Implementation of the Waste Hierarchy

Submitted to the Office for Environmental Protection

Prepared February 2026

Final Draft

Report For

Office for Environmental Protection

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Acknowledgements

Our thanks to the interviewees who contributed their experience and insight to this study.

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Version control table

Version	Date	Author	Description
V0.2	8/12/2025	Christine Batty, Lydia Gardiner, Taylor Otterson, Emily Cevallos Janssen	First draft
V0.3	12/12/2025	Christine Batty, Lydia Gardiner, Taylor Otterson, Emily Cevallos Janssen, Peter Jones Quality reviewed by Andy White, ICF	First draft
V1.0	17/12/2025	Christine Batty, Lydia Gardiner, Taylor Otterson, Emily Cevallos Janssen	First draft – submitted to OEP
V1.1	12/01/2026	OEP	Review by OEP
V1.2	20/01/2026	Christine Batty, Lydia Gardiner, Taylor Otterson, Emily Cevallos Janssen	Revisions based on client comments
V1.3	21/01/2026	Peter Jones	Internal QA
V2.0	27/01/2026	Christine Batty, Lydia Gardiner, Taylor Otterson, Emily Cevallos Janssen	Second draft – submitted to OEP
V2.1	05/02/2026	OEP	Review by OEP
V2.2	10/02/2026	Christine Batty, Lydia Gardiner, Taylor Otterson, Emily Cevallos Janssen	Revisions based on client comments
V2.2	11/02/2026	Peter Jones	Internal QA
V3.0	12/02/2026	Christine Batty, Lydia Gardiner, Taylor Otterson, Emily Cevallos Janssen	Final draft – submitted to OEP

Executive Summary

Approach

The waste hierarchy is a framework for deciding how to manage waste, based on which is likely to be environmentally preferable. It underpins modern waste policy across the European Union and around the world. This report evaluates the extent to which the waste hierarchy has influenced waste management in England since its transposition into English law in 2011. The evaluation draws on three core evidence streams:

1. Data Analysis: Examination of Defra's *UK Statistics on Waste dataset* (2010-2022) and *WasteDataFlow* local authority data (2010/11-2023/24) to examine whether trends in waste arisings, treatment methods and material flows across household, commercial, industrial and construction waste streams suggest that waste management practice has changed so as to conform with the waste hierarchy more closely.

2. Literature Review: A targeted review of national policy documents, local authority waste strategies, site-allocation policies and planning decisions for waste infrastructure to identify how far the hierarchy has shaped strategic direction, service design and infrastructure development.

3. Stakeholder Interviews: 15 interviews were conducted with representatives drawn from six stakeholder groups: government departments and regulators, local government and the wider public sector, industry and trade bodies, NGOs and campaign groups, research advisory and collaborative organisations and waste contractors. Interviews explored perceptions of the waste hierarchy, barriers to its implementation, and mechanisms for systematic improvement, making the hierarchy more effective in practice.

Evidence from these sources was examined to assess whether the waste hierarchy has had a discernible effect on waste outcomes, waste planning, or the way waste is thought about amongst those engaged with the topic, and to consider how it could be made more effective.

Key findings

Data analysis

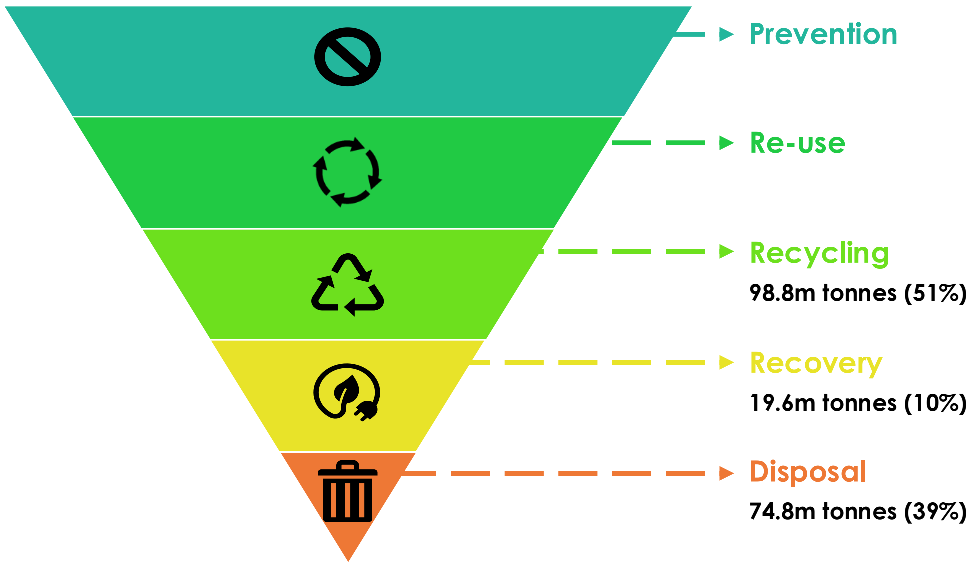
The data analysis found that total waste in England rose by 13% between 2010 and 2022, a per-capita increase of 5%, indicating no clear progress on waste prevention (see Figure 1.1). Some waste streams (textiles, paper/card, rubber, and food waste) have declined, apparently driven by wider trends such as consumer behaviour, lightweighting, offshoring of manufacturing, and reduced print consumption, rather than by the waste hierarchy. Recycling rates for all final-treated waste increased marginally, from 50.7% in 2010 to 51.1% in 2022. Landfilling fell from 25.6% to 21.4% of all waste between 2010 and 2022. However, standard-rate landfill volumes began their decrease in 1997, well before the hierarchy was introduced, suggesting that the cost of landfill and the development of incinerators as an alternative was the more significant factor in changing practice.

Local authority collected waste per capita fell 13% since 2011/12. However, the recycling rate achieved by local authorities in 2023/24 was 41.4%, virtually unchanged from 2011/12 despite many having expanded recycling services. Recycling tonnages fell 2% (11% per capita), while 'other recovery' (mainly incineration) rose 214%. Key contributory factors included:

- slow progress on introducing recycling services, especially food waste collections, in some areas, until policies that have not yet affected the statistics (e.g. Simpler Recycling) were introduced;
- garden waste charges reducing composting tonnages;
- lightweighting of packaging; and
- mixed or inconsistent policy signals (e.g., the Weekly Collection Support Scheme).

Overall, the data suggests that financial drivers, rather than the hierarchy itself, have been the primary determinants of waste treatment outcomes – although this may be changing as measures such as Simpler Recycling and packaging Extended Producer Responsibility take effect.

Figure 1-1: Infographic presenting final treatment methods for all waste in 2022[1]



Literature review

The review of national policy documents, local strategies, site allocation policies and planning decisions showed that national policy has often been aspirational rather than directive. Documents such as the Waste Management Plan for England (2013) and Waste Prevention Plan (2013) referenced the hierarchy, but contained few binding targets. Achievements, such as the 98% reduction in plastic bag use, tended to be single-issue interventions rather than elements of systemic, hierarchy-driven approach.

Local authority strategies frequently referenced the hierarchy but rarely operationalised prevention or reuse. Across the case studies reviewed, hierarchy language was often strong, but targets and funding focused on recycling rather than prevention or reuse. Residual waste infrastructure (particularly EfW) was frequently prioritised within long-term planning frameworks and progress was limited by systemic barriers such as housing stock, contamination, and lack of space in dense urban areas.

The review also found that planning decisions acknowledged but rarely prioritised the hierarchy. EfW case studies (Lostock, Waterbeach) showed that the hierarchy was typically referenced as context rather than as a decisive factor. Decisions tended to hinge on local environmental, visual or heritage impacts, not whether higher tiers of the hierarchy had been maximised. The application of waste acceptance criteria was sometimes deemed sufficient to satisfy the planning inspector that the waste

[1] Material that is sent directly for reuse, or is otherwise prevented from becoming waste, does not meet the criteria for being characterised as waste and is therefore not reflected in the data. See footnote 17 for further details.

hierarchy would be applied effectively, without consideration of the quantity of recyclables remaining in the residual stream or the risk of disincentivising further measures to increase recycling.

Overall, the literature review showed that the hierarchy consistently features in the narrative on policy and practice, but appears rarely to be given priority over practical, financial or other factors in decisions.

Interview findings

Interviewees generally considered the hierarchy to provide a useful conceptual framework but did not believe it was a meaningful driver of behaviour. Economic levers such as the Landfill Tax had far greater influence on decisions that affected large amounts of waste; prevention and reuse remain niche, underfunded and difficult to scale, being prioritised below recycling, which is more measurable. Key barriers to greater application of the waste hierarchy included:

- Lack of policy and regulatory drivers for prevention and reuse; delays to Extended Producer Responsibility (EPR) changes (especially the introduction of packaging EPR (pEPR)), Deposit Return Scheme (DRS) and other reforms have exacerbated this gap.
- Economic disincentives, including the cost-competitiveness of virgin materials and limited commercial viability of repair.
- Insufficient funding, with England offering less support for reuse/repair initiatives than Wales or some EU countries.
- Skills gaps and limited infrastructure, especially for repair services.
- Complexity of End of Waste rules, hindering innovative recycling and reuse solutions, particularly in construction soils and organics.
- Weak enforcement, with little evidence of the hierarchy being actively enforced by regulators.
- Cultural barriers, including growing consumption of low-cost items, short product lifespans and limited public awareness of the hierarchy.

Opportunities noted by interviewees included the expansion of Simpler Recycling, EPR and DRS to drive upstream change; national communication campaigns to normalise reuse and repair; targeted incentives for product design, repairability and the reuse sector; and revising or clarifying hierarchy guidance to address lifecycle exceptions and modern material flows. Overall, interviewees viewed the hierarchy as symbolically important but practically weak, a principle that needs stronger regulatory and economic backing to generate measurable impact.

Recommendations

This report includes detailed recommendations in section 6.0, drawn from interviews and Eunomia's analysis. These are directed towards a range of actors (e.g. local authorities, waste management companies, regulators). One of the key opportunities identified from this exercise in improving implementation of the waste hierarchy is to enable delivery against the 25YEP targets on municipal waste recycling and residual waste reduction.

For government, recommendations focus on strengthening and extending existing policies, including widening the scope of pEPR and applying EPR to additional material streams. New measures are proposed, such as local authority recycling targets and a review of landfill tax treatment for soils. The report also emphasises stronger action on reuse and waste prevention, including a right to repair and adding reuse targets to the beverage deposit return scheme.

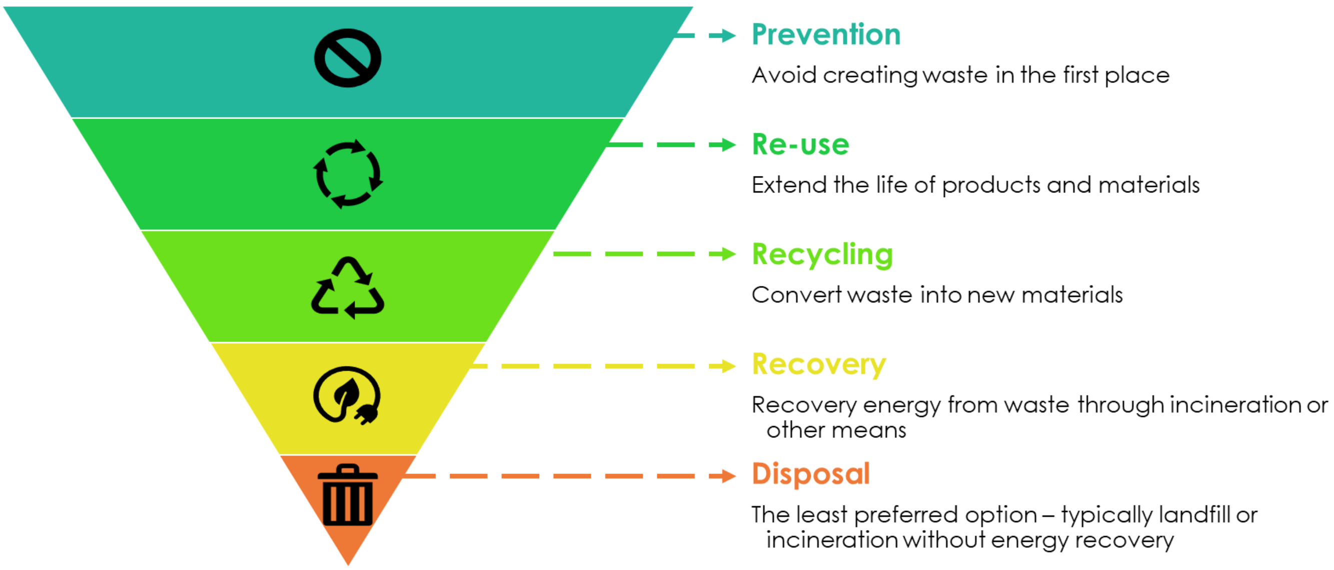
For the Office for Environmental Protection (OEP), the recommendations highlight opportunities to undertake further research, particularly to examine barriers to meeting 25YEP waste targets and comparative analysis across the UK's four nations to identify how different policies have led to different outcomes in terms of the proportion of waste managed at each tier of the waste hierarchy.

Table of Contents

1.0 Introduction

The waste hierarchy is a framework for deciding how to manage waste. It ranks different waste management approaches in order of environmental preference, prioritising actions that maximise resource efficiency (see Figure 1-1). This framework underpins modern waste policy across the European Union (EU) and has been adopted in England as part of efforts to reduce the environmental impact of consumption and move away from a traditional linear model to promote a more circular economy.

Figure 1-1: The Waste Hierarchy



The concept of the waste hierarchy was developed by a Dutch politician, Ad Lansink, who proposed it to the Dutch parliament in 1979. It was then adopted into EU law in abbreviated form through Article 3 of Directive 91/156/EEC,[2] before being incorporated in full in Article 4 of Directive 2008/98/EC. The 2008 Directive required member states to apply the hierarchy "*as a priority order in waste prevention and management legislation and policy*."[3]

As well as influencing the thinking of policymakers in England, the waste hierarchy was transposed into English (and Welsh) law through the Waste (England and Wales) Regulations 2011, which require anyone handling or controlling waste to apply the waste hierarchy whenever waste is transferred, with all transfers of commercial waste having to be accompanied by a declaration that the waste hierarchy has been applied. It was supported by statutory guidance.[4] The influence of the waste hierarchy as a guide to thinking in waste management in England is evident through the frequency with which it is referred to

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[2] European Commission (1991) *Council Directive 91/156/EEC of 18 March 1991 amending Directive 75/442/EEC on waste*. Available at: https://eur-lex.europa.eu/eli/dir/1991/156/oj/eng
[3] European Commission (2008) *Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives*. Available at: https://eur-lex.europa.eu/eli/dir/2008/98/oj/eng
[4] HM Government (2011) *Guidance on applying the Waste Hierarchy*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69403/pb13530-waste-hierarchy-guidance.pdf

in documents such as national strategies[5] and local plans related to waste,[6] planning decisions on waste infrastructure[7] and even waste company websites.[8]

In the Waste Management Plan for England, Defra described the waste hierarchy as *"enshrined in law through the Waste (England and Wales) Regulations 2011"* and wrote that:

> *The waste hierarchy… has driven some progress towards better use of our resources…. Our focus is on moving up the waste hierarchy, to minimise the amount of waste we produce by improving our resource efficiency and keeping products in circulation longer so that they do not become waste.*[9]

This highlights the Government's view that the waste hierarchy has had an influence on waste management and continues to shape the Government's approach[10].

It is certainly true that in the past quarter century, England has made significant progress in moving some waste streams up the waste hierarchy. Prior to the millennium, the great majority of municipal waste in England was landfilled, with energy recovery and recycling being rare. In 2000/01, the English local authorities collected 28 million tonnes of waste, of which 78.5% was landfilled, with just 12.3% being recycled. In 2023/24, the amount collected had fallen to 25 million tonnes, despite population growth of over 18%.[11] Of this, just 5.5% was landfilled, while 41.4% was recycled and 49.9% incinerated for energy recovery.[12] It is substantial progress. However, this data set shows that, while reliance on landfill has declined steadily since the waste hierarchy was brought into law, the recycling rate has remained little changed, while reliance on incineration increased substantially. This suggests that it is factors other than the waste hierarchy itself that are likely to have had the biggest impact on how waste is managed in England, although developments have been somewhat consistent with waste hierarchy principles.

2.0 Introduction to the project

The Office for Environmental Protection (OEP) has welcomed the Government's commitment to a zero-waste economy, the formation of a Circular Economy Task Force (CETF) and the CETF's. role in developing an evidence-driven and actionable Circular Economy Strategy underpinned by a series of roadmaps for reform in different sectors.[13] While the Circular Economy Strategy (now known as the 'Circular Economy Growth Plan') will endeavour to steer the economy towards circularity and reduce

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[5] For example, the 2018 *Resources and Waste Strategy for England* (available at: https://assets.publishing.service.gov.uk/media/5c18f11740f0b60bbee0d827/resources-waste-strategy-dec-2018.pdf) mentions the waste hierarchy 22 times, while the 2021 *Waste Management Plan for England* (available at https://assets.publishing.service.gov.uk/media/60103f71d3bf7f05bc42d294/waste-management-plan-for-england-2021.pdf) mentions it 25 times.

[6] For example, see Bristol City Council's 2016 document *Towards a Zero Waste Bristol: Waste and Resource Management Strategy*, available at: https://www.bristol.gov.uk/files/documents/820-towards-a-zero-waste-bristol-waste-and-resource-management-strategy/file

[7] For example, the planning decision regarding a proposed incinerator in Hoddesdon, Hertfordshire, available here: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819027/19-07-19_DL_IR_Addendum_Rattys_Lane_3195373.pdf

[8] For example, waste collector First Mile explains the waste hierarchy to its customers here: https://www.thefirstmile.co.uk/the-big-picture/the-waste-hierarchy-what-it-means-for-your-business

[9] Defra (2021) *Waste Management Plan for England*. Available at: https://assets.publishing.service.gov.uk/media/60103f71d3bf7f05bc42d294/waste-management-plan-for-england-2021.pdf

[10] The Environmental Targets (Residual Waste) (England) Regulations 2023 has targets which is the OEP's primary lever for influence.

[11] Office for National Statistics (2025) *Population estimates time series dataset* (released 26 September 2025) Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatestimeseriesdataset

[12] Defra (2025) *Local authority collected waste management – Provisional annual results 2023/24*, Figure 7. Available at: https://www.gov.uk/government/statistics/local-authority-collected-waste-management-annual-results/local-authority-collected-waste-management-provisional-annual-results-202324#management-of-all-local-authority-collected-waste-202324-table-4-and-figure-7

[13] Terms of Reference: Circular Economy Taskforce (2024). Available at: https://assets.publishing.service.gov.uk/media/6762f1afcdb5e64b69e307d9/20241217_-_CE_Taskforce_ToRs_for_gov.uk.pdf

the amount of waste generated, the early indications are that its focus will be on product design and patterns of resource consumption.[14] This is a much-needed area for intervention and has the potential to be highly impactful in reducing waste and/or increasing the opportunity for reuse or recycling. However, while it may prevent waste, it is not expected to directly address the management of the waste that continues to arise. The latest Environmental Improvement Plan (EIP 25) is likely to address this gap, although it currently lacks a well-defined waste delivery plan.

This project builds on previous OEP research[15] and develops OEP's work by evaluating the extent to which the application of the waste hierarchy through policy and implementation of legal duties has been effective in moving waste management to the higher levels of the hierarchy as possible.

2.1 Aim

The overarching aim for this report is to answer the following research question:

> *What are the current barriers, opportunities and solutions for effective application of the waste hierarchy in England?*

It does this by asking how effective the implementation of the waste hierarchy has been to date by examining the impact it has had through its entry into law in the Waste (England and Wales) Regulations 2011 and associated guidance, and its wider influence on policy since its adoption into English law. If the waste hierarchy has been effective, its impact would have been expected to:

- Reduce waste; and
- Increase the proportion of waste that is managed at the highest practicable tier of the hierarchy.

It seeks to assess the impact of the implementation of the waste hierarchy, separately from to other factors (such as financial incentives, advances in technology or separate legal requirements) that may have influenced practice in waste management. Isolating the impact that the waste hierarchy has had to date helps to identify any barriers that have limited its effectiveness and where opportunities may lie for greater impact to be achieved.

2.2 Method

This study constitutes an evidence-based review of the impact of the implementation of the waste hierarchy. Three main sources of evidence were consulted to augment the project team's prior knowledge of the subject matter:

- The available data on waste, to seek evidence of the waste hierarchy's impact in changes in how waste is actually managed.
- A review of relevant literature, to seek evidence of the waste hierarchy's impact on strategic decisions that could reasonably have been expected to influence how waste is managed, even if this did not result in significant changes in the data.
- Interviews with stakeholders from local authorities, waste management companies, government departments, regulators, professional bodies, representative bodies, NGOs and researchers to seek to further understand the implementation of the waste hierarchy across numerous stakeholder groups.

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[14] Jones, Beth (2025) Steve Reed announces plans to end UK 'throwaway society'. *Resource*, 27 March 2025. Available at: https://resource.co/article/steve-reed-announces-plans-end-uk-throwaway-society

[15] Office for Environmental Protection (2025) *Assessment of resources and waste policy in England*. Available at: https://www.theoep.org.uk/commissioned-research/assessment-resources-and-waste-policy-england

The study then seeks to draw out themes and conclusions from these different sources of information. In meeting this aim, this study provides OEP with insights to inform its developing knowledge of waste, its annual reporting on the Government's progress against Environment Improvement Plans, and support OEP's soils, chemicals and marine work.

3.0 Data Analysis

In this section, we present the data analysis element of the research on which the assessment of the impact of the implementation of the waste hierarchy is based. The research first looked for evidence of the impact of the waste hierarchy in waste data, since we would anticipate that, if the waste hierarchy has been effective, this should be evident in waste reduction (at least on a per capita basis, or increasing evidence of reuse, recycling and other recovery, with a reduction in disposal. In subsequent sections, we seek evidence of its effectiveness in shaping planning decisions and waste strategies; and then evidence from interviewees regarding the role it has played in waste management decisions they have participated in or observed.

3.1 Analysis of trends in treated waste volume

The starting point for this analysis was to examine whether the available data on waste management shows evidence of waste being managed increasingly in accordance with the waste hierarchy. If the waste hierarchy has been effective, then its introduction into English law in 2011 should have initiated a downward trend in waste (at least on a per capita basis); and an increase in the share of waste being managed at higher tiers of the hierarchy. Shifts toward higher tiers may indicate that the hierarchy has influenced waste management practice. The analysis also disaggregates the volume and management practices relating to different materials, so that variations in the patterns amongst smaller waste streams are not masked by the impact of larger streams.

England's waste data is comprehensive compared to many countries, but has also its limitations. The best data relates to waste collected by local authorities, which is reported through a system called WasteDataFlow. This data is examined later in this section. However, much of England's waste (including most construction and demolition waste, industrial waste and commercial waste) is not handled by councils, and thus WasteDataFlow covers only around 15% of England's waste. The primary data source covering all waste is the Department for Environment, Food and Rural Affairs' (Defra) publication UK Statistics on Waste.[16,17] Unless otherwise noted, the analyses in Section 3.1 rely on this dataset. Any alternative data sources are explicitly identified and cited in footnotes. The UK Statistics on Waste dataset covers final treatment of all waste in England from 2010 to 2022 and reports tonnages by material for each of the six treatment methods described in Table 3-1. These methods align with the three lowest tiers of the waste hierarchy: recycling, other recovery, and disposal. There is no treatment category for preparation for reuse within the dataset. Material that is sent directly for reuse, or is otherwise prevented from becoming waste, does not meet the criteria for being characterised as waste and is therefore not reflected in the data.[18] An increase in waste prevention would thus only be reflected in waste data through a reduction in overall arisings. However, it is important to note that reductions in arisings can also result from factors unrelated to waste prevention, such as decreased consumption, dematerialisation, and increased outsourcing of manufacturing, making conclusions about waste prevention trends difficult to draw from this dataset alone. A fall in waste volumes for a given material or treatment may suggest

[16] HM Government (2025) *UK statistics on waste*. Available at: https://www.gov.uk/government/statistics/uk-waste-data
[17] The Government is working to introduce a system of Digital Waste Tracking from October 2026, which will improve the quality of data on where non-household waste is generated, how it is collected and how it is sorted and treated. See: https://www.gov.uk/government/publications/digital-waste-tracking-service/digital-waste-tracking-service
[18] HM Government (2024) *Check if your material is waste*. Available at: https://www.gov.uk/guidance/check-if-your-material-is-waste

higher levels of reuse or other waste prevention, or simply a decline in the activities that generate waste. The exact cause of a decline in arisings cannot be determined from these data alone.

Table 3-1: Treatment method definitions and corresponding waste hierarchy tier

Treatment method	*Definition*	*Waste hierarchy tier*
Recovery other than energy recovery - except backfilling[19]	Predominantly recycling and composting but also includes some non-recycling recovery such as wood used for biomass[20]	Recycling
Energy recovery	Incineration with energy recovery at a facility that meets the "R1" standard for efficiency[21]	Other recovery
Recovery other than energy recovery - backfilling	Using waste to fill excavated areas or for engineering or landscaping purposes, replacing virgin materials	Other recovery
Incineration	Incineration that does not meet the "R1" standard for efficiency	Disposal
Deposit onto or into land	Landfilling	Disposal
Land treatment and release into water bodies	Sewage treatment, where the resulting output is discharged into a river, lake or sea.	Disposal

Defra reports waste treatment using the European Waste Catalogue for Statistics (EWC-Stat) methodology, which uses 33 categories of waste materials, spanning materials arising from both business and household sources.[22] Of these, 15 are non-hazardous, and 18 can be either hazardous or non-hazardous. Hazardous materials are discussed in more detail in Section 3.1.2.

To facilitate analysis, this report groups waste materials with clear non-household origins into five broad categories: agriculture, construction, industry, metals[23], and waste treatment (see Table 3-2). The remaining material types are classified as 'other' and are more likely to originate from households. these 'other' materials are discussed in detail in Section 3.1.3.

Table 3-2: Waste material grouped by material category

Agriculture	*Construction*	*Industry*	*Metals*	*Waste treatment*	*Other*
Animal faeces, urine and manure	Dredging spoils	Acid, alkaline or saline wastes	Metallic wastes, ferrous	Mineral waste from waste treatment and stabilised waste	Animal and mixed food waste
	Mineral waste from construction and demolition	Chemical wastes	Metallic wastes, mixed	Sludges & and liquid wastes from waste treatment	Batteries and accumulators wastes

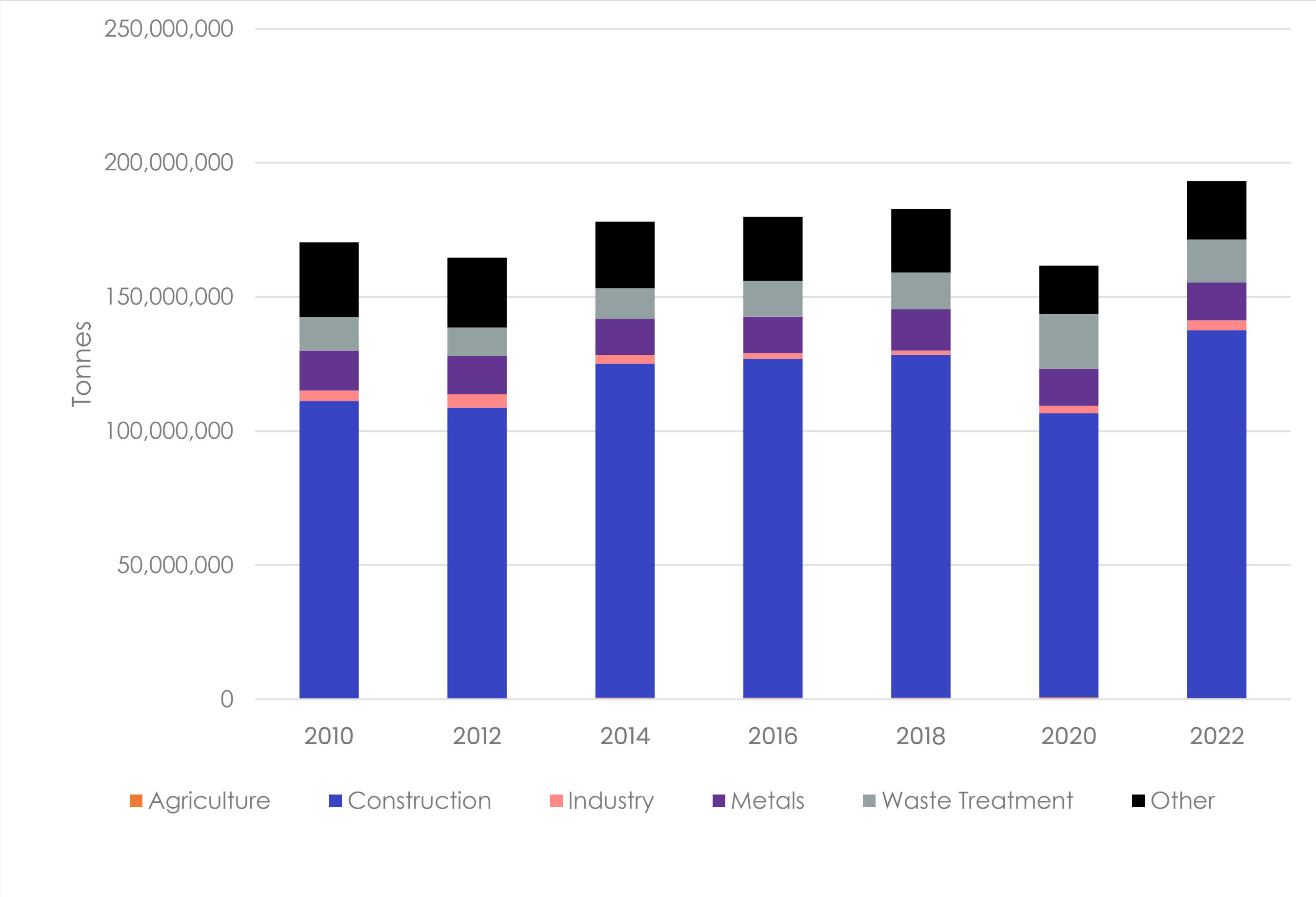
[19] The term "recovery" here means 'any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function'
[20] The full definition is 'any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes'. It includes the reprocessing of organic material (for example, composting and anaerobic digestion)
[21] More information on the R1 standard and the formula by which it is calculated can be found on the CIWM website; https://www.ciwm.co.uk/ciwm/knowledge/the-r1-energy-efficiency-formula.aspx
[22] Commission of the European Communities Eurostat (2010)*Guidance on classification of waste according to EWC-Stat categories.* Available at: https://unece.org/sites/default/files/datastore/fileadmin/DAM/stats/documents/ece/ces/ge.33/2012/mtg2/Supplement_Manual_on_Waste_Statistics.pdf
[23] While some metal waste arises from households, this is massively outweighed by the amount arising from non-household sources.

