



Department
for Environment
Food & Rural Affairs

Resources and Waste Strategy

Monitoring Progress

Fourth edition

May 2024

We are the Department for Environment, Food and Rural Affairs. We're responsible for improving and protecting the environment, growing the green economy, sustaining thriving rural communities and supporting our world-class food, farming and fishing industries.

We work closely with our 33 agencies and arm's length bodies on our ambition to make our air purer, our water cleaner, our land greener and our food more sustainable. Our mission is to restore and enhance the environment for the next generation, and to leave the environment in a better state than we found it.



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Foreword

This is the fourth edition of Monitoring Progress, a framework of indicators for tracking progress towards objectives set out in the Resources and Waste Strategy. Monitoring Progress is aimed at a wide audience, including policymakers, analysts and specialists in the Defra Network, the Environment Agency, WRAP, the waste sector, academia, researchers, consultancies, and other organisations.

Introduction

In December 2018, we published ‘Our waste, our resources: a strategy for England’ (the ‘Resources and waste strategy’, RWS)¹. This presents the Government’s long-term approach to preserve our stock of natural capital, minimise waste, promote resource efficiency and move towards a circular economy. In addition, it sets out how we will reduce damage to the natural environment by managing waste safely and tackling waste crime.

Section 8.2 of the RWS introduced a suite of indicators to monitor how we are advancing in the areas of resource productivity and recycling, greenhouse gas emissions, waste production, landfilling, and waste crime. These are statistical measures used to consolidate real-world outcomes into meaningful information and are an important tool to measure progress towards the policies and commitments outlined in the RWS.

Purpose of this document

The first Monitoring Progress document² was published in August 2020 with a focus on defining this set of indicators, presenting historic trends to set a baseline for future updates and showing hypothetical pathways towards government objectives.

Monitoring Progress will evolve over time and this fourth edition builds on the first three by updating the indicators with the latest available data. It is expected that the suite of tracked indicators will continue to evolve in future releases.

Sources and details for each indicator are provided at the end of each chapter. The relevant goals in the Environmental Improvement Plan (EIP)³ are provided, as are the corresponding goals in the government’s 25 Year Environment Plan (25YEP)⁴. Relevant targets, commitments and strategic ambitions are also highlighted here, and where appropriate within graphs and accompanying text. Indicators that form part of the government’s 25YEP outcome indicator framework⁵ are highlighted in the text.

Monitoring Progress is intended to be used alongside the Evaluation Plan⁶, which builds on data generated during monitoring by more comprehensively assessing policies against several dimensions in addition to intended outcomes. These may include costs and benefits of a policy, unintended consequences, and the effectiveness of its implementation.

For further details, see the introduction to the first edition of Monitoring Progress.

¹ HM Government (2018) [Our waste, our resources: a strategy for England](#)

² Defra (2020) [Resources and waste strategy: monitoring progress](#)

³ Defra (2023) [Environmental Improvement Plan 2023](#)

⁴ Defra (2018) [25 Year Environment Plan](#)

⁵ Defra (2020) [Outcome indicator framework for the 25 Year Environment Plan](#)

⁶ Defra (2020) [Resources and waste strategy: evaluation plan](#)

Notes on indicators

This document continues to track indicators included in the RWS, except for those for which no data are currently available or where the underlying data source is not published annually. We will keep the set of indicators under review and expect it to develop further in future releases.

To reflect the government's priorities in line with the waste hierarchy, this document leads with statistics on resource consumption, followed by recycling and waste disposal. Indicators that form an important part of the RWS, but which fall outside this hierarchy (on greenhouse gas emissions and waste crime), are placed at the end of the document.

Indicators with new data

The following indicators have been updated with new data:

- RP1. Material footprint
- RP2. Resource productivity
- RC1. Waste from Households recycling
- RC2. Municipal waste recycling
- RC4. Construction and demolition waste recovery
- RC5. Packaging waste recycling
- WD1. Residual waste landfilled or incinerated
- WD2. Biodegradable waste landfilled
- WD4. Waste trade
- GG1. Territorial greenhouse gas emissions from waste sector
- GG2. Carbon footprint
- WC1. Illegal waste sites
- WC2. Waste fly tipped
- WC3. Littering

The LF1. Municipal waste landfilled indicator previously included in the first edition⁷ of Monitoring Progress has been re-introduced with a proxy indicator in this edition (WD5. Municipal waste landfilled).

Indicators under development

Some indicators set out in the RWS remain under development. Where possible, a proxy indicator has been presented in the interim. The following indicators are considered as under development:

⁷ Defra (2020) [Resources and waste strategy: monitoring progress](#)

- A suite of indicators to monitor and evaluate progress in preventing waste was set out in the waste prevention programme for England: Maximising Resources, Minimising Waste⁸. These indicators will be integrated into future editions of this document.
- **RC2. Municipal waste recycled**
The municipal waste indicator is under development. Local authority collected waste is presented here as a proxy, which excludes privately collected waste.
- **RC3. Commercial and industrial waste recycled**
We are currently developing a formal methodology to estimate the recycling rate for commercial and industrial waste.
- **WD2. Biodegradable waste landfilled**
A formal methodology for reporting against this indicator has yet to be agreed. Biodegradable municipal waste landfilled is presented as a proxy, but it is unclear how representative this is of total biodegradable waste landfilled.
- **WD3. Food waste landfilled**
A formal methodology for reporting against this indicator has yet to be agreed. Biodegradable municipal waste landfilled is presented in WD2; food waste is thought to form a large proportion of this.
- **WD5. Percentage of municipal waste landfilled**
This indicator requires an estimate of total municipal waste arisings, which is under development. The total amount of municipal residual waste sent to landfill is presented as a proxy.
- **GG3. Carbon footprint of a basket of consumer goods**
Work on this indicator continues. No data are presented in this document.

Indicators not included in this edition

Some indicators in the previous edition of Monitoring Progress⁹ are based on data sources that are not published annually or have not been updated since last year's edition. In this edition, these indicators are no longer included¹⁰. We will keep the set of indicators under review, and it is expected that indicators will evolve in future editions. The list of removed indicators includes:

- Waste prevention: water use by the textiles industry
- WP1: Waste generation
- WP2 and WP3: Avoidable residual and avoidable residual plastic waste
- WP4: Food and drink waste
- WT1: Final treatment of waste

⁸ Defra (2023) [The waste prevention programme for England: Maximising Resources, Minimising Waste](#)

⁹ Defra (2022) [Resources and waste strategy: monitoring progress](#)

¹⁰ These indicators remain in previous editions of Monitoring Progress, although some parts of previous editions may be out of date.

Geographical scope

The RWS is a strategy for England, so it is desirable to track indicators covering England only. However, data for some indicators are available only at a UK level, including:

- RC5. Packaging waste recycled

The geographical scope is indicated for each dataset presented.

Definitions

Understanding the need for clear definitions of the quantities tracked in these indicators, we have included a glossary at the end of this document. More detailed technical definitions and data sources are provided at the end of each chapter.

Feedback

This document continues to evolve. Some indicators are experimental or remain under development, while others may continue to develop as interests change or new sources of data become available. To facilitate this, we welcome feedback on the content and format of this document to RandWCommissions@defra.gov.uk.

Resource productivity

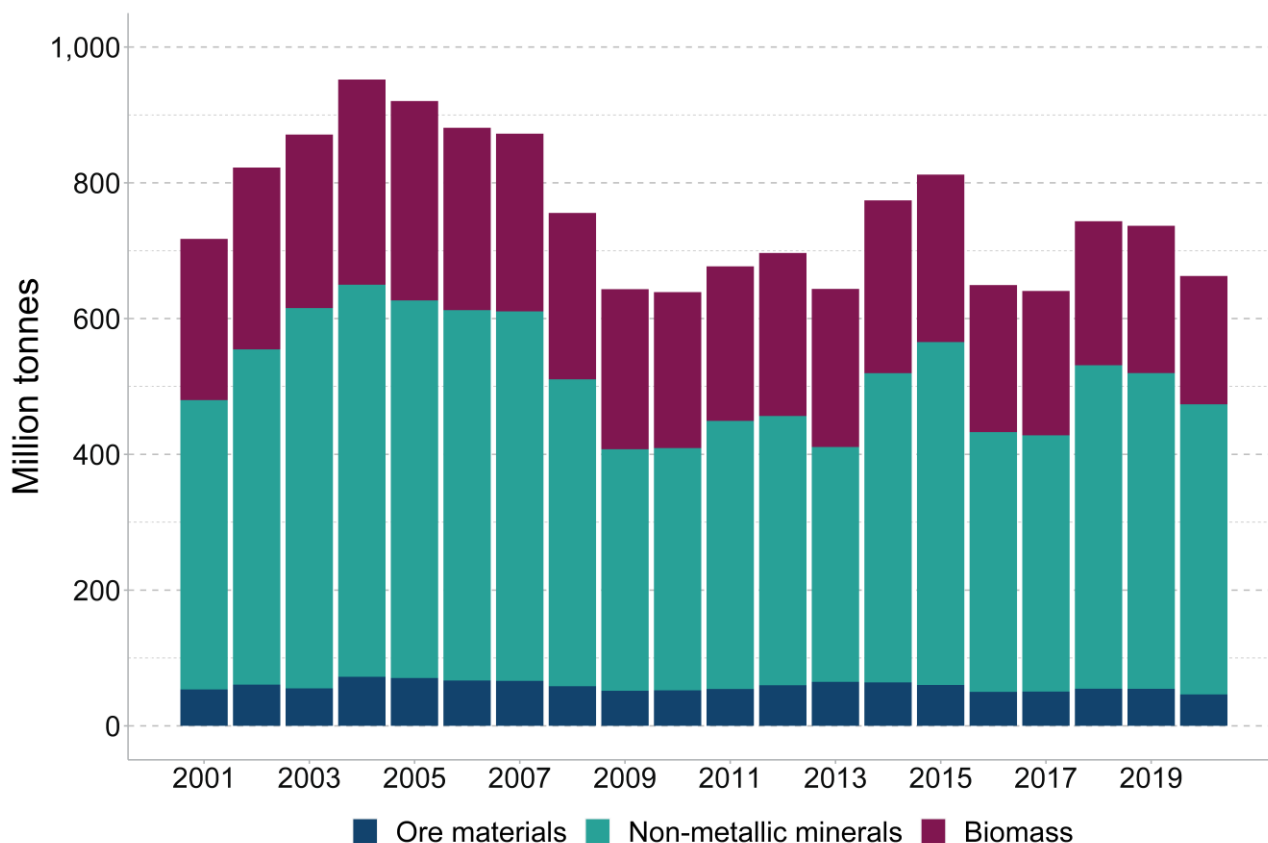
A circular economy means minimising the amount of natural resources entering the economy (especially non-renewable resources) as well as the amount of waste leaving it. A successful circular economy can achieve economic growth with minimal input of natural resources. This can be achieved by reducing consumption or by reusing and recycling materials into new products, both of which can also be expected to result in less waste.

This chapter explores the amount of material England consumes and how efficiently those materials are used.

RP1. Material footprint

This is indicator J2a in the 25 Year Environment Plan outcome indicator framework.

Figure 1.1 Raw material consumption by material type (excluding fossil fuels), England, 2001 to 2020, tonnes



Description of Figure 1.1: Stacked bar chart showing the England's raw material consumption categorised by ore materials, non-metallic minerals, and biomass materials from 2001 to 2020.

The material footprint, or raw material consumption, is the amount of primary raw materials extracted globally due to final demand for goods and services by England's residents. The measure takes account of the full upstream material extraction associated with the production of imports, while excluding that associated with exports.

For the purposes of the RWS, the material footprint excludes fossil fuels as these are not used directly to produce goods and services for consumption. Fossil fuel use has fallen by 42% since 2001.

In 2020, England's material footprint was an estimated 783 million tonnes (Mt), or 663 Mt when excluding fossil fuels. In that year, non-metallic mineral materials made up 427 Mt of the footprint, biomass materials 189 Mt, and ore materials 46 Mt.

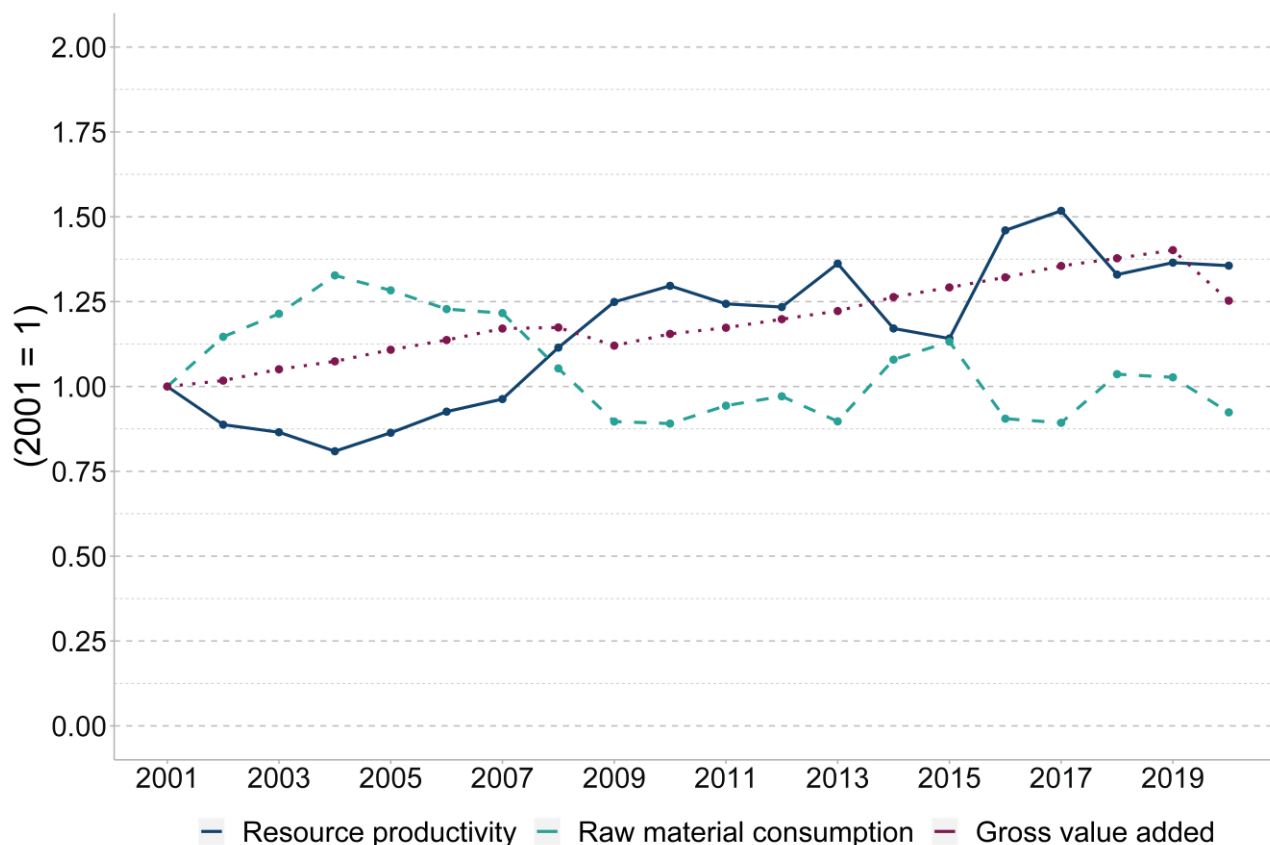
After peaking in 2004, the footprint (excluding fossil fuels) fell to its lowest level across the available series in 2010, before rising again to 2015; the pattern since then has been

inconsistent. When excluding fossil fuels, the total footprint was 30% lower in 2020 than in 2004. It was 11% lower in 2020 than the year prior (2019).

RP2. Resource productivity

This is indicator J2b in the 25 Year Environment Plan outcome indicator framework.

