bins into the collection vehicle.

An essential requirement for collecting film loose within a commingled stream (whether fully commingled or as part of two-stream collections) is access to a MRF that can separate loose film from the other materials. If procuring a new contract, soft market testing is recommended to check accessibility to MRFs with this capability. If a council has an ongoing MRF contract, it should discuss whether the MRF will be able to handle loose film or the film will need to be bagged. Contract variations will need to be invoked or negotiated. If the MRF cannot handle either loose or bagged film in the quantities anticipated, or the contract variations would be too costly, the roll-out may need to be delayed, unless the contract can be broken and a new contract procured that is cost-effective. In each case, the council should assure itself that the MRF has contracted outlets for film.

Common requirements for all councils

If bagged collections are required, they will need to be procured; framework contracts can facilitate this, but there may be delays in securing sufficient quantities for roll-out.

Consider procuring sacks with recycled content, whether for bagged collections of film, commercial waste customers, or use by cleansing operatives. This could potentially be part of securing a processing contract for the collected film.

A communications plan will need to be developed; WRAP provide extensive guidance on this.⁴⁵

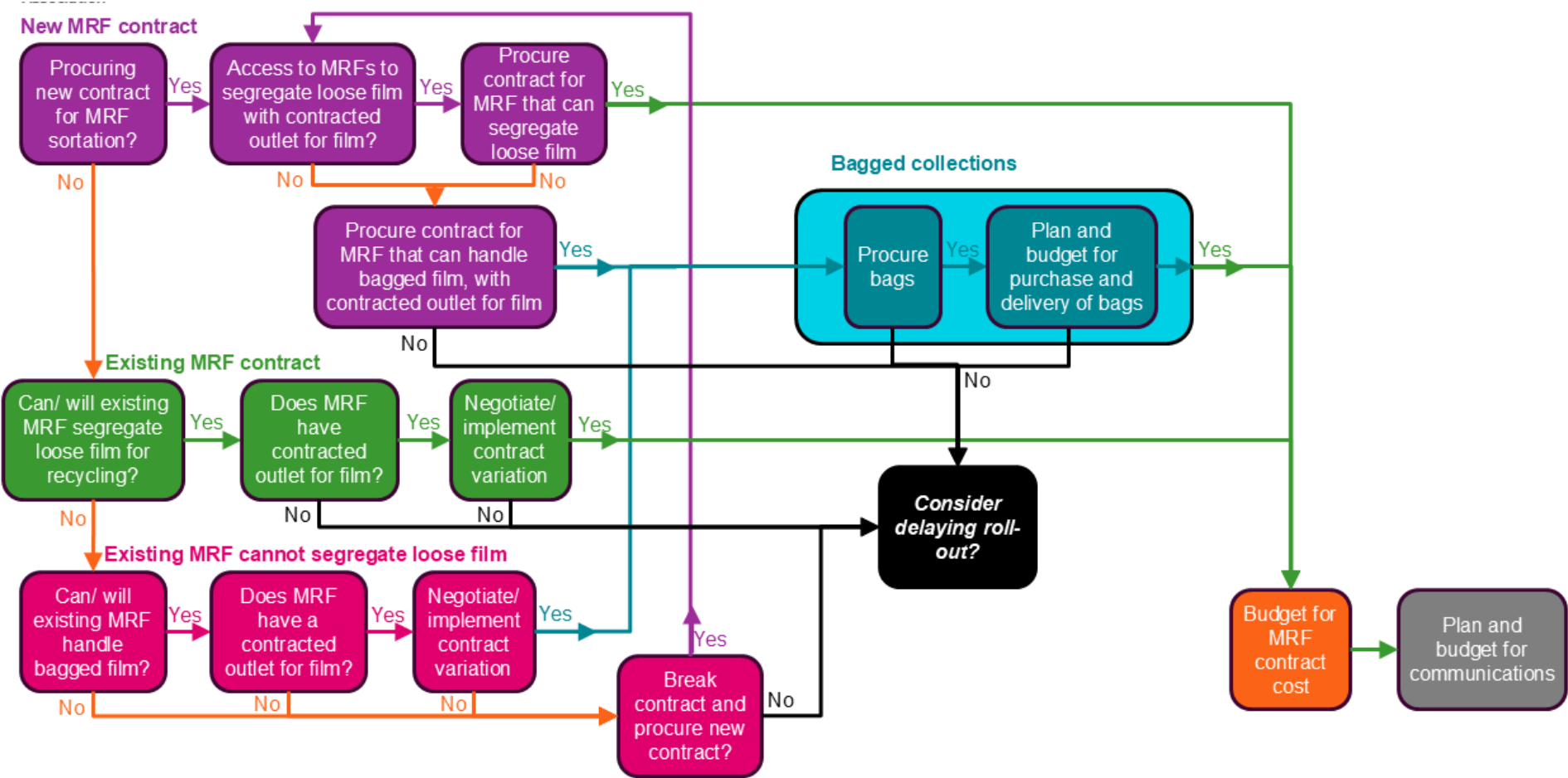
Budgets will need to be carefully tailored to reflect the actual costs to be incurred following negotiations with the MRF contractor, bag procurement and communications development. Likely participation and yields will play a significant role in the balance between paying costs for disposal and paying costs for MRF processing and the subsequent PRF gate fee. The WRAP LA Portal and FlexCollect trial results can give some insight into yields for similar authorities operating plastic film collections.