Agriculture	Construction	Industry	Metals	Waste treatment	Other
	Other mineral wastes	Combustion wastes	Metallic wastes, non-ferrous	Sorting residues	Discarded equipment
	Soils	Common sludges			Discarded vehicles
	Wood wastes	Spent solvents			Glass wastes
		Industrial effluent sludges			Health care and biological wastes
					Household and similar wastes
					Paper and cardboard wastes
					Plastic wastes
					Rubber wastes
					Textile wastes
					Used Oils
					Vegetal wastes
					Waste containing PCB

3.1.1 Waste trends by material category

Between 2010 and 2022, the volume of waste sent to a final treatment method in England fluctuated, hitting a low in 2020 (due to the disruption to business activity during the Coronavirus (COVID-19) pandemic) and a high in 2022. This is shown in Figure 3-1. However, the total tonnage in 2022 was 13% higher than in 2010, following a general upward trend bucked only by 2012 and 2020. Per capita waste followed a similar pattern, with an upward trend other than in 2020; but changed less overall, up just 4.5% over the whole period.

Figure 3-1: Total waste sent for treatment from 2010 to 2022, broken down by material category



In all years, the majority of treated waste (65–70%) is construction waste (see Table 3-3). Total construction waste tonnage rose between 2010 and 2022 – by 24% overall and 14% per capita. This is broadly aligned with sector activity: the ONS Construction Output Index (Great Britain) rose by 25.5% between 2010 and 2022.[24] The data therefore does not provide a strong indication of increased resource efficiency, whether in England as a whole or in the construction sector in particular.

Waste arising from waste treatment activity (8% of the total) and agriculture (<1%) also increased over the period, by 30% and 58%, respectively. The rise in waste treatment tonnage was largely driven by sorting residues, up 34%. Higher sorting residues may indicate the waste hierarchy at work — for example, if the additional material arose from more sorting of dry recyclables occurring at material recycling facilities (MRFs). However, the data discussed below suggests that, at least for local authority waste, dry recycling tonnage has not increased to such an extent, and there is no clear policy driver that would have led to a dramatic increase in dry recycling being separately collected from businesses. The increase may instead reflect increased sorting of mixed waste, especially in the construction sector, or perhaps an increase in contamination or stricter sorting rules in dry recyclables, which would result in more of the recyclables sent for sorting being rejected.

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[24] Office for National Statistics (2025) *Output in the construction industry*. Available at: https://www.ons.gov.uk/businessindustryandtrade/constructionindustry/datasets/outputintheconstructionindustry

Metals (7% of the total) and waste from industry (2%) declined over the period, down 5% and 4%, respectively. On a per-capita basis, the declines were larger; 13% for metal waste and 12% for industrial waste. Within industrial waste, the sharpest reductions were in combustion wastes (perhaps reflecting a move away from coal as source of power) and common sludges. [25,26] Within metal waste, the decline was concentrated in mixed and non-ferrous metallic wastes.

The biggest decline in percentage terms was in "other" waste (which made up 11% of all waste in 2022). The largest component of this is "household and similar" waste, and it also includes many of the key packaging waste streams, as well as textiles and electronics. This is discussed in greater detail in Section 3.1.3.

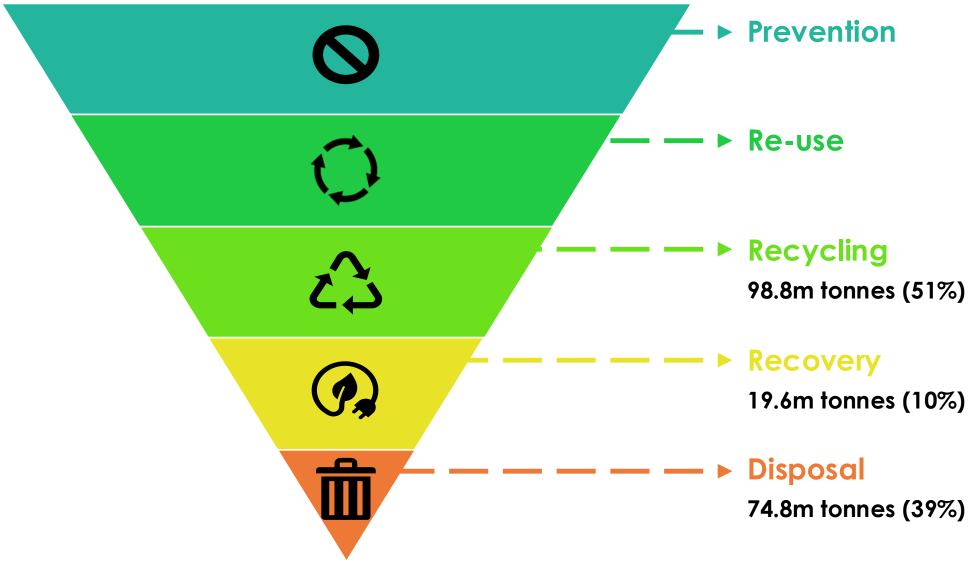
Table 3-3: Total and per-capita waste by material category, 2010 vs 2022 comparison

Material category (ranked by 2022 tonnes)	*Total waste in 2022 (tonnes) [% of total]*	*Net change from 2010 (tonnes)*	*% change in total waste from 2010*	*Per capita waste in 2022 (kgs)*	*% change in per capita waste from 2010*
Construction	136,990,937 [71%]	26,132,067	24%	2,398.61	14%
Other	21,759,167 [11%]	-6,206,258	-22%	380.99	-28%
Waste treatment	16,086,903 [8%]	3,680,022	30%	281.67	20%
Metals	14,120,096 [7%]	-794,294	-5%	247.23	-13%
Industry	3,720,686 [2%]	-162,500	-4%	65.15	-12%
Agriculture	497,831 [0.26%]	182,176	58%	8.72	45%

Figure 3-2 shows the proportion of waste in England sent to each treatment method. However, as materials that are reused or otherwise prevented from becoming waste are not classified as waste in the UK Statistics on Waste dataset, they are not included in the infographic. As a result, the figure can more accurately be said to represent the proportion of classified waste sent to final treatment, rather than the full range of waste-hierarchy outcomes. The amount of waste sent to recycling is approximately 98.8 million tonnes, with a recycling rate of 51.1%. This is little changed from 2010, when the recycling rate was 50.7%.

[25] Chapter 5: https://assets.publishing.service.gov.uk/media/688a28656478525675739051/DUKES_2025_Chapter_5.pdf
[26] Energy UK (2024) Closing the coal chapter: how the UK is leading the energy transition. Available at: https://www.energy-uk.org.uk/publications/closing-the-coal-chapter-how-the-uk-is-leading-the-energy-transition/

Figure 3-2: Final treatment destinations of all classified waste in 2022 by waste hierarchy tier

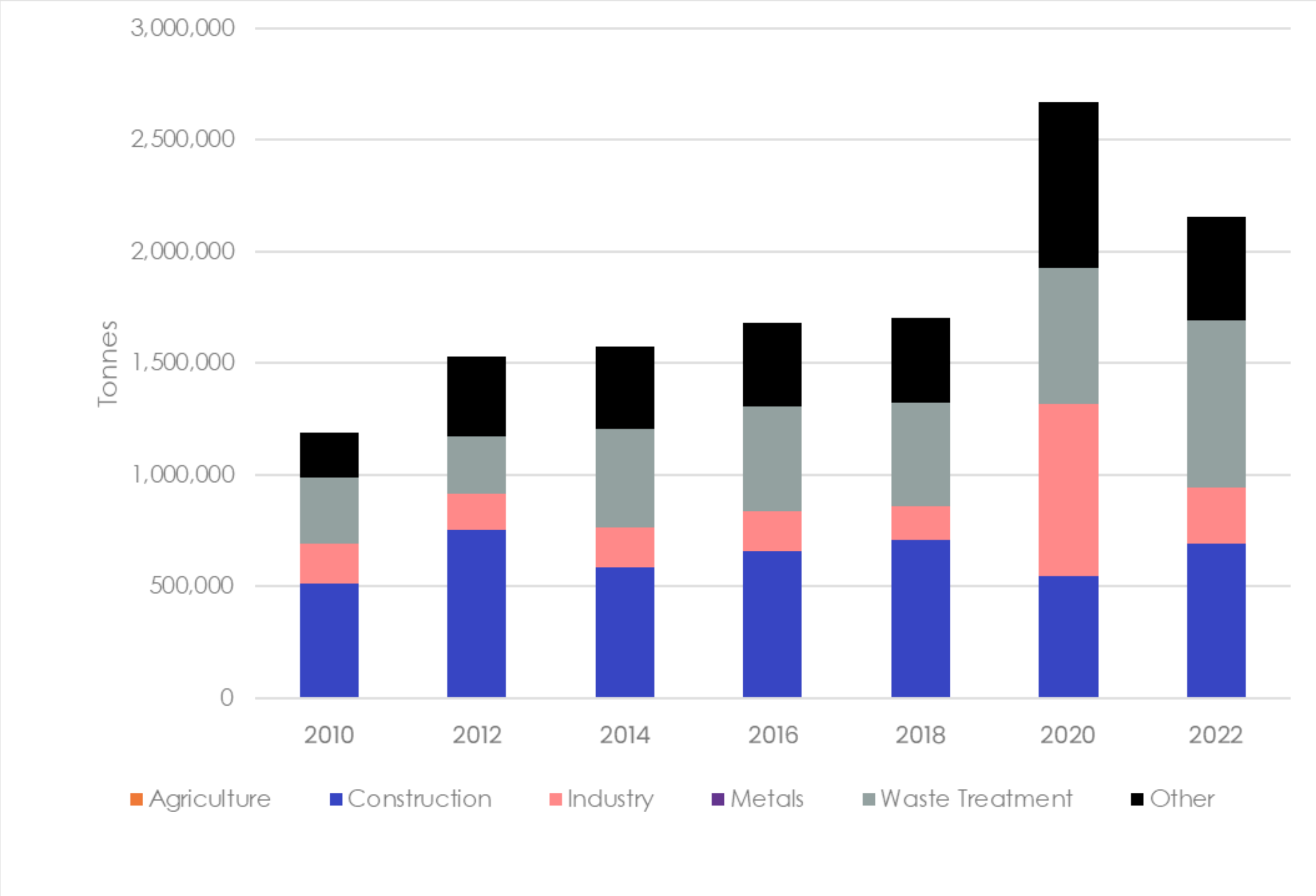


However, this dataset is dominated by wastes such as soils and rubble from construction and demolition. The treatment methods for this material are little changed since 2010, with the proportion recovered actually declining (from 52.8% to 52.4%). It is therefore necessary to look at other waste streams separately to examine whether there are instances where the waste hierarchy may have had greater impact on how waste is managed than it appears to have done from the headline data.

3.1.2 Hazardous waste trends by material category

Hazardous waste is an area of particular focus because of the additional risk it poses to the environment and health compared to other forms of waste. It therefore merits separate consideration, despite accounting for less than 2% of total waste in each year. Beginning the period at less than 1% of waste, it trended upwards throughout the period, increasing by 81% from 2010 to 2022, and peaking in 2020 (Figure 3-3). The 2020 peak was driven by increases in healthcare and biological wastes (in the 'other' category) and spent solvents (in the 'industry' category), which may reflect surges in medical research and treatment, intensified use of disinfectants, and heightened pharmaceutical manufacturing. There was also an increase in hazardous combustion wastes.

Figure 3-3: Hazardous waste sent for treatment from 2010 to 2022, broken down by material category



Material tonnage increased across all categories except agriculture, a category that (based on the way we have organised the data) does not include hazardous material. Waste treatment showed the largest growth, rising 153% from 2010. This growth was driven by mineral wastes from waste treatment and stabilised wastes. The increase is likely to reflect the ash resulting from greater use of incineration, which rose by 62% (without energy recovery) and 1,211% (with energy recovery) over the period. The catch-all 'other' category saw the second highest growth at 132%, driven by increases in discarded equipment (i.e. small and large electrical and electronic equipment), batteries and accumulators. Both waste streams are predominantly hazardous. As of 2022, 56% of waste from discarded equipment and 80% of waste from batteries and accumulators were classified as hazardous, reflecting the prevalence of substances such as mercury, lead, oil, and potentially explosive substances.

Growth in discarded equipment and battery waste aligns with global trends. The global volume of electrical and electronic equipment placed on the market rose from 62 million tonnes in 2010 to 120 million tonnes in 2022, and high-income countries, such as England, now average 109 devices per person.[27,28] Emerging waste streams such as solar panels, electric vehicles, and disposable vapes are likely to have contributed to the rise. Additionally, better reporting and an expanded scope under the

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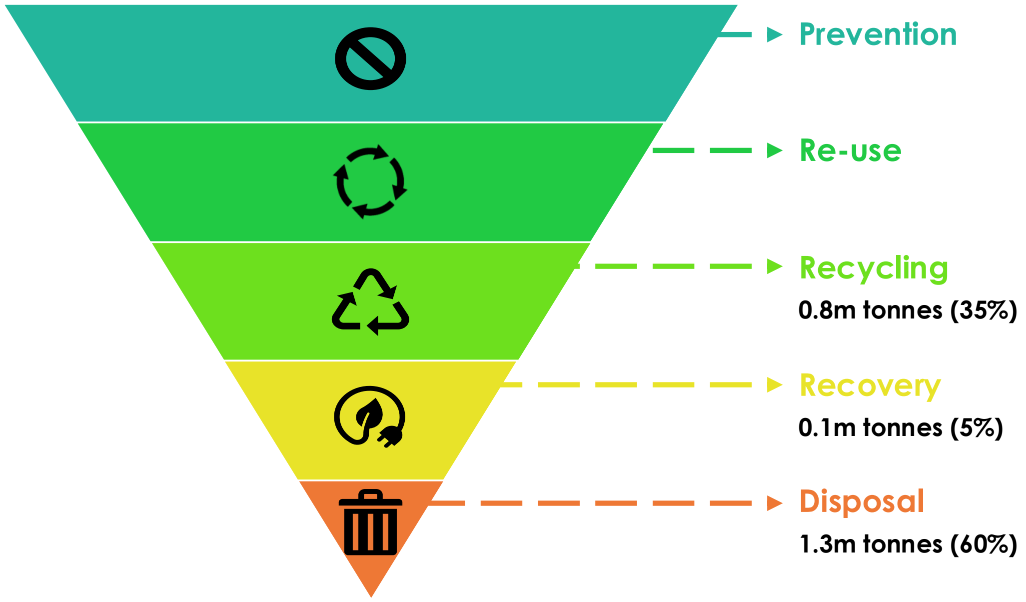
[27] United Nations Institute for Training and Research (2024) *The global E-waste Monitor 2024 – Electronic Waste Rising Five Times Faster than Documented E-waste Recycling: UN*. Available at: https://ewastemonitor.info/the-global-e-waste-monitor-2024/
[28] Office for National Statistics (2025) *Consumer trends: current price, seasonally adjusted.* Available at: https://www.ons.gov.uk/economy/nationalaccounts/satelliteaccounts/datasets/consumertrendscurrentpriceseasonallyadjusted/current

UK's Waste Electrical and Electronic Equipment Regulations 2013 and Waste Batteries and Accumulators Regulations 2009 may have contributed to the apparent growth in these streams.[29,30]

The tonnages and proportions of hazardous waste sent to each treatment method in 2022 are shown in Figure 3-4. Around 60% of the waste – about 1.3 million tonnes – was sent for disposal.[31] However, the 35% recycling rate represents some progress, with only 17% having been recycled in 2010. Nevertheless, the absolute amount of hazardous waste sent to landfill has increased by almost 60%, despite improved recycling making this a smaller share of hazardous waste than was the case in 2010.

Figure 3-4: Final treatment destinations of all hazardous waste in 2022 by waste hierarchy tier



3.1.3 'Other' waste trends by material

The 'other' category is composed of materials that either do not fall neatly into one of the five commercial categories (e.g. health care and biological wastes) or can originate from households as well as commercial sources (e.g. textile, rubber, and paper and cardboard wastes). These are some of the waste streams with the greatest opportunities for improved management. Collectively, 'other' wastes decreased by 22% from 2010, or 28% on a per-capita basis, driven by seven material types.

Household and similar wastes (i.e. municipal residual, bulky and street cleansing) saw the largest decline over the period, falling by 3.4 million tonnes (Table 3-4). This decline could reflect the waste hierarchy in action, either through changes in product design or behaviour that prevented waste, or through higher capture of recyclables as separate collection of recyclables expanded in response to waste hierarchy requirements. There is some evidence consistent with the latter in glass: glass waste rose by 23% from 2010 despite little sign of significantly more glass being placed on the market. A WRAP report for British Glass

[29] HM Government (2013) *The Waste Electrical and Electronic Equipment Regulations 2013*. Available at: https://www.legislation.gov.uk/uksi/2013/3113/contents
[30] HM Government (2009) *The Waste Batteries and Accumulators Regulations 2009*. Available at: https://www.legislation.gov.uk/uksi/2009/890/contents
[31] HM Government (2025) *UK statistics on waste*. Available at: https://www.gov.uk/government/statistics/uk-waste-data

found that glass packaging placed on the market increased by only 3% between 2017 and 2022, while this dataset shows separated glass waste up 16% over the period 2018-2022.[32]

Table 3-4: 'Other' waste sent for treatment by material, 2010 vs 2022 comparison

Material (ranked by net change)	*Total waste in 2022 (tonnes)*	*Net change from 2010 (tonnes)*	*% change in total waste from 2010*	*Per capita waste in 2022 (kgs)*	*% change in per capita waste from 2010*
Mixed and undifferentiated materials	1,378,910	582,760	73%	24.14	60%
Glass wastes	1,557,568	290,090	23%	27.27	13%
Batteries and accumulator wastes	139,875	134,863	2,691%	2.45	2,472%
Discarded equipment	363,083	133,901	58%	6.36	46%
Plastic wastes	878,406	39,207	5%	15.38	-4%
Used oils	11,178	7,949	246%	0.20	219%
Waste containing PCB	129	123	2,229%	0.00	2,046%
Health care and biological wastes	198,837	-12,794	-6%	3.48	-13%
Textile wastes	82,150	-26,635	-24%	1.44	-30%
Rubber wastes	79,409	-59,032	-43%	1.39	-47%
Animal and mixed food waste	963,156	-219,574	-19%	16.86	-25%
Vegetal wastes	2,865,848	-1,567,060	-35%	50.18	-40%
Paper and cardboard wastes	1,218,239	-2,092,697	-63%	21.33	-66%
Household and similar wastes	12,022,379	-3,417,361	-22%	210.50	-28%

Paper and cardboard, rubber, and textile wastes also declined over the period, falling 63%, 43%, and 24%, respectively. This is shown visually in Figure 3-5 (larger waste streams, inclusive of paper and carboard wastes) and Figure 3-6 (smaller waste streams, inclusive of rubber and textile wastes). This could indicate waste prevention, but concurrent market and consumer trends make a single cause hard to attribute.

- For paper and cardboard, the fall may reflect a shift to digital consumption and away from in-office work, with reduced demand for newspapers, magazines, periodicals, and office paper. A

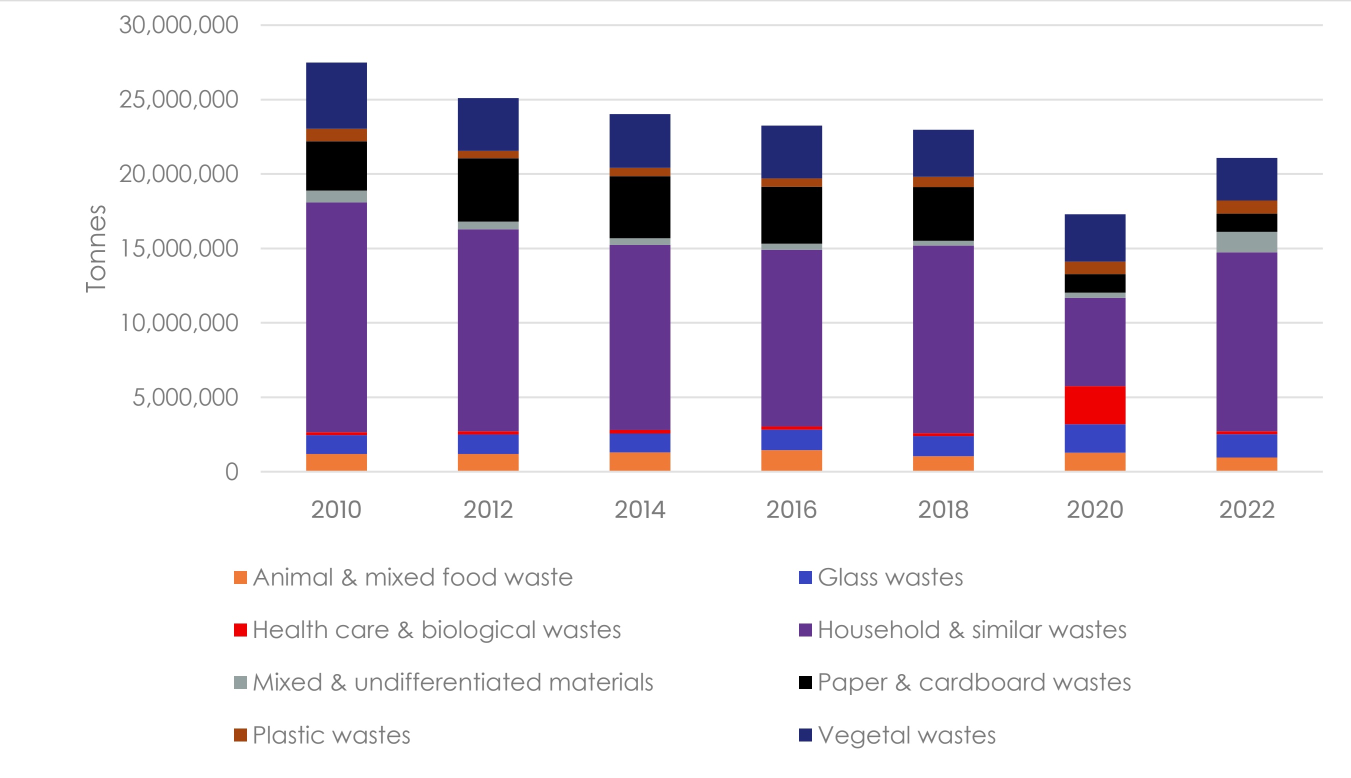
[32] WRAP (2024) *A Roadmap to Closed Loop Glass Recycling*. Available at: https://www.wrap.ngo/resources/report/roadmap-closed-loop-glass-recycling#download-file

WRAP Market Situation Report notes that these trends accelerated during the pandemic and continued thereafter, matching the sharp drop shown in Figure 3-5.

- For rubber, the decline in recorded treatment volumes may reflect higher export rates of end-of-life tyres rather than a genuine reduction in arisings.[33] The Environment Agency estimates that close to 90% of the UK's waste rubber is currently exported to India.[34]

The picture for textiles is also not straightforward. Textile waste fell in 2020 and, although it partially returned by 2022, it remained 16% below pre-pandemic levels. This pattern aligns with the drop in UK consumption of new textiles during the pandemic and the slower rebound during the cost-of-living crisis, with average weekly spending on clothing and footwear at £17.60 in 2021 compared with £22.80 in 2019.[35] Meanwhile, the post-consumer textile (PCT) market expanded, with 5% more PCT diverted from end of life in 2021 than in 2019. In 2022, around 40% of diverted PCT was resold domestically and 60% exported.[36] Higher diversion rates could signal waste prevention, but if they are driven by increased offshoring, they may simply reflect economic pressures, with UK-based sorting becoming less viable due to high labour costs and thin margins.

Figure 3-5: 'Other' waste sent for treatment (larger waste streams) from 2010 to 2022, broken down by material



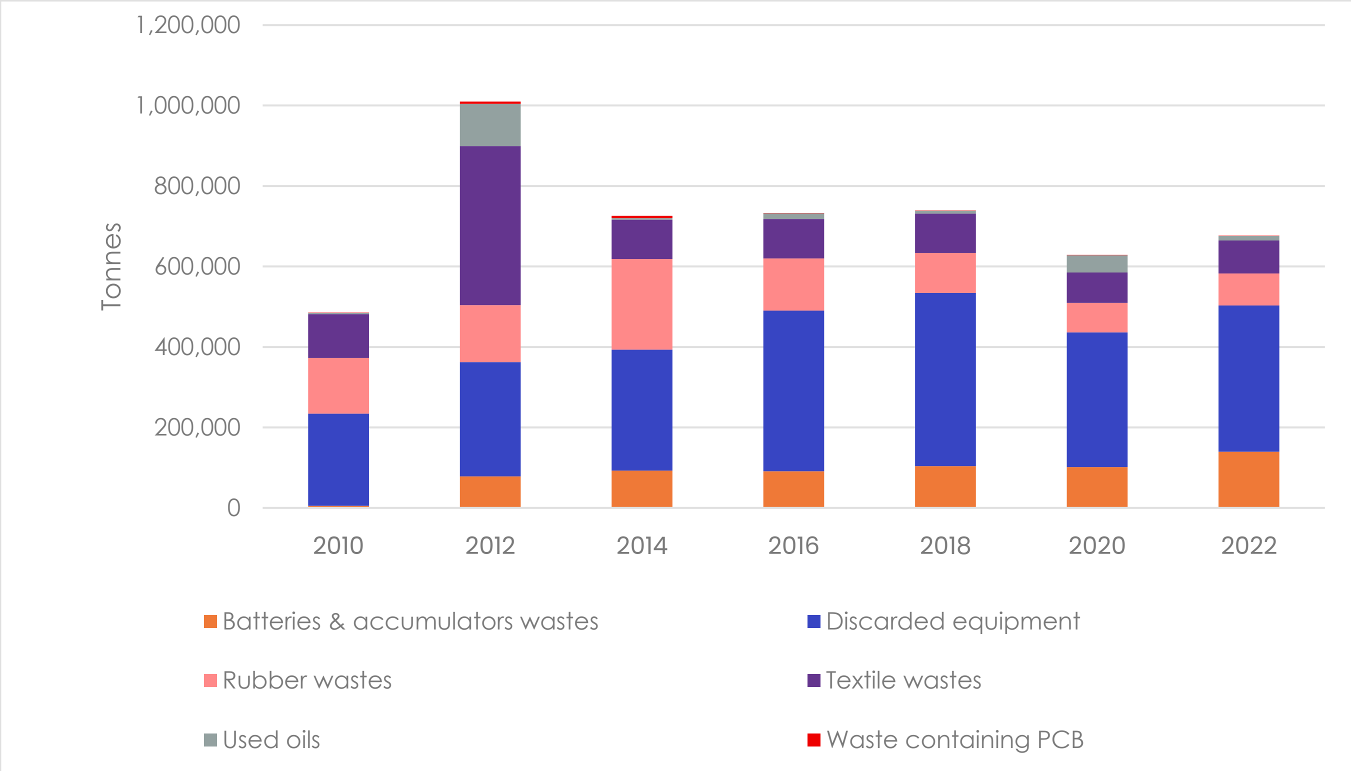
[33] WRAP (2020) *Paper Market Situation report 2020*. Available at: https://www.wrap.ngo/resources/market-situation-reports/paper-2020

[34] Environment Agency (2020) *Waste Tyres Internal Review. Environment Agency's regulation of waste pneumatic tyres and their export*. Available at: https://assets.publishing.service.gov.uk/media/688c75ab64845fffe80890e1/Waste_Tyres_Internal_Review_-_Final_Report_Redacted.pdf

[35] WRAP (2024) *Textiles market situation report.* Available at: https://www.wrap.ngo/sites/default/files/2024-04/WRAP-Textiles-Market-Situation-Report-2024.pdf

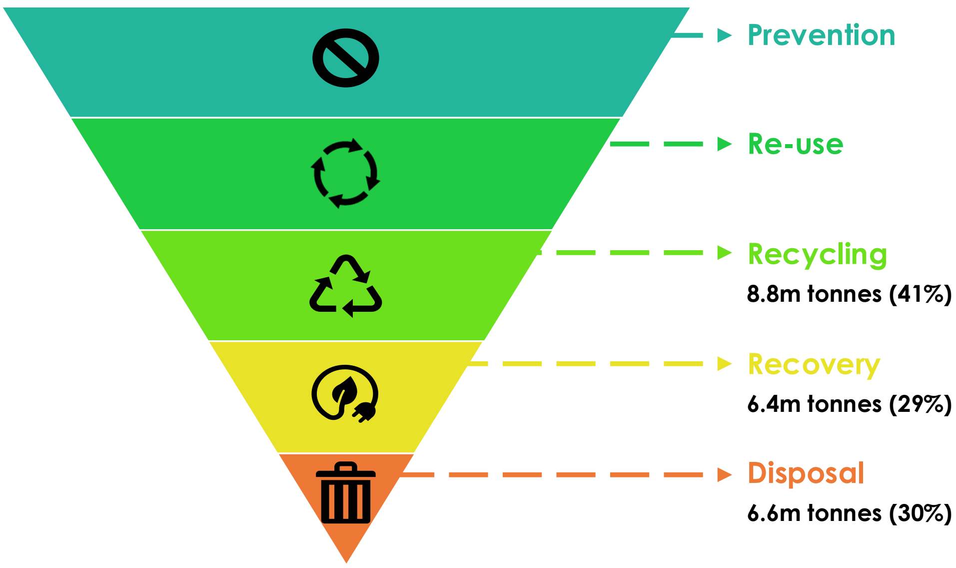
[36] WRAP (2024) *Textiles market situation report.* Available at: https://www.wrap.ngo/sites/default/files/2024-04/WRAP-Textiles-Market-Situation-Report-2024.pdf

Figure 3-6: 'Other' waste sent for treatment (smaller streams) from 2010 to 2022, broken down by material