Figure 1.2 Resource productivity, England, 2001 to 2020, gross value added (chained volume measure, 2019 £) per tonne raw material consumption (excluding fossil fuels)



Description of Figure 1.2: Indexed line chart showing England's gross value added, raw material consumption, and resource productivity from 2001 to 2020.

Resource productivity is a measure of economic output (measured by gross value added, GVA) per unit of raw material consumption. The economy is able to grow by consuming more resources or by using resources more efficiently; increasing resource productivity implies more efficient use of raw materials.

Between 2001 and 2020, England's gross value added largely trended upwards and increased by 25% overall, while across the same period, raw material consumption (excluding fossil fuels) fell by 8%. Both England's GVA and raw material consumption (excluding fossil fuels) fell between 2019 and 2020.

Resource productivity, measured as a ratio of these two values, therefore increased by an estimated 36% between 2001 and 2020, largely rising year-on-year between 2001 and 2012, before falling to 2015 as growth in raw material consumption outpaced that in gross value added. After 2015, resource productivity has resumed a pattern of increase,

although plateaued between 2019 and 2020 as a result of a decrease in England's GVA and raw material consumption (excluding fossil fuels).

Resource decoupling can be said to occur when the economy grows without a corresponding increase in resource consumption. As GVA has increased while the material footprint has decreased, this suggests that absolute decoupling between economic output and raw material consumption has taken place between 2001 and 2020.

Indicator data sources and information

Sources:

- Defra (2023) [England's material footprint](#)
- Office for National Statistics (2023) [Regional gross value added](#)

Relevant goal in the EIP: Goal 5 – maximise our resources, minimise our waste

Corresponding goal in the 25YEP: Goal 5 – using resources from nature more sustainably and efficiently

Relevant target/ambition/commitment:

- Strategic ambition: Double resource productivity by 2050 (RWS, 2018)
- UN Sustainable Development Goals 8 and 12

Classification: Official statistic

Definitions and details of calculations: The estimates of raw material consumption presented here are based on an approach developed on behalf of Defra by the University of Leeds. The approach takes estimates of domestic extraction by country and world region and reallocates them to final demand using an environmentally extended multiregional input-output (MRIO) model which builds on Supply and use and input-output tables produced by the UK's Office for National Statistics. Further details of the methodology is available in the associated [methodology document](#) and [statistics notice](#). These values are sensitive to changes in the sectoral and geographical resolution of the model used to produce them, changes in which have led to backwards revisions.

Recycling

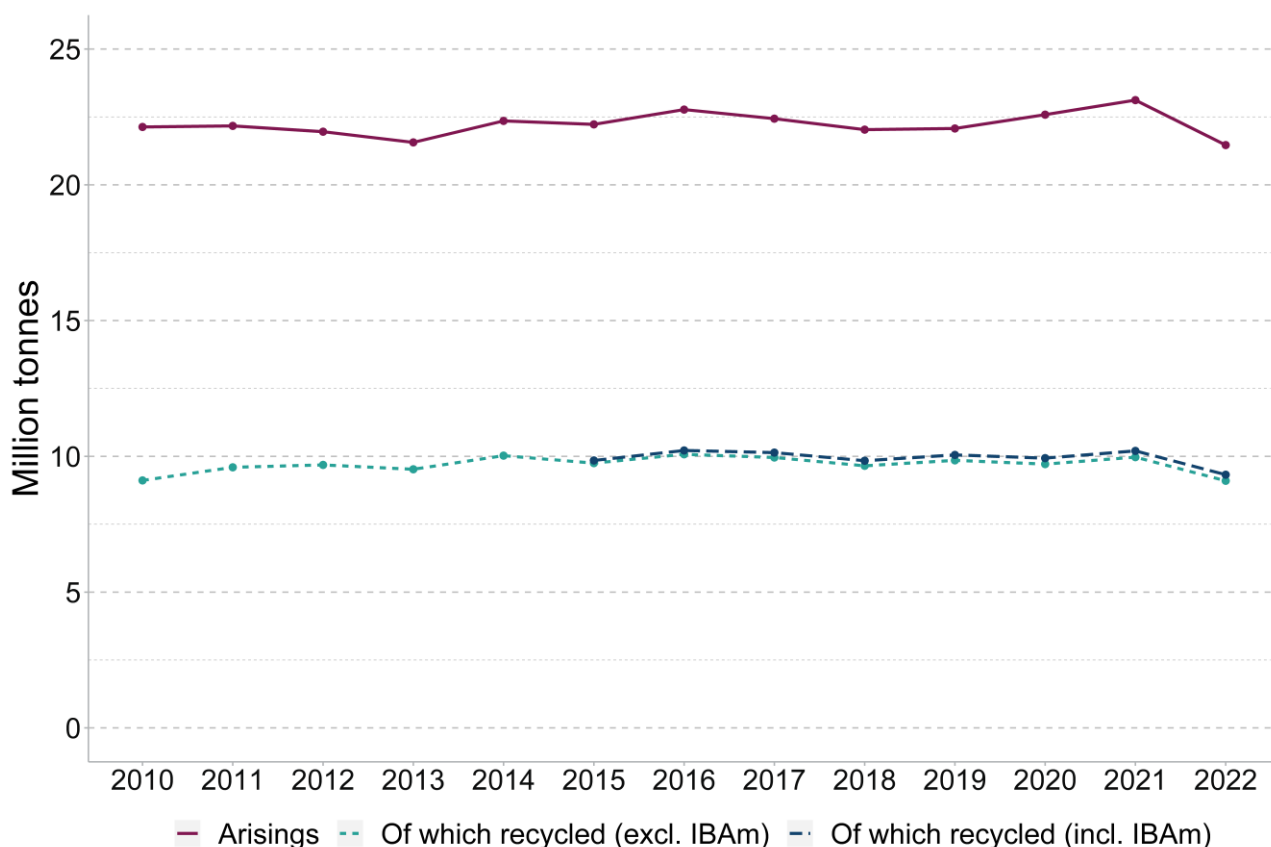
If waste cannot be avoided altogether, recycling is preferable to disposal. This includes dry recycling — turning paper, plastic, metals, and glass into new products of a similar type — as well as composting and anaerobic digestion of organic wastes to produce compost or fertiliser, and recovery of construction and demolition waste. In all of these cases, products that would otherwise go to waste substitute for virgin materials, reducing our raw material consumption and keeping waste out of landfill.

This chapter includes data on the recycling rate for waste from households and waste collected by local authorities, the recovery rate for construction and demolition waste, and recycling of packaging materials.

RC1. Waste from Households recycling

Pending the development of the Municipal Waste indicator (RC2), this is the indicator being used as interim indicator J3 in the 25 Year Environment Plan outcome indicator framework.

Figure 2.1 'Waste from households' recycled, composted or prepared for reuse, England, 2010 to 2022, million tonnes

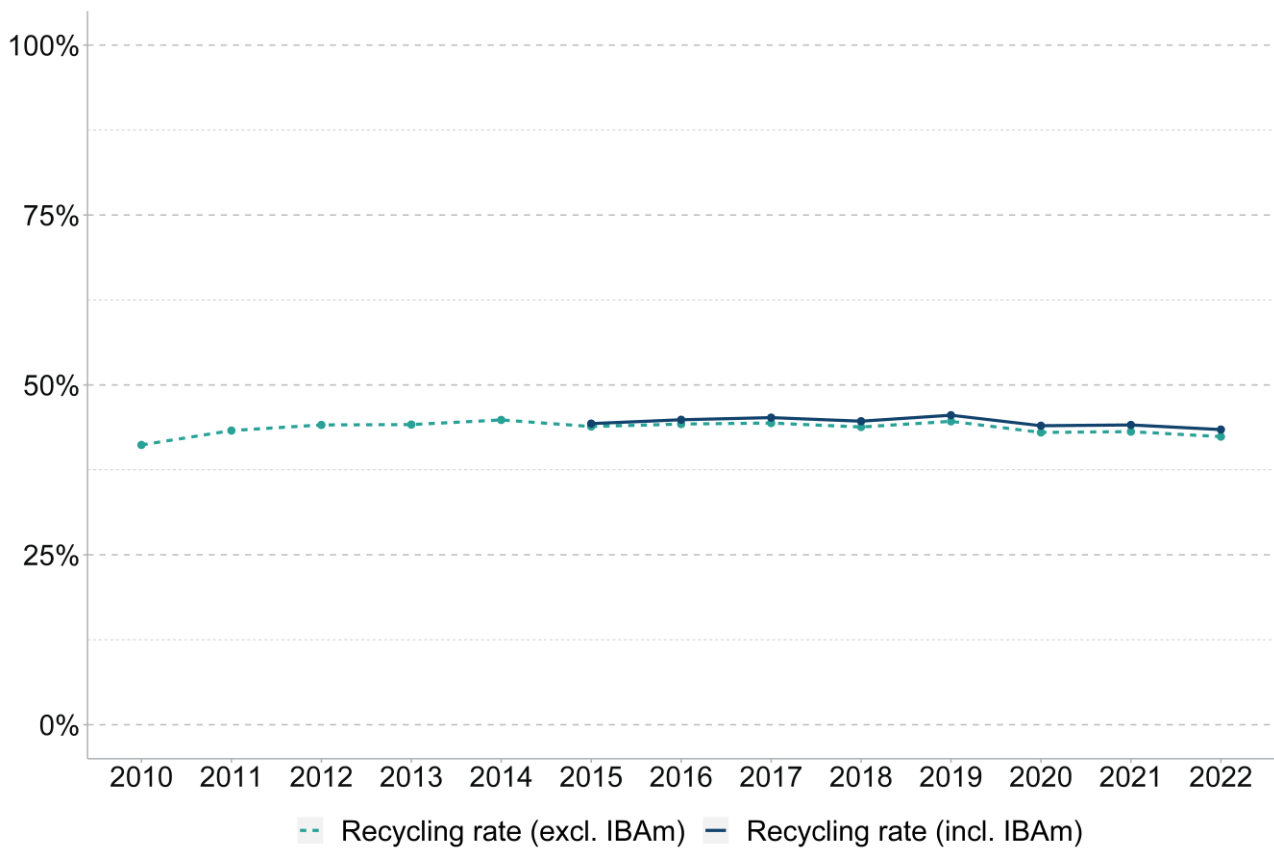


Description of Figure 2.1: Line chart showing the total amount of 'waste from households' from 2010 to 2021, as well as the amount of 'waste from households' which was recycled excluding incinerator bottom ash metals from 2010 to 2022 and including incinerator bottom ash metals from 2015 to 2022.

'Waste from households' is the agreed harmonised UK measure used to report household recycling.

Considered annually, 21.5 million tonnes of 'waste from households' was collected in 2022, a decrease of 7.2% from 2021. In 2022, 9.1 million tonnes was recycled, composted or prepared for reuse (excluding incinerator bottom ash (IBA) metal). While the total amount of 'waste from households' collected in 2022 is 3.0% less than in 2010, the mass of waste recycled, composted or prepared for reuse is similar, having decreased by 8.7% from 2021.

Figure 2.2 'Waste from households' recycled, composted or prepared for reuse, England, 2010 to 2022, percentage of total arisings



Description of Figure 2.2: Line chart showing the percentage of 'waste from households' that is recycled, excluding incinerator bottom ash metals from 2010 to 2022 and including incinerator bottom ash metals from 2015 to 2022.

The percentage of 'waste from households' in England recycled, composted or prepared for reuse (excluding IBA metal) increased from 41.2% in 2010 to 43.9% in 2015 and has remained broadly flat since, falling slightly to 42.4% in 2022.

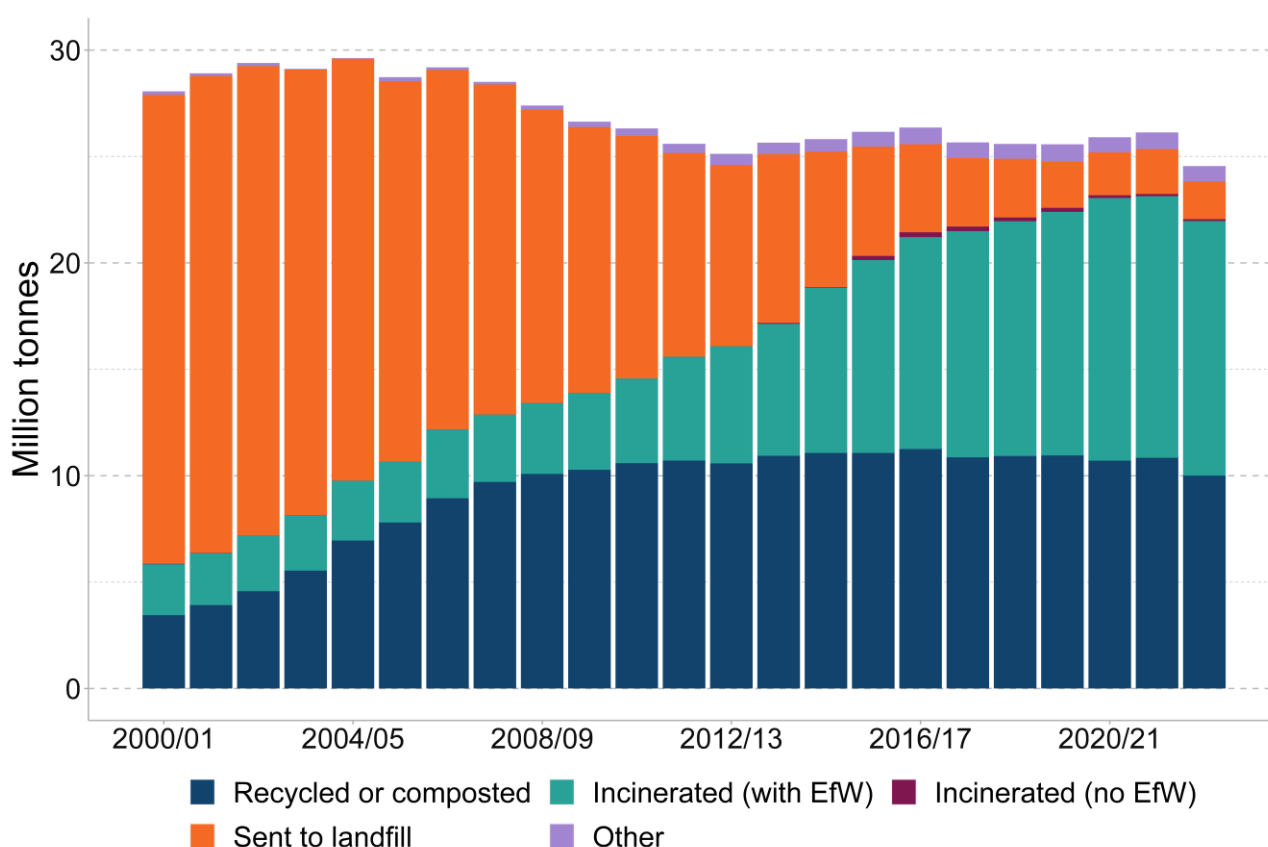
Including IBA metal, the Waste from Households recycling rate has fallen slightly from 44.3% in 2015 to 43.4% in 2022.

RC2. Municipal waste recycling

This indicator is under development. We have presented local authority collected waste recycled here as a proxy until the metric for municipal waste recycled is developed. This measure is slightly narrower than municipal waste but broader than ‘waste from households’, as it incorporates non-household local authority collected waste, including from commercial and industrial sources. The developed indicator of a municipal waste recycling rate is expected to include household and household-like waste from a variety of sources including households, commercial, and industrial.

Once completed, this will be indicator J3 in the 25 Year Environment Plan outcome indicator framework.