If a council is minded to delay collections of plastic film it should be noted that Defra's guidance on Simpler Recycling published in March 2025 and updated on 13 May 2025 states that "You cannot use an assessment to justify not collecting any of the dry recyclable waste streams."⁴⁶ Written assessments can be used only to justify how dry recycling materials are collected, not whether they are collected. It is not known what the penalties would be for local authorities that delay collections of plastic film due to not having a MRF that can handle the film, or that does not have a contracted outlet for film, or where the additional cost of collecting film would not be economically practicable.

⁴⁵ WRAP (2025), [Kerbside plastics bag collection guidance & templates: guidance document and supporting assets](#).

⁴⁶ Defra (13 May 2025), [Simpler recycling: household recycling in England - GOV.UK](#).

Figure 11: Commingled and two-stream collections decision tree and tasks



6.1.2 Considerations for councils operating multi-stream collections

Figure 12 provides an overview of considerations for councils operating multi-stream collections (kerbside sort) and subsequent sorting requirements.

The starting assumption is that, since kerbside boxes are used, it is preferable to collect film in bags to avoid wind-blown litter, and also to facilitate segregation at the mini-MRF in the depot. Loose film put out for collection in kerbside boxes is more likely to be caught by the wind than loose film in wheeled bins, since box lids may not be provided, or might be missing, or not tightly fitted. Loose film may also be blown by the wind when tipping boxes into the collection vehicle.