In 2022, about 29% of 'other' waste was treated via recovery, of which 99.9% was energy recovery, and 0.1% was backfilling, the process of using waste as fill material. The tonnages reported for each treatment method are specified in Figure 3-7.[37]

Figure 3-7: Final treatment destinations of all "other" waste in 2022



[37] HM Government (2025) *UK statistics on waste*. Available at: https://www.gov.uk/government/statistics/uk-waste-data

3.1.4 Waste trends by treatment method

Energy recovery is the treatment method that saw the fastest growth from 2010 to 2022, up 1,211% (Figure 3-8, Table 3-6). However, it still accounted for less than 6% of total waste treated in any given year. Growth was concentrated in household and similar wastes (within "other") and in sorting residues (within waste treatment). The UK Statistics on Waste dataset shows no energy recovery for household and similar wastes from 2010 to 2014, before increasing to over half of its treated tonnage in 2016. This is likely to reflect the introduction of a process for incinerator operators in England to apply for "R1" recovery status in 2016, leading to some incinerators being recategorised as recovery facilities from that year onwards.[38]

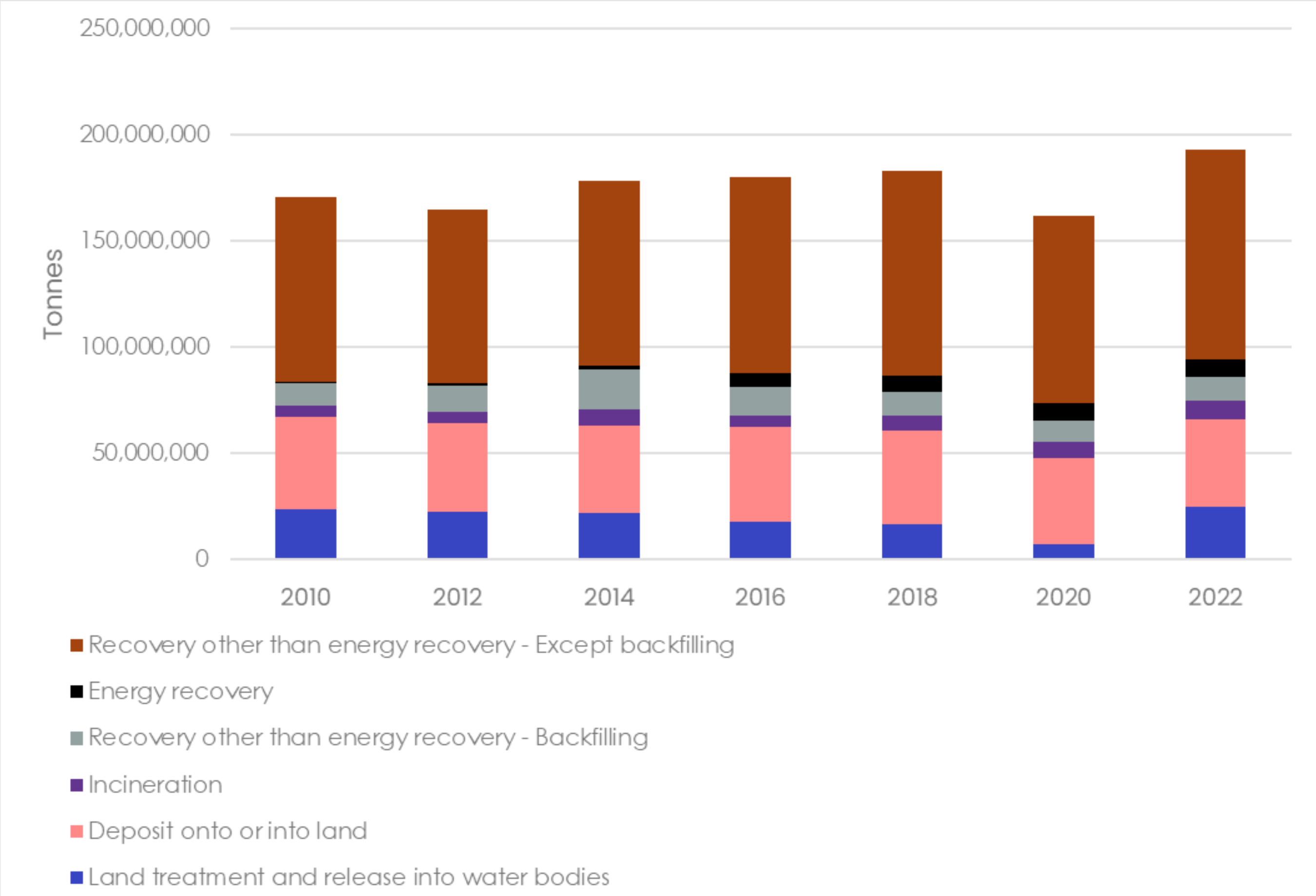
Although a temporary decline occurred in 2016 (as shown in Figure 3-8), overall incineration expanded by 62% from 2010–2022, equivalent to a 48% increase per capita. This reflects the fact that many of the incinerators in England have not applied to be recognised as "R1" energy recovery facilities – although it appears likely that a high proportion would meet the standard, as it is not unduly stretching. In the UK Statistics on Waste dataset, the division of incineration between "recovery" (for R1 facilities) and "disposal" (for non-R1 facilities) somewhat understates the rise in incineration in the UK. Looking at the fate of residual waste (excluding major mineral wastes), the proportion sent for incineration or energy recovery (including sending waste overseas for incineration) rose from less than 20% in 2010 to nearly 63% in 2023, while the overall tonnage of residual waste was little changed.[39]

Backfilling and land treatment, and release into water bodies, changed little between 2010 and 2022, with total volumes up 5% each and per-capita volumes down 3%.

[38] HM Government (2016) *Waste incinerator plant: apply for R1 status*. Available at: https://www.gov.uk/guidance/waste-incinerator-plant-apply-for-ri-status

[39] HM Government (2025) *Estimates of Residual Waste and Municipal Residual Waste in England.* Available at: https://www.gov.uk/government/statistics/estimates-of-residual-waste-excluding-major-mineral-wastes-and-municipal-residual-waste-in-england/estimates-of-residual-waste-excluding-major-mineral-wastes-and-municipal-residual-waste-in-england

Figure 3-8: Total waste sent for treatment from 2010 to 2022, broken down by treatment method



Recovery other than energy recovery (excluding backfilling) increased by 15%, or 5% on a per-capita basis between 2010 and 2022 However, as shown in Table 3-5, recovery as a proportion of all treated waste (a proxy for the recycling rate) remained broadly stable between 2010 and 2022. It hovered around 50% throughout the period, though briefly exceeding 54% during the pandemic. Energy recovery and deposit onto or into land (i.e. landfilling) saw the most significant changes in usage rates among all treatment methods. Energy recovery, for reasons outlined in the paragraphs above, grew from less than 1% of all waste treatment in 2010 to more than 4% in 2022, while landfilling's share fell by around five percentage points, from 26% to 21%.

Table 3-5: Treatment method as a proportion of total waste from 2010 to 2022

Year	*Recovery*	*Energy recovery*	*Backfilling*	*Incineration*	*Deposit onto or into land*	*Land treatment and release into water bodies*	*Total*
2010	50.72%	0.38%	6.25%	3.18%	25.58%	13.90%	**100%**
2012	49.55%	0.76%	7.30%	3.52%	25.10%	13.77%	**100%**
2014	48.85%	0.73%	10.75%	4.10%	23.19%	12.38%	**100%**

Year	Recovery	Energy recovery	Backfilling	Incineration	Deposit onto or into land	Land treatment and release into water bodies	Total
2016	51.35%	3.45%	7.37%	3.02%	24.85%	9.95%	**100%**
2018	52.77%	4.03%	6.05%	3.82%	24.11%	9.21%	**100%**
2020	54.48%	5.16%	5.96%	4.94%	24.77%	4.68%	**100%**
2022	51.14%	4.37%	5.78%	4.50%	21.36%	12.85%	**100%**

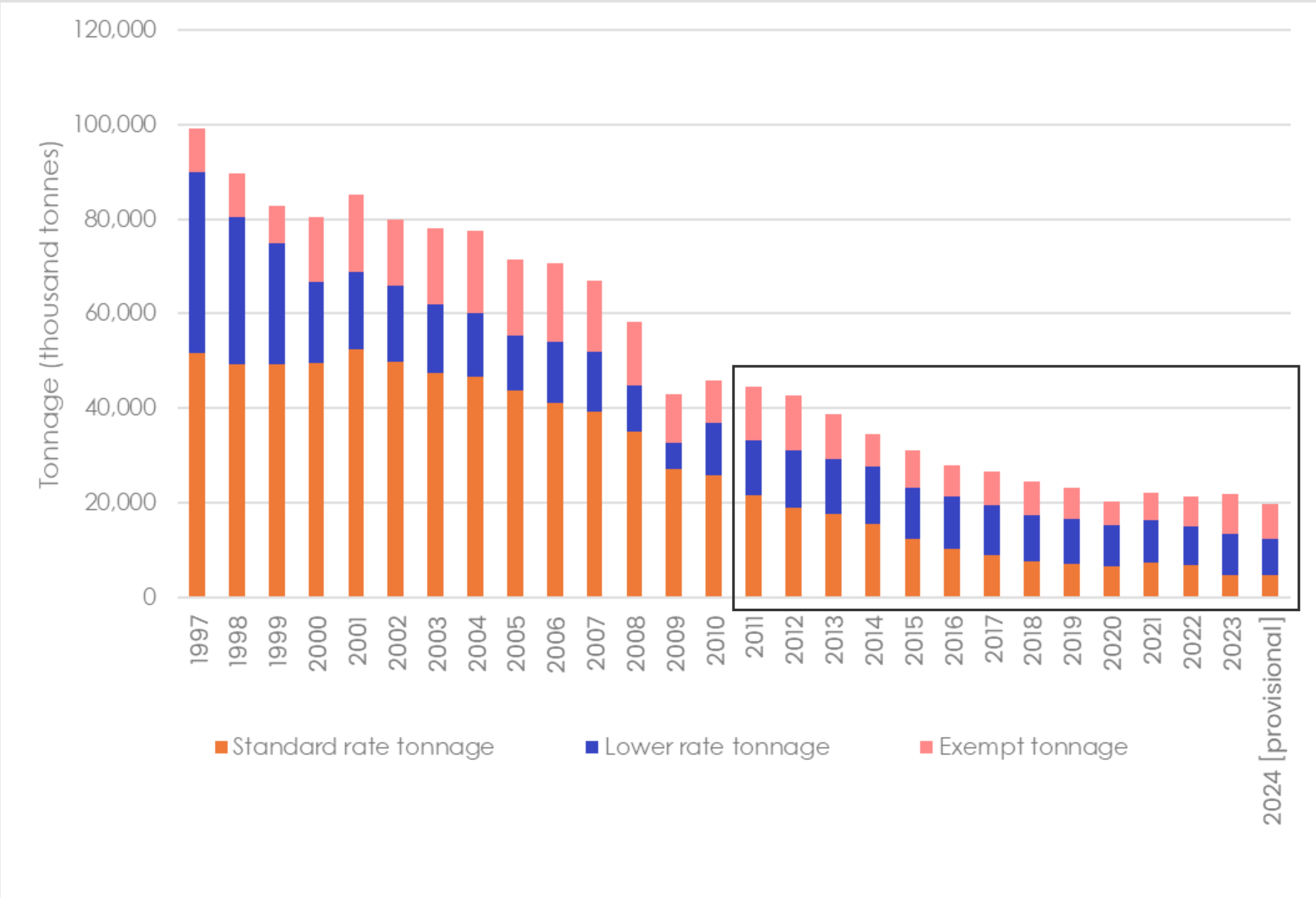
In terms of total waste volume, landfilling was also the only treatment method to show an absolute decline over the period, falling by nearly 5% and recording the largest per-capita reduction of 13%. Recovery (mainly recycling) remained largely unchanged, while incineration and energy recovery increased from around 3.5% of waste in 2010 to around 9% in 2022.

The decline in landfill is reflected in declared tonnages for the purposes of Landfill Tax, a trend whose start predates the waste hierarchy (Figure 3-9). The Landfill Tax, introduced in 1996 and uprated each April, is levied on the disposal of non-exempt materials at landfill sites.[40] Declared tonnage has fallen year on year in all but three years since 1997 (when data was first available), dropping 54% between 1997 and 2010 and a further 56% between 2011, when the waste hierarchy was established in law, and 2024. The most substantial and sustained reduction in landfill has been in standard rate material, which attracts the highest tax rate. Lower rate, less polluting material has also declined consistently, though at a slower pace. Exempt material, primarily inert material from dredging, mining and quarrying activities, has remained more constant in recent years.

This evidence suggests that the decline in landfilling shown in Figure 3-9 are unlikely to be driven primarily by a desire to comply with the waste hierarchy. Instead, they mainly reflect the impact of the Landfill Tax escalator on standard rate material, a policy announced well in advance of the introduction of the waste hierarchy, under which the Landfill Tax was increased by £8 per tonne each year from 2007 to 2014. This policy led to the construction of numerous incinerators, which came into operation throughout the 2010s. The impact on lower rate material is less pronounced, while exempt material, not subject to the same economic pressure, has tended to remain constant.

[40] HM Revenue and Customs (2025) *Environmental Taxes Bulletin*. Available at: https://www.gov.uk/government/statistics/environmental-taxes-bulletin

Figure 3-9: Landfill Tax declared tonnage from 1997 to 2024



As seen in Table 3-6, there was minimal change in the distribution of tonnage by treatment type across agriculture, construction, and metals between 2010 and 2022. The wastes we have categorised as 'industry' were the only class of waste where there has been a large increase in the proportion of waste that is recovered through recycling – an increase of almost 50 percentage points. Much of this is due to combustion wastes moving into recovery other than energy recovery (excluding backfilling). In 'other', household and similar wastes shifted towards energy recovery. In 'waste treatment', increased sorting residues pushed tonnage into incineration (with and without energy recovery) and recovery other than energy recovery (excluding backfilling).

These changes were likely driven by the Landfill Tax, which was designed to disincentivise landfill disposal resulting in an increase in incineration and, to a lesser extent, recycling.

Table 3-6: Treatment method breakdown by material category (distribution of tonnages), 2010 vs 2022 comparison

Year	Material category	Recovery	Energy recovery	Backfilling	Incineration	Deposit onto or into land	Land treatment and release into water bodies	Total
2010	Agriculture	1%	0%	0%	97%	1%	1%	**100%**
2022	Agriculture	4%	0%	0%	95%	1%	0%	**100%**
2010	Construction	53%	0%	10%	0%	16%	21%	**100%**
2022	Construction	52%	0%	8%	1%	20%	18%	**100%**
2010	Industry	29%	0%	0%	8%	63%	0%	**100%**
2022	Industry	78%	0%	0%	7%	15%	0%	**100%**
2010	Metals	100%	0%	0%	0%	0%	0%	**100%**
2022	Metals	100%	0%	0%	0%	0%	0%	**100%**
2010	Other	41%	1%	0%	17%	41%	0%	**100%**
2022	Other	40%	29%	0%	18%	12%	0%	**100%**
2010	Waste Treatment	2%	3%	0%	0%	95%	0%	**100%**
2022	Waste Treatment	7%	12%	2%	14%	65%	0%	**100%**

Prevention Re-use Recycling Recovery Disposal

3.1.5 Local authority waste trends by waste hierarchy level

One of the higher profile streams of waste is the material collected by UK local authorities, which dominates discussions of recycling performance despite being little more than an eighth of waste arisings. It comprises mostly household waste from residential premises, but also includes some waste from businesses that councils collect. This stream is not separately identified in the UK Statistics on Waste dataset used in the preceding sections of this report. Within that dataset, changes in the management of waste collected by local authorities are obscured by the far greater tonnage from construction activity; and by waste that is similar in nature but from commercial sources. For a more granular view of trends in household waste, we used Defra's dataset on waste managed by local authorities, derived from WasteDataFlow (WDF).[41] This dataset spans the financial years from 2010/11 to 2023/24, and covers five treatment methods, which we have grouped by waste hierarchy level (see Table 3-7).

The terminology used to describe waste has changed over time. Historically, the term "municipal waste" was used to refer to waste collected by local authorities. However, under the EU Landfill Directive,[42] municipal waste was defined as "waste from households, as well as other waste which, because of its nature or composition, is similar to waste from households". To avoid confusion while maintaining the local authority dataset, Defra decided in 2011 to introduce the term with "Local Authority Collected Waste" (LACW) to refer to all waste collected by local authorities. This is broader than the previous definition of municipal waste as it also includes some construction and demolition waste. Earlier publications may still use the former terminology.[43] Defra includes reuse within its composite recycling-composting measure. However, an analysis of Eunomia's in-house WDF database indicates that preparing waste for reuse remains a marginal activity, accounting for between 0.05% and 1% of all recycling by local authorities in each year over the past decade. To ensure that preparing for reuse is reflected in this analysis, we have used those figures to separate reuse from recycling in each year from 2015/16 onwards. For earlier years, reuse is included within the recycling waste hierarchy tier.

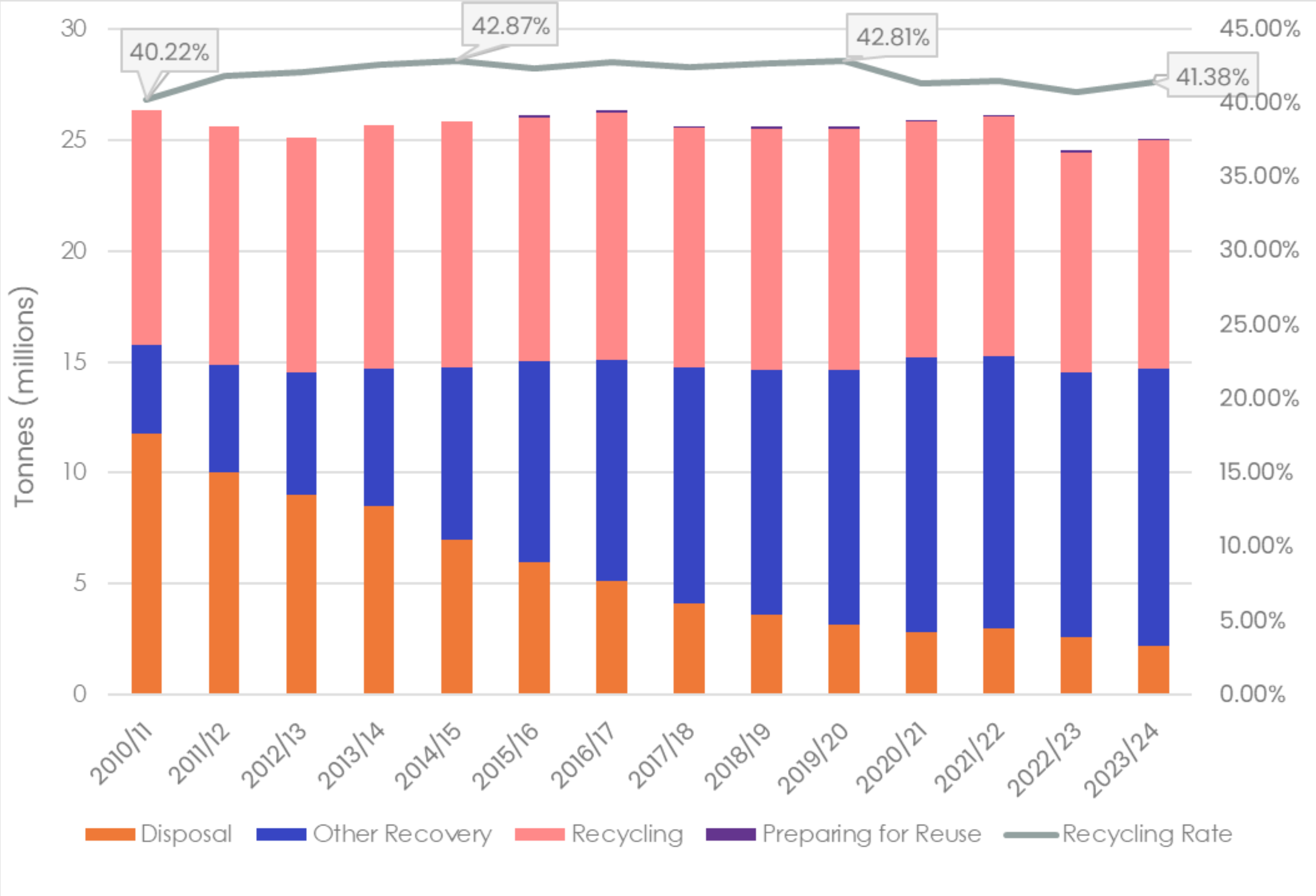
Table 3-7: Local authority waste treatment method by waste hierarchy tier

Waste hierarchy tier	*Treatment method*	*Notes*
Preparing for reuse	N/A	Separated from recycled-composted treatment method from 2015/16 onwards.
Recycling	Recycled-composted	Includes the waste sent for recycling, composting, and anaerobic digestion that is accepted by the re-processor. Reuse is included in this measure until 2015/16.
Other recovery	Incineration with energy from waste (EfW)	Includes incinerator bottom ash (IBA) and metals from IBA.
Disposal	Landfill, incineration without EfW, other	Incineration includes IBA and metals from IBA. 'Other' includes waste treated/disposed of through other unspecified methods as well as process and moisture loss.

[41] HM Government (2025) *Local authority collected waste management - annual results*. Available at: https://www.gov.uk/government/statistics/local-authority-collected-waste-management-annual-results
[42] European Council (1999) Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste. Available at: https://eur-lex.europa.eu/eli/dir/1999/31/oj/eng
[43] HM Government (2011) *Local authority collected waste – definition of terms*. Available at: https://www.gov.uk/guidance/local-authority-collected-waste-definition-of-terms

Overall, local authority collected waste was broadly stable, rising 5% in total from 2011/12 (Figure 3-10) and falling 13% per capita. Patterns were similar to those in the UK Statistics on Waste dataset, with year on year reductions in landfill inputs and parallel increases to EfW plants, resulting in an 81% drop in disposal tonnage and a 214% rise in other recovery tonnage.

Figure 3-10: Local authority waste sent for treatment from 2010/11 to 2023/24, broken down by waste hierarchy level



Although local authorities across England have expanded their recycling services in recent years, the tonnage of material recycled or prepared for reuse fell by 2% overall and 11% per capita. The proportion of material sent for recycling, nominally the recycling rate shown in Figure 3-10, changed little over this period, fluctuating by a point or two around the 41% mark. Several factors may help explain this trend:

- A common service change involved expanding the collection of plastics and cartons as authorities moved to align with upcoming Simpler Recycling legislation. These materials are relatively light, so even if they appear more frequently in the recycling stream, their impact on overall tonnage is limited.
- Long-term contracts, often for EfW, Mechanical and Biological Treatment (MBT) or In-Vessel Composting, have been cited as a barrier to local authorities introducing separate food waste collections under recent Simpler Recycling reforms. Diverting substantial amounts of material away from the contract would in some cases lead to a contractual breach, or in other cases make the waste less suitable for the contracted form of treatment. As a result, 26 authorities have been granted transitional provisions allowing them to delay implementation until the 2030s or

early 2040s.[44]These same considerations are likely to have deterred some councils from introducing food waste collections (and perhaps making other expansions to recycling services) during the 2010s.A 'lightweighting' effect may also be contributing, with packaging producers increasing efforts to reduce the weight of their products ahead of extended producer responsibility reforms (EPR).[45] This would lower recycling tonnages even if the number of items remained constant.

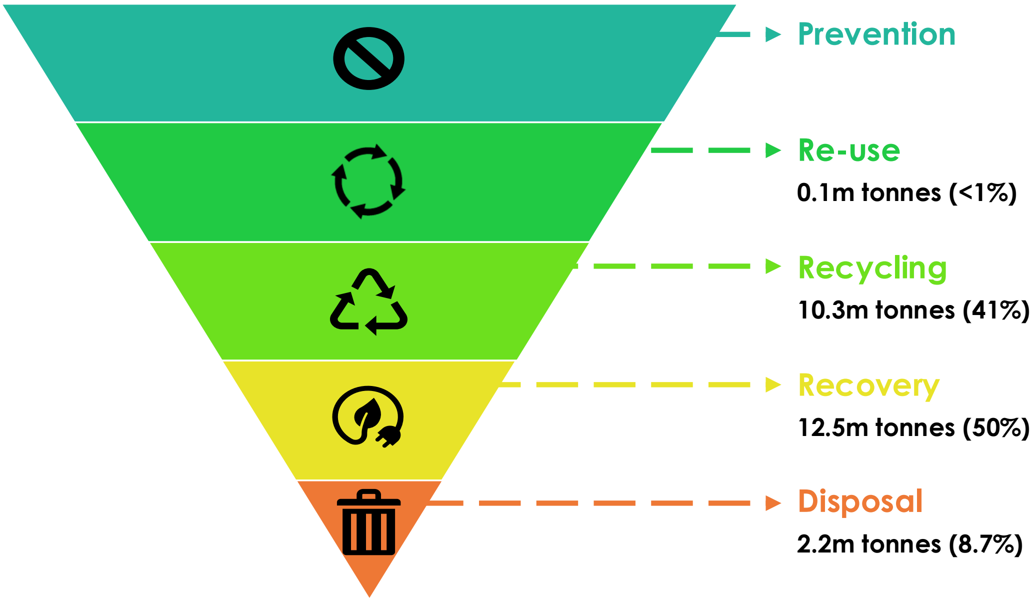
- Many councils have introduced subscription fees for garden waste collections, which tends to somewhat reduce the total amount of garden waste that is received for composting, thereby reducing recycling performance. Some of the waste moves to the residual waste stream, while some appears to be dealt with through an increase in home composting.[46]
- Policy has not always been supportive of measures that increase recycling. The Weekly Collection Support Scheme, which was introduced shortly preceding the period covered by the dataset, provided £250 million to fund councils to introduce, retain, or reinstate weekly residual waste collections.[47] There is strong evidence that reducing the effective weekly residual waste capacity available to households increases recycling rates;[48] it is therefore plausible that a scheme encouraging more frequent residual collections may have shifted material from recycling into the residual stream.

There is, however, evidence of progress on separate food waste collections. Analysis of WDF shows that inputs to anaerobic digestion increased by 34% since 2015, reflecting the growing number of local authorities introducing weekly kerbside food-waste services. Some previously did not offer a food waste collection, while others formerly collected food mixed with garden waste. The reduction in mixed organics explains the reduction in material sent to in-vessel composting (IVC), which is commonly used for this stream; use of open-air windrow composting, used for separately collected garden waste, increased by 16% over the period.

Figure 3-11 shows the proportions of Local Authority Collected Waste in England sent to each treatment method. The amount of waste sent to recycling is approximately 10.3 million tonnes, with a recycling rate of 41.4%.[49]

[44]Nayak, N (2025) How long-term energy-from-waste contracts are delaying food waste collections. *ENDS Report*, Available at: https://www.endsreport.com/article/1942634/long-term-energy-from-waste-contracts-delaying-food-waste-collections
[45] Nikolova, M (2025) Material reduction cuts waste and drives innovation in packaging design. *Packaging Insights*. Available at: https://www.packaginginsights.com/news/material-reduction-packaging-design.html
[46] WRAP (2025) *Good Practice Guidance on Waste and Recycling Collections – Garden Waste*. Available at: https://www.wrap.ngo/sites/default/files/2025-05/WRAP-Good-Practice-Guidance-Garden-Waste.pdf
[47] Department for Communities and Local Government (2012*) Weekly Collection Support Scheme.* Available at https://assets.publishing.service.gov.uk/media/5a79ca25e5274a18ba50ed8f/2139162.pdf
[48] WRAP (2015) *Analysis of recycling performance and waste arisings in the UK 2012/13*. Available at: https://www.wrap.ngo/sites/default/files/2020-09/WRAP-anaylsis-recycling-performance-2012-13.pdf
[49] HM Government (2025) *Local authority collected waste management - annual results*. Available at: https://www.gov.uk/government/statistics/local-authority-collected-waste-management-annual-results

Figure 3-11: Final treatment destinations of all Local Authority waste in 2023/24



3.2 Conclusions

The data on waste in England provides limited evidence that the waste hierarchy has had a substantial effect on waste since being implemented. The picture is muddied by competing pressures, including economic conditions, wider waste-policy changes, and global events such as COVID-19. This analysis sought to cut through that complexity to identify evidence of the extent to which the waste hierarchy has shaped how waste is managed, whether within local-authority-managed waste systems, across the wider economy, or in relation to specific materials and treatment methods.

At a macro level, there is little evidence that waste prevention has occurred, with total waste per capita increasing slightly since 2010 (+5%). Though some material streams — such as textiles, rubber, paper, and card — have seen significant reductions in tonnages treated, it is unclear whether these declines have been driven by the waste hierarchy or by other structural factors. From a local authority perspective, waste has declined more noticeably, decreasing by 5% in total and 13% per capita. The reductions are concentrated in recycling and disposal tonnages and cannot be attributed to higher reuse rates.

In the overall waste data for England, the recycling rate has risen only marginally, from 50.7% in 2010 to 51.1% in 2022. There has been a small decrease in the proportion of material sent to landfill (from 25.6% to 21.4%), but the difference is largely explained by an increase in incineration – only around half of which meets the criteria to be classed as recovery. However, the long-term fall in landfill began prior to the introduction of the waste hierarchy and appears to have been driven by the UK's need to meet targets under the EU's Landfill Directive,[50] and delivered through the Landfill Tax.[51]

[50] European Union (1999) *Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste*. Available at: https://eur-lex.europa.eu/eli/dir/1999/31/oj/eng
[51] Including the Landfill Allowance Trading Scheme (LATS), which between 2005 and 2013 capped the amount of landfill each local authority was entitled to use each year, and created a market under which those with spare allowances could sell them to those that had a shortfall. This led to concerns of very high landfill costs for some authorities, hastening the adoption of incineration. For commentary on the scheme's impact, see for example the following article from ISEP: https://www.isepglobal.org/articles/landfill-allowances-to-be-scrapped

In respect of local authority waste, the effect of the Landfill Tax was magnified by the support that authorities received through Defra's Waste Infrastructure Delivery Programme (WIDP), which supported the development of residual waste treatment facilities (sometimes as part of wide integrated waste contacts) through the Public/Private Partnership model. The great majority of the facilities built were incinerators for residual waste treatment.[52] These factors appear to have been more influential than the direct implementation of the waste hierarchy on the decision making that led to this change in waste treatment. Consequently, reliance on landfill has plummeted, from 86% of local authority waste in 2000/01 to 43% in 2010/11 and only 5.5% in 2023/24.