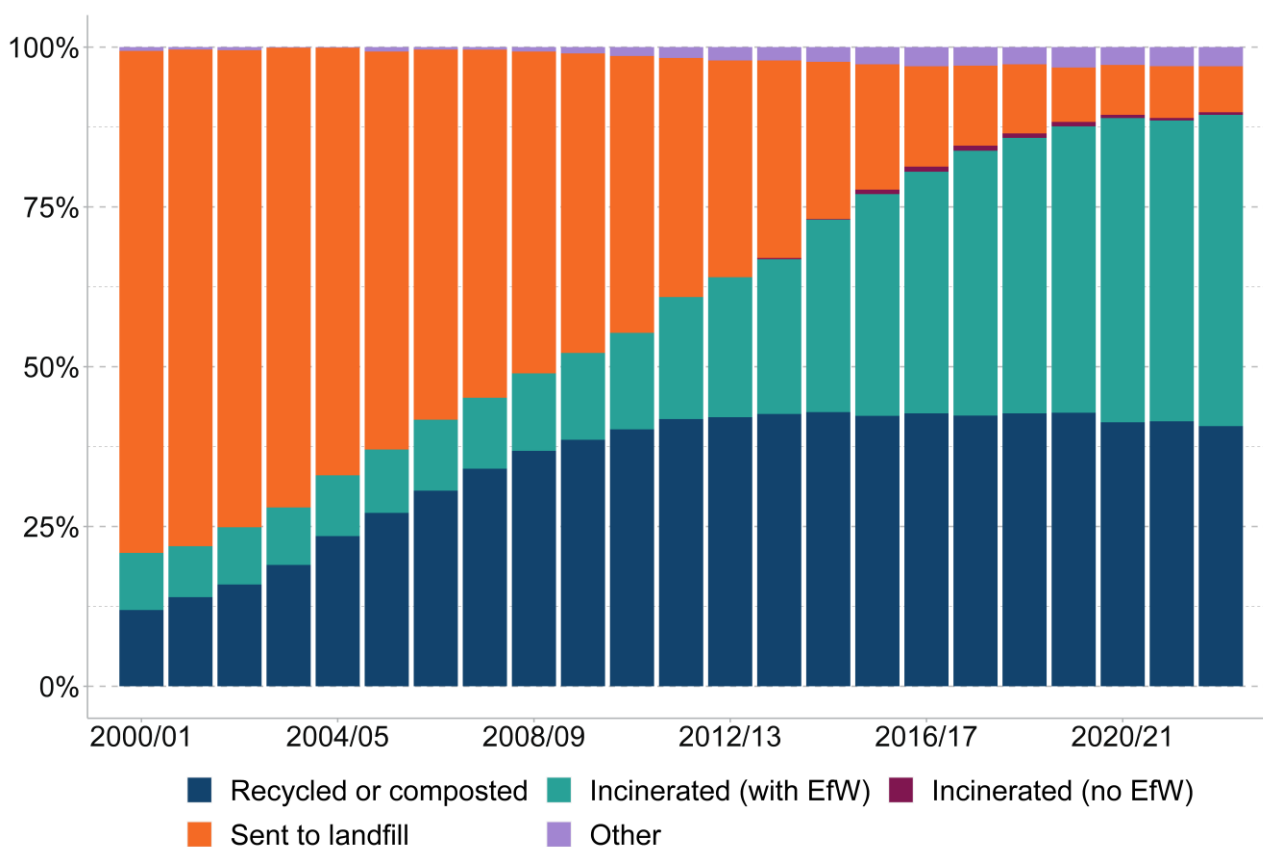
Figure 2.3 Local authority collected waste recycled or composted, England, 2000/01 to 2022/23, million tonnes



Description of Figure 2.3: Stacked bar chart showing the amount of local authority collected waste according to treatment type (recycled or composted, incinerated with or without energy from waste, sent to landfill, or other treatment) from 2000/01 to 2022/23.

Around 2.9 times as much local authority collected waste was sent for recycling or composting in 2022/23 as in 2000/01, rising from 3.4 million tonnes to 10.0 million tonnes despite arisings falling by 12.5% over the same period. However, as with ‘waste from households’, local authority collected waste recycled has been largely flat for several years. Total arisings in 2022/23 decreased by 6.0% from 2021/22.

Figure 2.4 Local authority collected waste recycled or composted, England, 2000/01 to 2022/23, percentage of total arisings

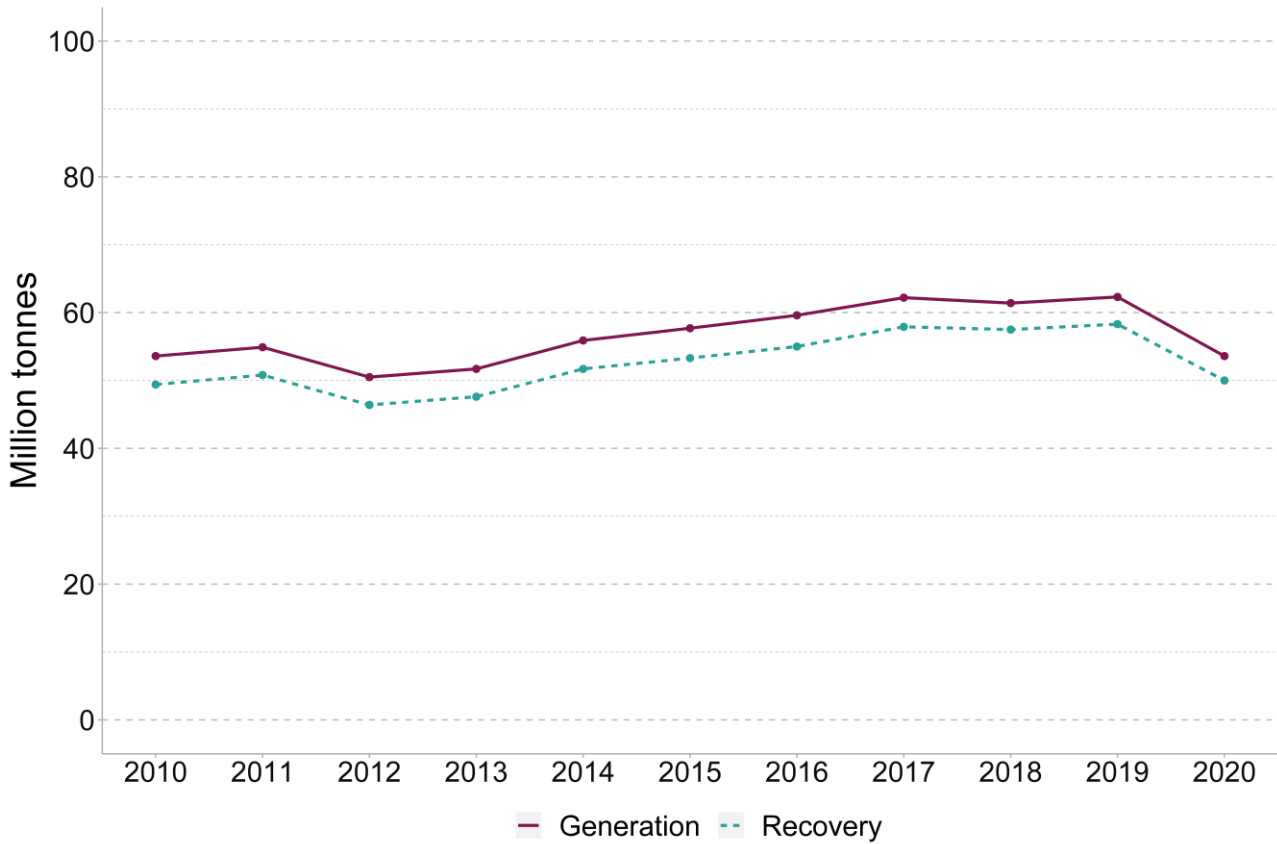


Description of Figure 2.4: 100% stacked bar chart showing the proportion of five treatment categories of local authority collected waste relative to the total amount of local authority collected waste. The categories include local authority collected waste that is recycled or composted, incinerated with or without energy from waste, sent to landfill, as well a category for other treatment types. The data is displayed from 2000/01 to 2022/23.

The proportion of local authority collected waste sent for recycling or composting, relative to overall arisings, has remained roughly constant since 2011/12, standing at 40.7% in 2022/23.

RC4. Construction and demolition waste recovery

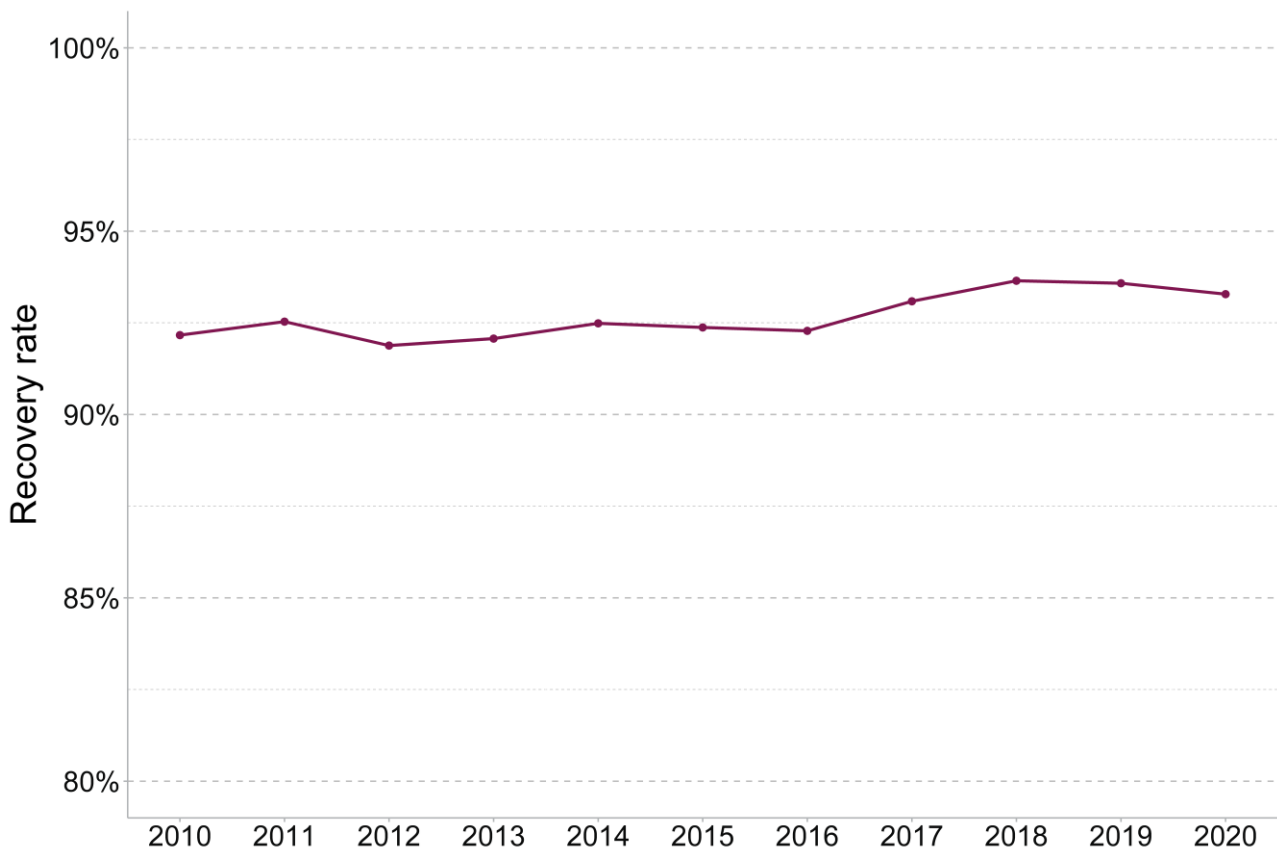
Figure 2.5 Non-hazardous construction and demolition waste recovered and placed on market, England, 2010 to 2020, million tonnes



Description of Figure 2.5: Line chart showing the amount of non-hazardous construction and demolition waste generated and recovered in England from 2010 to 2020.

Estimates of the recovery rate for non-hazardous construction and demolition waste have been calculated. This rate has remained consistently high over time and the amount of waste recovered closely tracks that placed on the market.

Figure 2.6 Non-hazardous construction and demolition waste recovered, England, 2010 to 2020, percentage of total placed on market

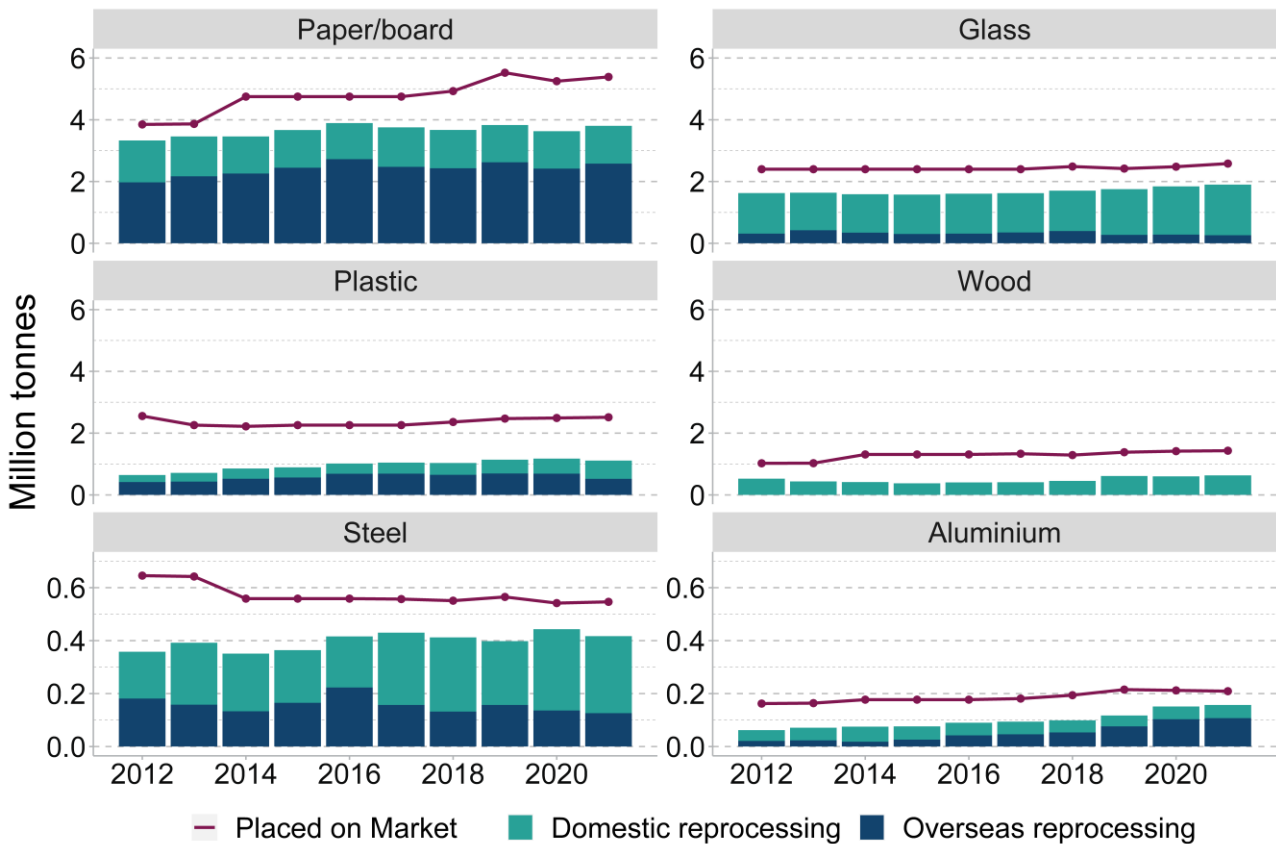


Description of Figure 2.6: Line chart showing the percentage of non-hazardous construction and demolition waste recovered in England relative to the total amount of non-hazardous construction and demolition waste generated in England, from 2010 to 2020.