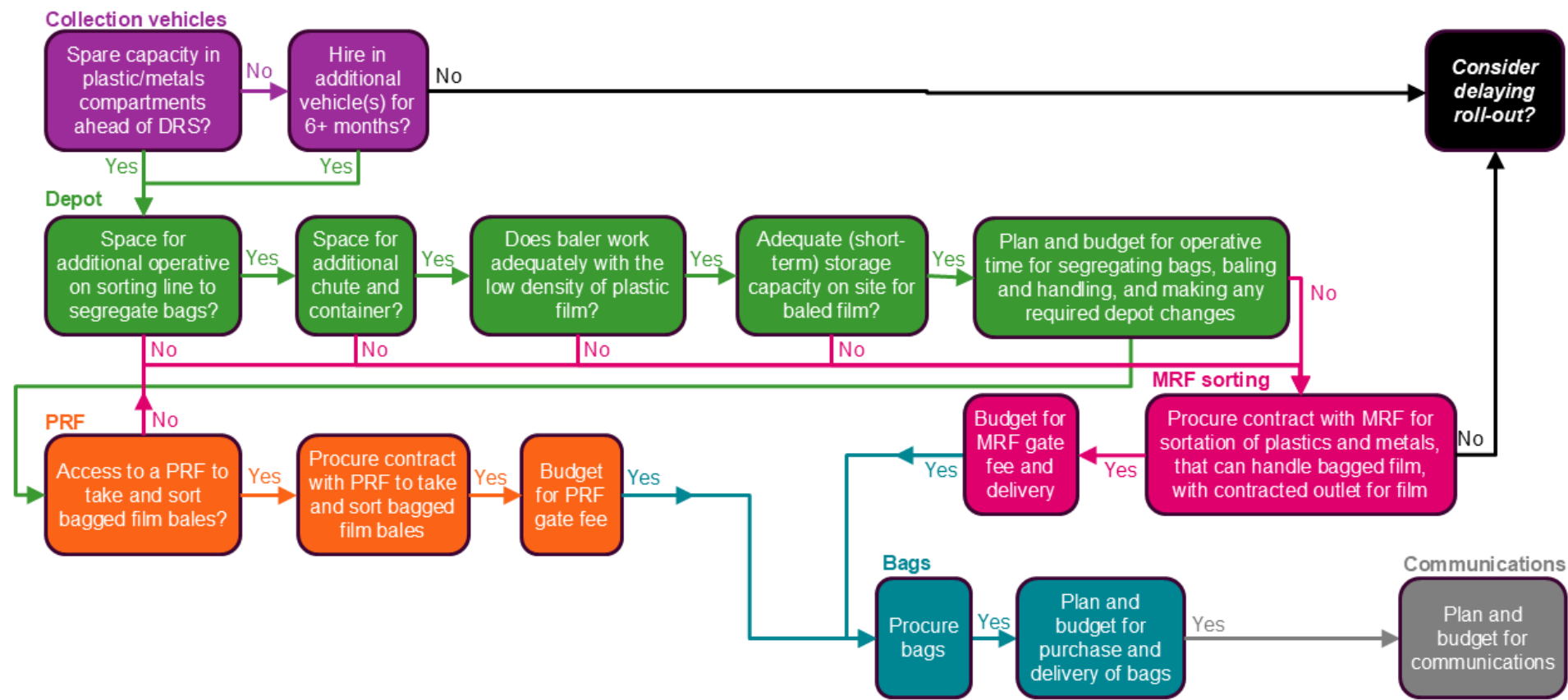
For multi-stream collections, the recommendation is to collect bagged plastic film with the mixed plastics and metals stream, which is stored in the upper compartment of kerbside collection vehicles. There should be sufficient space in this compartment, even if food and beverage cartons are also collected in this compartment in line with Simpler Recycling recommendations. Once the deposit return scheme (DRS) is introduced in October 2027, there will be lower volumes due to fewer plastic drinks bottles and drinks cans being collected. In the unlikely event of there being insufficient space, additional vehicles could be used until volumes drop with implementation of DRS.

A major challenge for many councils operating multi-stream collections is that the space for their mini-MRF sorting line at their depot or waste transfer station is very constrained. There may not be space on the sorting line for an additional operative to segregate bags, or for an additional chute and container. The baler specification should also be checked to determine whether it can bale plastic film. There will also need to be sufficient storage capacity on site for baled film, to be able to send full loads to PRF operators. If these requirements cannot be met, particularly in the short term pending infrastructure changes, a MRF contract may need to be procured to take the mixed plastics and metals with bagged plastic film – or a PRF contract to take mixed rigid plastic and bagged film.

A PRF contract will be needed for the bagged film even if a council is able to segregate the bags adequately at its depot or waste transfer station. The council should assure itself that the PRF has contracted outlets for the film once sorted.