While local authority recycling performance is little changed since 2011 (up from 40.2% to 41.4%), the composition of what is recycled has changed. Garden waste has tended to decrease, seemingly as a consequence of the widespread introduction of subscription fees for this service. In Chorley Council, for example, the introduction of a £30 fee in 2017 was followed by a 5% decrease in the recycling rate.[53] While a small amount may now instead be sent for disposal, a proportion of this waste is seemingly being prevented or diverted to home composting.[54] There are also concerns about charges leading to an increase in fly-tipping, but little clear evidence within the relevant data that of a correlation.[55] However, provision of food waste collection services has gradually increased since 2011 (as increases in disposal fees resulted in a better economic case for councils to remove food waste from the residual waste). It has then rapidly increased since the Government mandated that councils separately collect food waste from 1 April 2026, and has provided New Burdens funding to support the change.

The change in food waste recycling is an interesting illustration of the challenge of identifying where the waste hierarchy has had an impact. As Landfill Tax rose, councils whose disposal costs created a business case to separate food waste, chose to do so. By 2012/13, WRAP's local authority scheme data showed that 95 English local authorities (26% of the total) had a separate food waste service in place, although nine of these were trial areas and the data excludes mixed food and garden waste services. After the Landfill Tax escalator ended and disposal costs stabilised, the pace of new adoptions slowed despite the existence of spare operational capacity at anaerobic digestion (AD) sites across England.[56].The WRAP data shows that in 2022/23, the number of councils with food waste collections was 126 (35%), with a further 46 (13%) offering mixed food and garden services. It was only with the decision to make collections mandatory (which may itself have been inspired by the waste hierarchy) that the pace of change increased, so that by 2026 all English councils will offer some form of food waste collection, and those offering mixed food and garden transitioning to separate collections when their contractual circumstances allow. We conclude that the waste hierarchy is only indirectly responsible for this change, with other factors having much more of a direct impact on operational decisions.

[52] A full list of WIDP-supported residual treatment facilities can be found here: https://www.data.gov.uk/dataset/595a77b9-b04d-4bde-bd9d-13d878a25065/waste-infrastructure-delivery-programme-widp-infrastructure-facilities-list-ifl2

[53] Chorley Council (2018) Impact of Charging for Garden Waste. Available at: https://democracy.chorley.gov.uk/documents/s90857/Impact%20of%20Garden%20Waste%20Charging.pdf

[54] WRAP (2025) *Good Practice Guidance on Waste and Recycling Collections – Garden Waste.* Available at: https://www.wrap.ngo/sites/default/files/2025-05/WRAP-Good-Practice-Guidance-Garden-Waste.pdf

[55] Huntingdonshire District Council (2023) *Garden Waste Subscription Service: Town and Parish Councillor's Handbook*. Available at: https://buckdenpc.org.uk/wp-content/uploads/2023/11/Garden-Waste-Subscription-Service-Handbook-.pdf

[56] WRAP (2020). AD and Composting Industry Market Survey Report. Available at: https://www.wrap.ngo/sites/default/files/2021-01/AD%20%26%20Composting%20Market%20Survey%20Report.pdf

4.0 Literature review

Eunomia conducted a review of examples of documents in which evidence of the waste hierarchy's impact should be evident, if it was to be effective in influencing waste management. These form a series of case studies of how the waste hierarchy has been applied in policy, strategy and decision-making. The main document types reviewed were:

- Key national waste policies whose impact should already have been felt. We consider more recent policies whose impact is unlikely to have been fully realised in Section 5.4.1.
- Local authority waste strategies that set out local waste management objectives and targets.
- Local authority site-allocation and development-management policies, which determine the spatial distribution of new waste infrastructure.
- Planning applications for energy-from-waste plants,

There were potentially hundreds of relevant documents to review that were prepared over the relevant time period. This would not have been practicable within the available budget and timeline. Eunomia therefore selected exemplars with the aim of covering different parts of England and different points in time, and to draw out themes that are representative of our understanding of the wider picture that other similar documents reveal.

Viewed together, the sources consulted provide a rounded picture of the extent to which the waste hierarchy is being applied, or overlooked, across strategic planning, land-use decisions and infrastructure delivery, and therefore form a crucial evidence base for evaluating its implementation in practice.

4.1 National policies and strategies

The government has produced numerous relevant policy and strategy documents since 2011. Of these, the two most relevant are discussed below.

4.1.1 Case Study: Waste Management Plan for England (2013)

This document was the first waste management plan developed after the waste hierarchy entered into law in 2011 – although the waste hierarchy was mentioned in Waste Strategy 2000,[57] and was prominent in the Waste Strategy for England 2007.[58] The 2013 Waste Management Plan for England[59] includes a chapter on the current waste management situation in England, which summarises how the waste hierarchy was being applied. The plan:

- Explains the requirements created by the Waste (England and Wales) Regulations to apply the waste hierarchy on the transfer of waste, the availability of guidance and the enforcement role of the Environment Agency.

[57] HM Government (2000) *Waste Strategy 2000*. Part 1 available at: https://www.isonomia.co.uk/wp-content/uploads/2017/05/wastvol1.pdf; Part 2 available at: https://isonomia.co.uk/wp-content/uploads/2017/05/wastv2_1.pdf
[58] HM Government (2007) *Waste Strategy for England 2007*. Available at: https://assets.publishing.service.gov.uk/media/5a7cd52eed915d6b29fa8ee9/7086.pdf
[59] HM Government (2013) *Waste Management Plan for England*. Available at: https://assets.publishing.service.gov.uk/media/5a7c3b1140f0b674ed20fb5c/pb14100-waste-management-plan-20131213.pdf

- Mentions the Government's ambition to reduce the amount of waste produced across the economy whilst supporting economic growth, and refers to an accompanying waste prevention plan (discussed in Section 4.1.2 below), without setting any clear targets.

- Mentions efforts to develop re-use and repair policies alongside the waste prevention plan, without setting any clear targets.

- Explains that the UK was working to meet the EU target of recycling 50% of household waste by 2020, and was already exceeding the 70% target for recovering construction and demolition waste.

- Signals the government's support for "efficient energy recovery from residual waste – of materials which cannot be reused or recycled - to deliver environmental benefits, reduce carbon impact and provide economic opportunities" – alongside positive words about AD as a treatment for food waste. AD is classed as a form of energy recovery, but is considered preferable to composting (classed as recycling) for food waste on lifecycle analysis grounds. It is also counted towards recycling tonnage in waste statistics.[60]

- Describes "landfill or incineration without energy recovery" as "the last resort" for most types of waste, while recognising that it may sometimes be required.

The main activities to support these intentions that are highlighted within the document focus on the quality (rather than the quantity) of recycling. It highlights:

- The then government's support for weekly collections of residual waste (when reducing residual waste capacity was understood at the time to be an effective way to increase recycling).[61]

- The new requirement on councils to source separate dry recycling streams, which did not ultimately lead to any significant change in local authority collection practice, and does not appear to have been meaningfully enforced.[62]

- New regulations requiring sorting facilities to undertake sampling on input and output material, with the results published by the Environment Agency. This remains in force and has enabled a better understanding of recycling contamination.

- That the government had decided not to mandate separate collections of food waste by councils.

- References to new waste planning policy (discussed in Section 4.1.3 below).

As the description above makes clear, there were few new measures contained in the plan, and the already announced measures that it mentions had little prospect of making a direct impact on moving waste up the hierarchy – indeed, the focus on weekly collections was likely to be inconsistent with this goal.

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[60] HM Government (2011) *Applying the Waste Hierarchy: evidence summary.* Available at: https://assets.publishing.service.gov.uk/media/5a797dfde5274a3864fd7772/pb13529-waste-hierarchy-summary.pdf
[61] WRAP (2007) *Alternate weekly collections guidance.* Available at: https://www.wrap.ngo/sites/default/files/2021-02/WRAP-alternate-weekly-collections-guidance-final-report.PDF
[62] Jones, P (2018) Law in disorder: the Environment Agency and the waste hierarchy. *Isonomia*. Available at: https://www.isonomia.co.uk/law-in-disorder-the-environment-agency-and-the-waste-hierarchy/

4.1.2 Case Study: Waste prevention plan (2013)

The 2013 Waste Prevention Plan[63] (WPP) laid out a broad framework that it stated was intended to shift the economy away from the 'make-use-dispose' traditional linear model to a circular model. It contained an eye-catching waste prevention measure in the form of a charge on single use carrier bags. However, much of its content was aspirational, rather than focused on action. The plan explained:

- A list of roles and actions for different actors (e.g. designers, manufacturers, distributors, retailers);
- Measures to encourage businesses to contribute to a more sustainable economy by building waste reduction into design, offering alternative business models and delivering new and improved products and services;
- Measures to encourage a culture of valuing resources by making it easier for people and businesses to find out how to reduce their waste, to use products for longer, repair broken items, and enable reuse of items by others;
- Measures, including some funding for projects and a capital loan fund of £1.5m to help businesses recognise and act upon potential savings through better resource efficiency and preventing waste, to realise opportunities for growth; and to support action by central and local government, businesses and civil society to capitalise on these opportunities.

It did not set binding targets or quantified commitments for overall waste reduction or for particular material waste streams. Rather, it outlined broad aims, e.g. "reduce the quantity and impact of waste produced", but left undefined how much – although it set out some metrics by which waste prevention could be measured.

An evaluation of the impact of the plan in 2020[64] found that:

- While total waste had not gone down, waste arisings per unit of GVA had decreased, continuing a previous downward trend.
- A mandatory minimum 5p charge was introduced in October 2015 for large retailers (250+ employees). Defra data for 2024-25 showed that the number of single-use plastic carrier bags issued had fallen almost 98% (over 7.4 billion bags less) since the charge was introduced.
- The government had supported a number of initiatives (e.g. a government-wide swap shop, the Electrical and Electronic Equipment Sustainability Action Plan), some of which had quantifiable impacts, but most of which have not continued in the longer term.
- 387,000 tonnes of waste had been prevented between 2013 and 2019 as a result of actions taken by organisations collaborating with Government, including approximately 103,000 tonnes that would not have been prevented in the absence of Government's intervention. The great majority of this was attributed to actions taken by retailers under the Courtauld Commitment.[65]

While the WPP had some notable achievements over the 6 years, the total waste prevented equates to some 60,000 tonnes per year, of which 17,000 tonnes could be attributed to government intervention.

[63] HM Government (2013) *Prevention is better than cure - The role of waste prevention in moving to a more resource efficient economy.* Available at: https://assets.publishing.service.gov.uk/media/5a7c087640f0b645ba3c6479/pb14091-waste-prevention-20131211.pdf
[64] WRAP (2020) *Review of the Waste Prevention Programme for England 2013: Summary Report*. Available at
[65] The Courtauld Commitment is now known as the UK Food and Drink Pact. It began in 2005 as a voluntary agreement to reduce food packaging waste has grown into a framework to tackle food waste, greenhouse gas emissions and water stress across the supply chain. For mor information on the Courtauld Commitment, see: https://www.wrap.ngo/take-action/uk-food-drink-pact/history

Set in the context of waste arisings of over 150 million tonnes per year, the evaluation shows that, even this level of effort had only a modest impact on waste generation in England.

4.1.3 Case Study: National Planning Policy for Waste (2014)

The National Planning Policy for Waste[66] was designed to guide local planning authorities and waste planning authorities, sitting alongside the Waste Management Plan[59]. Although the waste hierarchy is highlighted right at the beginning of the document, which states that planning authorities should have regard to it, local planning authorities are not required to prove that higher tier options had been practically prioritised nor did it act as a corrective mechanism.

The role of the hierarchy in the document is as a guiding ethos, rather than a practical decision-making tool. The focus remains on identifying suitable sites and areas for waste management facilities, integrating waste infrastructure into local plans, and ensuring enough capacity is made available for expected waste arisings. At a local level this has tended to equate to ensuring that sufficient residual waste infrastructure (particularly incineration capacity) is in place.

4.2 Local authority waste strategies

Local authorities play a central role in managing household waste. They decide how rubbish is collected, how recycling is organised, and what types of services and incentives are offered to residents. Because of this, they are key to turning national waste policies into real action on the ground. Their actions have the potential to reduce waste and increase reuse and recycling, so if the waste hierarchy has been effective, its priority order should be reflected in local waste strategies.

4.2.1 Case Study: Herefordshire and Worcestershire Waste Strategy (2004-2034)[67]

The joint municipal waste management strategy for Herefordshire and Worcestershire is a 20-page long-term partnership document covering the period 2004-2034. Herefordshire Council is a unitary authority, which has both waste collection and waste disposal responsibilities. Worcestershire is a two-tier local authority area, where Worcestershire County Council is the Waste Disposal Authority, while six district councils are the Waste Collection Authorities for their respective areas. The document referenced is a 2011 review and update of the 2004 version, examining progress since that date and setting new goals. It frames waste as a resource and explicitly endorses the waste hierarchy as one of its principles:

> *Principle Two - Commitment to the waste hierarchy of which waste prevention is the top*

The strategy takes credit for stopping growth in household waste arisings. It identifies "home composting, food waste prevention, 'smart shopping', and both reuse and junk mail initiatives" as ways in which waste prevention can be achieved, and the partner authorities agreed to take a uniform approach to pursuing such initiatives. Reuse was to be supported through greater reuse of bulky waste and materials accepted at household waste recycling centres (HWRCs), and by encouraging the use of charity shops and exchange services such as Freecycle. Prevention and reuse measures are presented more as initiatives than as funded programmes with targets. The strategy set a goal of reducing residual waste to 592kg per household in Herefordshire and 591kg in Worcestershire by April 2020. These goals were met with the counties reaching 510.1kg and 572.9kg respectively in 2019/20 – and each has reduced these

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[66] Department for Communities and Local Government (2014) *National Planning Policy for Waste*. Available at: https://assets.publishing.service.gov.uk/media/5a7ef594e5274a2e8ab4946c/141015_National_Planning_Policy_for_Waste.pdf
[67] Joint Members Waste Resource Management Forum (2011) *Waste Strategy for Herefordshire and Worcestershire*. Available at: https://www.herefordshire.gov.uk/media/kdndceoj/herefordshire_and_worcestershire_joint_waste_strategy.pdf

figures in subsequent years. The average for England that year was 524kg per household, making the two counties' performance creditable but not exceptional.

The strategy had supported a roll-out of a co-mingled recycling service and a garden waste service to increase recycling, but only one authority (Wychavon District Council in Worcestershire) planned to separately collect food waste. The strategy set recycling targets as follows:

Waste Disposal Authority	Target 2015	Actual 2015	Target 2020	Actual 2020
Herefordshire	45%	40.0%	50%	41.8%
Worcestershire	45%	40.8%	50%	43.6%

Both councils therefore fell short of their ambitions, perhaps in part due to not having targeted food waste for recycling. The councils are now introducing food waste collections in line with the government's Simpler Recycling rules, and intend to have them in place by April 2026.

A particular focus for the authorities was to support the development of a new energy from waste facility to reduce reliance on landfill. The Hartlebury incinerator, which meets the R1 energy recovery standard, commenced operation in 2017 at a cost of some £165m, and has a permitted capacity of 230,000 tonnes per annum, with operational capacity being a little lower than this.[68] That capacity broadly reflects the amount of residual waste the two counties currently collect (although Worcestershire still landfills some material and spare capacity is filled by waste from other authorities). However, the tonnage from Herefordshire and Worcestershire is likely to decrease as food waste collections are introduced.

This emphasis on energy-from-waste infrastructure may raises concerns about whether the strategy had the effect of favouring lower-hierarchy solutions for longer than was ideal, potentially limiting the scope for councils to place greater emphasis on prevention, reuse and recycling until new legislation prompted a shift. While there is no clear evidence of contractual and financial obligations requiring the supply of guaranteed minimum tonnage to the facility, as has occurred in some other contexts, [69] the did not in practice introduce changes, such as food waste collections, that might have reduced reliance on incineration. At the same time, the incinerator has played a significant role in reducing the volume of material sent to landfill, diverting waste away from the lowest tier of the waste hierarchy.

4.2.2 Case Study: Tower Hamlets Reduction and Recycling Plan (RRP) (2023-2025)[70]

Tower Hamlets' RRP frames its central mission as driving waste up the waste hierarchy, through waste avoidance, reuse and recycling. The borough is a densely populated central London borough with challenging housing stock, a very diverse community with a high transient population and significant

[68] Collis, E (2017) EnviRecover waste plant at Hartlebury Trading Estate officially opened by Duke of Gloucester. *The Kidderminster Shuttle*. Available at: https://www.kidderminstershuttle.co.uk/news/15347047.envirecover-waste-plant-at-hartlebury-trading-estate-officially-opened-by-duke-of-gloucester/
[69] House of Commons Environment, Food and Rural Affairs Committee (2014) *Waste Management in England – Fourth Report of Session 2014-15*. Available at: https://publications.parliament.uk/pa/cm201415/cmselect/cmenvfru/241/241.pdf?
[70] London Borough of Tower Hamlets (2023) *Tower Hamlets Reduction and Recycling Plan (RRP) April 2023 to March 2025.* Available at:
https://towerhamlets.moderngov.co.uk/documents/s223319/Tower%20Hamlets%20Reduction%20and%20Recycling%20Plan%202023%20-%202025.pdf and
https://democracy.towerhamlets.gov.uk/documents/s223320/Appendix.%201%20for%20Tower%20Hamlets%20Reduction%20and%20Recycling%20Plan%202023%20-%202025.pdf

levels of deprivation. It is therefore a challenging location in which to achieve high levels of reuse and recycling.

The plan commits to achieving a recycling rate of 23% in 2024/25, from a 2022/23 performance level of 17.6%. The commitment is supported by planned interventions including over £2m investment in improving recycling infrastructure in flats, better access to recycling bins and bags and redesigned collection routes for efficiency. It also mentions behaviour change programmes for community groups, faith groups, schools and landlords. The RRP aligns with the authority's broader strategic goals such as becoming a net zero carbon council by 2025 and meeting the London Environment Strategy.

> *"The main objective of the RRP is to move waste up the waste hierarchy by providing residents and businesses in the borough with greater access to services that will allow and encourage them to waste less, reuse and recycle more."*

However, while the language of the hierarchy is strongly embedded, the structure of the plan still places more emphasis on downstream recycling rather than upstream waste prevention. The most detailed and well-funded actions relate to recycling participation and service delivery, whereas measurable targets for waste reduction and reuse are limited or absent, suggesting that prevention is not operationalised to the same degree as collection-based outcomes. Actions relating to reuse are limited to a programme of five events per year (e.g. swap shops, bicycle repairs and workshops on clothes mending, composting, upcycling) and ten stalls to encourage reuse and waste minimisation.

While the waste hierarchy is referenced extensively, there are gaps. Food waste is addressed only in pilot schemes and there was no plan to collect it universally; reuse is less strongly featured than recycling and disposal. The plan emphasises the barriers to higher rates of recycling, including lack of space for recycling or lack of availability for recycling options – particularly for flats and mixed-use buildings.

These structural constraints raise questions about the feasibility of achieving meaningful progress up the hierarchy without a level of action that is beyond the resources of a local authority to undertake quickly. The plan focuses heavily on individual behaviour change, yet systemic barriers, such as poor waste storage design in dense developments, limit residents' capacity to engage, and which limits the potential effectiveness of the RRP's reliance on engagement as a delivery mechanism. Despite the commitments in the plan, Tower Hamlets' recycling rate in 2023/24 (the latest for which data is available) had fallen to 15.8%.[71]

4.2.3 Case Study: City of Newcastle-upon-Tyne Waste Strategy (2019-2030)[72]

The 2024 revised Newcastle waste strategy shows promising signs: trials for food waste, new recycling initiatives, public engagement and explicit recognition of the waste hierarchy.

> *"Newcastle City Council has a statutory duty to consider the waste hierarchy … when thinking about how it manages the waste it is responsible for. So, we must start with the most favoured option and only use the least favoured option (landfill) when we cannot find other alternatives".*

However, the data provided in the strategy tells a somewhat disappointing story: the recycling rate had dropped from over 40% in 2016/17 to 25% in 2023/24. This was attributed to the closure of the city's mechanical and biological treatment plant and in-vessel composting plant, in preparation for a move to

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[71] HM Government (2025) *Local authority collected waste management - annual results*. Available at: https://www.gov.uk/government/statistics/local-authority-collected-waste-management-annual-results
[72] City of Newcastle Council (2024) *City of Newcastle upon Tyne Waste Strategy 2019 - 2030 Revised 2024.* Available at: https://www.newcastle.gov.uk/sites/default/files/your-services/Waste%20and%20recycling/Newcastle%20Waste%20Strategy%202019-2030%20Revised%202024.pdf

separate food waste collections that would make these facilities obsolete. However, the amount of mixed dry recycling collected had also fallen, from around 23% of waste in 2020/21 to 18% in 2023/24, in part due to issues with contamination. Consequently, per household residual waste was rising. The divergence between the strategic framing and performance outcomes raises questions about whether the hierarchy had been functioning as a practical decision-making framework, or more as a symbolic statement of intent.

There appears to be a risk of a gap between intention and implementation. Many commitments remain in pilot or exploratory phases, with few measurable targets for prevention or reuse. The waste strategy does include an action plan, focused on relevant themes such as waste prevention including reuse, recycling and composting, planning, recovering value from waste and enforcement. However, without clear milestones, time-bound indicators and accountability mechanisms, the action plan risks becoming a list of aspirations rather than a deliverable pathway. The strategy leans heavily on future pilots to generate progress, creating uncertainty about when hierarchy-driven changes will materialise at scale. Furthermore, the lack of a robust financial and operational roadmap makes it difficult to assess whether Newcastle has the resources, partnerships and infrastructure required to reverse the decline in recycling and residual-waste performance.

4.2.4 Case Study: West Berkshire Waste Management Strategy (2025-2032)[73]

West Berkshire's strategy is a strong example of embedding the waste hierarchy across policy, service design, targets and public engagement. The strategy aims to move substantially beyond mere recycling: its guiding principles are "Drive down general waste and increase recycling", "Improve West Berkshire's street scene" (tackling litter, fly-tipping etc.), and "Lead the way" (how the council and local businesses apply resource efficiency). Targets are ambitious: reaching 60% recycling by 2030 (from a 2022/23 baseline of 49.8%), cutting residual waste to 120 kg per person per year by 2042, and achieving Net Zero by 2030 for its waste services. The authority already had a comprehensive recycling system in place, including food waste collections, and was contemplating a move to three weekly residual waste collections to further incentivise recycling – which were then implemented in September 2025.[74]

However, while the targets are ambitious, the long-term horizons, particularly the 2042 residual waste target, raises questions about whether progress will be front loaded, or delayed, and whether interim monitoring mechanisms are strong enough to prevent stagnation. In addition, the emphasis on percentage recycling rates risks overshadowing the need for absolute reduction in waste generation, meaning West Berkshire could achieve high recycling whilst also still handling high volumes of waste.

The approach is both strategic and behavioural, with measures including reducing black bin capacity to encourage waste minimisation, expanding kerbside collections to include food waste, small electricals and cartons, and supporting reuse through repair and donation initiatives. The hierarchy is clearly visible throughout: waste prevention is prioritised, reuse is actively promoted, recycling services are broadened, and disposal is treated as a last resort. Even so, the strategy assumes that behaviour-led interventions will translate into consistent public participation, yet evidence from other authorities shows that reducing residual bin capacity can produce short-term backlash, contamination, or increased fly-tipping if not paired with intensive education and enforcement. Furthermore, while reuse initiatives are mentioned, it is unclear whether they have sufficient scale and long-term funding to contribute meaningfully to the waste-prevention goals rather than functioning primarily as pilot-style add-ons.

[73] West Berkshire Council (2025) *West Berkshire Waste Management Strategy 2025-2032*. Available at: https://www.westberks.gov.uk/wastestrategy
[74] West Berkshire Council (2025) *Three-weekly black bin collections*. Available at: https://www.westberks.gov.uk/3-weekly-collections

A critical question for West Berkshire will be whether system-level barriers, such as consumption patterns, product availability, and private-sector waste practices, are capable of being sufficiently addressed by a local authority to make prevention genuinely achievable rather than aspirational. Without structural interventions beyond household waste management services, progress may remain largely reliant on individual behaviour change, or wider structural forces that determine patterns of consumption, rather than the actions of individual local authorities.

4.3 Site allocation policies

How local councils plan to manage and reduce waste through infrastructure capacity is commonly outlined in their infrastructure or site allocation policies. Walsall and Lancashire Councils were selected as examples to assess the extent which waste management is regarded as something to be managed versus something that can be changed and what portion of council land is dedicated to waste infrastructure. This review was intended to offer insight into whether planning decisions favour reuse and recycling facilities over lower-value recovery or disposal sites.

4.3.1 Case Study: Walsall Site Allocation Document (2019)[75]

This document outlines policies on new development at new and existing waste management sites, specifically Policies WM1 – WM5 outlined in Black Country Core Strategy (BCCS). The approach that Walsall took when outlining their site allocation policies for waste considers waste beyond something that is generated and managed. The prioritisation of waste reduction is emphasised in the opening statement:

> *"…any remaining waste that cannot be re-used, recycled or recovered can be disposed of responsibly."*

While this wording frames disposal as a last-resort option, it is largely aspirational and non-quantified. The lack of specific reduction or reuse targets means it is difficult to assess whether the policy was designed with the aim of driving change or whether it placed reliance on other mechanisms.

The targets set in the plan are:

- 180,000 tonnes per annum of additional capacity for re-use, recycling or composting / anaerobic digestion
- 300,000 tonnes per annum of additional capacity for recovery of energy from pre-treated residual non-hazardous household and commercial and industrial waste; and
- 50,000 tonnes per annum of additional capacity for sorting and transfer of non-hazardous waste from households and businesses.

Walsall set no waste disposal targets as this was the least preferred pathway for waste, but identified locations for waste disposal operations to be permitted in instances that it is "the most appropriate option for managing waste" and where the proposals comply with BCCS waste policies and national policy guidance.

[75] Walsall Council (2019) *Site Allocation Document (SAD)*. Available at: https://go.walsall.gov.uk/planning-and-building-control/planning-policy/current-planning-policy/site-allocation-document-sad

Ambitions for residual waste treatment capacity therefore greatly exceed those for recycling, and reuse is not mentioned. The ambition to drive waste up the waste hierarchy therefore mainly takes the form of a goal to divert material from landfill, and to a lesser extent towards recycling.

Walsall Council states it "has no plans to develop any new waste management infrastructure by itself or in partnership with others, and is likely to continue to rely on contracts with commercial waste operators to manage the waste it collects from local households and businesses". Most additional capacity for recycling and recovery capacity is expected to be delivered by the private sector. This is common practice amongst English local authorities.

4.3.2 Case Study: Joint Lancashire Minerals and Waste Local Plan - Site Allocation and Development Management Policies (2013)[76]

Compared to Walsall's Site Allocation Document (which relied heavily on work already carried out in the BCCS), Lancashire County Council took a more methodical approach to site allocation and development for waste, forecasting waste arisings and future capacity needs per facility type to allow for "more demanding targets" to be set to increase recycling and recovery to assist in driving waste management up the waste hierarchy. However, it acknowledges that it is based on rather dated waste arisings and projections data, originating from 2003. This raises concerns about the reliability of capacity planning and target setting.

The plan states that development will be supported for waste management facilities to provide for the requirements set out below in 2016-20.

Waste Source	Recyclable	Compostable	Recovery	Landfill/Residual
Municipal	330,000	220,000	175,000	206,000
Commercial/ Industrial	650,000	115,000	481,000	535,000
Total	880,000	335,000	656,000	741,000

The plan therefore does set out to approve developments that would support more material being recycled or composted than any other level of the waste hierarchy. However, reliance on landfill would be set to remain higher than energy recovery, and reuse is not mentioned. The effect of the waste hierarchy in shaping the plan is therefore somewhat limited.

4.4 Incinerator planning decisions

Waste strategies give insight into the intentions of an organisation/council to reduce, reform, prevent and manage waste at a local level. However, the actual implementation of these strategies can be assessed by reviewing the type of planning permissions that have been approved or denied for waste management infrastructure in that area. Two planning applications for energy from waste (EfW)

[76] Joint Advisory Committee for Strategic Planning: Lancashire County Council, Blackpool Council, Blackburn with Darwen Council (2013) *Joint Lancashire Minerals and Waste Local Plan*. Available at: https://www.rossendale.gov.uk/downloads/download/11189/lancashire-minerals-and-waste-local-plan

infrastructure are discussed below to illustrate the factors that led to the planning decisions, and the extent to which the waste hierarchy was taken into consideration.

Both planning decisions reference the importance of the waste hierarchy, particularly in the introductory sections, emphasising the need to prevent waste, prioritise recycling and ensure only residual waste is incinerated. However, it is less evident that this principle was carried through into the decisions. In neither case were waste hierarchy considerations accorded particular importance – in Lostock, objections that the facility might deter recycling were easily overcome through the application of waste acceptance criteria[77] and permission was granted despite waste hierarchy concerns. In the case of Waterbeach, all parties agreed that the facility would divert waste from landfill in accordance with the waste hierarchy, but permission was refused based on aesthetic and heritage impacts that were considered to outweigh waste management benefits.

National planning guidance and local plans recognise the waste hierarchy and s influence whether and where waste infrastructure planning applications are made. However, these planning decisions suggest that, while the waste hierarchy is acknowledged, it is far from a decisive factor in waste infrastructure decisions. The lack of integration of waste hierarchy principles into the core planning decisions highlights a disconnect between policy intentions and practical implementation.

4.4.1 Case Study: Lostock EfW

The planning decision regarding the proposal for an EfW facility at Lostock, Cheshire on the site of a former power station was controversial. The local planning authority objected to the application, triggering a mandatory public inquiry. The planning inspector then recommended that permission should be granted, [78] and the relevant Secretary of state agreed.[79]

One of the council's key objections was that:

> *"the application has not demonstrated that the proposal will maximise opportunities for waste to be managed in accordance with the waste hierarchy, demonstrate that the waste would be disposed of at one of the nearest appropriate installations, and does not ensure that the waste management facility is sited in such a way as to avoid the unnecessary"*

Waste hierarchy concerns were also raised by several other objectors. The waste hierarchy was therefore explicitly discussed in the case. The council explained that its concern was that waste might not be adequately sorted to remove recyclables before it was incinerated. However, the planning inspector was satisfied that, as a concession by the applicant, "a residual waste acceptance scheme condition is now proposed and a form of condition acceptable to the Council has been agreed". The inspector noted that "the imposition of such a control has now become a consistent feature of recent decision-making in EfW cases as reflected not just in the Rookery South decision but also in the Severnside decision… and the Ferrybridge decision…."