The proportion of construction and demolition waste that is recovered rose from 92.2% in 2010 to 93.3% in 2020.

RC5. Packaging waste recycling

Figure 2.7 Packaging waste recycled, UK, 2012 to 2021, tonnes



Description of Figure 2.7: Six line charts, one for each material of paper/board, glass, plastic, wood, steel, and aluminium, showing the tonnages of packaging waste placed on the market from 2012 to 2021. Also displayed on each chart is a stacked bar chart showing the tonnages of packaging waste reprocessed in the UK and overseas over the same period.

The majority of packaging waste is recycled. The total tonnes recycled increased from 6.5 million tonnes in 2012 to 8 million tonnes in 2021, and over the same period total packaging placed on the market is estimated to have increased by around 2 million tonnes from 11 to 13 million tonnes.

Most paper packaging is exported for reprocessing, whereas most reprocessing of glass, steel and wood occurs within the UK. In 2021, 68% of paper and aluminium packaging was exported for reprocessing. In the same year, 86% of glass packaging, 70% of steel packaging, 53% of plastic packaging, and 99% of wood packaging was reprocessed within the UK.

Table 2.1 Packaging waste recycled, UK, 2012 to 2021, percentage of total

Year	Aluminium	Steel	Paper and cardboard	Glass	Plastic	Wood	Total recycling
2012	38%	56%	86%	68%	25%	51%	61%
2013	43%	61%	89%	68%	32%	42%	65%
2014	41%	64%	73%	67%	38%	31%	59%
2015	43%	65%	77%	66%	39%	29%	61%
2016	51%	74%	82%	67%	45%	31%	65%
2017	52%	77%	79%	68%	46%	31%	64%
2018	39%	75%	74%	69%	44%	35%	62%
2019	54%	70%	69%	72%	46%	44%	62%
2020	72%	82%	69%	74%	47%	42%	63%
2021	75%	76%	71%	74%	44%	44%	63%

The total recycling rate for packaging material has fluctuated over the period from 2012 and 2021 impacted by both changes in packaging placed on the market and levels of recycling. Overall, it rose two percentage points from 61% to 63%.

However, the recycling rate for most material categories has risen significantly over this period, with aluminium, steel, glass, and plastic all seeing substantially increased recycling rates. This is counteracted by reduced levels of recycling for paper and cardboard (which represents the most common material category for packaging) and wood, but which have seen increases both in the amount recycled and packaging placed on the market.

Indicator data sources and information

RC1

Source: Defra (2024) [ENV18 - Local authority collected waste](#)

Relevant goal in the EIP: Goal 5 – maximise our resources, minimise our waste

Corresponding goal in the 25YEP: Goal 8 – minimise waste

Classification: National Statistic

Definitions and details of calculations: ‘Waste from households’ recycled refers to waste generated by households sent for recycling, composting or reuse in England. This measure includes waste from regular household collection, civic amenity sites, bulky waste, and other household waste, while excluding street cleaning/sweeping, gully emptying, separately collected healthcare waste and soil, rubble, plasterboard and asbestos wastes. Incinerator bottom ash is included in figures from 2015. Further details on the definition and calculation are available at the data source.

RC2

The municipal waste indicator is under development. Local authority collected waste has been used as a proxy.

Source: Defra (2024) [ENV18 - Local authority collected waste](#)

Relevant goal in the EIP: Goal 5 – maximise our resources, minimise our waste

Corresponding goal in the 25YEP: Goal 8 – minimise waste

Relevant target/ambition/commitment: The Circular Economy Package includes a commitment to recycle 55% of municipal waste by 2025, 60% by 2030 and 65% by 2035 (by weight).

Classification: Official statistic

Definitions and details of calculations: Municipal waste includes household waste, commercial and industrial waste collected by local authorities, and commercial and industrial waste that is similar in nature and composition to household waste but not collected by local authorities. Using local authority collected waste as a proxy therefore omits this latter component of municipal waste. Local authority collected waste consists of all waste from households, street sweepings, municipal parks and gardens waste, beach cleansing waste and waste resulting from the clearance of fly tipped materials plus commercial or industrial waste which is collected by local authorities. It is a broader measure than ‘waste from households’, but a narrower measure than municipal waste. Local authority collected waste recycled or composted refers to the waste collected by

local authorities which is then sent for recycling or composting. Data reported for financial years. Further details on the definition and calculation are available at the data source.

RC4

Source: Defra (2023) [UK statistics on waste](#)

Relevant goal in the EIP: Goal 5 – maximise our resources, minimise our waste

Corresponding goal in the 25YEP: Goal 8 – minimise waste

Classification: Official statistic

Definitions and details of calculations: 'Recovered' refers to waste either being recycled or reused in some form while including backfilling.

RC5

Source: Defra (2023) [UK statistics on waste](#)

Relevant goal in the EIP: Goal 5 – maximise our resources, minimise our waste

Corresponding goal in the 25YEP: Goal 8 – minimise waste

Relevant targets/ambitions/commitments:

The Resources and Waste Strategy includes a commitment to recycle at least 65% of packaging waste by 2025 and 70% by 2030. The UK Government and devolved administrations consulted on recycling targets for packaging in scope of the new packaging extended producer responsibility scheme and published its proposals in March 2022. Future recycling targets will be confirmed in the Regulations that will introduce extended producer responsibility. The Government has also consulted on collection targets for drinks containers in scope of the Deposit Return Scheme and published its proposals in January 2023.

Classification: Official statistic

Definitions and details of calculations: 'Packaging waste recycled' refers to tonnes of UK packaging waste accepted for recycling, both domestically and overseas. Estimates are calculated based on Packaging Recovery Notes and Packaging Export Recovery Notes sold by accredited reprocessors and exporters and estimates of total packaging placed on the market by material. A de minimis threshold applies to producers required to meet recycling obligations of a turnover of £2 million and the handling of at least 50 tonnes of packaging each year. Further details of the methodology are available at the data source.

Waste disposal

Recovering energy from and disposing of waste are the last resort for waste that is not recycled. This includes landfill and incineration (with or without energy recovery, as well as combustion), which are associated with higher carbon emissions than most other waste management methods and permanently remove the waste from the economy. This necessitates more material extraction if the products are to be replaced (though incineration can be used to produce energy in an energy-from-waste (EfW) plant and metals can be extracted from incinerator bottom ash). A circular economy would minimise the amount of waste sent for final disposal by extending the life of products and recycling them to substitute for virgin materials.

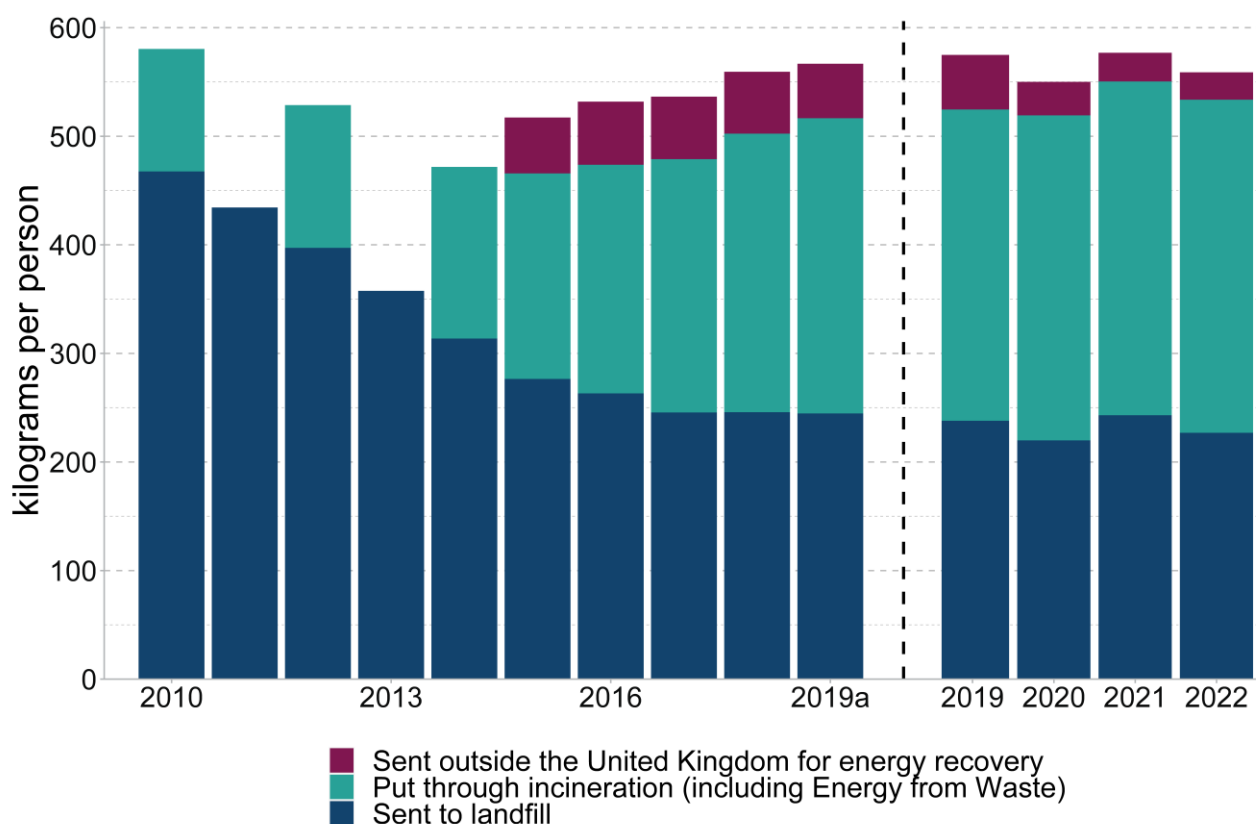
This chapter includes statistics on the amount of waste generated in England that is landfilled or incinerated (with or without energy recovery) in the UK, the amount of residual waste sent outside the UK as refuse derived fuel (RDF) or solid recovered fuel (SRF) for energy recovery, the amount of especially harmful biodegradable waste sent to landfill, and the amount of municipal residual waste landfilled in England.

WD1. Residual waste landfilled or incinerated and WD4. Waste trade

This indicator covers residual waste excluding major mineral wastes. This includes waste generated in England that is landfilled or incinerated in the UK or sent outside the UK for energy recovery as RDF or SRF (previously included in the WD4. Waste trade indicator).

Pending development of an indicator representing residual waste arisings by type and sector, data for 2010-2019a corresponds to interim indicator J4 in the 25 Year Environment Plan outcome indicator framework.

Figure 3.1 Residual waste (excluding major mineral wastes) by treatment method, England, 2010 to 2022, kilograms per person



Description of Figure 3.1: Stacked bar chart showing the amount of residual waste generated in England, not including major mineral wastes, that is landfilled, incinerated, or sent outside the UK for energy recovery between 2010 and 2022.

Note: Estimates for the years 2010-2019a include residual waste generated in the UK that is treated in England, and tonnages of metals removed from incinerator bottom ash (IBA metals) that are sent for treatment other than landfill or incineration are included.

Estimates for the years 2019-2022 show residual waste generated in England that is treated inside or outside of England, and IBA metals that are sent for treatment other than landfill or incineration are not included. Comparisons between estimates prior to and after 2019 should be made with care. Prior to 2014, data on waste put through incineration was

reported biennially so there is no incineration data available for the years 2011 and 2013. Prior to 2015, data on waste sent outside the United Kingdom for energy recovery included both waste originating in England and Wales, so is not included in these figures for England.

There were 8.1 kilograms per person, or about 460,000 tonnes, more residual waste excluding major mineral wastes in 2019 (using the methodology that accounts for the movement of residual waste into and out of England and the exclusion of IBA metals) compared to 2019a. This was largely a result of more residual waste originating in England that is put through incineration outside of England compared to the amount of residual waste put through incineration in England that originated from elsewhere, and therefore increasing the amount of residual waste in scope of this measure.

Historically, the amount of residual waste excluding major mineral wastes sent to landfill had decreased from 467.5 kilograms per person in 2010 to 244.6 kilograms per person in 2019a (prior to the methodology change), a decrease of 47.7%. The amount of residual waste excluding major mineral wastes put through incineration more than doubled from 112.8 kilograms per person in 2010 to 271.9 kilograms per person in 2019a. In 2019a, the amount of residual waste excluding major mineral wastes sent outside the United Kingdom for energy recovery stood at 50.2 kilograms per person, a decrease of 2.5% from 2015 (51.5 kilograms per person).

Following the methodology change, in 2019 the amount of residual waste excluding major mineral wastes sent to landfill stood at 238 kilograms per person and decreased by 4.7% to 226.8 kilograms per person in 2022. This was equivalent to a decrease from 13.4 to 13.0 million tonnes. The amount of residual waste excluding major mineral wastes put through incineration, however, generally increased each year compared to 2019, standing at 306.8 kilograms per person in 2022 and representing an increase of 7% from 2019 (286.7 kilograms per person). This was equivalent to an increase from 16.1 to 17.5 million tonnes. The amount of residual waste excluding major mineral wastes sent outside the United Kingdom for energy recovery decreased year-on-year between 2019 and 2022, standing at 25.2 kilograms per person in 2022. This represented a decrease of 49.9% from 2019 (50.2 kilograms per person), or a decrease from 2.8 to 1.4 million tonnes.

Table 3.1 Residual waste (excluding major mineral wastes) by treatment method, England, 2019 to 2022, kilograms per person and million tonnes

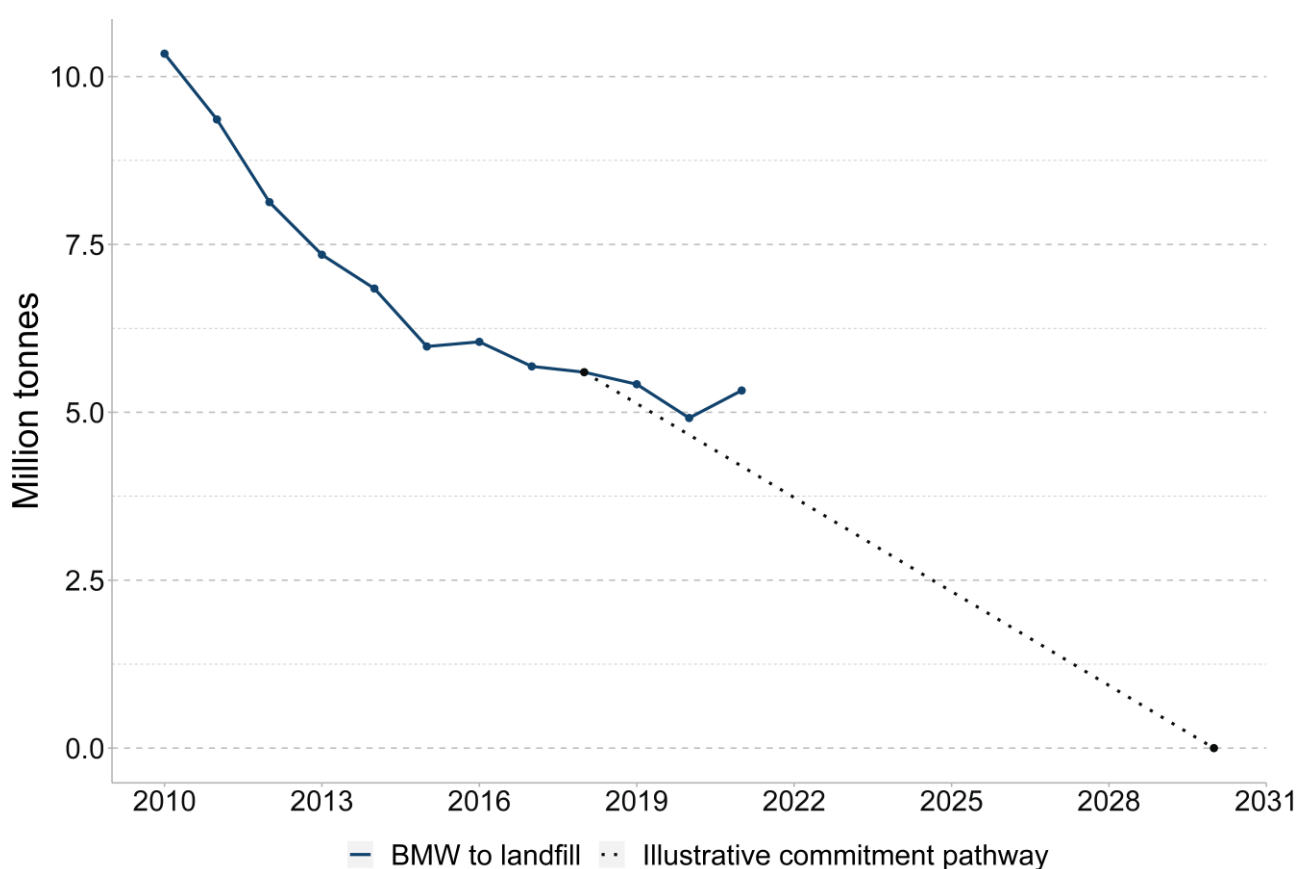
Treatment method	Year	Amount, kilograms per person	Amount, million tonnes
Sent to landfill	2019	238.0	13.4
	2020	219.9	12.4
	2021	243.0	13.7
	2022	226.8	13.0
Put through incineration (including Energy from Waste)	2019	286.7	16.1
	2020	299.3	16.9
	2021	307.4	17.4
	2022	306.8	17.5
Sent outside the United Kingdom for energy recovery	2019	50.2	2.8
	2020	30.9	1.7
	2021	26.4	1.5
	2022	25.2	1.4
Total	2019	574.8	32.3
	2020	550.1	31.0
	2021	576.8	32.6
	2022	558.8	31.9

WD2. Biodegradable waste landfilled

This indicator was set out in the Resources and Waste Strategy but a formal methodology for reporting against this indicator has yet to be agreed. Biodegradable municipal waste landfilled is presented here as a proxy, but it is unclear how representative this is of total biodegradable waste landfilled.