The common requirements for all councils listed in section 6.1.1 also apply.

Figure 12: Multi-stream collections decision tree and tasks



6.1.3 Sales of segregated materials

Risks councils may face if national sorting (PRFs/MRFs) and reprocessing capacity does not keep pace with mandatory film collections from end March 2027 are highlighted below.

a. Potential Impact on Recyclate Quality and Market Value

Flexible plastics in commingled streams can contaminate high-value segregated materials such as paper, card, aluminium and steel. Paper and card contamination can occur because film behaves like 2D material. Contamination of segregated paper/card reduces sale value and may render loads unsellable.

b. Pressure on PRFs/MRFs with Limited Capacity

Without additional UK investment, end-market capacity will fall short of the amounts expected to be collected from 2027. If PRF/MRF capacity is insufficient, councils may face higher gate fees due to constrained reprocessing capacity. Baling and storing film may be required for extended periods, but large storage areas are needed and wet or degraded film becomes unrecyclable.

c. Risk of Increasing Disposal Costs

When reprocessors cannot accept material, councils may be forced to send flexible film to energy recovery or landfill. This would lead to a loss of expected EPR revenue and increased disposal spend, particularly if bale quality is poor, markets become saturated or PRN values fall, reducing economic incentive for recyclers.

d. Impact on Contractual Arrangements

Councils relying on long-term MRF contracts might face:

- Variation charges if film increases contamination or residue levels.
- Rejection of loads if film cannot be extracted efficiently.
- Need for contract renegotiation to include film-specific handling fees.

e. Strategic Implications

To safeguard income from segregated recycling streams, councils should:

- Prioritise bagged presentation if needed for film to minimise impact on fibre quality.
- Confirm that their MRF/PRF can maintain purity of key materials when film tonnages increase.
- Plan for potential interim solutions (e.g. storing baled film, seeking European reprocessing markets).

6.1.4 ETS impacts for plastic film sent to EfW, RDF or SRF

ETS will apply to plastic film sent to EfW, RDF or SRF from 1 January 2028, so until that time ETS charges will not apply. Since the ETS involves trading allowances, the prices are not known in advance.

Operators of energy from waste plants will pass on ETS costs for any plastic in their input stream. This incentivises diversion of plastic from residual waste streams to recycling. For local authorities, this will rely on having both effective collection systems and recycling outlets for collected plastic and achieving high engagement, participation and capture by residents.

MRF operators and potentially PRF operators may pass on ETS costs for disposal of rejected materials to EfW, RDF or SRF. This may influence the cost-effectiveness of loose compared with bagged collections, since more film may be rejected during MRF processing of commingled streams including films.

6.2 Communications

It is recommended to follow WRAP guidance on communications; a full set of template leaflets is provided.⁴⁷

⁴⁷ WRAP (2025), [Kerbside plastics bag collection guidance & templates: guidance document and supporting assets](#).

Careful consideration should be made of the list of materials to be accepted or not accepted in the scheme, particularly for plastic film not mandated for collection under Simpler Recycling such as pouches, fruit nets, small items, ready meal lids, cling film, film with paper or foil layers and oxo-degradable, biodegradable or compostable film. Table 1 in section 3.1 provides an overview of what materials do and do not need to be accepted under Simpler Recycling and Figure 1 in that section provides WRAP's recommended list of plastic bags and wrapping to be collected for recycling. These should also be discussed with the MRF and/or PRF operator.

6.3 Data gaps, uncertainties and risk

The following is a summary of some data gaps, uncertainties and risk to be considered when planning for the roll-out of film collections.