[7777] Waste acceptance criteria ensure that only waste that conforms to a certain description is taken into a facility. In a case such as this, it might involve putting procedures in place to ensure that the site only accepts waste that is classified under certain waste codes – such as 20 03 01 Mixed municipal waste, and not materials that are more readily recycled, such as 15 01 packaging wastes. The limitation of this approach is that mixed municipal waste will contain waste that, had it not been mixed, would have been recyclable. It has not proved possible to find the original waste acceptance criteria that applied to Lostock EfW. However, a permit amendment in 2021 showed that the facility was allowed to receive a range of packaging and construction wastes, and had recently successfully applied to be able to burn various mixed wastes. See: https://www.lostocksep.co.uk/wp-content/uploads/2021/01/LSEP-environmental-permit.pdf

[78] Planning Inspectorate (2012) *Application by Tata Chemicals Europe Ltd and E.On Energy From Waste UK Ltd Under S36 of the Electricity Act 1989 for a 60MW Generating Station At Lostock, Northwich, Cheshire.* Available at: https://webarchive.nationalarchives.gov.uk/ukgwa/20180927103239/https://itportal.beis.gov.uk/EIP/pages/projects/Lostock.htm

[79] Department for Energy and Climate Change (2012) *Application for Consent to Construct and Operate an Energy from Waste-Fuelled Generating Station at Land Formerly Occupied by the Lostock Power Station, Lostock, Northwich, Cheshire*. Available at: https://webarchive.nationalarchives.gov.uk/ukgwa/20180927103239/https://itportal.beis.gov.uk/EIP/pages/projects/Lostock.htm

Despite the fact that the residual waste that would be incinerated would contain material that, had it been source separated, would have been suitable for recycling, the planning inspector and the council agreed that the acceptance scheme (which is no longer available in the archived version of the decision) was a satisfactory resolution to waste hierarchy concerns. The inspector concluded that "The waste to be used as fuel would be managed in accordance with the waste hierarchy, provided that the proposed condition is in place."

The facility was granted planning permission, but remains under construction.

4.4.2 Case Study: Waterbeach: waste management park

In 2017. a planning application was made to Cambridgeshire County Council to build an EfW facility on land near Waterbeach, Cambridgeshire. The County Council rejected the proposal, against officers' advice, citing concerns about its impact on visual amenity and a nearby heritage asset – although the site was already home to a number of pieces of waste treatment infrastructure. The applicants appealed, and the appeal was recovered for decision by the Secretary of State in 2019.

The planning inspector conducted an enquiry and issued a report in 2020.[80] While the waste hierarchy is mentioned in the report, all parties agree that a large amount of waste was being landfilled in Cambridgeshire and that the proposed facility would move waste up the waste hierarchy. The planning inspector judged that

> *"Moving the treatment of waste up the waste hierarchy would be beneficial, but… I believe that the appellant has overstated the likely waste management advantages of the WWRF, and in my view this should attract moderate weight in the planning balance."*

He concluded that the appeal should be dismissed, primarily because the development "would not contribute positively to the character and quality of the area and so would be at odds with the [National Planning Policy on Waste]". The Secretary of State agreed with the planning inspector's decision.

[80] Planning Inspectorate (2020) *Town and Country Planning Act 1990 Sections 78 and 79 appeal by AmeyCespa (East) Limited against the decision of Cambridgeshire County Council.* Available at: https://assets.publishing.service.gov.uk/media/5ee73b39d3bf7f1eb5fef750/Combined_DL_IR_R_to_C_Levitts_Field.pdf

5.0 Interviews

The previous sections of this report have examined whether evidence of the impact of the waste hierarchy can be found in data, policies, local plans and planning decisions. Little evidence of the waste hierarchy having clearly identifiable impacts has been found, beyond perhaps working alongside the Landfill Tax to influence diversion of waste from landfill to incineration.

With multiple possible drivers of change in play, it is necessary to investigate the motivations that animated those engaged in waste management during the period. Interviews were therefore conducted to examine the role that it has played in the minds of those involved in waste management and their impressions of the impact it has had on waste management changes between 2011 and the present day.

Interviews covered a range of topics, with interviewees being encouraged to think broadly about the impacts of the waste hierarchy (see Appendix A.3.0 for the interview topic guide, and the questions asked). We have endeavoured to organise the interview outputs into themes in the sections below. We have also sought to record the range of opinions expressed by interviewees, even where some of these might be contentious or could benefit from additional nuance, and to do so without applying undue editorial commentary on what interviewees said. The views expressed therefore do not represent the opinions of Eunomia, or of the Office for Environmental Protection.

5.1 Effectiveness of the waste hierarchy in achieving its objectives

5.1.1 Waste hierarchy and wider incentives

All those interviewed stated that the waste hierarchy provides a useful guiding principle in their work. However, they could not draw a direct link between the waste hierarchy and waste management actions designed to prevent waste, or increase reuse and recycling.

There was a broad consensus amongst interviewees that, where waste prevention, reuse and recycling have advanced, this has been driven by prescriptive regulation backed by enforcement, or commercial incentives (sometimes created through economic instruments such as the Landfill Tax). Policy to date has focused the economic incentives on reducing landfill, which has moved waste into energy recovery and recycling (depending on which was more economically attractive); but waste management costs have not had any significant impact on driving reuse and prevention.

One interviewee said, “Landfill Tax has had the biggest influence to date, on moving waste up the waste hierarchy. In the future EPR is likely to have a big impact but the extent of the impact is still to be determined”.

One interviewee noted that, while some retailers, producers, and members of the public are making efforts to align with top tiers of the waste hierarchy, such practices remain niche. “Without a premium price, these activities are not scalable to the mass market”.

This interviewee also said, “Incentives currently exist for high-value materials such as WEEE, where the price paid by offtakers can offset the additional labour costs associated with sorting, handling, and repairing. However, for lower-value materials, commercial viability is limited. Waste operators will be focused on the lower tiers of the waste hierarchy to manage high volumes of waste at the lowest possible cost. As a result, regulatory support and enforcement are needed to drive meaningful change”.

An interviewee from a local authority said the biggest focus for councils has always been recycling as it has been the subject of targets and is easy to measure. Reuse and prevention are difficult to define, and councils and waste management contractors have limited influence over waste prevention. "Areas where there are statutory targets will always be the main priority".

However, where councils are already doing well on recycling, there is some indication that the focus can shift to higher rungs of the waste hierarchy. One local authority interviewee from a council achieving around 60% recycling said "'The waste hierarchy is front and centre of the council's waste strategy, which has helped to focus action and the communications plan on reuse and prevention. Also, bids received for our recent waste contract procurement were evaluated based on how the contract would deliver the principles of the waste hierarchy. Being a top performing council in terms of recycling rate, has meant we can now focus on activities higher up the waste hierarchy".

5.1.2 The role of the waste hierarchy in shaping behaviour

Interviewees highlighted two potential roles of the waste hierarchy in communicating waste management priorities and encouraging better waste management behaviour. The hierarchy had been employed both as a way to communicate waste management principles to those engaged in the industry, and to the general public.

There was a consensus amongst interviewees that the waste hierarchy provides a conceptual framework that in some way aims to prioritise waste management options with the lowest environmental impact, but that it does little in practice to change consumer behaviour and product design, which they considered to the most effective way to reduce waste.

There was some concern that terms like 'recycling' are not clearly defined, leading to a false equivalence between activities with different environmental outcomes (e.g. downcycling, closed-loop recycling, and reuse) both within the industry and among the public.

5.1.2.1 Waste managers

Two interviewees from organisations involved in delivering qualifications and training in waste and resources management highlighted that the waste hierarchy plays a central role in shaping the design of their training programmes. One said, "the waste hierarchy has led to more circular economy thinking and has been a useful way to explain how resource management should be prioritised to people without a background in the waste industry". This is evidence that waste managers are taught the waste hierarchy, which suggests it has a potential influence on their choices.

However, some interviewees suggested that the concept of the waste hierarchy was overly simplistic as a guide for waste managers' decision making in choosing the most preferable environmental option for treating material.

5.1.2.2 The wider public

Interviewees did not consider the waste hierarchy to be widely recognised or understood by the public, limiting its effectiveness as a behavioural driver. When asked how effective they felt the waste hierarchy is a communications tool, one interviewee said,

> *"the waste hierarchy doesn't get people thinking about the whole system that needs to change and how resource use across the whole lifecycle of products and services impacts the environment and I don't think the term 'circular economy' is widely understood either".*

One interviewee explained that, to assess how effectively the waste hierarchy communicates sustainable waste management to residents, a high-performing local authority conducted a survey of householders. The aim was to determine public awareness of the waste hierarchy and its value as a communication tool. The findings revealed that most respondents were unaware of the concept, suggesting it has not reached the public and this is not currently having a direct effect on public waste reduction and recycling behaviours. The interviewee said,

> *"the message needs to be simple, and residents don't seem to be engaging with the concept of the waste hierarchy, it's more useful as a concept for waste managers rather than the general public. Householders need to feel they're changing behaviour through their own choice rather than being told what to do. If they can see a benefit like helping them deal with the cost-of-living crisis they are much more likely to change their behaviour".*

One interviewee said, "It is essential to communicate that the economy is fundamentally dependent on the natural environment—it cannot operate independently of it. Continuing with linear resource management poses significant risks to long-term GDP growth, as it undermines the ecological systems that support economic activity". Several interviewees warned that if we persist with extractive, wasteful practices, we risk destabilising both environmental and economic resilience which needs to be communicated and prioritised as a foundational economic concern, not just an environmental one.

5.1.3 Revision or refocusing of the waste hierarchy

Several interviewees questioned whether the waste hierarchy required revision. Some saw it as too much aligned to the concept of a linear, rather than circular, economy, primarily due to it being concerned with "waste." Several interviewees said that the word "waste" was not helpful in encouraging a circular approach and should be reconsidered, as it placed a focus on material that was already waste or likely to become waste. These interviewees thought that to move toward a more circular economy might require a rethink or evolution the waste hierarchy into a more holistic framework - one that prioritises resource stewardship from the design phase and integrates economic incentives that discourage waste generation altogether.

Some suggested that the hierarchy should perhaps only apply to materials that can no longer be retained within a circular economy – although it is not quite clear how to interpret this, as reused, recycled and recovered materials are all to some degree retained in the circular economy.

One limitation of the waste hierarchy, as implemented in the Waste (England and Wales) Regulations 2011[81] and in planning policy, was recognised to be that it is addressed to waste managers when they receive waste. It is therefore focused on people who receive material only after it has become waste and have little opportunity to prevent waste arising, or the form in which it is presented. It is not addressed to those who shape the products that ultimately become waste: those engaged in activities such as product design, manufacturing, and marketing – or indeed the regulation of the market in which these actors operate.

5.2 Successes in delivering principles of the waste hierarchy

This section summarises examples of initiatives and activities that interviewees considered to have delivered the principles of the waste hierarchy. While these are examples of practice that is consistent with the hierarchy, we note that all interviewees were asked whether the implementation of these

[81] The Waste (England and Wales) Regulations 2011 require the waste hierarchy to be applied "on the transfer of waste"; it is not required to be applied by the producers of products or the generators of waste in ways that might reduce waste or alter how it is presented.

initiatives was directly driven by a wish to conform to the waste hierarchy. No interviewee said that this was the case.

5.2.1 Examples of good practice

Municipal waste strategy

Several interviewees highlighted municipal waste strategies as good examples of how efforts to apply the waste hierarchy had been taken forward. Case studies of individual authorities' waste strategies are provided in Section 4.2.

- An interviewee representing London Boroughs said "The principles of the waste hierarchy are well embedded in London Boroughs' Reduction and Recycling Plans (RRPs), which incorporate reuse, prevention and recycling activities. There are lots of examples of small-scale initiatives within councils to prevent waste and increase reuse, but a more coordinated approach nationally would help to scale up the effectiveness of the activities."

- One council said "community reuse and prevention initiatives have a positive cultural impact, normalising borrowing and buying second-hand. There's a great opportunity to promote these initiatives to help householders during the cost-of-living crisis".

- One interviewee representing a university said "the university's estates management is delivered with the waste hierarchy in mind for the things it has influence over. Reuse opportunities are communicated to students, no refuse bins are present in offices, and we provide recycling collections around the university site and in residential halls".

- One interviewee said, "The Welsh Government has made great progress on recycling through its 'One Planet One Wales' initiative. Between 2010 and 2020, Wales increased its recycling rate from 40% to 65%, significantly outperforming England, where rates stagnated between 40% and 43%". It was suggested by this interviewee that this disparity is partly attributed to long-term incineration contracts in England which include a Guaranteed Minimum Tonnage (GMT), which have been a barrier to recycling more. They suggested that Wales is more focused on reuse and prevention as they don't rely on large, long term EfW contracts.[82]

Some examples of good municipal waste prevention and reuse initiatives mentioned by interviewees were:

- **Household Waste Recycling Centre (HWRC) reuse:**
  - The Suez Renew Hub[83] delivers "industrial scale" repair and upcycling of items such as furniture, bikes, toys, white goods, and electricals deposited by residents at the Greater Manchester Combined Authority's HWRCs. The Renew Hub also provides training in repair skills.

[82] Guaranteed Minimum Tonnage (GMT) is a contractual arrangement under which the customer (whether a local authority or other waste collector) agrees to supply a specified minimum amount of waste to a facility over a defined period—usually annually. Often, the customer must pay the treatment costs of the GMT, even if less waste is supplied, although the EfW operator may be under an obligation to try to source waste from elsewhere to make up a shortfall. This model was applied in some PFI contracts, as a way of de-risking the project and thus securing a lower overall cost. A GMT will only deter recycling if it is set at a level that, with plausible recycling efforts, the customer might fall below. A small GMT should not have a deterrent effect. In practice, while some local authorities have entered into contracts with GMTs for residual waste, these are far from the majority of residual waste contracts in England. However, some local authorities are still contemplating contracts with substantial GMTs (e.g. Durham County Council in 2025 – see: [Appendix 3 Technical review.pdf]) and there are other contractual arrangements that can also disincentivise recycling, e.g. where residual tonnage above a certain minimum attracts a lower gate fee).
[83] Recycle for Greater Manchester (n.d.) *Renew Hub.* Available at: https://recycleforgreatermanchester.com/renew-hub

- **Community library of things (product hire initiatives for household items) and repair cafes:**
  - Share Portsmouth[84] is a community-led charity in Portsmouth focused on reducing waste, carbon emissions, and raw material use through sharing, repairing, and re-use. It runs two main initiatives: a library of things and repair café.
  - Restart fixing Factories[85], physical spaces where people can bring in broken electronics and appliances to be fixed for free, while gaining new skills, and Repair Vouchers[86] which provide individuals with up to 50% off the cost of a repair.
- **Food surplus schemes:**
  - The Best Before Café[87] in Letchworth rescues surplus supermarket food and provides it to the local community for a small charge.
- **Community Digital item takebacks:**
  - Tech-Takeback[88] is a Brighton-based circular economy initiative that focuses on reusing and recycling unwanted tech and electrical items to reduce e-waste and promote digital inclusion.
- **Real nappy campaigns:**
  - Real Nappies for London[89] is a waste prevention and sustainability initiative that promotes the use of reusable nappies instead of disposables to reduce environmental impact and save money for families.
- **Cup recycling schemes:**
  - Beyond the Bin is a grant fund operated by Valpak on behalf of the National Cup Recycling Scheme.[90] In 2025, it offered grants of up to £45,000 to support innovative solutions that increase the recycling or reuse of on-the-go paper cups in the UK.
- **Oxfordshire reuse and prevention directory:**
  - Oxfordshire County Council's Waste Wizard[91] is an online tool where residents enter their postcode and the item they want to dispose of, and it shows reuse, repair, and recycling options locally.
- **Master composter schemes:**
  - Norfolk County Council's Master Composter Scheme[92] seeks to raise awareness of the benefits of composting, through a network of volunteer advisors.

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[84] Share Portsmouth (n.d.) Let's Start a Revolution. Available at: https://shareportsmouth.org.uk/
[85] The Restart Project (2024) *We're going to roll out community Fixing Factories to more London high streets!* Available at: https://therestartproject.org/news/fixing-factory-funding-announcement/
[86] The Restart Project (2025) *We're bringing repair vouchers to the UK.* Available at: https://therestartproject.org/news/repair-vouchers/
[87] Best Before Café (n.d.) *What we do*. Available at: https://bestbeforecafe.co.uk/what-do-we-do/
[88] Tech Takeback (n.d.) *Our History*. Available at: https://www.techtakeback.com/about.html
[89] Real Nappies for London (n.d.) *Nappy Incentive Schemes*. Available at: https://www.realnappiesforlondon.org.uk/about-us/nappy-incentive-schemes/
[90] National Cup Recycling Scheme (n.d.)
[91] Oxfordshire County Council (n.d.) *Search for an item to recycle, repair, reuse or dispose of*. Available at: https://www.oxfordshire.gov.uk/waste-and-recycling/recycle-repair-reuse
[92] Norfolk County Council (n.d.) *Master composters.* Available at: https://www.norfolk.gov.uk/compost

- **Retailer returns and repair services:**
    - Amazon offers several ways to buy repaired or refurbished goods in the UK, mainly through its Amazon Resale[93] and Amazon Renewed[94] programs.
    - Currys' Care & Repair[95] is an extended warranty and support service designed to extend the useful life of products beyond the manufacturer's guarantee.
    - Ikea offers a Buyback[96] service to customers. The items that Ikea purchases are then sold in store and online for a reduced price through the Re-shop and Reuse Service.[97]
- **Commercial collections data analysis for waste prevention:**
    - SUEZ has piloted a business waste analysis service that identifies opportunities for waste prevention through changes in procurement or operational practices.[98] Any resulting cost savings are shared with customers. An example of this in practice is profiling conference delegates to reduce food waste.
- **Packaging design:**
    - CIRCPACK is a consultancy service offered by Veolia to help businesses design and certify recyclable and sustainable packaging.[99] It focuses on improving packaging recyclability and supporting compliance with evolving regulations.

There was no data available to quantify the impact of these initiatives. Many of the examples relate to relatively small waste streams in tonnage terms (e.g. nappies, waste electronics) or rely heavily on volunteers. There appears to be greater potential for waste prevention in the work being carried out by large corporates to reduce waste, extend product lifetimes and advise customers on how to improve their resource efficiency, although there is little information on the scale of these activities.

One final initiative that was highlighted which has broader application than just municipal waste was One Wales, One Planet, the Welsh Government's Sustainable Development Scheme.[100] The scheme sets out a vision for sustainable development, as well as principles and specific actions. In the field of resource efficiency, it set out specific targets such as

- a minimum of 1% of municipal waste re-used by 2025
- a recycling rate of least 70% recycling across all sectors by 2025
- energy recovery to be an option for a maximum of 30% of municipal waste by 2025,
- a maximum level of residual household waste per inhabitant of 150kg per year,

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[93] Amazon (n.d.) *Amazon Resale*. Available at: https://www.amazon.co.uk/b/?_encoding=UTF8&node=8873238031&ref_=cct_cg_0000_1a1&pf_rd_p=18ee3412-92b4-48a4-a506-f2d2038105f4&pf_rd_r=BY2X1SQWT2YY0RRHD3YE
[94] Amazon (n.d.) *Amazon Renewed*. Available at: https://www.amazon.co.uk/b?node=8362590031&pd_rd_w=0Gjfg&content-id=amzn1.sym.33434db7-f25e-4c9a-b509-54a97af7b186:amzn1.sym.33434db7-f25e-4c9a-b509-54a97af7b186&pf_rd_p=33434db7-f25e-4c9a-b509-54a97af7b186&pf_rd_r=CS7Y93Y99BCXRSPKPZHR&pd_rd_wg=poQ5F&pd_rd_r=fd4cd5b1-1cae-483f-93a2-5c0faf1ddd93&qid=1765822205&ref_=sxts_snpl_1_0_33434db7-f25e-4c9a-b509-54a97af7b186
[95] Currys (n.d.) *Care & Repair*. Available at: https://www.currys.co.uk/services/care-services/care-repair.html
[96] Ikea (n.d.) *Buyback & Resell Service*. Available at: https://www.ikea.com/gb/en/circular/buy-back/
[97] Ikea (n.d.) *Re-shop and Re-use*. Available at: https://www.ikea.com/gb/en/circular/
[98] Suez (n.d.) *Suez.scope*. Available at: https://www.suez.co.uk/en-gb/our-offering/businesses/what-are-you-looking-for/resources-management-consulting/suezscope
[99] Veolia (n.d.) *CIRCPACK*. Available at: https://www.circpack.veolia.com/
[100] Welsh Assembly Government (2009) *One Wales: One Planet: The Sustainable Development Scheme of the Welsh Assembly Government.* Available at: https://senedd.wales/media/y5knxwob/gen-ld7521-e-english.pdf

- a maximum level of municipal waste going to landfill of 5%.
- zero waste by 2050, meaning that products and services will need to be designed so that they reduce or reuse waste as far as possible.

The Welsh Government also committed to developing sector plans for commercial, industrial, construction and demolition sectors, which it proceeded to do over subsequent years.[101] The Welsh Government has actively pursued its goals and even where they have not been met, there has been significant progress. For example, the government produced a collections blueprint for local authorities to adopt, and provided significant funding to support its adoption. It set statutory recycling targets for local authorities, with substantial fines if they were not achieved. According to Statistics Wales:[102]

- Residual household waste per capita has dropped from 217kg in 2012/13 to 168kg in 2023/24.
- The household reuse, composting and recycling rate (calculated differently from England's) has risen from 52.3% in 2012/13 to 66.6% in 2023/24.
- The landfill percentage for household waste has dropped below 1%, while 31% of waste is incinerated, the great majority with energy recovery.

The example of Wales's approach to waste management indicates that a clear and consistent strategic approach, backed by incentives and funding, can lead to significant change in how waste is managed, leading to greater conformity to the waste hierarchy – though even in Wales, reuse has proved challenging to increase in a way that is evident in waste statistics.

5.3 Barriers

Despite recognition of the need to prevent, reuse and recycle more, meaningful change remains constrained by a set of persistent structural barriers. Overcoming them requires more than incremental improvements; it demands coordinated, system-wide shifts. Based on interviewees input, some of the most significant barriers identified by interviewees are explained in the sections below.

5.3.1 Lack of policy and regulatory drivers for reuse, repair and prevention

Interviews indicated a prevailing view that most policies and incentives have focused on the lower tiers of the waste hierarchy – recycling, recovery, and disposal – while placing far less emphasis on prevention and reuse. Combined with delays to the implementation of potentially impactful policies announced in the 2018 Resources and Waste Strategy (e.g. Extended Producer Responsibility (EPR) for packaging, the Deposit Return Scheme (DRS) for beverage containers), interviewees saw this focus as a significant hindrance to progress. There was a consensus that the lack of separate targets for reuse and prevention (directed at those with greatest power to deliver them, which is unlikely to be waste managers) has meant activity has been more focused on recycling and recovery.

One local authority interviewee said,

> *"to make a real difference, policy needs to be more focused on the production stage of a products lifecycle. Designed obsolescence needs to be prohibited in policy and*

[101] For example, the construction sector plan can be found here: https://cedrec.com/cedrec_images/upload/guidance/welsh-government-construction-demolition-waste-plan.pdf
[102] The following statistics have been extracted from tables published here: https://statswales.gov.wales/Catalogue/Environment-and-Countryside/Waste-Management/Local-Authority-Municipal-Waste

regulation. A packaging refill agenda needs to be promoted through EPR and, once established, the DRS needs to extend to container reuse".

One interviewee from an NHS trust said that the policy and regulation that applies to their industry is not ambitious enough. The trust that they work for had set its own targets, as they were already performing at a higher level than the national targets. This interviewee said,

"Some trusts see meeting the existing targets as a tick box exercise and improving performance in this sector relies on motivated individuals to be proactive. There are good networks that exist to join up policy makers with waste managers to share good practice across NHS trusts and we have been making progress, but there is a lot of room for improvement".

Another interviewee said, "There is an absence of joined up approach from government to reuse and prevention. Packaging and product design is not in line with reuse, repair or recycling. Producers need to be mandated to do more and there needs to be the political will to benefit the environment over corporate profits".

One interviewee said, "Since Brexit, the prioritisation of repair and reuse has declined, as the UK is not bound by EU legislation such as the Right to Repair Directive".[103]

The lack of product sustainability standards can make it difficult for even responsible organisations to make sustainable choices. One NHS trust interviewee highlighted the difficulty of procuring more sustainably, in ways that might support the application of the waste hierarchy. The interviewee said,

"The complexity of NHS supply chains, spanning multiple suppliers, product categories, and procurement frameworks, can make it challenging to ensure that all products meet consistent sustainability standards, limiting visibility and control over procuring sustainably. Putting more restrictions on manufacturers to comply with environmental standards is needed. Getting data from suppliers to evaluate the products they are buying is really difficult so making sustainable procurement decisions is challenging".

5.3.2 Economic disincentives

The consensus amongst interviewees was there are strong economic disincentives to the prioritisation of activities at the top of the waste hierarchy.

Several interviewees said that, in some cases, it is more cost-effective to use virgin materials rather than recycled alternatives. Similarly, repairing or purchasing second-hand items can be as expensive—or even more costly—than buying new. One interviewee from a waste management company said, "we are lucky if we break even on the reuse parts of our contracts, so contracts including reuse and prevention rely on contractors and councils wanting to do the right thing as they aren't profitable. Reuse and repair services are also generally less profitable for manufacturers and retailers".

Another interviewee said, "Manufacturers and retailers generally don't like the repair model as they perceive it to be less profitable than the current take, make, dispose model. Manufacturing cheap products with a short lifespan is the most profitable for retailers and manufacturers".

[103] European Union (2024) *Directive (EU) 2024/1799 of the European Parliament and of the Council of 13 June 2024 on common rules promoting the repair of goods and amending Regulation (EU) 2017/2394 and Directives (EU) 2019/771 and (EU) 2020/1828.* Available at: https://eur-lex.europa.eu/eli/dir/2024/1799/oj/eng

Several interviewees raised the issue of the rise in cheap products, in particular electrical items, that contain hazardous materials and are complex to disassemble which make them expensive to transport and recycle and therefore not suitable for repair or reuse.

An interviewee from an NHS trust said,

> *"the main barrier to reuse and prevention is the short-term financial pressure to make savings. I have many potential projects that require funding that would make financial savings and deliver significant environmental benefits, but the financial savings will not be realised until around five years into the project and therefore won't be approved. It is very dependent on the Chief Executives. The Newcastle NHS Trust Chief Executive is a great example of someone that is willing to invest to save in reuse and prevention projects".*

Currently, there is significant reliance on the charity sector and the goodwill of volunteers to establish infrastructure for reuse and repair—such as charity shops, repair cafés, and libraries of things. One interviewee said,

> *"To truly scale these initiatives, government funding and financial incentives are essential to make reuse and repair commercially viable. Low-value electrical items, such as toasters and kettles, are generally not cost-effective to repair through professional services. Therefore, voluntary repair initiatives are needed to address this gap".*

5.3.3 Lack of funding for reuse and prevention

Amongst interviewees there was generally considered to be less government support for reuse and waste prevention activities in England compared to many other countries, particularly EU member states. Interviewees took it as read that reuse and repair initiatives are typically not commercially sustainable without some level of supplementary funding or financial incentive.

One interviewee said, "There is a lack of government funding available in England when compared to the support provided by the Welsh government, such as through Repair Café Wales and Library of Things Wales".

The interviewees provided evidence that there was some funding available for reuse and repair initiatives. For example, the CIWM launched the Circular Economy Innovators Fund to support small and micro businesses in the UK and Republic of Ireland that are advancing circular economy solutions and successful applications were announced and awarded with up to £10,000 in August 2024. However, interviewees mentioned that financial support is needed on a much larger scale to upscale existing small-scale reuse and prevention projects.

Funding on this scale does not appear to be in immediate prospect. England's Waste Prevention Programme (2023 update)[104] sets out ambitions like eliminating avoidable waste by 2050 but relies heavily on voluntary industry initiatives and consumer behaviour change, without major new funding or the prospect of new legal requirement.

[104] HM Government (2023) *The waste prevention programme for England: Maximising Resources, Minimising Waste.* Available at: https://www.gov.uk/government/publications/waste-prevention-programme-for-england-maximising-resources-minimising-waste

5.3.4 Lack of skills and infrastructure

There was a widespread view amongst interviewees that there is a lack of infrastructure for the reuse, repair and recycling of materials. One interviewee said, "Operators are unlikely to invest in new infrastructure without clear market incentives".

Conversely there has been significant investment in EfW. One interviewee from a university said "'a major barrier to recycling and reuse in England has been large incineration contracts demanding waste to meet the contracts guaranteed minimum tonnage[105] and energy production requirements. Waste management companies, largely owned by US investment banks, require existing or higher levels of waste to maintain profits." The interviewee considered this to be a barrier to prevention, reuse and recycling.

Several interviewees that worked in the reuse and repair sector reported a lack of skills in repair services. There were also concerns that many people who had the relevant skills were nearing retirement age. One interviewee said,

> *"Many repair businesses are small, independent, and struggle to attract younger talent due to low wages and limited career pathways".*

The skills shortage limits the capacity of repair facilities that are available, which can lead to customers experiencing long waits or high costs for repairs. This discourages them from making use of repair services, especially when low-cost replacement items may be conveniently available.

5.3.5 Measurement issues for prevention, reuse and repair

Many interviewees highlighted the challenges associated with measuring the impact of reuse and prevention activities. As a result, the environmental, social, and economic benefits of these initiatives are often not fully understood or quantified. One interviewee from a local authority said,

> *"Without the ability to conduct a robust cost-benefit analysis, it becomes difficult to justify budget allocations for projects that support the upper tiers of the waste hierarchy".*

Many organisations have stopped at the recycling tier as it is difficult to justify costs of moving up the waste hierarchy when benefits are not easily measurable.

5.3.6 Application of End of Waste (EoW) rules

It was reported by several interviewees that the way the End of Waste Regulations are enforced is often a barrier to recycling or reuse particularly for construction waste, soils, hazardous and clinical wastes.

One interviewee said,

> *"The existing EoW regime is highly complex and regarded as a specialist area by both the sector and regulators, leading to limited understanding and engagement with its rules and processes. This complexity often drives operators to seek reassurance from regulators for themselves and their customers, creating additional pressure on regulatory resources".*

[105] Guaranteed Minimum Tonnages are discussed in footnote 82.

It was reported by several interviewees that current regulatory efforts focus on a very small tonnage of material, typically from businesses committed to legal compliance and handled by small specialist teams. One interviewee said,

> *"General understanding of EoW among inspectors is low, and there is little proactive identification or enforcement. As a result, attention remains concentrated on small volumes brought forward by operators striving to comply, rather than addressing broader compliance gaps".*

Another point raised that there is uncertainty around international movements – an opinion from a UK regulator regarding EoW may not be shared by the receiving country and vice versa. There have been Instances of materials being shipped as waste to 'be safe rather than sorry', but this restricts the opportunity for the material to be treated higher up the waste hierarchy.

One interviewee said,

> *"Operators face significant challenges in achieving end-of-waste status for innovative recycling and reuse processes, due to the EA's narrow interpretation of waste definitions and reluctance to approve new protocols, with examples involving materials like clay, oyster shells, eggshells, and soil. They often classify materials as waste even when there is a clear intended reuse, such as items donated to charity shops or materials processed into new products, which creates regulatory hurdles for businesses seeking to innovate. Only a limited number of materials have approved end-of-waste protocols, and the Environment Agency's Definition of Waste Panel rejects the vast majority of applications, making it difficult for businesses to obtain recognition for new recycling or reuse processes".*

Policy and guidance can often be too complex and difficult for some organisations to comply with. A more accessible system that is easier for smaller operators with limited resources to navigate could open up innovation. Interviews suggested that some operators are looking for more environmentally beneficial uses of their material which has previously been disposed of and are willing to take legal risks by asserting end-of-waste status, reflecting a shift in industry attitudes and a potential tipping point for change.

5.3.7 Barriers specific to soil reuse

Interviewees highlighted some specific barriers relating to the reuse of soil. A key economic barrier is the relatively low cost of landfilling soil, which disincentivises reuse. This is compounded by regulatory constraints, where excavated soil is automatically classified as waste, making reuse legally complex unless the material can be formally re-designated. A soil expert interviewed said "The application of the precautionary principle further restricts opportunities for beneficial reuse, even in cases where the material poses minimal environmental risk".

The interviewee said,

> *"In the UK, it is estimated that 58% of landfill input, by volume, consists of soil and soil-like materials. This represents poor use of a finite and valuable resource and contributes to the rapid depletion of landfill capacity".*
>
> *"To address these challenges, policy reform is needed. One option is to increase the landfill levy for soil, as is currently under consideration in Scotland. Additionally, a shift in regulatory approach is recommended—specifically, to require soil to be assessed for reuse potential before it is classified as waste. This would align with the principles of the circular economy and encourage more sustainable material management".*
>
> *"Soil is often perceived as low-value due to its low disposal cost. However, it holds high intrinsic value in terms of its applications in construction, its role in nutrient recycling,*

food production, and its capacity as a carbon store. For example, in France, river dredge material is not classified as waste, but rather as a valuable soil conditioner, recognising its origin as eroded land material being returned to productive use. In contrast, such an approach would be difficult to implement under current UK regulations".

There are, however, positive examples of soil reuse in practice. The interviewee said "The Eden Project's ReCon initiative successfully reused soil that would otherwise have been landfilled, reducing the need for new excavation. Similarly, the Stratford Olympic Park development demonstrated innovative soil fabrication techniques, tailoring soil properties such as drainage and pH to meet specific landscape and planting requirements".

Case Study: On-Site Reuse of Excavated Soil at Dorset Police Headquarters[106]

During construction of the new Dorset Police Headquarters, the project team faced the challenge of managing more than 4,600 tonnes of excavated soil. Rather than sending this material to landfill, they developed a materials management plan under the CLAiRE Definition of Waste: Code of Practice (DoWCoP),[107] enabling all excavated soil to be reused on or near the site.

The team repurposed the entire 2,119 m^3 of soil to create two landscaped earth mounds in the neighbouring North field. This approach achieved 100% diversion of excavation waste from landfill, eliminated the need for over 200 lorry trips, and delivered significant cost and carbon savings.

The project demonstrates how early planning and circular economy thinking can transform excavated material from a waste liability into a useful on-site resource.

The Government consulted on changes to Landfill Tax in England that would have led to the elimination of the lower rate of tax that applies to soils, increasing the cost per tonne from £4.05 to over £120.[108] This was intended to address a range of issues, including misdeclaration of material as lower rate when it should be charged as standard rate. However, as part of Budget 2025, it was announced that the proposals would not be taken forward, in part due to concerns regarding the perceived impact on house building and infrastructure development.[109] Instead, the lower rate of Landfill Tax was increased to £8.65 per tonne, increasing the incentive for diversion of this stream, but to a considerably smaller degree than was contemplated.

5.3.8 Enforcement

Enforcement Resources

Interviewees expressed a range of perspectives that highlight a lack of enforcement, whether of the waste hierarchy directly or of waste policies that would support the hierarchy's priorities, as a barrier to moving waste up the waste hierarchy.

Some stakeholders argued that the enforcement resources that are available are consumed by a focus on waste crime. One interviewee said:

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106 Willmott Dixon (n.d.) *Zero excavation waste to landfill at Dorset Police HQ.* Available at: https://www.willmottdixon.co.uk/now-or-never/case-studies/zero-excavation-waste-to-landfill-at-dorset-police-hq
107 CLAIRE (n.d.) *Definition of Waste: Code of Practice*. Available at: https://claire.co.uk/projects-and-initiatives/dow-cop.html
108 HM Government (2025) Consultation on Reform of Landfill Tax. Available at: https://www.gov.uk/government/consultations/consultation-on-reform-of-landfill-tax
109 Davies-Dennis, P (2025) Budget 2025: Government backtracks on landfill tax overhaul. *Circular.* Available at: https://www.circularonline.co.uk/news/budget-2025-government-backtracks-on-landfill-tax-overhaul/

"While a significant proportion of the UK's waste is managed illegally, enforcement efforts are primarily focused on tackling the most serious cases of waste crime, rather than ensuring compliance with policies aimed at increasing recycling, reuse, or waste prevention.".

Another interviewee representing waste operators said,

"Simpler Recycling requirements for commercial collections have been implemented slowly. The Environment Agency has taken a very soft approach to enforcement, which needs to be ramped up. Waste operators have been frustrated that they have invested significant cash to implement compliant services, but recycling collections aren't yet being requested by businesses at the rate they expected. There has been a total lack of communication to businesses, so they are unaware of Simpler Recycling requirements. The requirement to implement commercial recycling collections is being raised by the contractors and businesses think it's a sales pitch".

Others believed that enforcement efforts are misdirected, restricting innovation in material repurposing to prevent disposal. They noted that regulators lack the capacity and expertise to tackle organised criminal activity effectively, which diverts attention away from supporting legitimate reuse and prevention initiatives.

In practice, it appears that the Environment Agency has never meaningfully enforced compliance with the waste hierarchy, although it is recognised that application of the hierarchy requires a degree of judgement that makes enforcement decisions far from black and white.[110]

Enforceability Issues

There was a consensus amongst interviewees that the Environment Agency (EA) takes a limited regulatory role in enforcing the waste hierarchy. Waste hierarchy principles are embedded in permit conditions and BAT (Best Available Techniques) requirements, and the EA's engagement is often policy-oriented within the regulatory framework to achieve best effect. There are compliance activities and opportunities to align operations with the waste hierarchy, with operators being under an obligation to provide evidence of how they have implemented the waste hierarchy. However, operators are not always sure how to apply the waste hierarchy, or encounter situations where the waste hierarchy does not adequately decide between options. One interviewee said,

"Sometimes it can be challenging to know what the best action should be, for example which form for recycling might be preferable over another. Also, sudden changes in recycling and other recovery/treatment facilities available to an operator may mean they need to revisit their options. Compliance with a general waste hierarchy provision, therefore, needs to be taken in context with the situation at a particular time."

The EA is not the only regulatory body to face challenges in applying the waste hierarchy. The rapid rise in sales of cheap electrical products with short lifespans and containing harmful chemicals poses significant monitoring challenges for the Office for Product Safety and Standards (OPSS). The OPSS's relevant powers are focused on prosecuting producers and retailers that fail to offer take-back services for waste electronic and electrical equipment. These powers are not an ideal fit for fast-evolving technologies and online marketplaces. This regulatory lag makes it difficult to keep pace with innovation and ensure compliance.

[110] Jones, P (2018) Law in disorder: the Environment Agency and the waste hierarchy. *Isonomia*. Available at: https://www.isonomia.co.uk/law-in-disorder-the-environment-agency-and-the-waste-hierarchy/

5.3.9 Handling of waste hierarchy exceptions

Some interviewees found there to be limitations to the waste hierarchy concept, with several mentioning that the waste hierarchy may not always deliver the best environmental outcome.

- An interviewee representing waste management operators said the waste hierarchy might not always be aligned with the best option in terms of greenhouse gas (GHG) emissions. EfW with carbon capture might be a better option for organics than AD.
- Conversely, other interviewees suggested that the waste hierarchy wrongly prioritises energy recovery over landfill, when incineration might not be the best option for plastics – again, due to GHG emissions.

One interviewee referred to:

> *"a bias towards energy recovery over landfill. Certain biogenic waste materials (food, garden waste, paper, card, wood etc) are often assumed to have net zero carbon emissions during energy recovery. This assumption is based on the idea that the carbon released during combustion or decomposition was originally absorbed from the atmosphere during the material's growth phase, creating a closed carbon loop. Whereas, it is usually assumed that biogenic carbon emissions are taking place after the materials growing phase and therefore is not assumed to be net zero. This has favoured EfW over landfill as a more sustainable solution for disposal."*

This perception on the part of interviewees does not accurately reflect the way that the waste hierarchy was implemented, whether in England or in the EU. England's waste hierarchy guidance[111] makes it clear that it is possible to justify deviation from the waste hierarchy on lifecycle grounds, and explains three instances where "the evidence suggests that waste management options which are not in keeping with the waste hierarchy order are better for the environment." These are food waste (treatment by AD (energy recovery) rather than composting (recycling); mixed food and garden (treatment by dry AD (energy recovery) rather than composting (recycling); and lower grade wood (treatment EfW (energy recovery) rather than recycling). The government published its detailed reasoning for these exceptions in an evidence summary,[112] which guidance indicated would be updated annually – though this has not happened in practice.

This aspect of the waste hierarchy is clearly not well understood, even by experts in the field, and could usefully be explained further by Government.

5.3.10 Consumerist culture

The proliferation of low-cost products, particularly electrical goods with short lifespans and hazardous components, presents significant challenges to advancing reuse, recycling, and repair initiatives.

One interviewee observed that political and cultural factors exacerbate these challenges:

> *"Governments are reluctant to promote reuse or discourage new purchases, as it's likely to be unpopular with consumers. Within the civil service, there is hesitancy to commission evidence-based research, given that findings could necessitate policies*

[111] HM Government (2011) *Guidance on applying the Waste Hierarchy*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69403/pb13530-waste-hierarchy-guidance.pdf
[112] HM Government (2011) *Applying the Waste Hierarchy: evidence summary*. Available at: https://assets.publishing.service.gov.uk/media/5a797dfde5274a3864fd7772/pb13529-waste-hierarchy-summary.pdf

> *perceived as contrary to corporate interests. Consumerism remains a dominant cultural force, creating barriers to reuse and second-hand purchasing. For corporations, sustaining high levels of new product consumption is more profitable than encouraging reuse or waste prevention."*

This view was reinforced by an academic interviewee.

> *"Recent years have seen a marked increase in online shopping and takeaway deliveries among students in halls of residence, contributing to rising volumes of waste requiring collection."*

They further noted that, "The waste hierarchy has had limited impact on cultural norms or consumer behaviour. Efforts to promote reuse and prevention are overshadowed by persistent encouragement to purchase new products."

Another contributor highlighted socio-economic influences on repair behaviour. "Repair is more prevalent among middle-class individuals and is often framed as an environmentally conscious choice. Conversely, marketing strategies and psychological drivers encourage frequent replacement of products that remain functional."

5.3.11 Lack of joined up national communications

Several interviewees mentioned that, while there were local reuse, repair and prevention campaigns at a local authority level, a more joined up national level campaign would be helpful. One local authority interviewee said,

> *"A joined up national communications campaign to promote recycling has been helpful and the same is needed for promoting reuse, repair and prevention to help to change behaviour and make buying second-hand and repairing items more socially acceptable".*

One interviewee said, "The financial benefits of prevention and re-use have been highlighted by organisations such as the EA, WRAP and others, but keeping this message live requires on-going communications and is part of the win-win aspects of how growth and the environment can improve together".

5.4 Opportunities

As the data provided in Section 3.0 shows, there is a huge opportunity to recycle, reuse and repair many more items. WRAP estimated in 2024 that UK households are putting over one billion items in the rubbish every year that could be recycled.[113] The Restart Project conducted a study which showed that almost of half of electricals sent for recycling could have been reused.[114] More voluminous waste streams such as construction and demolition wastes may already be managed relatively well, but they still comprise a large proportion of the waste sent for disposal and therefore present opportunities for improved management.

This section outlines the key opportunities for improvement identified by interviewees and through Eunomia's analysis. However, in order to set these ideas in context, it is first necessary to discuss relevant policy interventions that have already been planned for England, but which have either not yet been

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[113] WRAP (2024) *Recycle Week 2024: Rescue Me – Recycle*. Available at: https://www.wrap.ngo/media-centre/press-releases/households-waste-over-one-billion-items-every-year-could-be-recycled
[114] Restart (2023) *What a waste: our study shows almost half of electricals sent for recycling could be reused.* Available at: https://therestartproject.org/news/recycling-reusable-products/

implemented or whose implementation is sufficiently recent to have not yet been reflected in the data or in stakeholder perceptions.

5.4.1 Policy landscape

While this report primarily reflects established practices and data within the current waste hierarchy, it is important to acknowledge that the waste management landscape continues to evolve rapidly. England's 2018 Resources and Waste Strategy (2018)[115] set in train a number of developments. These have been somewhat slow to come to fruition, with the progress being hindered by the COVID-19 pandemic, and many of the main resultant changes are therefore not yet reflected in the available datasets used in this report. Nor will stakeholders yet view them as "in place", and their views on changes that will flow from them remain speculative. Nevertheless, these changes represent important developments that could significantly shape the extent to which England's waste management conforms to the waste hierarchy, and which should not be duplicated in future recommendations. They are also the key measures that the Government has highlighted as contributing to its plans to meet the residual waste reduction targets under the Environment Act 2021.[116]

5.4.1.1 Simpler Recycling

The Government is in the process of implementing a more consistent system of recycling collections from households and businesses across England. All households and businesses will have the opportunity to recycle the same core materials:

- paper and card,
- plastic,
- metal,
- glass, and
- food waste.

The specific material types that must be collected are specified in more detail in regulations.[117] Implementation is phased:

- Since 31 March 2025, businesses with 10+ employees have been required to arrange collection of the core materials;
- By 31 March 2026, all local authorities must provide collections of the core materials to households (including weekly food waste);[118] and
- by 31 March 2027, micro-firms will be included within the scope of the requirements and plastic film will be added to the core materials that must be collected for recycling.

[115] HM Government (2018) *Our Waste, Our Resources: a Strategy for England*. Available at: https://assets.publishing.service.gov.uk/media/5c18f11740f0b60bbee0d827/resources-waste-strategy-dec-2018.pdf
[116] HM Government (2025) Residual waste reduction Environment Act target delivery plan. Available at: https://www.gov.uk/government/publications/residual-waste-reduction-environment-act-target-delivery-plan/residual-waste-reduction-environment-act-target-delivery-plan
[117] HM Government (2024) *The Separation of Waste (England) Regulations 2024*. Available at: https://www.legislation.gov.uk/uksi/2024/666/made
[118] A small number of exceptions have been made where authorities had long-term contracts for the treatment of mixed food and garden waste that would have been expensive to amend or exit. See The Environment Act 2021 (Commencement No. 9 and Transitional Provisions) Regulations 2024, available at: https://www.legislation.gov.uk/uksi/2024/639/made

The policy seeks to end the "postcode lottery" of recycling rules and improve England's stagnating recycling rates by filling in gaps in current recycling provision. It may also make it simpler to communicate at an England-wide level regarding what can be recycled, reducing confusion and contamination.

Many authorities are still in the process of implementing compliant services, and so effects on household waste will not be seen until late 2027/early 2028, when 2026/27 data will be published. Many authorities already offered compliant services, so the increase in recycling performance may not be dramatic, but is likely to be several percentage points. The impact on business waste will depend in part on enforcement, and would not necessarily be evident in any data that is currently published.

However, the move from seeking to encourage recycling through price incentives (driven by Landfill Tax) to specifying what must be recycled through regulation is a significant change of approach, which will make it significantly easier to drive recycling of additional materials in future.

5.4.1.2 DRS for beverage containers

The Government is also introducing a Deposit Return Scheme (DRS) for beverage containers. A DRS works by adding a small refundable deposit to containers, which consumers reclaim when they return the empty container for recycling. By creating a financial incentive for return, DRS may increase collection rates and improves the quantity and quality of recovered materials, reducing contamination and making closed-loop recycling more feasible. According to the UK Government's Consultation on Introducing a Deposit Return Scheme (DRS) for Drinks Containers[119], the scheme aims to "*incentivise moves to push more material up the waste hierarchy and move towards a more circular economy.*" The scheme is expected to be implemented in 2027, and will operate UK wide (although there may be some differences in implementation in devolved administrations, since Wales and Scotland are both eager to see glass bottles included in the scope.

While collection rates for plastic bottles and aluminium cans are already high compared with many other materials, losses during MRF sorting are significant. Furthermore, collecting plastic bottles as part of a mixed plastic stream can make recovering food grade plastics more difficult. The DRS therefore directly supports the recycling level of the waste hierarchy, over disposal or recovery – while also helping to reduce litter.

5.4.1.3 Extended Producer Responsibility

England is in the process of introducing a (UK-wide) Extended Producer Responsibility (EPR) scheme for packaging, building on the previous producer responsibility scheme for this material. The UK has several other producer responsibility schemes in place for materials such as batteries, waste electronics and end of life vehicles.

Producer responsibility schemes support the waste hierarchy's priorities by making producers responsible for the environmental impacts of their products throughout their life cycle. They aim to internalise the costs of waste management, which gives producers a financial incentive to reduce the weight of material they place on the market, design to extend product lifetimes and employ materials that can be readily reused or recycled. Producers can also be set recycling and recovery targets.

The Government has set out how the packaging EPR scheme will require producers will bear the full net costs of managing packaging once it becomes waste. This creates a direct financial incentive to minimise unnecessary packaging and shift towards more recyclable materials, including through the use

[119] HM Government (2019) *Introducing a Deposit Return Scheme (DRS) in England, Wales and Northern Ireland: Executive summary and next steps – Consultation Outcome*. Available at: https://www.gov.uk/government/consultations/introducing-a-deposit-return-scheme-drs-for-drinks-containers-bottles-and-cans

of modulated fees, where less recyclable or non-reusable packaging incurs higher charges.[120] The scheme includes new packaging recycling targets, and a system for calculating payments to local authorities for the costs of collecting, sorting and disposing of packaging.

At the time of writing, the scheme is in the early stages of its implementation. The first fees have been collected from producers, and the first payments made to local authorities. However, there has been little time for the scheme to have any measurable impact on how waste is managed. Aspects of the scheme originally consulted on have been delayed, and so it does not yet cover the costs of packaging that is littered or that enters the commercial waste stream. The Government undertook to revisit these issues as part of a review once the household waste element of it had been in operation for two years.[121]

The EPR scheme for packaging is a very significant change, because it moves the cost of managing packaging waste away from local taxpayers and on to the people who use packaging through the price of the products they buy. It creates an obligation on packaging producers to pay the costs of waste management and pass these on to their customers, creating a new incentive to reduce and improve packaging. This can be expected to lead to further lightweighting and simplification of packaging, and reduce the tendency of producers to place packaging formats on the market without consideration of how they will be managed at end of life. This is likely to lead to some level of reduction in waste, as well as an increase in recycling.

5.4.1.4 The Waste Prevention Programme for England: Maximising Resources, Minimising Waste (2018)

Following on from the Resources and Waste Strategy[122], the Waste Prevention Programme for England: Maximising Resources, Minimising Waste[123] ("WPP") was published in 2023 and updates the 2013 WPP discussed in Section 4.1.2. This paper sets out a national direction to move from waste management to waste prevention - designing out waste at source, extending product life, and supporting more circular, resource-efficient systems. The WPP sets out the priorities for action to manage waste in accordance with the top two rungs of the waste hierarchy: prevention and reuse.

The WPP includes a section focused on designing out waste. Evidence collected by WRAP on sustainable product design[124] suggests that 80% of the environmental damage caused when products become waste can be avoided by decisions made at the design stage. The WPP proposes ecodesign requirements and promotes the adoption of environmental credentials, measures that were also highlighted in the 2013 WPP, and which appear unlikely to have a dramatic impact on waste prevention.

A range of targeted measures are mentioned in the WPP as helping to reduce waste generation through better product design, extended producer responsibility, and local reuse initiatives. However, it contains few new goals or substantive delivery mechanisms. Key achievements mentioned include laying policy and regulatory foundations:

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[120] HM Government (2021) *Packaging and packaging waste: introducing Extended Producer Responsibility – Response to Consultation.* Available at: https://www.gov.uk/government/consultations/packaging-and-packaging-waste-introducing-extended-producer-responsibility
[121] HM Government (2021) *Packaging and packaging waste: introducing Extended Producer Responsibility – Response to Consultation.* Available at: https://www.gov.uk/government/consultations/packaging-and-packaging-waste-introducing-extended-producer-responsibility
[122] HM Government (2018) *Our Waste, Our Resources: a Strategy for England*. Available at: https://assets.publishing.service.gov.uk/media/5c18f11740f0b60bbee0d827/resources-waste-strategy-dec-2018.pdf
[123] HM Government (2023) *The waste prevention programme for England: Maximising Resources, Minimising Waste*. Available at: https://www.gov.uk/government/publications/waste-prevention-programme-for-england-maximising-resources-minimising-waste/the-waste-prevention-programme-for-england-maximising-resources-minimising-waste
[124] WRAP (2013) *Embedding environmental sustainability in product design*. Available at: https://www.wrap.ngo/sites/default/files/2021-03/WRAP-embedding-environmental-sustainability-in-product-design-final.pdf

- Implementation of measures under the Resources and Waste Strategy and the Environment Act[125], establishing the legal and strategic framework for waste prevention.
    - A target has been set under the Environment Act to halve residual waste kg per person by the year 2042.[126] This will be measured as a reduction from 2019 levels (574 kg per capita).
    - This target was set to build on the Resources and Waste Strategy commitment achieve a 65% municipal recycling rate and send less than 10% of municipal waste to landfill by 2035.
- Development of updated guidance on the Definition of Waste,[127] intended to support reuse and remanufacturing. Since the publication of the WPP, the Definition of Waste guidance has been withdrawn and replaced with a new guide.[128]

The WPP mentions a number of sector-specific waste prevention initiatives, including:

- **Textiles:** Continuation of Textiles 2030 (now the Textiles Pact), a voluntary industry agreement driving circular design, reuse, and fibre-to-fibre recycling. This primarily focuses on reducing the overall carbon and water footprint of products. The government proposed developing a textiles waste hierarchy and to introduce requirements on at least some businesses to present textile waste separately for recycling, and for producers to offer takeback schemes. However, these proposals do not appear to have progressed.
- **Construction:** Expansion of materials resource efficiency programmes, promoting reuse of aggregates, design for deconstruction, and waste minimisation in major projects. Small scale groups have been set up to explore opportunities to share materials between projects, for example the Major Infrastructure – Resource Optimisation Group (MI-ROG). Government has developed a roadmap to zero avoidable waste in construction, which defines targets such as eliminating all but hazardous C&D waste entering landfill.
- **Furniture and bulky items:** The WPP highlighted growth in local authority reuse schemes and partnerships with charities to extend product life through collection and redistribution. The national Reuse Network claims to have successfully reused 2.55 million furniture and electrical items in their 2024 Social Impact Report. The WPP committed to publish research about the requirements to improve labelling and consumer information for furniture in 2023, but this does not appear to have happened.
- **Electricals and electronics:** The WPP asserts support for Right to Repair regulation[129] and development of take-back and repair initiatives to reduce premature disposal. Government made some additional progress by establishing the voluntary Electrical and Electronic Equipment Sustainability Action Plan, but this was later closed.
- **Food:** The WPP highlighted implementation of food waste reduction targets, business engagement through WRAP's Courtauld Commitment 2030, and community redistribution via surplus food networks. Some progress has been made in this space, with mandatory food waste collections being advanced through Simpler Recycling (see Section 5.4.1.1).

[125] HM Government (2021) *Environment Act 2021*. Available at: https://www.legislation.gov.uk/ukpga/2021/30/contents
[126] HM Government (2023) *The Environmental Targets (Residual Waste) (England) Regulations 2023.* Available at: https://www.legislation.gov.uk/en/uksi/2023/92/made
[127] HM Government (2021) *Decide if a material is waste of not: general guide.* Available at: https://www.gov.uk/government/publications/legal-definition-of-waste-guidance/decide-if-a-material-is-waste-or-not
[128] HM Government (2024) *Check if your material is waste.* Available at: https://www.gov.uk/guidance/check-if-your-material-is-waste
[129] HM Government (2021) *The Ecodesign for Energy-Related Products and Energy Information Regulations 2021*. Available at: https://www.legislation.gov.uk/uksi/2021/745/contents/made

Sector-specific initiatives under the WPP have shown measurable progress at local and pilot levels; however, their scalability remains limited by structural, economic, and cultural barriers. The WPP has spawned pilots, voluntary agreements, and localised interventions. It mentions integrating reuse areas within household waste recycling centres (HWRCs) to enable recovery of household items for resale or donation, or local repair cafes, sharing library and tool libraries to strengthen reuse.

Textiles and electronics offer some of the greatest opportunities for large-scale impact, yet both sectors are characterised by short product lifecycles and a "throwaway" culture. Initiatives such as the Textiles Pact are endeavouring to shift practice towards durability, extended producer responsibility, and reuse – but the WPP recognises cultural and behavioural barriers as central to these challenges. Overall, the WPP acknowledges that voluntary and pilot-led approaches alone are unlikely to deliver the scale of impact required, but does not appear to have led to more systematic change as yet.

5.4.1.5 Digital Waste Tracking

Defra consulted upon proposals for mandatory digital waste tracking in 2022.[130] The proposal was intended to address the lack of systematic data on waste outside of the local authority collection system. As the consultation paper says, under the current system,

> *"it is very difficult to determine what happens to our waste and to have a comprehensive understanding of whether it has been recycled, recovered, or disposed of."*

The consultation initially planned for the system to be introduced in 2023 or 2024. This date has been pushed back, and the latest published position was for private beta invitations to be issued in Autumn 2025, a public beta in spring 2026 and mandatory use for waste receivers in October 2026. The service is then to be rolled-out to other parts of the waste system, including waste carriers and brokers, as part of a second phase. According to Defra's preliminary timetable, after similar private and public beta test stages to those in Phase 1, Phase 2 is planned to become mandatory in October 2027.[131, 132]

The introduction of mandatory digital waste tracking would be likely to have a positive impact on the implementation of the waste hierarchy, because it would provide more transparent, up to date information on waste movements and destinations. This would help policy makers, regulators and businesses more accurately determine whether waste is actually being sent for reuse or recycling, rather than for disposal or recovery. For example, the centralised system proposed by Defra is designed to track waste from production all the way through treatment and product-creation from waste-derived materials.

The improved traceability and accountability may also deter waste crime and discourage operators from directing materials into lower value routes (e.g. disposal or export) rather than higher value reuse/ recycling options, which would encourage waste to move up the hierarchy.

[130] HM Government (2022) *Consultation on the introduction of mandatory digital waste tracking.* Available at: https://consult.defra.gov.uk/environmental-quality/waste-tracking/supporting_documents/Consultation%20document%20%20Introduction%20of%20mandatory%20digital%20waste%20tracking.pdf
[131] HM Government (2026) *Digital Waste Tracking – Phase Two: What It Means for Waste Operators*. Available at: https://createsend.com/t/t-23E2868B365F41872540EF23F30FEDED
[132] Jones, B. (2026) Defra confirms timeline for Digital Waste Tracking rollout. *LetsRecycle*. Available at: https://www.letsrecycle.com/news/defra-confirms-timeline-for-digital-waste-tracking-rollout/

5.4.1.6 25 Year Environment Plan

The 25 Year Environment Plan (25YEP) sets out the UK Government's long-term vision to leave the environment in a better state for future generations.[133] This vision is supported by the delivery mechanisms set out in Environmental Improvement Plans, the most recent being Environmental Improvement Plan 2023[134] (EIP 23) and Environmental Improvement Plan 2025[135] (EIP 25), which update the 25YEP and translate its long-term goals into more detailed actions, targets and delivery frameworks.

The 25YEP sets out a series of challenging long-term targets under its goal of "*minimising waste, re-using materials as much as we can and managing materials at the end of their life to minimise the impact on the environment*". These include:

- reducing the total mass of residual waste excluding major mineral wastes per calendar year to no more than 287 kg per capita by 2042;[136]
- eliminating avoidable plastic waste by 2042; and
- zero avoidable waste by 2050.

The Resources and Waste Strategy's ambition to achieve a municipal recycling rate of at least 65% by 2035 is made a formal target in the 25YEP.[137] This target was reinforced within EIP 23, which outlines interim delivery priorities and sector-led actions to improve recycling performance.

The 2042 residual waste target was supported by eight interim targets for 2028 in EIP 23. These include January 2028 targets of 437 kg per capita and a total tonnage limit of 25.5 million tonnes. It also set a target for municipal waste per capita of 333kg per capita by 2028 and limits for particular materials (food, plastic, paper/card, metal, card) in municipal residual waste. EIP 25 reiterates the same interim targets, but moves the date back to December 2030.

Clear steps have been taken towards meeting some other targets, with EPR and the plastic packaging tax supporting the reduction of avoidable plastic waste. The commitment to consistent recycling collections also appears achievable, given statutory levers and local authority operations. It will reduce residual waste and increase the municipal recycling rate. However, the 65% recycling target and the residual waste target remain ambitious goals.

Longer-term targets such as "zero avoidable waste by 2050" and the full elimination of avoidable plastic waste by 2042 hinge on widespread behavioural change, rapid scaling up of systems and infrastructure, transformation of fresh supply-chains, market demand for recycled/reuse materials and global upstream material flows. Achieving these steps will require policies that are not yet in prospect.

The EIPs largely rely on the three key policies described above (Simpler Recycling, packaging EPR, beverage container DRS) as the means by which the interim and long-term targets will be met – alongside the Circular Economy Growth Strategy. They do not include an analysis of whether these policies are likely to be sufficient to meet the recycling or residual waste targets, or the scale of any gap, and thus the need for additional policy interventions. EIP 25 does include some recognition that additional policy measures may be needed and suggests government may consider expanding the list

[133] HM Government (2018) A Green Future: Our 25 Year Plan to Improve the Environment. Available at: https://assets.publishing.service.gov.uk/media/5ab3a67840f0b65bb584297e/25-year-environment-plan.pdf
[134] HM Government (2023) *Environmental Improvement Plan 2023*. Available at: https://assets.publishing.service.gov.uk/media/64a6d9c1c531eb000c64fffa/environmental-improvement-plan-2023.pdf
[135] HM Government (2025) *Environmental Improvement Plan 2025*. Available at: https://assets.publishing.service.gov.uk/media/692d8d9cce50d215cae962a5/Environmental_Improvement_Plan__EIP__2025.pdf
[136] This is a legally binding target set under the Environment Act 2021 through the Environmental Targets (Residual Waste) (England) Regulations 2023 (available at: https://www.legislation.gov.uk/uksi/2023/92/body/made)
[137] HM Government (2023) *At a glance: summary of targets in our 25 year environment plan.* Available at: https://www.gov.uk/government/publications/25-year-environment-plan/25-year-environment-plan-our-targets-at-a-glance?

of separately collected materials that are banned from landfill without some form of treatment process. However, as landfill of municipal waste has been in steep decline, this would have quite a limited impact.

5.4.1.7 Circular Economy Taskforce

The Circular Economy Taskforce was established in November 2024 as an independent expert advisory group to support the Government in creating a circular economy strategy for England.[138] The strategy, now dubbed the Circular Economy Growth Plan, will be published in 2026 and will set out how Government will deliver a more circular and more prosperous economy.[139] An important element of this work will be assessing the anticipated impacts of possible further policies, beyond those currently in train, on reducing residual waste. In doing so, the Taskforce has the potential to strengthen the practical application of the waste hierarchy by shifting policy emphasis towards prevention, reuse and product design.

5.4.1.8 Single-use plastic bans

In addition to the carrier bag charge, which significantly reduced the use of single-use plastic carrier bags (see Section 4.1.2), England has banned a range of single use plastic items.[140] With effect from 2023, the following items were banned:

- drinks stirrers
- balloon sticks
- cutlery
- food and drink containers made of expanded and extruded polystyrene

In addition, restrictions were put in place on single use plastic plates, bowls and trays, straws and cotton buds. The government has recently announced its intention to ban wet wipes containing plastic from 2027.[141]

5.4.1.9 Inclusion of incineration in the UK ETS

In 2023, the government has announced that, from 2028, emissions from incineration will be included within the UK Emissions Trading Scheme (ETS).[142] Subsequently, the government has consulted on these proposals, and issued an interim response focused on how monitoring and verification under the scheme will function.

The ETS is a "cap and trade" scheme, which sets a limit on the total fossil carbon emissions from the emitters that it covers. Each year, operators who are covered by the scheme must surrender UK ETS Allowances (UKAs) to cover their emissions for that year. To do so, they must acquire UKAs (over

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[138] HM Government (2024) *Circular Economy Taskforce*. Available at: https://www.gov.uk/government/groups/circular-economy-taskforce
[139] HM Government (2025) Residual waste reduction Environment Act target delivery plan. Available at: https://www.gov.uk/government/publications/residual-waste-reduction-environment-act-target-delivery-plan/residual-waste-reduction-environment-act-target-delivery-plan
[140] HM Government (2024) Single-use plastics bans and restrictions. Available at: https://www.gov.uk/guidance/single-use-plastics-bans-and-restrictions
[141] HM Government (2025) *New law bans plastic wet wipes to protect rivers and seas*. Available at: https://www.gov.uk/government/news/new-law-bans-plastic-wet-wipes-to-protect-rivers-and-seas
[142] HM Government (2026) *UK Emissions Trading Scheme (UK ETS): a policy overview*. Available at: https://www.gov.uk/government/publications/uk-emissions-trading-scheme-uk-ets-policy-overview/uk-emissions-trading-scheme-uk-ets-a-policy-overview

and above any free allocation they may be eligible for) through auctions run by the government, or from other participants through secondary markets.

Because the scheme is market-based, it is difficult to predict what UKAs may cost in 2028; it is also not yet clear how incinerator operators will pass on their additional costs to the organisations that supply them with waste. However, it is anticipated that the increase in costs will be significant, most likely some tens of pounds per tonne; and that this will incentivise greater removal of fossil-based materials (e.g. plastic packaging, manmade textiles) from the residual waste stream in order to reduce liability for ETS costs.

5.4.2 Policy Opportunities

Having reviewed the policies that are already in train, it is now possible to explore the gaps that remain and the opportunities for further progress to be made in moving waste up the waste hierarchy. While the Government has not included in EIP 23 or EIP 25 a gap analysis between the impacts of current policies and the interim or long term targets, the opportunities described below would potentially assist in closing any gap that may arise. The opportunities included in the text combine suggestions made by interviewees with observations provided by Eunomia.

5.4.2.1 Waste Prevention

5.4.2.1.1 DRS and refillables

While the DRS that is being implemented in England (see Section 5.4.1.2) focuses on recovering containers for recycling, a DRS can be designed to promote refillable and reusable containers. This opportunity is highlighted in Zero Waste Europe's DRS Manifesto,[143] which calls for deposit systems to be a stepping stone from single-use with recycling towards reuse. Once the DRS is implemented, the Government could explore amending it to stipulate a percentage of containers that should be reusable.

Moving towards the use of refillable beverage containers would create logistical challenges and may be more difficult in the modern, more centralised bottling system than it was historically. However, the possibility of re-use focused scheme is demonstrated by Germany's 'pfand' system, which covers both reusable and recyclable containers.[144]

5.4.2.1.2 Local reusable container schemes

There are emerging examples of schemes to enable consumers to more easily make use of reusable containers in place of single use ones. In Bristol, a scheme was piloted in 2023 by producer responsibility scheme Ecosurety and NGO City to Sea, under which people could take a resuable cup from any participating outlet and return it to any other participating outlet.[145] Such schemes could potentially be expanded to other types of containers such as takeaway trays or clamshells.

The Government could take steps to support and expand such schemes, such as mandating participation by relevant retailers, or requiring local authorities to support and co-ordinate local schemes.

[143] Zero Waste Europe (2019) *Deposit Return Scheme Manifesto*. Available at: https://zerowasteeurope.eu/wp-content/uploads/2019/07/2019_07_23_zwe_drs_manifesto.pdf
[144] Bottle Bill (n.d.) *Bottle Bill Resource Guide – Germany*. Available at: https://www.bottlebill.org/index.php/current-and-proposed-laws/worldwide/germany
[145] City to Sea (2022) *Bristol Refill Cup Scheme*. Available at: https://www.citytosea.org.uk/bristol-refill-cup-scheme/

5.4.2.2 Preparation for reuse

5.4.2.2.1 Funding for reuse initiatives

Interviewees suggested a range of reuse and repair initiatives that could be funded more consistently to enable them to be operated more consistently across the country, at greater scale and on a more reliable financial footing. These included

- Community repair hubs;
- A national reuse network;
- Repair voucher schemes;
- VAT reductions on repair services;
- Training programs for repair professionals;
- Public education to raise awareness about repair options and benefits;
- Circular design grants to encourage manufacturers to design products that are easier to repair and reuse;
- Material recovery technology to support sorting and refurbishment systems;
- Online platforms for spare parts and repair guides; and
- Product passport system (through a QR code, barcode or RFID tag) to increase transparency to enable reuse and repair.

Some interviewees suggested that EPR funding could be used to provide this support; however, this perhaps reflects the saliency of EPR funding in interviewees' minds as a new source of resources and might not be consistent with the focus of EPR on ensuring that producers meet the costs of managing the waste for which they are responsible. Government could equally fund any of the initiatives described above through existing taxation mechanisms, or from a fresh levy on relevant product types.

5.4.2.2.2 Expanding 'Right to Repair'

Right to Repair policies require producers to give consumers and/or independent repairers access to spare parts and repair information, so products can be fixed rather than discarded. The European Union adopted Ecodesign regulations in 2021, which introduced repairability requirements for certain household appliances; the UK has largely mirrored these rules. Increasing the repairability of items has the potential to increase product lifetimes, since consumers will have more of an opportunity to repair items when they are damaged or fail, rather than discarding them. This may also affect the design of products, giving additional incentives to make them more durable.

In the UK, Right to Repair currently applies mainly to large household appliances like washing machines and fridges, requiring manufacturers to make parts available for up to 10 years to help reduce waste and extend product lifespans. However, the Right to Repair framework that has been adopted in the UK is relatively limited in scope.

Table 5-1 - Comparison of Right to Repair in UK, EU and US

Feature	England (UK)	EU	US
Start Date	July 2021	March 2021 (Ecodesign rules)	Varies by state (e.g., New York 2023)
Scope of Products	Large household appliances (washing machines, dishwashers, fridges, TVs)	Broader: in addition, includes smartphones, tablets, laptops (under new proposals)	Broader: in addition, includes smartphones, laptops, farm equipment (state laws)
Spare Parts Availability	Up to 10 years for certain appliances	Up to 10 years for certain appliances	Typically mandated for consumer access
Access to Repair Info	Professional repairers only	Consumers and professional repairers	Consumers and professional repairers
Consumer Access to Parts	Limited (not direct for most cases)	Direct access encouraged	Direct access required

Policy ambition and supporting initiatives across the UK nations differ. For example, Scotland and Wales are investing more in community repair networks and circular economy programs than in England.

There is an opportunity for the Government to extend the right to repair in England to a wider range of electronic devices, as is the case in the EU. There are also calls to extend this right to other classes of goods that are increasingly reliant on computer hardware and software, such as motor vehicles.

5.4.2.3 Recycling

5.4.2.3.1 Expanding the core materials for collection

The Government has mandated local authorities to separately collect the material streams that represent the greatest tonnage in household and commercial waste. However, there are several smaller waste streams that could be added to the list of core materials that must be separated, whether by households, businesses or both.

The most attractive additional materials to require to be separated, based on considerations such as the tonnage available, the opportunity for GHG emissions savings and the opportunity to reduce fire risk would be textiles, small waste electronic and electrical equipment and household batteries.

5.4.2.3.2 Mandatory recycling targets

While local authorities have generally had regard to national recycling targets, the Government has opted not to place targets on authorities directly. The success of Wales in achieving rapid increases in local authority recycling can at least in part be attributed to its decision to set clear, long-term and gradually escalating targets for all councils.

There remains an opportunity for the Government in England to adopt a similar approach, although the approach taken in Wales, where all authorities were set the same target, may not be appropriate in England where some inner city authorities face challenges with housing stock that may be more extreme than those found even in Wales's larger cities.

5.4.2.3.3 Additional DRS and/or EPR schemes

The waste sector has recognised the benefits of DRS and EPR in requiring producers to internalise the costs of end of life management of their products. The Chartered Institution of Wastes Management published a white paper in 2024 calling for targeted implementation of extended producer responsibility (EPR) to product types known to cause issues such as electrical items and batteries, as well as textiles and mattresses.[146] Such EPR schemes would provide a means to fund the collections suggested in Section 5.4.2.3.1. For batteries and items containing batteries, the paper suggests that a DRS may be appropriate in order to create an incentive for people to separate these materials from general waste, to reduce the risk of waste fires. The paper goes on to suggest that EPR should be the default position for any new product being placed on the market which either uses critical raw materials or has the potential to cause 'environmental harm' at its end of life.

5.4.2.4 Energy Recovery

The use of energy recovery has expanded significantly over the period since the waste hierarchy was implemented in England. Few suggestions were made by interviewees regarding measures to expand the use of energy recovery; although it was suggested that, if carbon capture and storage is implemented at EfW facilities, it may be environmentally preferable to dispose of some forms of biodegradable waste via incineration rather than through anaerobic digestion. If there is a clear environmental case for this, the existing mechanism for evidencing exceptions to the waste hierarchy could be used to amend guidance (see Section 5.3.9).

In fact, the increased use of incineration and energy recovery for municipal residual waste appears to have been a potential deterrent to increases in recycling during the 2010s. This issue is significantly reduced by the introduction of Simpler Recycling, which mandates that local authorities and businesses must put recycling arrangements in place for all materials, regardless of whether recycling is more expensive than energy recovery. In some instances, contractual terms relating to residual waste treatment have served to justify delays in implementing the additional recycling collections required by Simpler Recycling, but these delays affect a relatively small number of authorities and are limited to food waste.

However, in the longer term, where energy recovery remains the cheaper option than recycling, it could create an incentive against maximising the amount of material that is captured for recycling. This could occur where energy recovery is very cheap, or where recycling is very expensive. There are few instances where this would be likely to arise, due to many recyclable materials having a positive value or low disposal cost and the ETS adding to the cost of incinerating fossil-derived materials. However, the Government to should maintain an understanding of the EfW market to ensure that a sufficiently high proportion of materials that have a high recycling cost (e.g. plastic film) are captured for recycling, to understand whether there is a need to intervene in the market.

5.4.2.5 Cross-cutting

5.4.2.5.1 Enforcement

Several enforcement-related opportunities emerged during the interviews.

Powers to mandate product design features

[146] CIWM (2024) *An EPR of Everything, Starting with Batteries!* Available at: https://www.circularonline.co.uk/wp-content/uploads/2024/07/CIWM-373-Batteries-Report-Document-Final-upload-compressed.pdf

One interviewee emphasised that the Government should take greater powers to mandate product design features—such as limiting hazardous materials and simplifying disassembly—would significantly improve opportunities for reuse, repair, and recycling. They also recommended closer collaboration between OPSS and HMRC to share import data, enabling better tracking of products and producers and addressing the challenge of regulating unknown market participants.

Improved waste data systems

Improved waste data would support agencies in achieving more consistent and robust enforcement. Current systems rely heavily on voluntary producer registration, creating gaps in regulatory coverage. OPSS uses the National Packaging Waste Database for registration, but without mandatory participation, it is difficult to maintain accurate records of producers and products.

It was suggested that improved tracking should be treated with the same importance as safety certification to ensure products placed on the market can be safely disposed of and meet environmental standards. Strengthening these systems would enhance compliance and support a more sustainable product lifecycle. For example, it would enable the identification of cases where inadequate source separation of waste, implausibly low arisings, or unexplained differences between waste received and passed on by a waste management company

This suggestion would largely be met through the introduction of the proposed digital waste tracking system (see Section 5.4.1.5), although the opportunity to take enforcement action where data indicates that waste may not have handled properly will require additional funding for regulators.

In addition to the need for digital waste tracking, it was suggested that more information was required regarding what materials were contained in mixed waste streams, especially residual waste. This information would increase understanding of the opportunities that remain for diversion of high value materials into recycling or reuse, as well as enabling better estimates of the negative impacts of treatment at the lower end of the waste hierarchy (e.g. emissions from landfill or incineration).

More collaborative approach

It was suggested that the Environment Agency should align its approach with those of regulators in Scotland, Northern Ireland, and Wales. The interviewee thought that other regulators were more collaborative, provided feedback to improve applications, and had developed protocols to encourage reuse, resulting in less waste sent to landfill.

5.4.2.5.2 Communications

National campaign to promote reuse and repair

Many interviewees thought that a national communication campaign should be implemented to promote the top tiers of the waste hierarchy—prevention and reuse. A government-led strategy, similar to the successful national recycling campaign, would encourage sustainable consumption and reuse behaviours, such as repair services, second-hand platforms, and waste prevention practices.

Campaigns such as Hypno Cat and Recycle Now show how clear, focused creative campaigns can successfully encourage recycling by giving people a simple, memorable message about what to do and why it matters. Their strength lies in being closely aligned to a single action, recycling, without competing calls to action that might dilute their impact. As new communications are developed around reuse and repair, it could be helpful to position these as separate and distinct strands, with their own tone, visuals, and objectives, so audiences are less likely to feel unsure about which behaviour (reuse, recycling) is preferable. This kind of clarity could support each campaign in building recognition and motivation in its own right, rather than creating mixed messages across the wider resource efficiency agenda.

A sustainable consumption and reuse campaign could also be linked to the cost-of-living crisis, highlighting the financial benefits of reuse and repair.

One interviewee said, "There is still a stigma attached to buying second-hand so this needs to be addressed and the benefits, both environmental and financial, need to be promoted more widely".

Communication could begin at the point of purchase, e.g. through improved labelling that indicates how repairable and durable products are. This would help consumers make more informed choices. Additionally, clearer messaging about the difference between reuse and recycling might guide the public to make the most environmentally beneficial choice when they have finished with a product. As one interviewee noted: "Consumers often get confused between reuse and recycling, assuming that items they drop off will be reused rather than recycled." Increasing awareness that reuse and repair are more beneficial than recycling—and providing clarity on whether donated items will be repaired, reused, or recycled – may help improve understanding.

Another interviewee suggested that communications could be supported by creating a centralised exchange platform to make reuse easier – although it might be argued that various platforms (eBay, Gumtree, Facebook Marketplace, Freecycle) already fulfil parts of this role.

Simpler recycling

It was highlighted that more investment is needed in communicating the requirements of Simpler Recycling to businesses, so that they are aware of their new recycling obligations. It was suggested that this should be followed up by stronger enforcement where non-compliance remains.

5.4.2.5.3 Other

Financial incentives for reuse and recycled content

Some interviewees said there was a need to create incentives that would ensure repairing products is more cost-effective than purchasing new ones. Introducing rewards or incentives for reuse and the use of recycled content in new products could drive procurement and design decisions that prioritise a more circular system.

Support for community action groups

Local authorities are often not structured to support individual or grassroots action. It was suggested that councils could establish arm's-length organisations with a separate operating structure – accountable, yet empowered to make independent decisions – to support these groups to achieve significantly more.

Improved guidance

The current waste hierarchy guidance was published in 2013 and has not subsequently been revised. Comments from interviewees indicated that, even amongst people who are highly familiar with the waste hierarchy, aspects of it are not well understood – especially, the way that the guidance allows for deviations from the hierarchy where these are justified on the basis of lifecycle analysis. A particular problem with the hierarchy guidance is the way that it approaches residual waste, which is treated as a waste stream in its own right and asking how best to manage it, rather than encouraging thinking regarding how the materials contained within residual waste could in future be diverted to recycling streams. This is consistent with the way that the Waste (England and Wales) Regulations 2011 are directed towards waste managers and applied "on the transfer of waste" rather than at a more strategic level.

It would now be timely for the government to revisit the waste hierarchy guidance to ensure that it accounts for policy, technology and market developments since 2013 and to consider how it could be made more effective in driving improvements in waste management.

Building upon the waste hierarchy

Several interviewees expressed concerns regarding the limitations of the waste hierarchy, finding it inherently linked to the linear economy or insufficiently focused on waste prevention. This perspective has surfaced on a number of occasions over the last decade. Three examples are highlighted below.

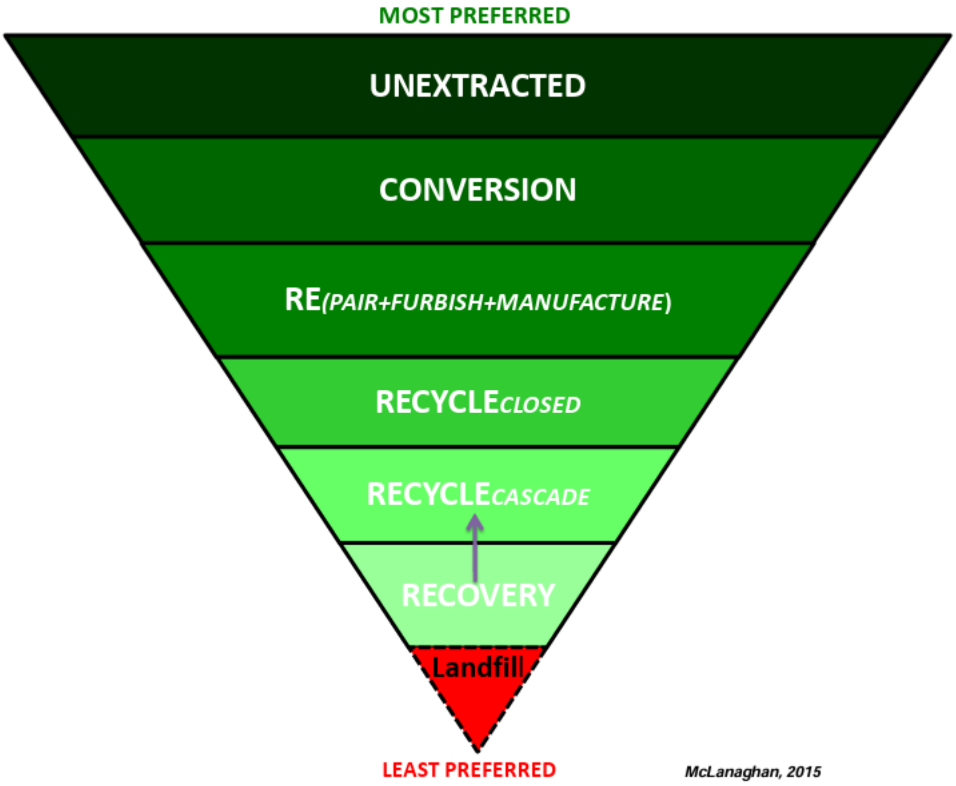
- In 2014, an academic article was published that reviewed the impact of the waste hierarchy, concluding that "the waste hierarchy in its current form is an insufficient foundation for waste and resource policy to achieve absolute reductions in material throughput. Suggested improvements are the adoption of a value-based conception of waste and related collection practices, more stringent and targeted policies on least desirable options like landfill, the specification of waste management targets based on dematerialization ambitions, and the use of the waste hierarchy within a resource productivity-oriented framework."[147]

- In 2015, a proposal for a European Resource Hierarchy (EHR) was published,[148] which aimed to address the waste hierarchy's lack of "influence on the upstream supply chain" by providing "a whole-life framework for the stewardship of national/global natural capital use throughout the productive economy". The proposed hierarchy split recycling into two tiers, differentiation between closed and open loop; and replaced preparation for reuse with the more explicit terminology of "repair, refurbishment or remanufacture". At the top of the hierarchy, prevention was replaced with two tiers referring to how natural resources are handled – "unextracted" and "conversion", highlighting that it is preferable to leave resources "in the ground" rather than converting them into products and services. However, the relationship between the top two tiers of the EHR and those below is unclear, seeming to imply that converting fresh resources for use in the economy is preferable to repairing or recycling. (See Figure 5-1).

[147] Van Ewijka, S., Stegeman. J.A. (2014) Limitations of the waste hierarchy for achieving absolute reductions in material throughput. *Journal of Cleaner Production*. Available at: https://www.researchgate.net/publication/276480993_Limitations_of_the_waste_hierarchy_for_achieving_absolute_reductions_in_material_throughput

[148] McLanaghan, S (2015) *European Resource Hierarchy Discussion Paper*. Available at: https://resource.co/sites/default/files/EUROPEAN_RESOURCE_HIERARCHY.pdf

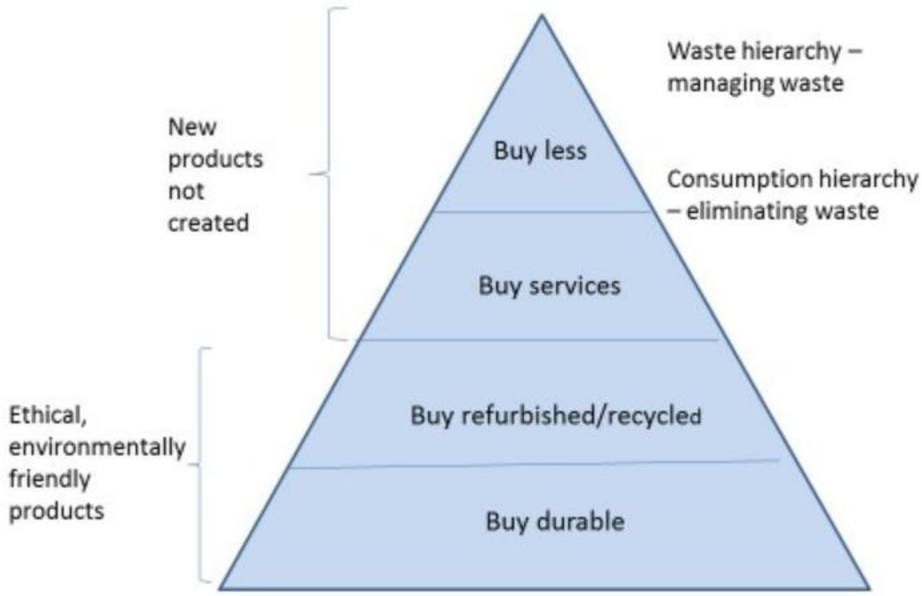
Figure 5-1: European Resource Hierarchy Diagram



- In 2017, Suez published a blog[149] that, while recognising the limitations of the waste hierarchy, suggests that "tinkering with it, for example by expanding some steps or introducing new steps to force-fit other concepts would make it unwieldy and water down its powerful message." Instead, the article suggested separating the resource chain into several discrete elements (e.g. product design, manufacturing, consumption, disposal) and applying appropriate concepts to each. So, while the waste hierarchy would continue to apply to the disposal phase, a different hierarchy might apply to consumption. (See Figure 5-2).

[149] Suez (2017) *Rethinking the waste hierarchy*. Available at: https://www.suez.co.uk/en-gb/news/blog-171024-rethinking-the-waste-hierarchy

Figure 5-2: Proposed Consumption Hierarchy



- In 2024, Keep Britain Tidy launched redesigned waste hierarchy (Figure 5-3) aimed at helping local authorities better educate residents about waste prevention, mindful consumption, and the transition to a circular economy.[150] Their research indicated that public awareness of the waste hierarchy was limited, with many people still defaulting to recycling rather than reduction or reuse, the two preferred options higher up the hierarchy. This may partly reflect confusion about the three concepts, with around 30% of the population believing they are interchangeable.[151] To address this, Keep Britain Tidy proposed a more visually engaging and action-focused waste hierarchy, incorporating clearer descriptors and symbols to improve understanding. The main changes were:
    - removal of the "energy recovery" tier, presumably because the decision about how to treat residual waste is not one that individuals can make; and
    - splitting reuse into three separate actions (rehoming unwanted items, keeping on using old items, and buying second hand goods or renting goods).

  Meanwhile, waste prevention was refocused on buying less. This model has an appeal as a way of making the concepts of the waste hierarchy more applicable to day-to-day decisions made by members of the public, though thereby making it less suited to guiding waste policy makers.

[150] Keep Britain Tidy (No Date) *Recycling*. Available at: https://www.keepbritaintidy.org/our-work/recycling
[151] Grundon (2024) *Making waste prevention a priority: Keep Britain Tidy unveils new waste hierarchy*. Available at: https://www.grundon.com/keep-britain-tidy-unveils-new-waste-hierarchy/

Figure 5-3: Keep Britain Tidy's waste hierarchy

Despite the shortcomings of the waste hierarchy, efforts to revise it have gained little traction, perhaps for the reasons identified in the Suez article. As a guide to how to think about end of life for products, the waste hierarchy remains intuitive and powerful, while proposed revisions tend to become unwieldy or difficult to explain. However, it is not reasonable to expect the waste hierarchy to provide the entire conceptual framework necessary to think about resource efficiency and circularity from all perspectives (policy making, product design, design of manufacturing processes, waste management). The issue would not therefore be that the waste hierarchy needs revision, but that it has been asked to deliver outcomes in policy for which it is not suited.

The government has established a Circular Economy Taskforce to support the development of a circular economy strategy for England. This could reasonably be expected to look much more widely at resource efficiency than does the waste hierarchy. Part of the thinking that could help to establish the circular economy strategy would be to develop conceptual tools with similar intuitive power to the waste hierarchy that could guide thinking in other parts of the resource management chain. The OEP should review the circular economy strategy once these are available and consider whether it should recommend that such conceptual tools be devised – and whether they need to be given any statutory force, in the same way that the waste hierarchy has.

5.5 Tackling waste crime

A core element of the Government's approach to incentivising energy recovery, recycling and reuse has been to make waste disposal more expensive, primarily through the Landfill Tax. However, high disposal costs create an opportunity to save money through avoidance, whether through fly-tipping or more organised forms of illegal dumping (e.g. large scale illegally operated dump sites, or waste being misdescribed at sites that are operating within the permitted system). One interviewee said,

> *"There will always be individuals trying to game the system, but this shouldn't be a barrier to reuse, repair or recycling. Landfill tax and now ETS mean there are bigger margins for financial gain through waste crime. However, organised waste crime is driven by profit and regulatory inaction, not by attempts to move waste up the hierarchy. Regulated businesses are focused on legitimate recycling and reuse and will make their best attempts to carry out their operations compliantly".*

There is also an economic incentive to misclassify materials to avoid higher disposal fees. Concerns over misclassification of material that should attract the standard rate of Landfill Tax as lower rate material led to the abortive plan to harmonise the two rates (see Section 5.3.7). Some hazardous waste may be declared as non-hazardous to access cheaper disposal routes.

While the issue of waste crime is only indirectly related to the waste hierarchy, and cannot be adequately reviewed in this study, interviewees made a few concrete suggestions regarding new steps that could be taken to deter waste crime, which we have sought to record here.

Several interviewees suggested that increasing the perceived value of second-hand items and waste materials could help reduce fly-tipping. Achieving this would require stronger markets for repurposed materials and reusable products, ensuring they are seen as viable and desirable alternatives to buying new. One thought that, if fly tipped materials were able to be removed more quickly, this might give rise to opportunities to separate more of it for treatment higher up the waste hierarchy.