In the RWS, we set out a commitment to work towards eliminating food waste to landfill by 2030, and to explore policies to work towards eliminating all biodegradable waste to landfill by the same date¹¹. Among other materials, biodegradable waste includes food waste, green waste (such as from gardens), cardboard, and paper.

Figure 3.2 Biodegradable municipal waste landfilled, England, 2010 to 2021, million tonnes



Description of Figure 3.2: Line chart showing the amount of biodegradable municipal waste landfilled in England from 2010 to 2021. A linear trajectory from 2018 to 2030 is shown, representing the commitment set out in the Resources and Waste Strategy to explore policies to work towards eliminating biodegradable waste to landfill by 2030.

¹¹ The Government's [Net Zero Strategy 2021](#) made a commitment to explore policies to work towards the near elimination of biodegradable municipal waste to landfill from 2028.

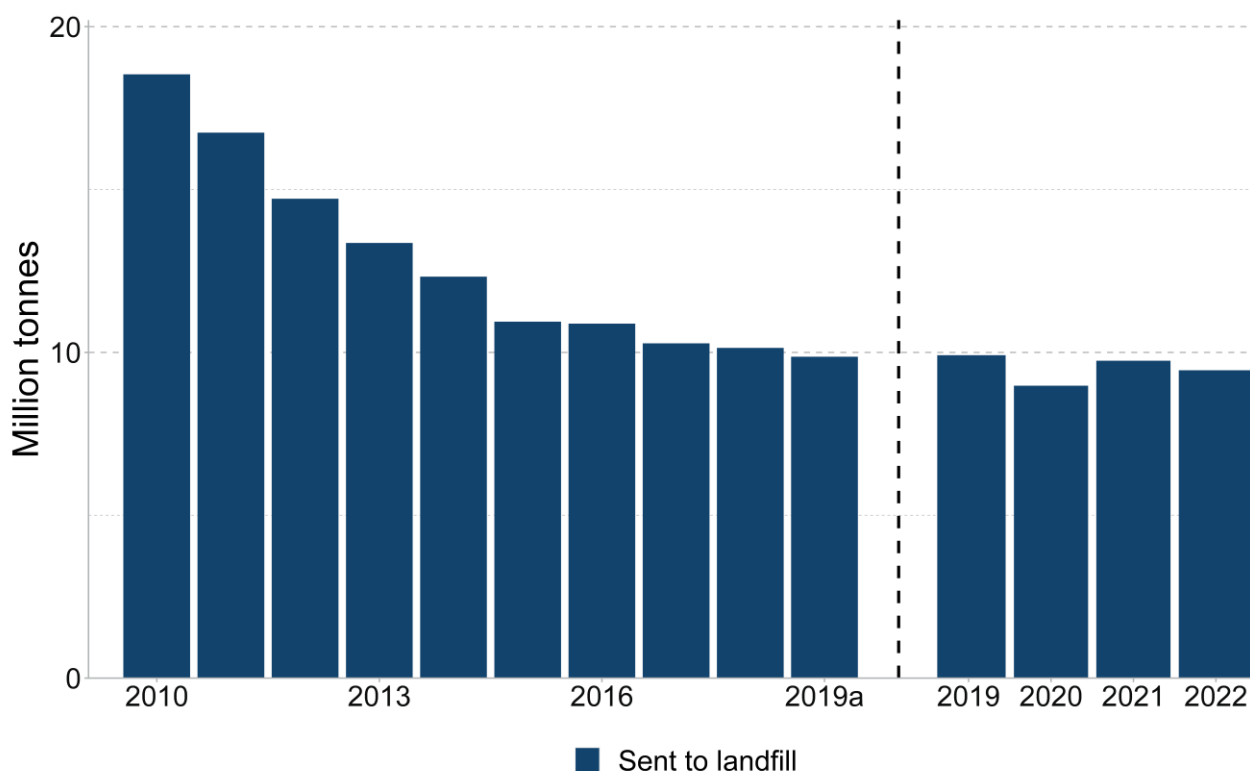
In 2021, 5.3 million tonnes of Biodegradable Municipal Waste (BMW) was sent to landfill in England, 48% less than in 2010. The 2021 figure is just 18.3% of the 1995 baseline of BMW generation.

The illustrative pathway represents the average improvement needed year-on-year (from 2018 levels) for England to meet the commitment set out in the RWS (which necessarily entails sending zero biodegradable municipal waste to landfill). While tonnages to landfill have generally fallen each year since 2010 (except in 2016 when there was a small increase), the trend appears to be plateauing. The amount of BMW sent to landfill in 2021 is 8% more than in 2020, but 2% less than in 2019. Therefore, achieving the commitment will require this reduction to accelerate.

WD5. Municipal waste landfilled

Indicator LF1. Municipal waste landfilled is re-introduced from the first edition of Monitoring Progress. The data for this indicator is currently a proxy for municipal waste landfilled. The total amount of municipal residual waste landfilled in England is presented instead as figures of total municipal waste arisings are not available. Municipal waste includes both household waste and waste from other sources which is similar in nature and composition to household waste, including “household-like” waste generated by businesses.

Figure 3.3 Municipal residual waste landfilled, England, 2010 to 2022, million tonnes



Description of Figure 3.3: Bar chart showing the amount of municipal residual waste in tonnes that is landfilled between 2010 and 2022.

Note: Estimates for the years 2010-2019a include residual waste generated in the UK that is treated in England, and tonnages of metals removed from incinerator bottom ash (IBA metals) that are sent for treatment other than landfill or incineration are included. Estimates for the years 2019-2022 show residual waste generated in England that is treated inside or outside of England, and IBA metals that are sent for treatment other than landfill or incineration are not included. Comparisons between estimates prior to and after 2019 should be made with care. Prior to 2014, data on waste put through incineration was reported biennially so there is no incineration data available for the years 2011 and 2013. Prior to 2015, data on waste sent outside the United Kingdom for energy recovery included both waste originating in England and Wales, so is not included in these figures for England.

Historically, the amount of municipal residual waste sent to landfill had decreased from 18.5 million tonnes in 2010 to 9.9 million tonnes in 2019a (prior to the methodology change), a decrease of 46.8%. Following the methodology change from 2019 onward, the amount of municipal residual waste landfilled decreased from 9.9 million tonnes in 2019 to 9.5 million tonnes in 2022, a decrease of 4.7%.

Indicator data sources and information

WD1 and WD4

Source: Defra (2024) [Estimates of Residual Waste \(excluding Major Mineral Wastes\) and Municipal Residual Waste in England](#)

Relevant goal in the EIP: Goal 5 – maximise our resources, minimise our waste

Corresponding goal in the 25YEP: Goal 8 – minimise waste

Relevant target/ambition/commitment: The estimates of residual waste excluding major mineral wastes serve as indicators to track progress against the long-term target to reduce residual waste (excluding major mineral wastes) set in compliance with the [Environment Act 2021](#). This target requires a reduction in the amount of residual waste (excluding major mineral wastes) generated in England to no more than 287 kilograms per person by 31 December 2042. These estimates also serve as indicators to track progress against the interim targets announced in the EIP. These targets require a reduction in the amount of residual waste (excluding major mineral wastes) generated in England to no more than 437 kilograms per person, and 25.5 million tonnes, in the most recent calendar by 31 January 2028.

Classification: Official statistics in development

Definitions and details of calculations: Residual waste here adopts a treatment-based definition and refers to waste generated in England that is landfilled or incinerated (with and without energy recovery) in the UK or sent outside the UK for energy recovery as refuse derived fuel/solid recovered fuel. Data on residual waste are collected by the Environment Agency and made available through the Waste Data Interrogator, associated incineration datasets, and International Waste Shipments data. From these datasets, waste codes catalogued as ‘major mineral wastes’ are excluded. Major mineral wastes are the predominant and largely inert wastes typically arising from the construction and demolition sector, such as concrete, bricks and sand, as well as soils and other mineral wastes from excavation and mining activities. Details about the method used to build these estimates of residual waste and associated waste codes can be found in a [methodology note](#) at the source. Note that corrections to tonnages of waste identified as major mineral wastes, and therefore excluded from the scope of this indicator, have resulted in some minor revisions to the time series presented in this edition.

WD2

A formal methodology for reporting against this indicator has yet to be agreed. Biodegradable municipal waste to landfill is presented here as a proxy.

Source: Defra (2023) [UK statistics on waste](#)

Relevant goal in the EIP: Goal 5 – maximise our resources, minimise our waste

Corresponding goal in the 25YEP: Goal 8 – minimise waste

Relevant target/ambition/commitment: The Resources and Waste Strategy included a commitment to work towards eliminating food waste to landfill by 2030, and to explore policies to work towards eliminating all biodegradable waste to landfill by the same date. This is a broader category than biodegradable municipal waste, but achieving this ambition necessarily entails sending zero biodegradable municipal waste to landfill, as this is a category of biodegradable waste.

Classification: Official statistic

Definitions and details of calculations: The UK countries have agreed a set of European Waste Catalogue (EWC) classification codes to represent municipal waste. Biodegradable municipal waste sent to landfill refers to the fraction of this municipal waste which will decompose within a landfill. Amongst other materials it includes food waste, green waste, cardboard, and paper. Further details of methodology are available at the data source. The 1995 baseline was modelled and agreed in 2010.

WD5

The Resources and Waste Strategy specifies that this indicator should be presented as a proportion of total municipal waste. Tonnages of municipal residual waste landfilled are presented as a proxy as figures of total municipal waste arisings are not available.

Source: Defra (2024) [Estimates of Residual Waste \(excluding Major Mineral Wastes\) and Municipal Residual Waste in England](#)

Relevant goal in the EIP: Goal 5 – maximise our resources, minimise our waste

Corresponding goal in the 25YEP: Goal 8 – minimise waste

Relevant target/ambition/commitment: The Resources and Waste Strategy included a commitment to send less than 10% of municipal waste to landfill by 2035.

Classification: Official statistics in development

Definitions and details of calculations: Data on residual waste are collected by the Environment Agency and made available through the Waste Data Interrogator. From these datasets, waste codes catalogued as ‘municipal waste’ are included. Municipal waste in this data includes both household waste and waste from other sources which is similar in nature and composition to household waste, including “household-like” waste generated by businesses. Details about the method used to build these estimates of municipal residual waste and the associated waste codes can be found in a [methodology note](#) at the source.

Greenhouse gas emissions

Waste management results in greenhouse gas emissions. The decomposition of biodegradable waste in landfills is a significant source of methane, a potent greenhouse gas. Other processes such as recycling and incineration also emit greenhouse gases. Greenhouse gas emissions are themselves a particularly harmful form of waste released into our atmosphere, so the Resources and Waste Strategy is also concerned with reducing our consumption-based carbon emissions. Carbon reductions align with the government's Net Zero Strategy, and footprint accounting builds on this by tracking global emissions associated with England's consumption.

This chapter includes data on territorial greenhouse gas emissions from the waste sector in England, as defined by the National Greenhouse Gas Inventory, and on the global carbon footprint associated with English consumption.

GG1. Territorial greenhouse gas emissions from waste management

Table 4.1 Territorial greenhouse gas emissions from the waste sector (as defined by the National Greenhouse Gas Inventory), England, 1990 to 2021, million tonnes carbon dioxide equivalent

Year	Landfill	Waste-water handling	Composting	Incineration	Anaerobic digestion	Total
1990	56.0	2.6	0.0	1.4	0.0	60.0
1995	58.6	2.6	0.2	1.0	0.0	62.4
2000	52.5	2.4	0.3	0.6	0.0	55.8
2005	40.3	2.1	0.5	0.5	0.0	43.4
2010	22.0	2.3	0.9	0.3	0.0	25.6
2015	13.1	2.4	1.3	0.3	0.1	17.2
2016	12.5	2.2	1.3	0.3	0.2	16.5
2017	12.7	2.4	1.4	0.3	0.2	16.9
2018	12.8	2.4	1.4	0.3	0.2	17.0
2019	12.7	2.3	1.4	0.2	0.2	16.8
2020	11.7	2.2	1.4	0.2	0.2	15.7
2021	11.0	2.4	1.5	0.3	0.2	15.2

Note: These figures have been revised to use the global warming potentials from the Intergovernmental Panel on Climate Change (IPCC)'s Fifth Assessment Report (AR5)¹², instead of AR4¹³ as used previously.

¹² Intergovernmental Panel on Climate Change (2023) - [Fifth Assessment Report](#)

¹³ Intergovernmental Panel on Climate Change (2023) - [Fourth Assessment Report](#)

In 2021, the waste sector in England, as defined by the National Greenhouse Gas Inventory, generated an estimated 15.2 million tonnes CO₂e (MtCO₂e) of greenhouse gas emissions, 75% less than the equivalent figure in 1990 (60.0 MtCO₂e) and slightly lower than 2020. The waste sector accounted for 4.6% of England's overall territorial emissions, down from 9.2% in 1990.

Emissions from landfill in England were significantly lower in 2021 than in 1990. This reflects a shift away from a reliance on landfill as a form of waste management in England as well as changes in the composition of landfilled waste and increased capture of gases from landfill sites.