- **Costs:** There is high uncertainty in:
 - the ETS carbon price
 - MRF pass-through of investment costs for loose-film sortation
 - MRF and PRF pass-through of ETS costs for disposal of unrecyclable fractions
 - participation, capture and bag usage rates
 - contamination rates
 - film value: this is very volatile, being dependent on oil prices and PRN/PERN prices and available sortation and reprocessing capacity.
- **Yields and behaviour:**
 - There is currently limited evidence of recycling yields for communal properties.
 - Participation estimates rely on FlexCollect trials data and may not translate across demographics.
 - The effect of future mandatory labelling on capture/contamination is unknown.
- **Material quality:**
 - Household film is typically smaller, dirtier, more inked/ coloured, and more heterogeneous than commercial film.
 - There is a risk to fibre quality from MRFs if film is collected loose and is not effectively extracted.

- Export under Basel B3011 requires very low contamination.
- **Non-packaging film:**
 - Approximately 14 per cent of household film is non-packaging (e.g. bin liners) and therefore not funded by packaging EPR.
 - Collection bags supplied by councils add further film tonnage that needs managing.
- **Infrastructure and markets:**
 - Future UK PRF/reprocessor investment is not guaranteed; dissolution and chemical recycling for household film are pre-commercial and energy-intensive.
 - Some planned plants prioritise rigid plastics.
 - Recyclable film may be sent for disposal if there is insufficient capacity at an economically viable price.
- **Policy/regulatory:**
 - Final EPR fee splits for flexibles vs rigids from 2027/28 are unknown.
 - RAM ratings may change as collection prevalence and technology evolve.
 - Payments to local authorities under EPR for dealing with film may vary considerably from year to year.

Appendix A: Plastics glossary and acronyms

EVOH (ethylene vinyl alcohol): An oxygen-barrier polymer used in multilayer films for meat/cheese etc. Recyclable only when present at <10 per cent by weight of the pack (some sources state <5 per cent).

LDPE (low-density polyethylene): a flexible, lightweight thermoplastic polymer made from the monomer ethylene that is tough and resistant to chemicals and widely used to make bags and wraps.

HDPE (high-density polyethylene): a thermoplastic polymer made from the polymerization of ethylene, characterized by a dense, linear molecular structure that provides high strength, chemical resistance, and durability. Commonly used to make milk bottles, but can also be used for films.

PE (polyethene): A family of polyolefins (LDPE/ LLDPE/ HDPE) widely used for plastic films, bags, and wraps, particularly shrink wraps and stretch wraps; recyclability depends on clarity, contamination and additives.

PET (polyethylene terephthalate): A polyester polymer used for bottles, trays and lidding films. PET films are excluded from the requirement to collect under Simpler Recycling, which specifies polyolefins. They are not widely recycled from household film streams and cause contamination of PE and PP film recycling.

PO (polyolefin): A class of polymers derived from olefins – primarily polyethylene (PE) and polypropylene (PP) – that dominate household flexible packaging.

PP (polypropylene): A polyolefin used in salad bags, multipack wraps and metallised snack packs, especially where wrapping is sealed at both ends. Mono-material PP films are technically recyclable, particularly for clear films, but actual recycling depends on markets and contamination.

rLDPE, rPET, rPP: Polymers with recycled content.

Appendix B: General glossary and acronyms

Business consumption: All non-household consumption, including commerce, industry, agriculture, construction and demolition, and institutions such as central and local government, hospitals etc.

Capture rate: The percentage of a specific type of waste material that is successfully collected for recycling out of the total amount of that material generated. This may be considered at a household level or a system level.

Chemical recycling: A set of processes (e.g. depolymerisation, pyrolysis, gasification) that break plastics down into monomers or hydrocarbons to make new plastics or chemicals; can remove contamination and potentially enable food-grade outputs, but technologies are emerging and energy-intensive.

Circular economy: An economic system aimed at eliminating waste and the continual use of resources. It contrasts with a traditional linear economy, which follows a 'take, make, dispose' model. In a circular economy, resources are kept in use for as long as possible, extracting the maximum value from them while in use, then recovering and regenerating products and materials at the end of their service life. This approach involves reusing, repairing, refurbishing, recycling and remanufacturing to create a closed-loop system, minimising the use of resource inputs and minimising the creation of waste, pollution, and carbon emissions.

Closed-loop recycling: a system where materials are collected, processed, and transformed back into the same product without losing quality. Contrasts with **open-loop recycling** and **downcycling**.

Commercial: Commercial waste is waste that is not from households, including business, industry, agriculture, construction and demolition, and institutions such as central and local government, hospitals etc.

Commingled: Commingled collections involve different recycling streams being collected together in a wheeled bin, box, or bag, and taken for sorting at a **materials recovery facility (MRF)**.

Communal collections: Collections from containers shared by multiple households, such as in blocks of flats.

Consumer: A person or a group who orders or uses purchased goods, products, or services primarily for personal, social, family, household and similar needs, not directly related to entrepreneurial or business activities.

Dissolution recycling: A solvent-based process that selectively dissolves a target polymer from mixed plastics; contaminants remain undissolved and are removed before the polymer is precipitated and re-extruded (with the polymer chains remaining intact).

Downcycling: Recycling a material into something of lower quality or value than the original product. Contrasts with **closed-loop recycling**.

EfW (energy from waste): Burning of waste materials, with heat or other energy recovered.

EPR (Extended Producer Responsibility): A policy approach whereby producers are given significant responsibility – financial and/or physical – for the treatment or disposal of post-consumer products. Under the UK packaging EPR (pEPR), packaging producers (brands and importers) are charged a fee per tonne of each packaging material to pay for the cost of local authorities managing household packaging.

ETS (Emissions Trading Scheme): The UK ETS is a cap-and-trade system in which businesses in specific energy-intensive sectors are allocated emissions allowances, which they can sell to others if they emit less carbon than they are allocated, or must buy more allowances if they emit more than they are allocated. The ETS will be expanded to cover energy from waste and other waste incineration operations from the beginning of 2028.

ETS traded carbon values: The market price of carbon emissions allowances under a cap-and-trade system.

Fibres: Paper and/or card.

Film: A thin and flexible plastic material commonly used as packaging in the form of bags or wraps. Most flexible plastics used for packaging are films.

Flexibles: Plastics classified as 'flexible' refer to packaging structures which flex easily, and which can be made of single or multiple layers of materials. Common

examples of flexible plastic packaging include bread bags, snack wrappers, netted produce bags, zip-lock pouches, lidding film and sachets⁴⁸.

FlexCollect: Project trialling a series of flexible plastic household collection and recycling pilots in the UK between 2022 and 2025.⁴⁹

Flow diagrams: Visual representations of the movement of materials, energy, costs or information through a system.

Household waste: Waste generated by households and managed by local authorities including waste and recycling from **kerbside collections**, **communal collections**, recycling banks, or household waste recycling centres (**HWRCs**), as well as waste from litter bins, street sweepings, parks and grounds waste.⁵⁰

HWRC (Household Waste Recycling Centre): Also referred to as Civic Amenity sites (CAs), Household Recycling Centres (HRCs), Community Recycling Centres (CRCs), or commonly as 'tips'.

Jazz film: Coloured film.

Kerbside collections: Recycling or waste collection services provided directly at the kerb outside residences.

Kerbside sort: See **Multi-stream collections**.

kg/hh/yr: An abbreviation for kilograms per household per year, a measure of recycling yield. Equivalent to tonnes per 1000 households per year.

kt: Thousand (metric) tonnes.

Landfill: Disposal of waste material by burying it.

LAPCAP (Local Authority Packaging Cost and Performance) Model: A model developed by Defra on behalf of the four nations which has been used to calculate

⁴⁸ Defra (4 September 2025), [Recyclability assessment methodology: stages of recyclability and definitions - GOV.UK](#).

⁴⁹ [Flexible Plastic Fund](#) (2022 to 2025), [Household collections — Flexible Plastic Fund](#).