5.6 Addressing unintended consequences

Some interviewees cautioned that indiscriminate efforts to move material up the waste hierarchy could have unintended consequences. One concern was "wishcycling", where people incorrectly place items in the recycling container that are not suitable for recycling. Food-soiled packaging, composite materials, or plastics not accepted locally can add to the costs of handling recycling and may damage other recyclable items in the same container or load. High levels of contamination may cause an entire load to be rejected and sent to landfill or incineration.

Wishcycling also creates inefficiencies for sorting facilities, adding time and expense. In severe cases, recyclers cannot sell recovered materials, leading to financial losses and reduced confidence in recycling systems.

It was suggested that clear communication, better packaging labelling, and harmonised recycling standards were the most useful ways to reduce confusion and ensure efforts to move waste up the hierarchy are not misdirected. These concerns are likely to be addressed to some degree through the introduction of Simpler Recycling, which will allow for more consistent communications as the list of materials collected by each English waste collection authority become standardised, and could be addressed further through national-level communication campaigns supporting packaging EPR.

6.0 Conclusions and recommendations

6.1 Conclusions

Taken together, the evidence presented throughout this report shows that there has been limited progress in England in achieving the aims of the waste hierarchy. While the waste hierarchy is widely known and understood by those engaged in waste management, it has had only a limited and often indirect influence on waste management outcomes in England. Broader economic pressures, other policy mechanisms, and external events have played a far more decisive role in shaping trends in how waste is managed.

At the national level, waste prevention has not been achieved, with per-capita waste increasing slightly since 2010 and reductions in specific material streams likely driven by wider structural factors. The majority of waste in England arises from construction and demolition activity. The treatment methods for this material are little changed since 2010, with the proportion recovered actually declining (from 52.8% to 52.4%). While local authority collected waste has fallen on a per capita basis, both recycling and disposal tonnages are down and there is no significant change in reuse.

Recycling performance has remained largely static, and the long-term reduction in landfill is primarily the result of the Landfill Tax and the UK's obligations under the EU Landfill Directive. Programmes such as Defra's WIDP further accelerated the shift toward residual waste treatment via incineration, overshadowing any direct effect of the hierarchy. Changes in what councils recycle, including reduced garden waste and the gradual expansion of food waste collection, similarly reflect economic drivers and, more recently, mandatory collection requirements rather than the hierarchy itself.

A review of a sample of national policies, local authority strategies, site-allocation documents and planning decisions provides a picture of how the waste hierarchy has been reflected, or overlooked, in practice. Across the documents examined, the hierarchy often features prominently in their language and expressed intent, but its influence on actual decisions is uneven and often overshadowed by other factors. The focus has often been on moving waste away from the bottom tier of the waste hierarchy, rather than maximising the amount handled at its upper tiers.

At the national level, the 2013 Waste Management Plan and Waste Prevention Plan referenced the hierarchy and set out broad aspirations, but offered few new measures or binding targets. The effects of these plans were modest, with only small amounts of waste prevented relative to national arisings. Similarly, the National Planning Policy for Waste presented the hierarchy as a guiding principle but did not require authorities to demonstrate that higher-tier options had been prioritised. There have been a number of eye-catching policies that are consistent with the waste hierarchy, such as the carrier bag charge and bans on certain single use plastic items, but these affect relatively small tonnages.

Local authority strategies revealed variation in how far the hierarchy shaped real-world choices. Some, such as Herefordshire and Worcestershire or West Berkshire, embedded its principles and set ambitious goals, though often with long timeframes, limited operationalisation of prevention, or the risk of locking in residual-waste infrastructure. Others, such as Tower Hamlets and Newcastle, referenced the hierarchy extensively but struggled to convert intent into measurable progress, constrained by systemic barriers, funding limitations, or competing service pressures. Site-allocation policies in Walsall and Lancashire acknowledged the hierarchy, but capacity planning often favoured residual-waste treatment. Authorities saw their duty as being to ensure that there was capacity for the waste they expected to arise, rather than seeking means to influence waste tonnage or how it is presented. Reuse is largely absent and recycling ambitions are overshadowed. Planning decisions on incinerator proposals demonstrated a similar pattern: the hierarchy was cited, but carried limited weight in the final decision. While there was an enforcement mechanism to require those handling waste to follow the waste hierarchy, there has been no enforcement action against organisations for failure to apply it.

Since 2018, the Government has been working to introduce more ambitious measures announced in the Resources and Waste Strategy.[152] These include Simpler Recycling, packaging EPR, the beverage container DRS and digital waste tracking. Some of these measures have now been implemented, at least in part, but have not yet had their full effect. However, they mark an important departure from reliance upon the economic instrument of the Landfill Tax as the main driver of change in waste management, giving rise to new opportunities for these policies to be extended in future. This may prove necessary, as the Government has set challenging recycling and waste reduction targets for the 2030s and 2040s, which are likely to require further interventions if they are to be achieved. However, the fact that these measures have proved necessary to bring about change further confirms that the waste hierarchy, as implemented, has not been effective in bringing about change directly.

Taken together, these findings underscore a consistent theme: although the waste hierarchy is widely referenced across policy and planning documents, its role has been more rhetorical than real. Decisions have generally been driven by economic incentives, regulatory obligations, operational constraints and local political priorities. Therefore, the key barrier to greater conformance to the principles of the waste hierarchy has been the absence of the necessary incentives and duties that would push actors in the waste system to conform to the waste hierarchy – although recent policies have taken steps in this direction.

There are substantial opportunities to advance compliance with the waste hierarchy further, including through expansion of EPR and extension of Simpler Recycling's list of core materials. In construction and demolition waste, there appear to be opportunities for regulatory reform to allow certain materials to be reused more easily; this may also be a case where a measure like the Landfill Tax escalator that was applied to standard rate material during the 2000s and 2010s could be applied in order to incentivise long-term changes in practice in the construction industry.

Overall, the findings indicate that, while the waste hierarchy may have informed policy direction, the concrete changes observed across England's waste system have been shaped much more strongly by targeted economic instruments and specific regulatory mandates than by the hierarchy's direct influence.

6.2 Recommendations

Based on the interviews conducted and analysis carried out by Eunomia, the following recommendations have been developed to highlight where application of the waste hierarchy could be made more effective, thereby supporting delivery of the targets in the 25YEP and EIP 25. Recommendations are summarised according to the actor capable of implementing them. Many of the interviewees highlighted structural incentives and cultural forces that are difficult for any individual actor to overcome or to present detailed, specific and credible actions to address.

To overcome these challenges, coordinated action is required across all stakeholder groups. Local authorities must embed reuse and prevention into strategies and procurement, while waste operators and producers need to innovate and collaborate to deliver circular solutions. Regulators should strengthen enforcement and simplify compliance processes, and community groups must be supported to scale up grassroots initiatives. Public bodies, including the NHS, can lead by example through sustainable procurement and invest-to-save approaches.

Achieving the ambitions of the waste hierarchy will depend on aligning policy, funding, infrastructure, and cultural change. This requires normalisation of waste prevention and reuse, supported by robust

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[152] HM Government (2018) *Our Waste, Our Resources: a Strategy for England*. Available at: https://assets.publishing.service.gov.uk/media/5c18f11740f0b60bbee0d827/resources-waste-strategy-dec-2018.pdf

economic and regulatory frameworks. Without this, the England will continue along a linear path that limits both environmental sustainability and long-term economic resilience.

6.2.1 National government

The UK government, in its role in setting waste policy for England, has a key role in setting the rules that determine how other actors manage waste, and could do so in ways that promote adherence to waste hierarchy principles.

- **Consider extending packaging EPR to commercial waste and litter**
  The current packaging EPR scheme does not fully internalise the costs of managing packaging waste. Elements of the scheme that are due to be reviewed after the scheme has been in operation for two years should be explored as early as possible so that the review can take place promptly.

- **Consider developing EPR or DRS for other materials**
  EPR is now widely recognised as an effective way to alter the behaviour of producers so as to encourage waste prevention and improved recyclability. CIWM has proposed several key material streams that should be prioritised for coverage by an EPR scheme that would help fund England-wide collection systems, such as electronic and electrical equipment and batteries.

- **Consider incorporating glass and reuse requirements in the DRS**
  Once the DRS has been implemented, the Government should review whether there would be benefits in including glass beverage containers in the scheme. This was resisted by the British Glass industry,[153] but the industry has since become concerned about the fees it bears under the EPR scheme.[154] A DRS that includes a refill mandate may be more attractive to the glass industry, while also being more consistent with the waste hierarchy.

- **Consider setting local authority recycling and/or reuse targets**
  Setting local authorities statutory recycling targets appears to have been an important element in how Wales achieved rapid improvements in local authority recycling. Scotland is now also considering statutory targets. England should consider whether such targets could be set in a fair way for local authorities (avoiding setting unachievable goals for low performers, or penalising those that have already invested heavily to achieve high performance). Instead of only setting a recycling target, the government could augment this with a reuse target.

- **Review the place of incineration/EfW in municipal waste management**
  The Government is aiming to substantially reduce the amount of municipal residual waste suitable for incineration over the next 10 years, through a combination of increased recycling and increased resource efficiency. However, England now has the residual waste treatment capacity to manage 50% of local authority collected waste (12.5m tonnes) in 2023/24. In addition, there was around 9 million tonnes of additional capacity for waste collected by private waste collectors.[155] Based on the Government's interim residual waste target for 2030 (333kg per capita), 21.5m tonnes of annual capacity would be sufficient to meet the needs of 64.5m people, while the latest ONS estimate of the population of England is only 58.6m people. While the government has recently tightened planning restrictions on incinerators and undertaken a review of capacity that found there was likely to be sufficient capacity to meet residual waste

[153] Lewis, G (2021) British Glass raises concerns on UK Governments DRS proposals. *Glass International.* Available at: https://www.glass-international.com/news/british-glass-raises-concerns-on-uk-governments-drs-proposals
[154] Mills, J (2025) UK glass industry responds to EPR fee reductions. *Glass International.* Available at: https://www.glass-international.com/news/uk-glass-industry-responds-to-epr-fee-reductions
[155] HM Government (2025) *UK Statistics on Waste 2025 dataset*. Available at: https://www.gov.uk/government/statistics/uk-waste-data

treatment needs,[156] but there does not appear to have been a thorough analysis of the level of risk of excess capacity or the implications this might have on wider waste targets. The Government could usefully revisit the previous "guide to the debate" document to support those looking to make sustainable decisions about waste management in the context of current policy and waste infrastructure.[157] If it appears that there may be insufficient incentive for waste generators to divert waste away from the residual stream, or if the government wishes to incentivise moving waste up the waste hierarchy within incineration, it could consider introducing a tax on waste sent to incinerators that do not meet the R1 standard and therefore are not formally classed as a form of energy recovery.

- **Review and update waste hierarchy guidance**
  England's waste hierarchy guidance[158] was published in 2011 and has not been updated since. Some concerns were raised by interviewees regarding possible exceptions to the waste hierarchy priority order that need to be addressed. There would also be an opportunity to revisit the way that "residual waste" is addressed as a separate type of material in the guidance, which has the potential to cause confusion when residual waste is made up primarily of materials that would have been recyclable had they not been placed in the residual stream.

- **Strengthen ecodesign requirements**
  Review the opportunities to require businesses to adopt ecodesign requirements more widely. Such opportunities may be identified through the Circular Economy Strategy, and it is beyond the scope of this study to explore in detail where they may exist or what the most effective ways of implementing them may be.

- **Extend right to repair**
  England's right to repair rules apply to a narrower range of devices than is the case in the EU or some US states. The Government should consider extending the list of devices covered so as to extend the lifetimes of a wider range of products.

- **National communications**
  Many interviewees highlighted a need for more consistent, national public-facing communications on waste hierarchy issues, ranging from techniques and benefits relating to waste prevention (linking benefits to cost-of-living savings) through to the recycling communications that Simpler Recycling was intended to facilitate. Packaging EPR includes funds to support communications on packaging recycling.

- **Review end of waste protocols process**
  Limitations in the process for gaining recognition for processes as resulting in "end of waste" were highlighted as an issue that might hamper innovation. Building on the review being undertaken by the Environment Agency to ensure that current protocols are up to date,[159] Government should ensure that this process is properly resourced and is accessible for those wishing to pursue it so that it does not act as an impediment to valuable innovation in recycling.

- **Review the Landfill Tax for soil**
  While immediate harmonisation with the standard rate of Landfill Tax was perhaps too sudden and dramatic a change, the Government could set out a plan to gradually escalate the lower rate of Landfill Tax, giving the construction industry time and incentive to adjust its practices to

[156] HM Government (2024) *Government to crack down on waste incinerators with stricter standards for new builds*. Available at: https://www.gov.uk/government/news/government-to-crack-down-on-waste-incinerators-with-stricter-standards-for-new-builds
[157] HM Government (2014) *Energy from waste A guide to the debate*. Available at: https://assets.publishing.service.gov.uk/media/5a7c77ade5274a559005a113/pb14130-energy-waste-201402.pdf
[158] HM Government (2011) *Guidance on applying the Waste Hierarchy.* Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69403/pb13530-waste-hierarchy-guidance.pdf
[159] HM Government (2025) *Waste quality protocols review*. Available at: https://www.gov.uk/government/publications/waste-quality-protocols-review/waste-quality-protocols-review

incorporate more recycling and reuse of this material, thereby reducing the risk of unintended consequences such as an increase in waste crime.

6.2.2 Local authorities

Local authorities play a critical role in implementing waste hierarchy principles at the municipal level. To strengthen the impact of the waste hierarchy locally:

- **Embed the waste hierarchy more effectively in strategies**
  Councils could incorporate more actionable steps and measurable targets for reuse and prevention into their waste and procurement strategies. Alignment with the waste hierarchy could be incorporated into strategic purchasing decisions, which might lead to greener buying; and in particular, could be built into the specification and evaluation of waste management contracts.

- **Consider reductions in residual waste collection frequency**
  Weekly residual waste capacity remains one of the key determinants of recycling rate, with decreases in the size of bins and/or (more effectively) reduction in collection frequency leading to increases in recycling. However, many authorities remain reluctant to collect residual waste less than fortnightly, despite some authorities successfully implementing three or four weekly collections that appear to offer a reasonable level of service for residents.

- **Participate in national communications campaign**
  Support and amplify any government-led campaigns to normalise reuse and repair, and to promote recycling.

- **Invest in reuse and repair infrastructure**
  Collaborate with community groups to establish reuse hubs, repair cafés, and libraries of things.

- **Improve data and measurement**
  Adopt WRAP's reuse measurement protocols and digital waste tracking systems to justify budget allocations for prevention projects.

6.2.3 Waste management companies

Waste operators are heavily involved in delivering practical solutions and therefore need to be engaged in order to move materials up the hierarchy:

- **Diversify service offerings**
  Develop commercial models for reuse and repair services, supported by social value clauses in contracts.

- **Address skills gap**
  Invest in training and apprenticeships for repair services to attract younger talent and sustain capacity.

- **Collaborate on circular design**
  Partner with producers to design packaging and products that are easier to repair and recycle, providing advice on how current systems operate and what changes might be required in order to accommodate new products and materials.

6.2.4 Producers and retailers

Producers and retailers influence waste generation through product design and consumer engagement:

- **Design for circularity**
  Implement ecodesign principles to reduce waste at source, improve repairability, and support reuse.

- **Enhance transparency and labelling**
  Introduce product passports and repairability scores to inform consumer choices.

- **Support repair networks**
  Offer takeback and repair services, or fund community repair hubs and offer repair vouchers. Explore VAT reductions on repair services.

- **Align with EPR goals**
  Prepare for modulated fees by reducing unnecessary packaging and prioritising reusable/refillable formats.

6.2.5 Regulators (Environment Agency, OPSS)

Regulators must strengthen enforcement and enable innovation:

- **Increase regulatory focus**
  Focus not just on serious waste crime, but also on wider compliance issues, including (for the Environment Agency) compliance with the waste hierarchy and (for the OPSS) how far current regulation allows lifecycle thinking to be incorporated into product design requirements.

- **Adopt collaborative approaches**
  Learn from devolved administrations to encourage reuse and repair through supportive protocols.

- **Implement a mandatory soil assessment process prior to waste classification**
  Reduce the amount of soil being classified as waste by implementing a new soil assessment process, which may allow less soil to be sent for disposal where this is not necessary.

- **Promote best practice case studies**
  Demonstrate the feasibility and benefits of reuse, and prevention to encourage managing materials in the top tiers of the waste hierarchy.

- **Introduce mandatory design requirements**
  Require products placed on the market to meet minimum standards for recyclability, durability and ease of disassembly, ensuring alignment with the waste hierarchy and prioritising prevention, reuse and high-quality recycling.

- **Restrict and phase down hazardous content**
  Strengthen controls on hazardous substances in products and components, reducing contamination of recycling streams and risks to waste operators and the environment.

- **Improve product labelling and information**
  Mandate clear, standardised labelling to identify recyclable materials and hazardous elements, supporting correct consumer disposal and safe treatment at end of life.

- **Align product standards with EPR and recycling infrastructure**
  Ensure design standards reflect the capabilities of UK collection and recycling systems, enabling producers to design products that can be effectively recovered and reprocessed within existing and planned infrastructure.

- **Promote innovation and best practice in circular product design**
  Support pilot schemes and case studies that demonstrate the feasibility and benefits of designing

out waste and hazardous materials at source, encouraging uptake of reusable, repairable and recyclable product models.

6.2.6 Community Groups and NGOs

Community-led initiatives are vital for cultural change and local engagement:

- **Scale up initiatives**
  Where funding allows, expand libraries of things, repair cafés, and surplus food redistribution. Share expertise to enable expansions in other parts of the country to benefit from existing successes.

- **Advocacy and education**
  Promote environmental and financial benefits of reuse and repair to shift consumer behaviour.

- **Partner with local authorities**
  Integrate community-led projects into municipal waste strategies for greater impact.

6.2.7 NHS and other public bodies

Public sector bodies can lead by example, through measures such as sustainable procurement and improved resource management:

- **Implement sustainable procurement**
  Apply strict sustainability criteria and demand transparency from suppliers. Learn from the most ambitious organisations in the sector, to benefit from good practice that has been developed.

- **Adopt invest-to-save approach**
  Advocate for long-term funding for reuse and prevention projects, demonstrating cost savings over time.

- **Share knowledge and best practice**
  Participate in networks to influence policy and replicate successful initiatives.

6.2.8 Further OEP Research

The OEP has an interest in ensuring that the Government is on track to meet the targets and commitments set out in the 25YEP, EIP 2025 and the Environment Act 2021. The key targets concern reducing residual waste (with different targets for municipal residual and overall residual (excluding major mineral wastes) and achieving a 65% municipal recycling rate by 2035. Both of these are supported by improved adherence to the waste hierarchy.

There is a wide range of research that the OEP could undertake to give itself greater assurance regarding whether the government is on track to reach these goals and to explore whether there are particular barriers to achieving it. The ideas that seem most aligned to the OEP's responsibilities and the findings of this report are:

- An assessment of the likely level of recycling and degree of diversion from residual waste that may be achieved by current waste policies (e.g. Simpler Recycling, packaging EPR, beverage container DRS) and the extent of any gap between this and the government's targets that needs to be filled by additional policies.

- A comparative analysis of waste management policies adopted since 2010 in England, Wales, Scotland and Northern Ireland, with the aim of understanding what has driven differences in outcome between the four nations.
- An examination of the role of incineration and energy from waste in municipal waste management, and the extent to which it could impede efforts to increase recycling.
- The effectiveness of MRF sorting and the opportunities for additional investment or changes in practice to improve sorting outcomes.
- An analysis of the drivers of waste crime and the costs and benefits of removing them.
- Best practice in improving the environmental performance of products in key sectors (e.g. electronics, textiles, packaging) and the opportunities for embedding these into product design
- The risks, barriers and opportunities around improving the recovery of soils and aggregate from construction and demolition.
- An investigation into the Environment Agency's approach to enforcing End-of-Waste regulations and determining whether recycling and reuse processes meet the criteria for End-of-Waste status.
- A gap analysis comparing the impacts of existing policies against interim and long-term waste hierarchy targets.

Appendix

A.1.0 Methodologies

A.1.1 Literature review

The purpose of this literature review was to examine how local authorities apply the waste hierarchy when formulating waste strategies, allocating land for waste infrastructure, and making planning decisions on incinerators (energy-from-waste facilities). The methodology combines a targeted literature review with an analysis of publicly available planning and policy documents. This approach allows an assessment not only of the policy intentions stated by local authorities, but also of how these intentions influence practical decisions.

A qualitative document review was chosen because local authorities' waste-related decisions are mainly expressed through written strategies and planning statements. The research design was structured to capture three related decision-making arenas:

1. Local authority waste strategies;
2. Site allocation planning documents; and
3. Planning decisions on incinerators/energy-from-waste facilities.

Analysing all three together enables comparison between high-level policy commitments and the actual outcomes of planning processes.

All data used are publicly available documents and therefore did not require ethical approval. However, care was taken not to single out authorities for criticism without contextual explanation; findings are framed to reflect structural patterns rather than individual authorities' shortcomings.

A.1.2 Modelling

To assess whether waste is being managed in accordance with the waste hierarchy, this analysis adopted two complementary approaches.

First, we leveraged Defra's publication UK Statistics on Waste,[16] which reports on the final treatment of all waste managed within England from 2010 to 2022. This dataset provides tonnage figures for 33 material types from both commercial and non-commercial sources across six treatment methods. For analytical purposes, materials with clear commercial origins were grouped into five broad categories — Agriculture, Construction, Industry, Metals, and Waste Treatment — along with a sixth 'other' category representing materials more likely to originate from households. The six treatment methods were then aligned with the bottom three tiers of the waste hierarchy (recycling, other recovery, and disposal), as reuse is not represented in this dataset.

Second, recognising that the inclusion of large volumes of commercial material in the UK Statistics on Waste can obscure more nuanced trends, we also examined Defra's English Local Authority Waste Management Dataset,[41] derived from WasteDataFlow (WDF). This dataset spans the 2010/11 to 2023/24 financial years and reports five treatment methods corresponding to the lower three tiers of the waste hierarchy. However, as Eunomia maintains its own in-house database (also powered by WDF) that includes data on reuse, we were able to estimate the proportion of recycling reported by Defra that was actually reuse. This enabled us to extend the analysis to cover all four tiers of the waste hierarchy.

Changes in tonnage were assessed in both datasets to identify evidence of waste prevention, both in absolute terms and on a per capita basis. Material-level analysis was also undertaken to explore whether distinct patterns emerged within specific material streams. In addition, shifts in the distribution of waste across treatment methods were examined to determine whether management practices have moved up the waste hierarchy over time.

A.1.3 Stakeholder engagement

Stakeholders were initially identified by stakeholder groups; Eunomia defined these early on as:

1. Government Departments and Regulators
2. Local Government and Public Sector
3. Industry and Trade Bodies
4. NGOs and Campaign Groups; and
5. Research, Advisory and Collaborative Organisations.

After starting the stakeholder engagement, an additional group was defined:

6. Waste Contractors.

From these groups, individual stakeholders were identified and confirmed with OEP. 41 stakeholders were contacted via email to be interviewed. To engage the stakeholders, a topic guide was developed containing the purpose of the interview and themes of discussion.

Interviews were set up via Microsoft Teams with Christine Batty, Engagement Lead, and lasted around 45 minutes. Each interviewee was asked for their consent at the beginning, and was notified that no individual quotes would be attributed to their name or organisation. Each interview, where possible, was transcribed.

15 interviews were successfully held as part of this project, across all six stakeholder groups.

A.2.0 Glossary

Anaerobic digestion – The breakdown of organic material, such as food waste, by micro-organisms in the absence of oxygen. The process produces a methane-rich biogas which can be used as renewable energy.[160]

Backfilling – A recovery operation where suitable waste is used for reclamation purposes in excavated areas or for engineering purposes in landscaping and where the waste is a substitute for non-waste materials.[161]

Bulky waste – Large items such as ovens or fridges, as well as unwanted furniture or other large refuse that cannot be put in collections bins.[160]

Commercial waste – Waste produced by businesses including but not limited to factories, markets, restaurants, pubs, offices and retail or wholesale establishments.[160]

Contamination – Waste that is incorrectly sorted and thereby affects the quality or ability of other materials to be recycled.[160]

Deposit Return Scheme (DRS) - A recycling system where a refundable deposit is added to drinks bottles and cans, which is returned when the empty container is brought back for recycling.[162]

Energy from waste (EfW) – The process of creating energy in the form of electricity (and where possible, the beneficial use of waste heat) from the incineration of waste materials.[160]

Energy recovery – The process of converting waste materials into energy, such as usable fuel, electricity or heat, through a variety of methods including combustion, gasification and anaerobic digestion.[163]

Extended Producer Responsibility (EPR) – A concept by which producers are liable and responsible for the physical or financial costs of the treatment of post-consumer products they put into the market.[160]

Kerbside collection – Domestic waste collection service from households with individual bins, usually consisting of separate services for dry recycling, organics and general waste.[160]

Landfilling – Deposit waste onto or into land in a controlled, or uncontrolled way.[164]

Material recovery facility (MRF) – A plan that separates and prepares single-stream recycling materials to be sold to end buyers.[165]

Municipal waste – Waste material that primarily originates from households, as well as waste from commercial, institutional, or industrial activities that share similarities in composition with household waste.[166]

Organic waste – Food waste and garden waste.[167] Also referred to as "biowaste".[168]

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160 See: https://www.biffa.co.uk/biffa-insights/waste-and-recycling-glossary
161 See: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Backfilling
162 See: https://www.veolia.co.uk/insights/insights/deposit-return-scheme-customer-guide
163 See: https://www.edie.net/definition
164 See: https://www.undrr.org/understanding-disaster-risk/terminology/hips/tl0509
165 See: https://www.rubicon.com/blog/materials-recovery-facility/
166 See: https://www.ecos.ie/glossary/what-is-municipal-waste-definition-of-municipal-waste/
167 See: https://wikiwaste.org.uk/index.php/Organic_Waste
168 See: https://eur-lex.europa.eu/eli/dir/2008/98/oj/eng

Preparation for Reuse – checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing.[169]

Recycling – A recovery operation by which materials are collected, sorted and reprocessed into products or materials intended for their original or different use, therefore returning materials to use within the economy.[160]

Residual Waste – Non-hazardous waste material from household and businesses that cannot be reused or recycled.[160] However, residual waste will generally contain a high proportion of material that could have been recycled had it been placed in the correct recycling stream.

Re-use – Any operation by which products or components that are not waste are used again for the same purpose for which they were conceived**.** without any significant reprocessing.[169]

Source separation – The practice of sorting and separating waste at the location where it is generated, which allows households to categorize waste by type and place in its designated bins.[170]

Two-tier area – A local government structure in which responsibilities are split between two authorities: district councils act as WCAs, and county councils act as WDAs.[171]

Unitary authority – A single-tier local authority responsible for all local government functions within its jurisdiction, including acting as both the WCA and WDA.[172]

Waste collection – The periodic or on-demand removal of solid waste from primary source locations using a collection vehicle and followed by the depositing of this waste at some central facility or disposal site.[173]

Waste collection authority (WCA) – A local authority statutorily responsible of the collection of household waste and, on request, certain commercial waste from within its geographical jurisdiction.[174] Authorities that have this status are detailed in section 30 of the Environmental Protection Act 1990,[175] with their duties explained in subsequent sections.

Waste disposal – The orderly process of discarding unwanted or useless material.[173]

Waste disposal authority (WDA) – A local authority statutorily responsible for the treatment, recycling, recovery and disposal of waste collected by WCAs within its geographical jurisdiction.[176] Authorities that have this status are detailed in section 30 of the Environmental Protection Act 1990,[175] with their duties explained in subsequent sections.

Waste management – The supervision of waste production, handling, processing, storage and transport from its point of generation to its final acceptable disposal.[173]

Waste prevention – Source reduction, is the elimination of waste before it is created – an effective technique towards waste minimisation.[173]

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[169] See: https://www.wrap.ngo/resources/guide/re-use
[170] See: https://www.sciencedirect.com/topics/engineering/source-separation
[171] See: https://www.lexisnexis.co.uk/legal/glossary/two-tier-area
[172] See: https://commonslibrary.parliament.uk/unitary-local-government-an-explainer/
[173] See: https://leap.unep.org/en/knowledge/glossary/waste-collection
[174] See: https://en.wikipedia.org/wiki/Waste_collection_authority
[175] See: https://www.legislation.gov.uk/ukpga/1990/43/section/30
[176] See: https://en.wikipedia.org/wiki/Waste_disposal_authority

A.3.0 Interview Topic Guide

Purpose of the session

Eunomia is working with the **Office for Environmental Protection (OEP)** to review how the waste hierarchy has been implemented in practice in England, and to assess its effectiveness in delivering environmental outcomes.

As part of this work, we are speaking to a range of stakeholders to better understand your experiences, perspectives, and insights. This guide sets out the themes we will explore in our discussion. It is not a questionnaire but an outline to help guide the conversation. Your contributions will play a valuable role in shaping recommendations on how the waste hierarchy can be applied more effectively in the future.

Themes for discussion

Your role and context

- How does your organisation, or those you represent, engage with the waste?
- How does the waste hierarchy, as implemented in English law, shape this practice?

Impacts of the waste hierarchy

- Where have you seen the Waste Hierarchy have a direct impact on your work or sector?
- Where has it had an indirect influence (e.g. through incentives, markets, culture)?
- Where do you think that the waste hierarchy has had the greatest/least impact nationally?

Barriers and opportunities

- What are the main barriers you see to applying the hierarchy effectively?
- Where do you see opportunities to strengthen or better embed the hierarchy?

Understanding effectiveness

- To what extent does the waste hierarchy explain why change has taken place?
- What types of interventions have been most effective in bringing about changes consistent with the waste hierarchy (waste prevention, increased reuse, increased recycling)?
- Can you share examples of what has worked well, and what has been less effective?

Mechanisms for improvement

- What changes, mechanisms, or approaches might make the hierarchy more effective in practice? How could it be better supported, enforced, or incentivised?

Waste crime and unintended consequences

- How has the waste hierarchy influenced waste crime (positively or negatively)?
- Are there ways it could be applied to help reduce illegal activity in the sector?

Closing

- Is there anything we haven't covered that you think is important for us to consider?

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