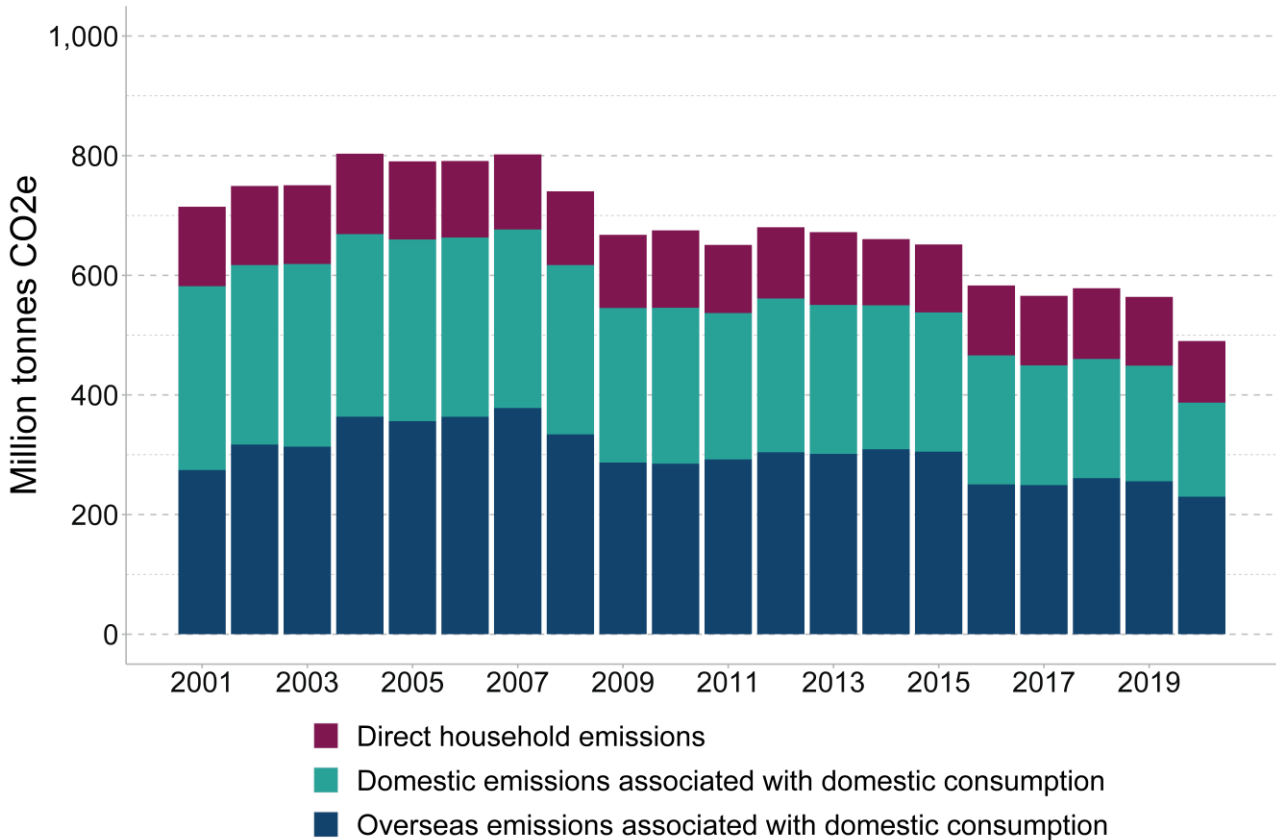
These figures exclude recycling and incineration with energy from waste (EfW), as these processes are not included in the definition of the waste sector of the National Greenhouse Gas Inventory. The greenhouse gas emissions from EfW were around 6.2 MtCO₂e in 2019¹⁴.

¹⁴ Climate Change Committee (2020) [The Sixth Carbon Budget: Waste](#)

GG2. Carbon footprint

This is indicator J1 in the 25 Year Environment Plan outcome indicator framework.

Figure 4.1 Carbon footprint on a consumption basis, England, 2001 to 2020, million tonnes CO₂ equivalent (MtCO₂e)



Description of Figure 4.1: Stacked bar chart showing England's carbon footprint on a consumption basis from 2001 to 2020. The footprint is categorised by direct household emissions, domestic emissions associated with domestic consumption, and overseas emissions associated with domestic consumption.

The 'carbon footprint' is the allocation of global greenhouse gas emissions to final demand for goods and services by England's residents. The measure takes account of the emissions arising along the supply chain for imported products and excludes domestic emissions associated with exports.

England's carbon footprint was an estimated 490 million tonnes CO₂ equivalent (MtCO₂e) in 2020, 31% less than in 2001 (715 MtCO₂e). In 2020, 47% of the footprint was made up of emissions arising overseas driven by domestic consumption, 32% of domestic emissions associated with domestic consumption and 21% direct emissions by households.

Table 4.2 Carbon footprint split by product group, England, 2020

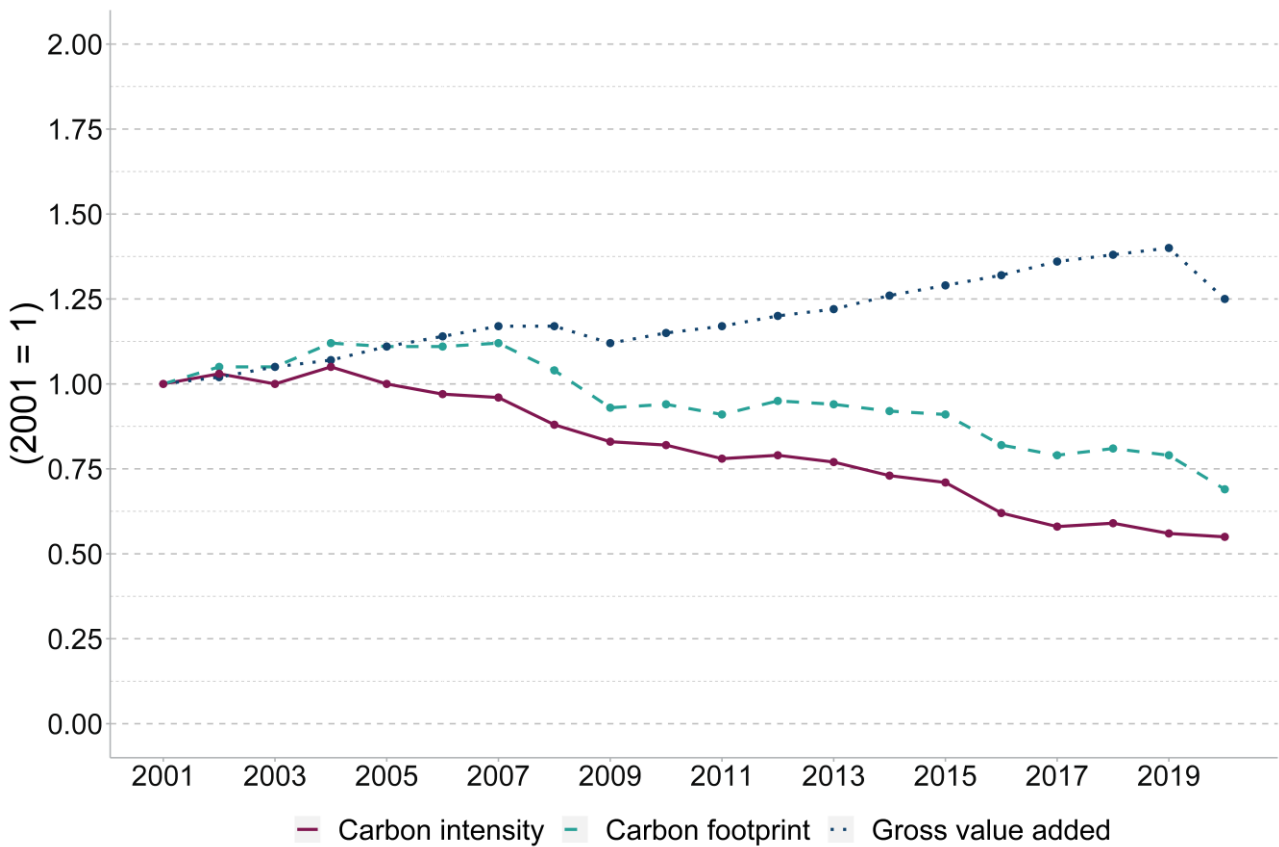
Category	Million tonnes	Percentage
Housing & power	119	24%
Transportation	95	19%
Government	85	17%
Gross fixed capital formation	64	13%
Food & beverages	42	9%
Other	27	5%
Hotels & restaurants	23	5%
Recreation & communication	22	4%
Furnishing, appliances	8	2%
Clothing & footwear	5	1%

Note: 'Other' encompasses alcohol & tobacco, health, education and miscellaneous goods and services.

In 2020, housing & power made up the largest share of England's carbon footprint (24%), followed by transportation (19%), and government (17%).

In 2020, 68% of England's carbon footprint was associated with final consumption expenditure of households. Classified by function, housing & power made up the largest share of the carbon footprint associated with household consumption in England in 2020 (36%), while transportation and food & beverages made up 29% and 13%, respectively. Emissions associated with these uses composed 77% of the carbon footprint associated with household consumption in 2020.

Figure 4.2 Intensity of greenhouse gas emissions on a consumption basis, England, 2001 to 2020, kilogrammes CO2 equivalent (kgCO2e) per £ gross value added (chained volume measure, 2019 £)



Description of Figure 4.2: Indexed line chart showing England’s gross value added, carbon footprint, and carbon intensity from 2001 to 2020.

Indicators of environmental intensity compare trends in economic activity with those in specific environmental flows as an inverse of measures of ‘productivity’. Carbon intensity is measured here as the carbon footprint per unit of economic productivity (gross value added, GVA). A lower carbon intensity is desirable.

Between 2001 and 2020, England’s GVA largely trended upwards, increasing by 25% overall, while across the same period, the carbon footprint fell by 31%. Both England’s GVA and the carbon footprint noticeably decreased in 2020. Measured as a ratio of these two indicators, England’s carbon intensity fell by an estimated 45% between 2001 and 2020, although has plateaued in 2020 as a result of a decrease in England’s GVA and carbon footprint.

Indicator data sources and information

GG1

Source: Department for Business, Energy and Industrial Strategy (2023) [Greenhouse Gas Inventories for England, Scotland, Wales & Northern Ireland: 1990- 2021](#)

Relevant goal in the EIP: Goal 7 – mitigating and adapting to climate change

Corresponding goal in the 25YEP: Goal 7 – mitigating and adapting to climate change

Relevant target/ambition/commitment: Legislative target within the Climate Change Act (2008), since updated with the aim of achieving net zero emissions by 2050 on a territorial basis.

Classification: National Statistic

Definitions and details of calculations: The ‘waste sector’ is a category used in international reporting and for which data are collected within the National Greenhouse Gas Inventory. Greenhouse gases covered within the inventory are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and Hydro-fluorocarbons (HFC), Perfluorocarbons (PFC), Nitrogen trifluoride (NF₃) and Sulphur hexafluoride (SF₆). Emissions from waste incineration with energy capture (the majority of incineration-related emissions today) is excluded in these figures, not because it is unimportant but because it is covered elsewhere within the emissions inventory under energy-related emissions.

GG2

Source: Defra (2023) [UK’s carbon footprint](#)

Relevant goal in the EIP: Goal 7 – mitigating and adapting to climate change

Corresponding goal in the 25YEP: Goal 7 – mitigating and adapting to climate change

Relevant target/ambition/commitment: Legislative targets within the Climate Change Act (2008) since updated with the aim of achieving net zero emissions by 2050 on a territorial basis, covering domestic emissions within the footprint.

Classification: Official statistic

Definitions and details of calculations: The ‘carbon footprint’ refers to emissions of greenhouse gases attributable to final demand in England, irrespective of where these are released globally. From this release, the carbon footprint now includes the following seven Greenhouse Gases: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and Hydrofluorocarbons (HFC), Perfluorocarbons (PFC), Nitrogen trifluoride (NF₃) and Sulphur hexafluoride (SF₆).

Waste crime

The term waste crime encompasses illegal waste sites, illegal waste exports, illegal waste dumping (including fly tipping) and the misdescription of waste among other illegal waste-related activities. Waste crime causes a disamenity to the public's enjoyment of the environment, reduces the availability of resources in our economy and imposes financial costs. The total cost of waste crime in 2018/19 to the legitimate waste industry and taxpayer in England was an estimated £924 million¹⁵, including £236 million from illegal waste sites and £392 million from fly tipping.

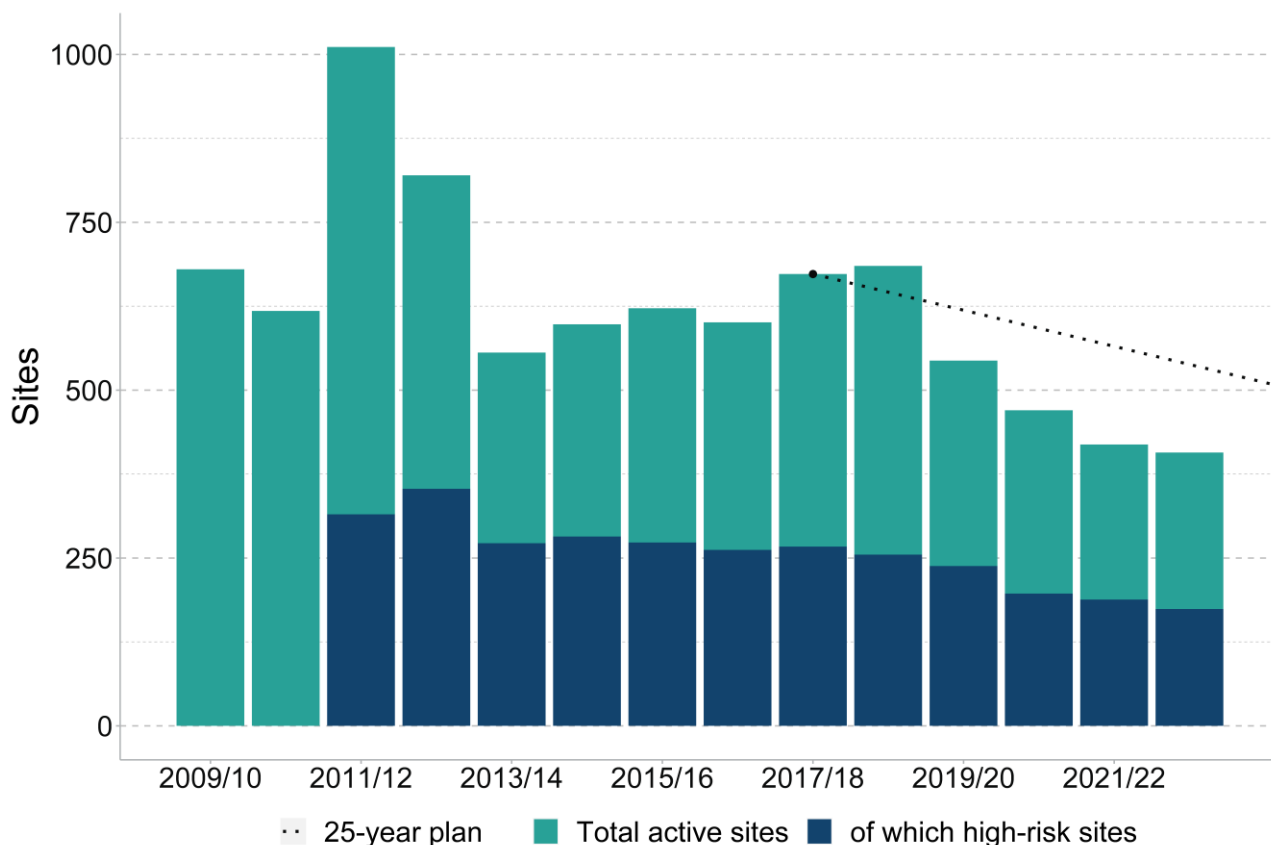
This chapter provides statistics on some of the main types of waste crime: the number of illegal waste sites identified by the Environment Agency, the number of incidents of fly tipping reported by local authorities and the types of waste involved. Statistics on the cost of litter are also presented.

¹⁵ Eunomia (2021) [Counting the Cost of UK Waste Crime](#)

WC1. Illegal waste sites

This is indicator J6a in the 25 Year Environment Plan outcome indicator framework.