⁵⁰ Defra/ Government Statistical Service (12 May 2021): [Statistics on waste managed by local authorities in England for April to June 2020 Provisional Data](#).

the net efficient costs incurred by every LA in the UK for the management of household packaging waste.

MBT (Mechanical biological treatment): A process that reduces the water content of residual waste, extracts metals, and produces a compost-like output from the biodegradable waste fraction and a **refuse-derived fuel (RDF)** or **solid recovered fuel (SRF)** with high calorific value from the remainder.

MRF (materials recovery facility): Facilities that receive commingled recycling and, via a series of mechanical processes, and usually some manual interventions, separate this into different material streams, such as ferrous and non-ferrous metals, paper, card, glass, and plastics.

Mechanical sorting: The use of physical processes (screens, air classifiers, optical/near-infrared sorters, conveyors) and manual picking to separate mixed recyclables into distinct fractions.

Mini-MRF: A small-scale **materials recovery facility (MRF)** used at a depot or waste transfer station by local authorities (or their contractors) operating multi-stream collections. These separate the plastics and metals streams that are typically collected together into ferrous metals (steel), non-ferrous metals (aluminium) and a remaining plastics stream. Under Simpler Recycling, this mixed stream may also include fibre-based composite drinks cartons as well as plastic film.

Model inputs: Data and assumptions used to create a model for predicting outcomes.

Multi-stream collections: Collections where householders and/or recycling collection crews separate recycling into different material streams that are deposited into assigned compartments on a recycling collection vehicle or onto different vehicles. Often referred to as kerbside-sort collections or source-segregated collections.

Open-loop recycling: Recycling a material into a different product or format than the original material. Contrasts with **closed-loop recycling** and **downcycling**.

PackUK: The scheme administrator for the UK's Extended Producer Responsibility for packaging (pEPR) programme.⁵¹ It sets pEPR fee rates for household packaging materials, collects these fees from obligated producers who place household packaging onto the market, and makes payments to local authorities to cover the cost of managing household packaging waste.

Participation rate: The percentage of households that actively participate in recycling programs by placing their recyclable materials out for collection.

PCR (post-consumer recycled) plastic: Plastic that has been used by consumers, either as a product or packaging, and then collected, sorted, processed and recycled into new products or packaging. It differs from manufacturing scrap that is recycled (pre-consumer recycling). For the purposes of the Plastic Packaging Tax, the definition includes plastic generated by commercial, industrial or institutional facilities in their role as end-users of the product, plus returns from the distribution chain, as well as plastic generated households.⁵²

pEPR (Packaging Extended Producer Responsibility): see EPR.

Plastic Packaging Tax: A tax introduced in 2022 on plastic packaging manufactured or imported into the UK containing less than 30 per cent recycled content. Pre-consumer recycling can be included until April 2027 as well as post-consumer recycled plastic. The rate in 2025-26 is £223.69 per tonne of plastic packaging without 30 per cent recycled content.⁵³ This will be increased in line with CPI inflation to £228.82 from 1 April 2026.⁵⁴

POM: Refers to 'Placed on the Market' – the act of making goods available for sale. Packaging POM refers to packaging used for goods placed on the market.

⁵¹ [PackUK - GOV.UK](#).

⁵² The National Archives (1 April 2022), Finance Act 2021, Chapter 26, Section 49, paragraph (6): [Finance Act 2021](#).

⁵³ Valpak (5 November 2024): [Understanding the UK Plastic Packaging Tax: Key changes and future implications](#).

⁵⁴ HM Revenue & Customs (12 February 2026): [Plastic Packaging Tax: steps to take - GOV.UK](#).

PRF (plastics recovery facility): A facility that sorts, grades, and prepares mixed plastic recycling into separate fractions or polymers for onward use at a **reprocessing facility**.

Primary data: Original data that is collected firsthand for a specific research purpose. Contrast with **secondary data**.

PRN (Packaging Waste Recovery Note)/ PERN (Packaging Waste Export Recycling Note): Tradable certificate issued by accredited reproprocessors in the UK/ exporters (respectively) to demonstrate that a specific amount of packaging waste has been recovered and recycled/ sent for recycling abroad.⁵⁵ Targets are set for recycling for each packaging material. Businesses that handle packaging and meet certain thresholds are required to obtain PRNs or PERNs to cover the recycling target for the amount they place on the market. When recycling is below target, the PRN/ PERN price goes up, and vice versa when it is above target.

RAM (Recyclability Assessment Methodology): The UK methodology used to assign green/ amber/ red recyclability ratings for modulated pEPR fees, based on collection prevalence, sortability, reprocessability and end markets.

RDF (refuse derived fuel): A type of solid fuel produced from various types of waste, including plastics, paper and cardboard in a residual waste stream. It is used as an alternative to fossil fuels in some industries and in specialist power plants.

Recyclate: Recyclable materials that have been separated out for recycling.

Reprocessing facility/ reprocessor (for plastic film): A facility that takes plastic film, typically from a **MRF** or **PRF**, and prepares it for use by a plastics manufacturer, extruder or moulder. The preparation may include additional sorting then washing, followed by flaking and/or extrusion into pellets or granules. It must achieve a quality that is high enough to be used in plastics processing instead of virgin material.

Residual waste: Waste that is not recycled and is typically sent to **landfill** or **energy-from-waste (EfW)** incineration.

⁵⁵ Department for Environment, Food and Rural Affairs (24 Mar 2026), [Consultation on proposals for reform to the Packaging Waste Recycling Note \(PRN\) system - Defra - Citizen Space](#).

Rigid plastics: Plastics that retain a fixed shape under normal handling (e.g. bottles, pots, tubs and trays), as opposed to **flexible** films and bags.

Secondary data: Information that has already been collected. Contrast with **primary data**.

Segregated collections/streams: See **Multi-stream collections**.

Sensitivity analyses: Analyses used to determine how different values of an independent variable affect a particular dependent variable under a given set of assumptions.

Simpler Recycling: A requirement for local authorities in England to provide more standardised recycling collections, with a mandated core set of materials that must be collected at the kerbside from every household from March 2026, with plastic film packaging and plastic bags required to be collected from March 2027.⁵⁶ Similar requirements apply to collections from businesses.⁵⁷

SRF (solid recovered fuel): An alternative to fossil fuels produced from **residual waste** that is processed to be of a higher quality than **RDF**. A typical disposal route for non-target waste separated by **MRFs**.

Tonnage flows: The movement of a quantity of waste materials measured in tonnes.

Two-stream collections (or twin-stream collections): These involve one type of recycling, such as glass or **fibres** (paper and/or card) being collected in a separate stream, with the rest collected in a **commingled** stream. It is assumed that if plastic film is collected in a two-stream collection, it will be collected in the commingled stream, either loose or bagged, which will then be taken for sorting at a materials recovery facility (**MRF**).

Waste from households: Waste generated by households and managed by local authorities, but excluding waste considered not to have come directly from households, such as waste from litter bins, street sweepings, parks and grounds

⁵⁶ Defra (13 May 2025): [Simpler recycling: household recycling in England - GOV.UK](#).

⁵⁷ Defra (3 October 2025): [Simpler recycling: workplace recycling in England - GOV.UK](#).

waste.⁵⁸ It includes waste and recycling disposed of in **kerbside** and **communal collections**, recycling banks, or at **HWRCs**. In contrast, 'household waste' includes waste from litter bins, street sweepings, parks and grounds waste.

WasteDataFlow:⁵⁹ A web-based system for municipal waste data reporting by UK local authorities.

⁵⁸ [Statistics on waste managed by local authorities in England for April to June 2020 Provisional Data](#).

⁵⁹ [WasteDataFlow Waste Management](#) (Last updated 3 April 2024).

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