Figure 5.1 Active illegal waste sites and high risk active illegal waste sites, England, 2009/10 to 2022/23, number of sites



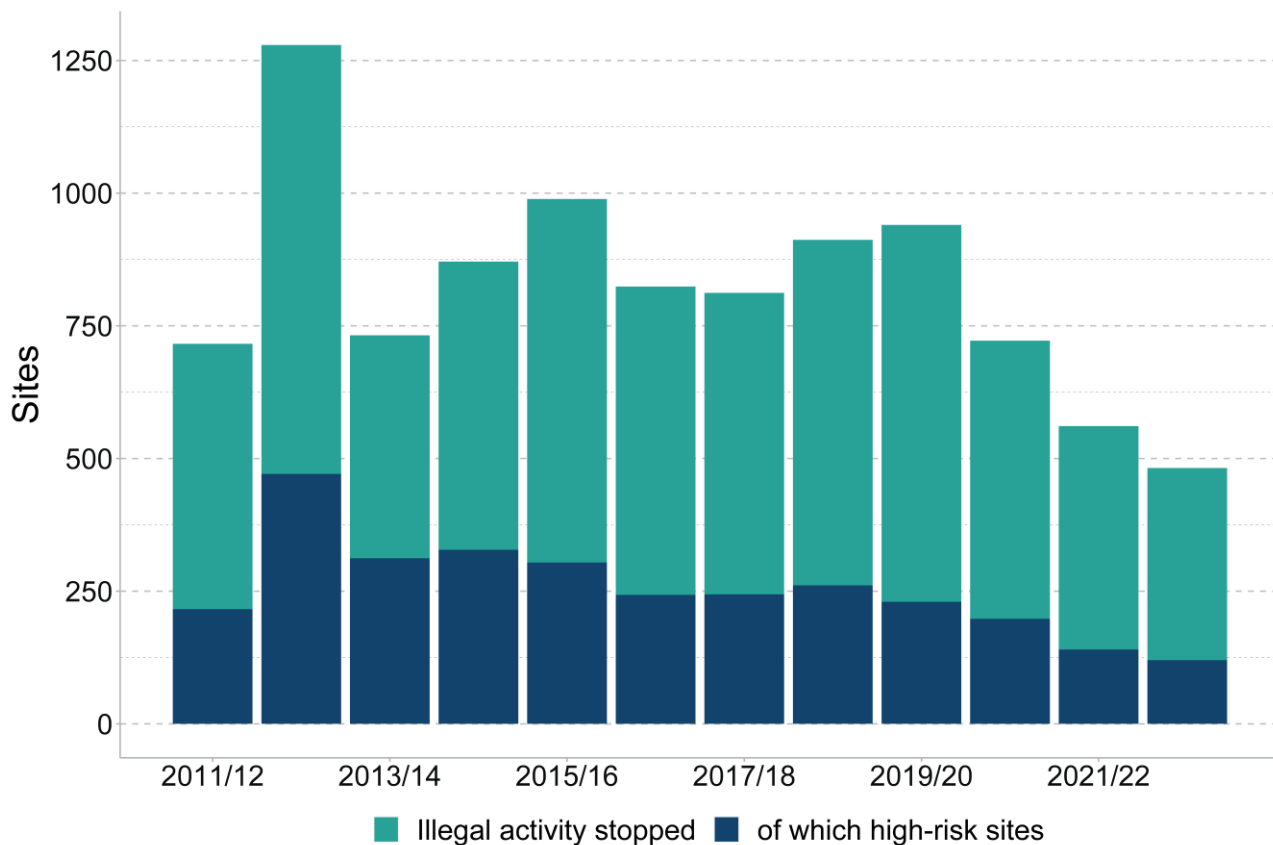
Description of Figure 5.1: Stacked bar chart showing the number of active illegal waste sites and high risk active illegal waste sites in England from 2009/10 to 2022/23. A linear trajectory starting from 2017/18 is shown representing the commitment set out in the 25-year Environment Plan to seek to eliminate illegal waste sites through the lifetime of the plan.

From 2013/14 to 2018/19, the total number of active illegal waste sites identified in England increased gradually from 556 to 685. In 2022/23, the number of active illegal waste sites fell to 407, the lowest figure yet recorded. Some of the reduction for 2020/21 may be due to reduced enforcement activity during the COVID-19 pandemic, which may have led to fewer sites being identified. However, the number of illegal waste sites recorded in 2019/20 was also lower than in any previous year, suggesting that this trend predates the pandemic.

The number of active illegal waste sites categorised as high-risk (monitored since 2011/12) has fallen by 51% from a peak of 353 sites in 2012/13 to 174 in 2022/23 (also the lowest figure yet recorded).

The 25-year Environment Plan (2018) includes a commitment to seek to eliminate illegal waste sites through the lifetime of the plan. Assuming a linear decay of the number of illegal waste sites from 2017/18 levels over 25 years (shown as a dotted line on the graph above), England is currently on track to achieve this ambition.

Figure 5.2 Illegal waste activity stopped, England, 2009/10 to 2022/23, number of sites



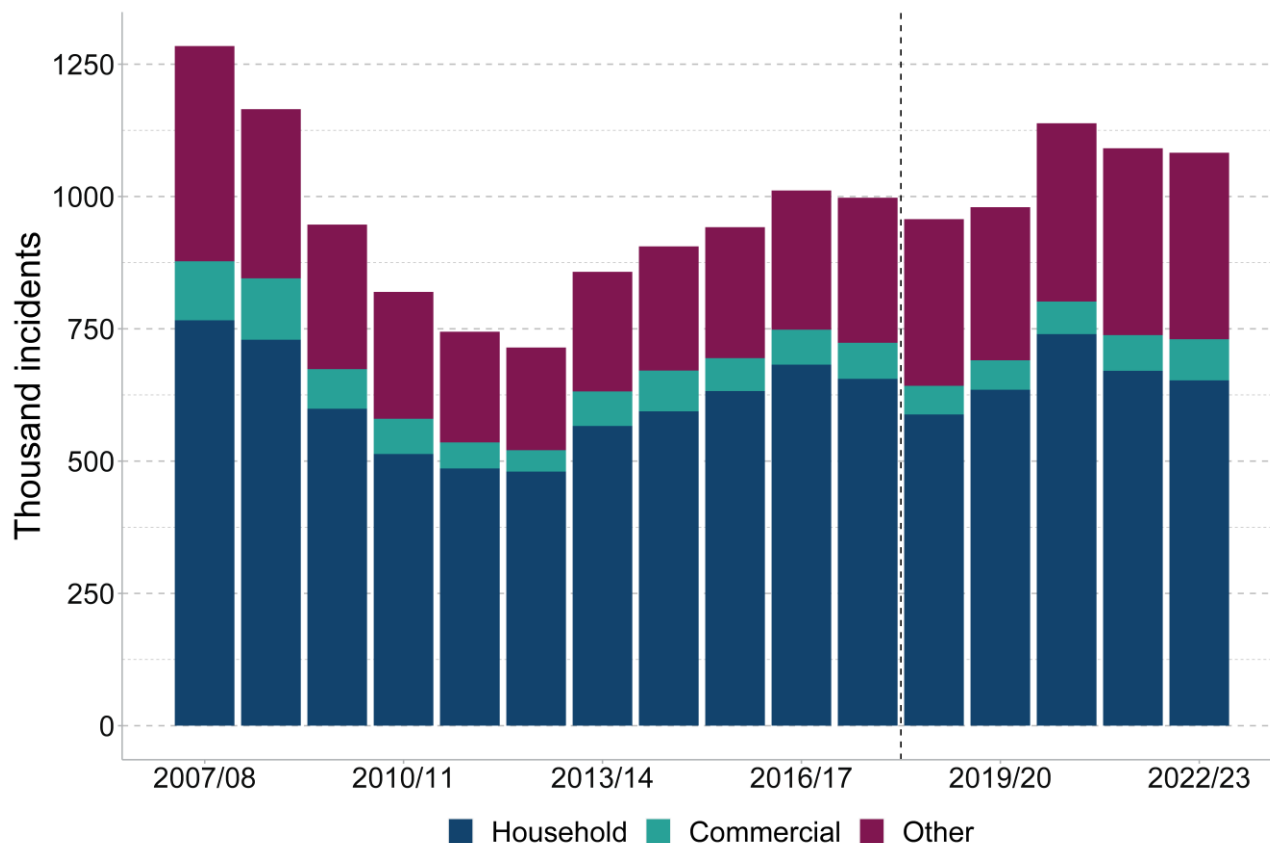
Description of Figure 5.2: Stacked bar chart showing the number of sites in England where illegal waste activity was stopped, and the proportion of those which were high-risk sites, from 2009/10 to 2022/23.

Most illegal waste sites identified by the Environment Agency have their illegal activity stopped, either by bringing the site into line with regulations or by otherwise putting a stop to its operation. In 2022/23, illegal waste activity was stopped at 482 sites, with 120 of these classified as high-risk sites.

WC2. Waste fly tipped

This is indicator J6b in the 25 Year Environment Plan outcome indicator framework.

Figure 5.3 Waste fly tipped, England, 2007/08 to 2022/23, thousand incidents



Description of Figure 5.3: Stacked bar chart showing the number of incidents of fly-tipped waste from household, commercial, or other sources from 2007/08 to 2022/23.

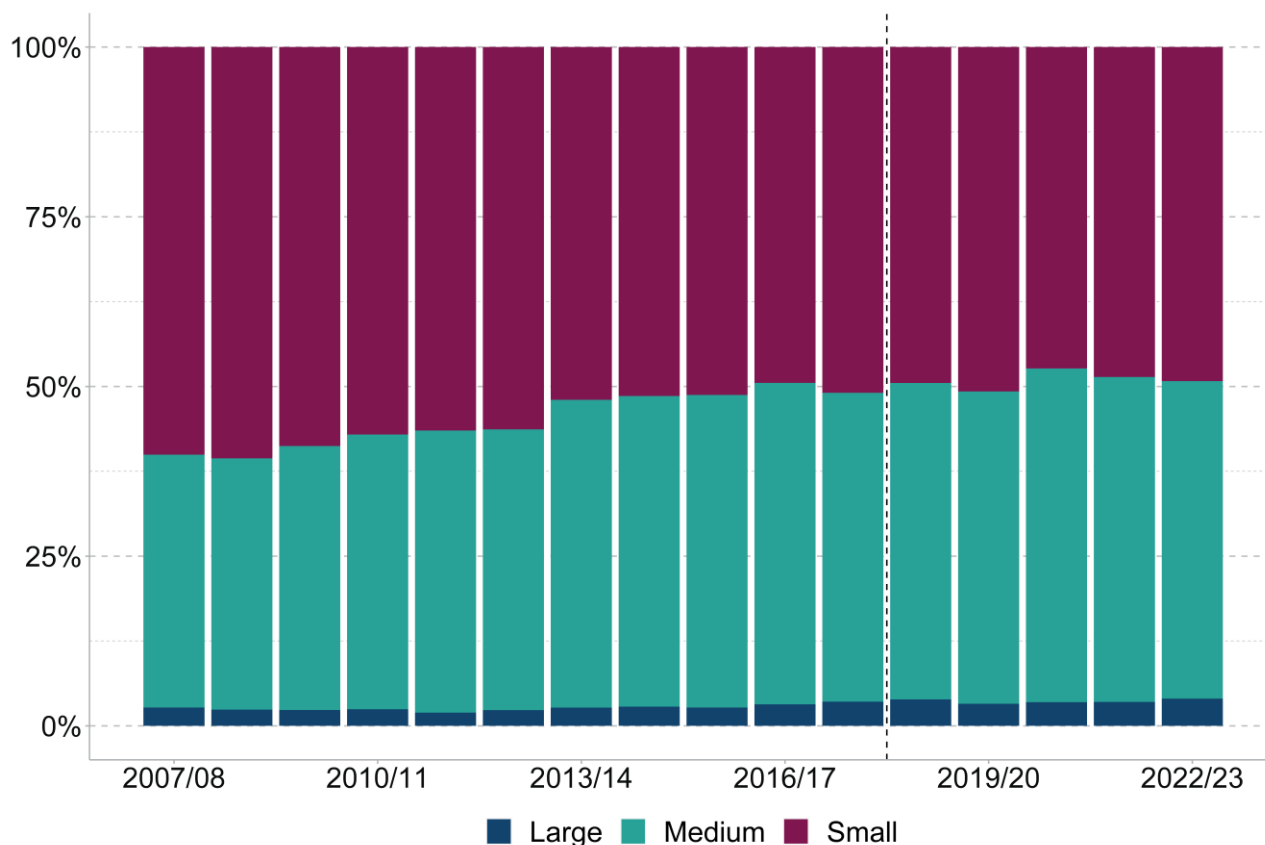
Note: National totals for fly-tipping incidents from 2019/20 onwards are not comparable to earlier years due to methodological changes. These changes have been retroactively applied to 2018/19.

Approximately 1 million incidents were reported in 2022/23, a small decrease of 1% from 2021/22. Figures from 2018/19 onwards are not directly comparable to earlier years. The majority of incidents (60% in 2022/23) continue to involve household waste, with commercial waste incidents making up only a small proportion of the total (7% in 2022/23).

These figures cover incidents identified and cleared by local authorities only. Incidents involving the Environment Agency or cleared by private landowners are not included. Details of the 57 incidents of illegal dumping dealt with by the Environment Agency in 2022/23 are published separately.¹⁶

¹⁶ Environment Agency (2022) Regulating for People, the Environment and Growth

Figure 5.4 Fly tipping incident sizes, England, 2007/08 to 2022/23, proportion of incidents



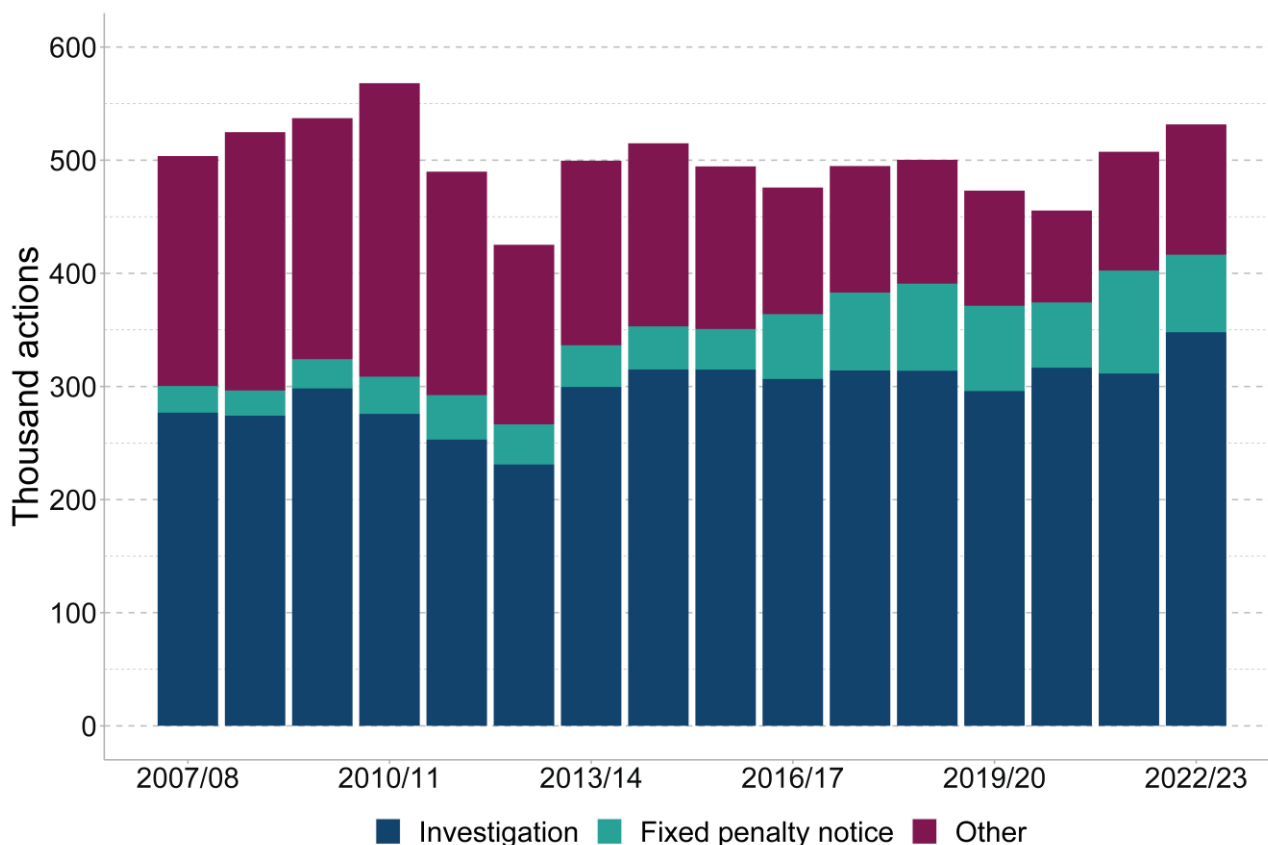
Description of Figure 5.4: 100% stacked bar chart showing the proportion of fly tipping incidents by size (large, medium, and small) in England from 2007/08 to 2022/23.

Note: “Small” incidents are here defined as single black bags, single items, and incidents that fit in a typical car boot; “medium” as van loads (small vans or Transit vans); and “large” as incidents requiring a tipper lorry to clear or consisting of multiple loads. National totals for fly-tipping incidents from 2019/20 onwards are not comparable to earlier years due to methodological changes. These changes have been retroactively applied to 2018/19.

Fly-tipping incidents vary in size. Large incidents (classified as “tipper lorry load” or “significant/multiple loads”) made up only 4% of incidents recorded in 2022/23. (The proportion was 2.7% in 2007/08, but these figures are not directly comparable.)

Meanwhile, the proportion of medium incidents (classified as “small van load” or “Transit van load”) rose from 37% to 46% between 2007/08 and 2017/18, with a corresponding reduction in the proportion of small incidents (“single black bag”, “single item”, or “car boot or less”) from 60% to 51%. This suggests that the typical fly-tipping incident has become larger over time.

Figure 5.5 Fly tipping enforcement, England, 2007/08 to 2022/23, thousand actions



Description of Figure 5.5: Stacked bar chart showing the number of enforcement actions taken against fly tipping, categorised by investigation, fixed penalty notices, or other enforcement, in England from 2007/08 to 2022/23.

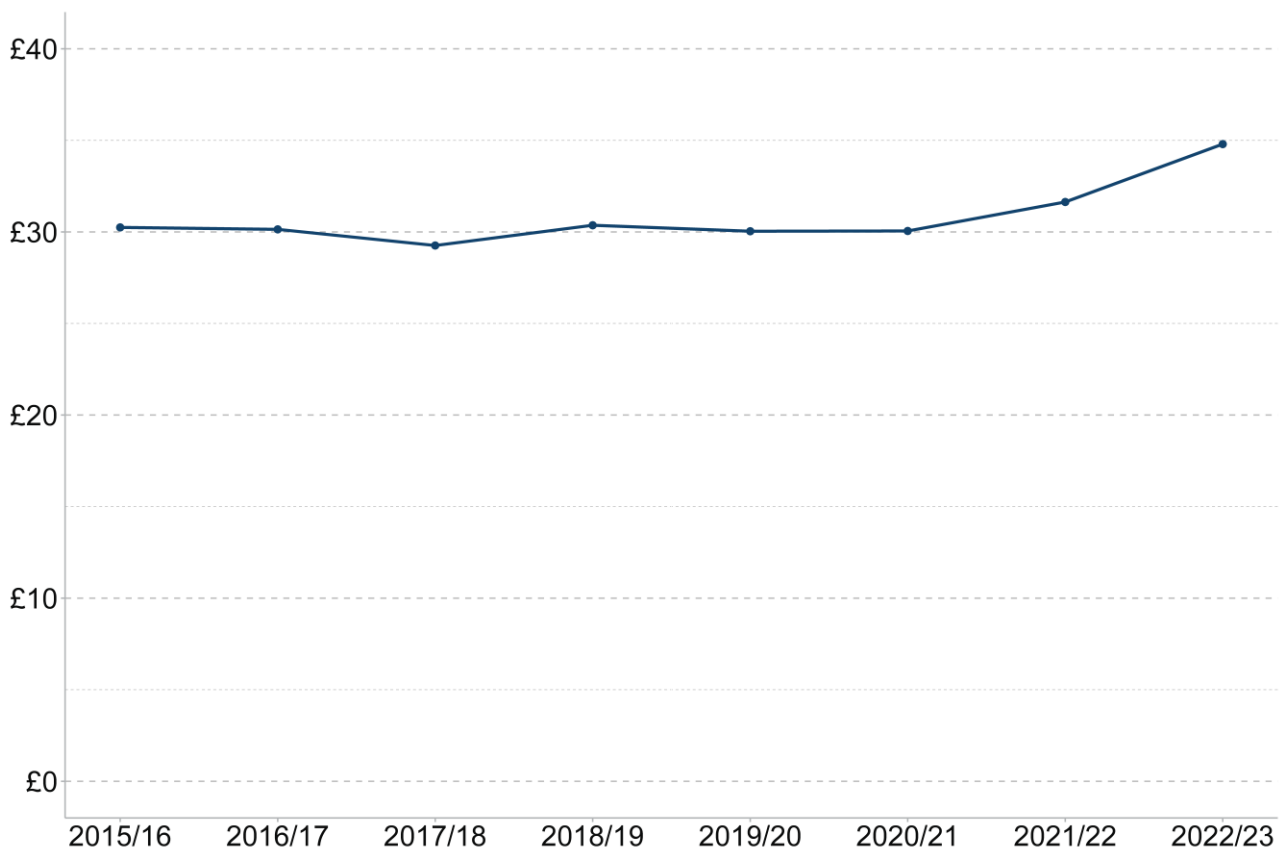
Enforcement actions taken against fly-tipping include investigations, fixed penalty notices, warning letters, statutory notices, prosecutions, injunctions, cautions, and vehicle seizures.

There was an increase in the levels of enforcement activity between 2007/08 and 2010/11, but this has since fallen off and remained roughly flat for several years. In 2022/23 a total of 532 thousand enforcement actions were taken across England, an increase of 5% from 2021/22.

In May 2016, local authorities in England were given the power to issue fixed penalty notices for fly-tipping. Prior to this date, local authorities issued fly-tippers with fixed penalty notices in relation to littering or anti-social behaviour. In January 2019, fixed penalty notice powers for breaches of the household waste duty of care were also introduced. Over this period, the use of fixed penalty notices has increased from around 36 thousand in 2015/16 to 69 thousand in 2022/23.

WC3. Littering

Figure 5.6 Costs to local authorities of street cleaning per household, England, 2015/16 to 2022/23



Description of Figure 5.6: Line chart showing the costs to local authorities of street cleaning¹⁷ per household in England from 2015/16 to 2022/23.

In 2022/23, it cost local authorities £822 million, or £34.79 per household, to keep England's streets clean. The cost per household has increased since 2015/16 (the first year on record), when the cost per household was £30.24. This figure does not include spending by other authorities whose role involves clearing litter, such as National Highways.

¹⁷ In addition to litter, street cleaning also includes costs associated with other activities such as removing fly tipping and graffiti.

Indicator data sources and information

WC1

Source: Environment Agency (2024) [Data on regulated businesses in England](#)

Relevant goal in the EIP: Goal 5 – maximise our resources, minimise our waste

Corresponding goal in the 25YEP: Goal 8 – minimise waste

Relevant target/ambition/commitment: The 25-year environment plan includes a commitment to seek to eliminate illegal waste sites by 2043, focusing on those of highest risk.

Classification: None

Definitions and details of calculations: Illegal waste sites refer to sites which operate without a permit, are organised and involve multiple loads of waste being treated, stored or disposed. High risk sites are waste sites deemed especially risky or hazardous by the Environment Agency. Data are a snapshot taken at the end of each financial year (April) for the financial year prior. Further details of methodology available at data source.

WC2

Source: Defra (2024) [ENV24 - Fly tipping incidents and actions taken in England](#)

Relevant goal in the EIP: Goal 5 – maximise our resources, minimise our waste

Corresponding goal in the 25YEP: Goal 8 – minimise waste

Relevant target/ambition/commitment: Seek to eliminate waste crime by 2042 (25YEP)

Classification: Official statistic

Definitions and details of calculations: Fly tipping refers to the illegal deposition of waste on land contrary to Section 33(1) (a) of the Environmental Protection Act. The types of waste fly tipped can range from 'black bag' waste to large deposits of materials such as industrial waste, tyres, construction material and liquid waste. Data based on returns made to the fly tipping module in the Waste Data Flow database by local authorities from April-March of the prior year. Further details of methodology available at data source.

WC3

Sources:

- Department for Levelling Up, Housing & Communities (2023) [Revenue outturn cultural, environmental, regulatory and planning services \(RO5\)](#)
- Office for National Statistics (2023) [Families and households in the UK](#)

Relevant goal in the EIP: Goal 5 – maximise our resources, minimise our waste

Corresponding goal in the 25YEP: Goal 8 – minimise waste

Classification:

- Revenue outturn cultural environmental, regulatory and planning services:
National Statistic
- Families and households in the UK: National Statistic

Definitions and details of calculations: The cost of street cleaning per household is calculated by dividing the total revenue outturn reported by local authorities in England in the category 'street cleansing (not chargeable to Highways)' by the number of households in England as estimated by the Office for National Statistics.

Glossary

Avoidable waste: Waste that it is technologically, environmentally and economically practicable (TEEP) to prevent from becoming residual waste, but that nevertheless entered the residual waste stream ([RWS, 2018](#)).

Biodegradable municipal waste (BMW): The fraction of municipal waste that will degrade within a landfill site. Amongst other materials it will include food waste, green waste, cardboard, and paper ([UK statistics on waste, 2023](#)).

Carbon footprint: A consumption-based measure of the global emissions attributable to final domestic demand for goods and services in England, including emissions for imports at every stage of the supply chain, wherever in the world they may occur, but excluding emissions generated in the production of products exported from England ([ONS, 2019](#)).

Final domestic demand: Consumption expenditure on goods and services by resident households, government and charities in a given period, in addition to gross fixed capital formation and changes in inventories and valuables ([OECD](#)).

Fly tipping: Fly tipping is a wide-ranging crime, including ‘the illegal disposal of household, industrial, commercial or other “controlled” waste without a waste management licence’ ([House of Commons, 2019](#)). We define this as the illegal deposition of waste on land contrary to Section 33(1) (a) of the Environmental Protection Act.

Greenhouse gas: An atmospheric gas that absorbs and emits infrared solar radiation, contributing to climate change. Greenhouse gases covered within the UK’s greenhouse gas inventory are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), nitrogen trifluoride (NF₃) and sulphur hexafluoride (SF₆) ([ONS, 2019](#)).

Gross value added (GVA): Measures the increase in the value of the economy due to the production of goods and services. GVA is calculated as the difference between the value of goods and services sold and intermediate expenses incurred to produce these ([ONS](#)).

Hazardous waste: Waste is generally considered hazardous if it (or a material or substance it contains) is harmful to humans or the environment. Examples include asbestos, certain chemicals, batteries, solvents, pesticides, inedible oils, and ozone-depleting substances ([HM Government](#)).

Illegal waste site: Waste sites that operate without a permit, are organised, and involve multiple loads of waste being treated, stored or disposed. Permit breaches and fly tipping are not illegal waste sites, but exempt sites operating outside their conditions and permitted sites operating outside of their permitted boundary are illegal waste sites ([Environment Agency, 2022](#)).

Intensity indicators: Intensity indicators compare trends in economic activity with trends in specific environmental flows. These can be expressed as intensity or productivity ratios,

with productivity ratios (such as resource productivity) calculated as a ratio of economic activity in relation to environmental flow, and intensity indicators (such as carbon intensity) the inverse of this ratio (SEEA-Environment Extensions, 2012). Intensity indicators can be grouped into two broad types:

1. Environmental intensity indicators - ratios of environmental variables such as emissions of pollutants or other residuals to economic variables.
2. Resource intensity indicators - ratios expressing resource use variables to economic variables.

Local authority collected waste (LACW): All 'waste from households', street sweepings, municipal parks and gardens waste, beach cleansing waste, and waste resulting from the clearance of fly tipped materials plus some commercial and/or industrial waste collected by local authorities ([Defra, 2011](#)).

Municipal waste: A measure combining both household waste and that from other sources which is similar in nature and composition to household waste, including 'household-like' waste generated by businesses and collected by private contractors ([Defra, 2011](#)). There is not yet an agreed methodology for reporting against this measure, although the UK Government and the devolved administrations have agreed a set of European Waste Catalogue (EWC) codes corresponding to biodegradable municipal waste ([UK statistics on waste, 2023](#)).

Raw material consumption (RMC, 'material footprint'): The allocation of global primary used raw material extraction to final domestic demand for goods and services by a country's residents ([UN, 2011](#)). A key benefit of this indicator is that it accounts for the full upstream material extraction associated with imports, measuring this on an equal basis to domestic extraction. The material footprint includes biomass materials harvested from, or cultivated within, ecosystems, including crops, wood and wild fish catch. The footprint also encompasses mineral resources (both metallic ores e.g. iron and non-ferrous metals, as well as non-metallic minerals such as limestone, clay, or sand), in addition to fossil fuels such as oil and gas. It does not include other types of resources such as water.

Refuse derived fuel (RDF): Material that is produced from waste, has undergone some sort of treatment process, and is intended for use as a fuel ([Environment Agency, 2015](#)). This is typically fuel produced by shredding and dehydrating municipal solid waste and consists largely of combustible components such as plastics and biodegradable waste ([Defra, 2014](#)).

Residual waste: Waste intended for disposal by landfill or incineration (with or without energy recovery), such as that collected from households in black bags or wheelie bins, as distinct from waste bound for recycling, reuse or recovery ([Defra, 2021](#)).

Solid recovered fuel (SRF): A waste-derived fuel distinguished from RDF in that it is produced to reach a specific quality standard ([Defra, 2014](#)).

Territorial emissions: Emissions of greenhouse gases that originate within the country's borders. This includes emissions released in England by foreign visitors and foreign-

registered companies but excludes emissions released by British citizens or UK-registered businesses abroad. This is the standard measure used to quantify greenhouse gas emissions under the Climate Change Act and the Net Zero target ([ONS, 2019](#)).

Waste from households (WfH): The agreed harmonised UK measure used to report household recycling. This includes waste from regular household collections, civic amenity sites, bulky waste collections and other household waste but excludes street sweepings, waste from gully emptying, separately collected healthcare waste and waste such as soil, rubble, plasterboard and asbestos ([UK statistics on waste, 2023](#)).

Waste treatment: Waste treatment methods are categorised as follows ([UK statistics on waste, 2023](#)):

- **Recovery:** “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”
- **Recycling:** (a subset of recovery) – “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 (e.g. composting, anaerobic digestion etc.) but excludes the use as fuels and the use for backfilling operations”
- **Energy recovery:** facilities where the main purpose is generation of energy and formal R1 accreditation has been awarded. Facilities without R1 accreditation are reported as incineration (disposal) even if they produce some energy.
- **Backfilling:** “a recovery operation where waste is used in excavated areas (such as underground mines, gravel pits) for the purpose of slope reclamation or safety or for engineering purposes in landscaping and where the waste is substituting other non-waste materials which would have had to be used for the purpose”
- **Disposal:** (including landfill and incineration) – “any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy”