



15 July 2021

## UK Statistics on Waste

The purpose of this release is to announce UK waste estimates that are produced in relation to official reporting requirements. It includes data on:

- [1. Recycling rate from Waste from Households](#) – new 2019 data
- [2. Biodegradable municipal waste sent to landfill](#) – new 2019 data
- [3. Packaging waste](#) – new 2018, 2019 (provisional) and 2020 (provisional) data
- [4. Recovery rate from construction and demolition](#) – new 2017 and 2018 data
- [5. Commercial and industrial \(C&I\) waste](#) – new 2018 UK figures and new 2019 England data
- [6. Total waste generation and final treatment of all waste](#) – new data for 2018
- [7. Waste infrastructure](#) – new data for 2018

There is a detailed separate [dataset](#) available for all sections.

### Key points

- The **UK recycling rate for Waste from Households** (WfH; including Incinerator Bottom Ash metal (IBAm)) was 46.2% in 2019, increasing from 45.0% in 2018.
- **The recycling rate for WfH increased in all UK countries in 2019.** The recycling rate for England was 45.5%, compared with 50.6% in Northern Ireland, 44.9% in Scotland, and 56.4% in Wales.
- **UK biodegradable municipal waste (BMW) sent to landfill** has fallen from approximately 7.2 million tonnes in 2018 to around 6.6 million tonnes in 2019.
- Provisional figures for 2020 show that 67.2% of **UK packaging waste** was either recycled or recovered, the same as in 2019.
- It is estimated that the UK generated 43.9 million tonnes of **commercial and industrial (C&I) waste** in 2018, of which 37.2 million tonnes (85%) was generated in England. The latest estimates for England only, indicate that C&I waste generation was around 37.2 million tonnes in 2019.
- **The UK generated 222.2 million tonnes of total waste in 2018**, with England responsible for 84% of the UK total.

## **Data revisions in this update**

This release contains minor revisions to the C&D figures for the UK for 2015 - 2016, due to revised figures from Scotland. The revised data for Scotland takes account of routine revisions of site returns provided by operators and the methodology to estimate C&D metal wastes generated has also been refined.

The 2016 Commercial & Industrial (C&I) waste arisings estimate for the UK has been revised to correct an error whereby the wet-to-dry weight factors had not been applied correctly to the NI data. This correction has resulted in a decrease in the UK 2016 C&I estimate of around 120 thousand tonnes.

Several revisions have been made to the waste generation and treatment figures for 2010, 2012, 2014 and 2016:

- Revisions were made to the 2010 – 2016 mining waste figures for all UK countries to reflect revised data.
- Revisions were made to the 2016 data for NI to correct an error whereby the wet-to-dry weight factors had not been applied correctly.
- For the 2018 waste generation figures for England, the co-mingled recyclates collected exclusively from households have been separated into the individual materials using proportions derived from composition waste studies carried out by WRAP (Waste and Resources Action Programme). We have made revisions to the 2010, 2012, 2014 and 2016 waste generation data for England to separate out the co-mingled waste into individual waste types.

## 1 Waste from Households (WfH)

Updated, with new figures for 2019

WfH is the agreed harmonised UK measure used to report household recycling. The UK currently defines 'household waste' using the WfH measure.

Updated UK figures for 2019 are available as summarised in Table 1. The recycling figures all include metal recovered and recycled after incineration (incinerator bottom ash metal; IBAm). This methodological change was introduced in the February 2018 release for 2016 data. At an overall UK level this change in methodology raised the recycling rate for 2019 by around 0.8 percentage points (equivalent to 211 thousand tonnes; see [dataset](#)). For more details on this change refer to the [methodology section](#).

**Table 1. Waste from Households, UK and country split, 2015-19**

*thousand tonnes and % rate*

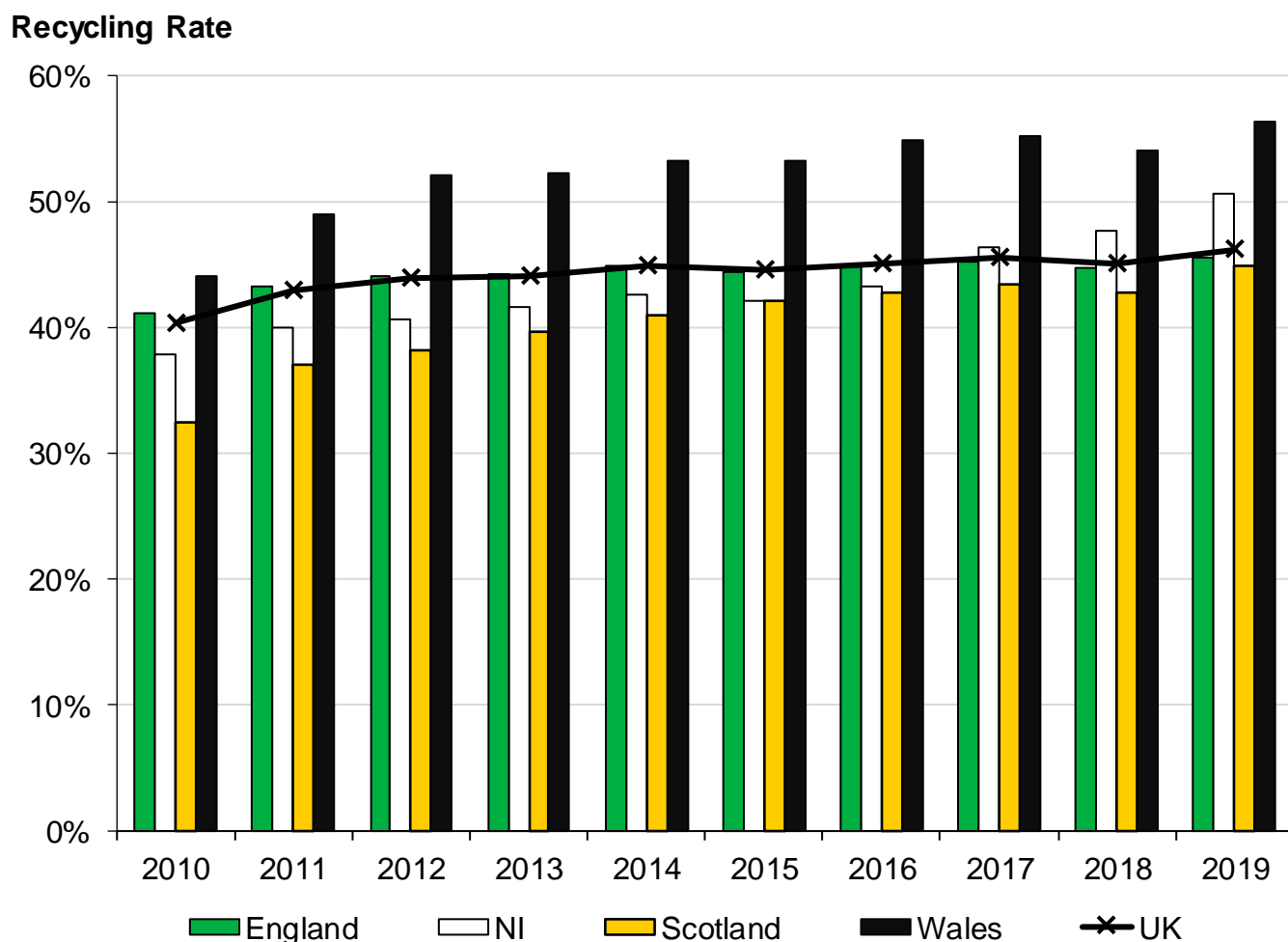
Year	Measure	UK Total	England	Northern Ireland	Scotland	Wales
2015	Arisings	26,675	22,225	818	2,354	1,278
	<i>Of which recycled</i>	11,865	9,849	344	991	681
	<b>Recycling rate</b>	<b>44.5%</b>	<b>44.3%</b>	<b>42.1%</b>	<b>42.1%</b>	<b>53.3%</b>
2016	Arisings	27,300	22,770	845	2,378	1,307
	<i>Of which recycled</i>	12,318	10,217	366	1,018	716
	<b>Recycling rate</b>	<b>45.1%</b>	<b>44.9%</b>	<b>43.3%</b>	<b>42.8%</b>	<b>54.8%</b>
2017	Arisings	26,897	22,437	843	2,345	1,271
	<i>Of which recycled</i>	12,250	10,139	390	1,019	702
	<b>Recycling rate</b>	<b>45.5%</b>	<b>45.2%</b>	<b>46.3%</b>	<b>43.5%</b>	<b>55.2%</b>
2018	Arisings	26,411	22,033	841	2,292	1,244
	<i>Of which recycled</i>	11,896	9,840	401	981	673
	<b>Recycling rate</b>	<b>45.0%</b>	<b>44.7%</b>	<b>47.7%</b>	<b>42.8%</b>	<b>54.1%</b>
2019	Arisings	26,441	22,074	842	2,303	1,223
	<i>Of which recycled</i>	12,203	10,054	426	1,033	690
	<b>Recycling rate</b>	<b>46.2%</b>	<b>45.5%</b>	<b>50.6%</b>	<b>44.9%</b>	<b>56.4%</b>

Source: WasteDataFlow, Defra Statistics

Figures include IBA metal.

Percentages calculated from unrounded figures; breakdowns for individual countries may not exactly sum to UK totals due to rounding.

**Figure 1. Recycling rate from Waste from Households, UK and country split, 2010-2019**



Source : WasteDataFlow, Defra Statistics

From 2015, these figures include IBA metal (this typically adds up to 0.8 percentage points to the overall UK recycling rate).

For Northern Ireland, figures including IBA metal are the same as those excluding IBA metals as no local authority collected municipal waste went directly to incinerators.

**Total UK WfH generation was 26.4 million tonnes in 2019, similar to the tonnages seen in 2018.** England is responsible for the vast majority of UK WfH, generating 22.1 million tonnes (83% of the UK total) in 2019.

**The UK WfH recycling rate (including IBA metal) was 46.2% in 2019,** increasing from 45.0% in 2018.

The recycling rate for waste from households increased in all UK countries in 2019. The recycling rate for England was 45.5%, compared with 50.6% in Northern Ireland, 44.9% in Scotland, and 56.4% in Wales.

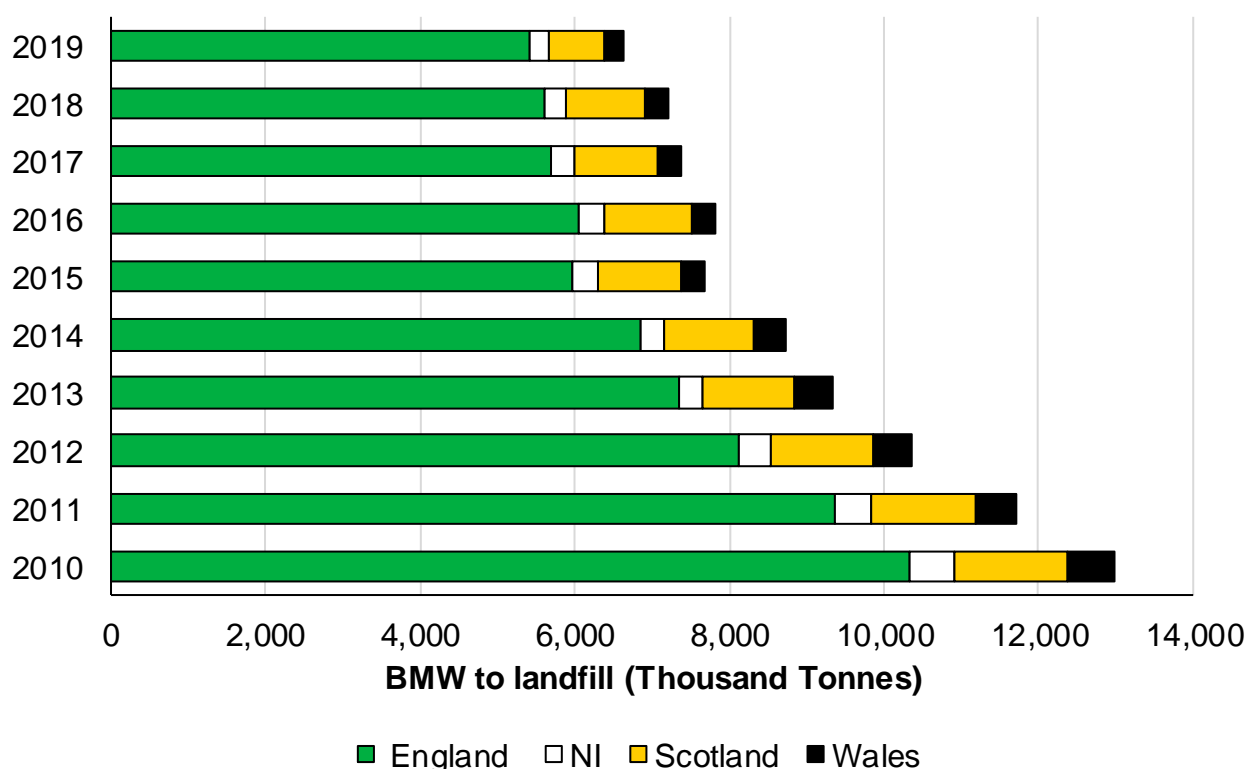
## 2 Biodegradable municipal waste (BMW) sent to landfill

Updated, with new figures for 2019

UK estimates for biodegradable municipal waste (BMW) to landfill have been calculated using a UK wide approach in accordance with relevant legislation. BMW is the fraction of municipal waste that will decompose within a landfill to produce methane, a potent greenhouse gas. Amongst other materials it will include food waste, green waste, cardboard and paper. Within the Landfill (Maximum Landfill Amount) Regulations 2011, the UK and its constituent nations have limits on the maximum amount of BMW by weight in tonnes that may be sent to landfill in 2013 and 2020.

The UK countries have agreed a set of European Waste Catalogue (EWC) classification codes to represent 'municipal waste'. Countries use broadly similar, but non-identical sets of factors, for the proportion of each EWC code that is biodegradable, based upon composition studies of landfill waste. See [methodology section](#) for more details.

**Figure 2. Biodegradable municipal waste (BMW) to landfill UK and country split, 2010-19**



Source: Waste Data Interrogator, Defra Statistics

**UK BMW sent to landfill in 2019 was 6.6 million tonnes.** UK tonnages of BMW to landfill have reduced each year since 2010, except in 2016 when there was a small increase. England is responsible for over three quarters (82%) of UK BMW to landfill, generating 5.4 million tonnes of the 6.6 million tonnes UK total in 2019.

**Table 2. BMW to landfill, UK and country split, 2010-19**

*thousand tonnes*

Year	Measure	UK	England	NI	Scotland	Wales
2010	Municipal Waste to Landfill	25,019	20,298	893	2,508	1,319
	of which BMW to Landfill	12,982	10,339	558	1,484	600
2011	Municipal Waste to Landfill	22,879	18,421	734	2,560	1,164
	of which BMW to Landfill	11,725	9,360	464	1,364	538
2012	Municipal Waste to Landfill	20,260	16,187	622	2,429	1,023
	of which BMW to Landfill	10,372	8,129	394	1,327	522
2013	Municipal Waste to Landfill	18,450	14,780	472	2,244	954
	of which BMW to Landfill	9,325	7,347	299	1,182	497
2014	Municipal Waste to Landfill	17,281	13,714	511	2,194	862
	of which BMW to Landfill	8,726	6,843	322	1,137	424
2015	Municipal Waste to Landfill	15,605	12,215	484	2,264	642
	of which BMW to Landfill	7,693	5,980	307	1,095	311
2016	Municipal Waste to Landfill	16,111	12,381	524	2,306	900
	of which BMW to Landfill	7,807	6,049	331	1,140	286
2017	Municipal Waste to Landfill	14,996	11,784	539	1,995	678
	of which BMW to Landfill	7,386	5,684	302	1,090	311
2018	Municipal Waste to Landfill	14,644	11,688	545	1,837	574
	of which BMW to Landfill	7,201	5,598	296	1,023	285
2019	Municipal Waste to Landfill	13,787	11,492	451	1,338	507
	of which BMW to Landfill	6,626	5,418	260	699	250

Source: Waste Data Interrogator, Defra Statistics

Individual countries may not exactly sum to UK total due to rounding.

**Table 3. Municipal waste to landfill, by main waste types, UK and country split, 2019**

*thousand tonnes*

Waste Type (EWC code)	UK	England	NI	Scotland	Wales
Wastes from mechanical treatment of waste (19 12 12)	8,975	8,127	187	335	326
Mixed municipal waste (20 03 01)	3,205	2,149	193	702	161
Other (all other EWC codes)	1,607	1,216	71	301	20
<b>Total</b>	<b>13,787</b>	<b>11,492</b>	<b>451</b>	<b>1,338</b>	<b>507</b>

Source: Waste Data Interrogator, Defra Statistics

Individual countries may not exactly sum to UK total due to rounding.

**The vast majority of municipal waste received at landfill is classified as “mixed” waste categories, from which it is not possible to routinely identify individual material streams, e.g. food waste, outside of separate specific commissioned research on waste composition. WRAP have recently published the results of a [study](#) to quantify the composition of municipal waste at the point of collection, but this does not directly relate to data on waste received at treatment sites.**

**The two main municipal waste categories at landfill are ‘wastes from mechanical treatment of waste’ (EWC code 19 12 12) and ‘mixed municipal waste’ (EWC code 20 03 01), which together make up around 88% of all municipal waste received at landfill.**

In 2019, 9 million tonnes of municipal waste sent to landfill in the UK was categorised as ‘wastes from mechanical treatment of waste’, and 3.2 million tonnes was categorised as ‘mixed municipal waste’. The proportions of these municipal waste categories at landfill

have nearly reversed since 2010, with ‘wastes from mechanical treatment of waste’ increasing each year (from 38% in 2010 to 65% in 2019) and ‘mixed municipal waste’ decreasing each year (from 54% in 2010 to 23% in 2019). Data on the biodegradable portions of these waste codes can be found in the underlying [dataset](#).

For England in 2019, EWC codes 19 12 12 and 20 03 01 together accounted for 89.4% of municipal waste received at landfill. Of the remaining 10.6%, 7.4% was accounted for by four EWC codes with tonnages between 100 and 390 thousand tonnes (20 02 02, 20 03 07, 20 03 03 and 19 05 03), 2.6% by eight EWC codes with tonnages between 10 and 100 thousand tonnes and the final 0.5% by small tonnages of a further 32 EWC codes.

### 3 Packaging waste

Updated with figures for 2018, 2019 (provisional) and 2020 (provisional).

The Producer Responsibility Obligations (Packaging Waste) Regulations set material specific recycling targets and require businesses obligated under the regulations to ensure the recycling of a proportion of the packaging they generate and place on the market. UK recovery/recycling rates for packaging materials for each of 2018, 2019 and 2020 are calculated based on the amount of packaging reported as being recycled under the regulations in each year and the total amount of packaging materials estimated to be placed on the UK market in each year.

**Table 4.1 Packaging waste and recycling / recovery, split by material, UK 2018**

	Packaging waste arising (thousand tonnes)	Total recovered / recycled (thousand tonnes)	Achieved recovery / recycling rate (%)
Metal	745	486	65.2%
<i>of which: Aluminium</i>	194	75	38.6%
<i>of which: Steel</i>	551	411	74.6%
Paper	4,929	3,669	74.4%
Glass	2,487	1,704	68.5%
Plastic	2,361	1,034	43.8%
Wood	1,291	454	35.2%
Other* materials	23	0	0.0%
<b>Total (for recycling)</b>	<b>11,836</b>	<b>7,347</b>	<b>62.1%</b>
Energy from Waste	z	728	6.2%
<b>Total (for recycling and recovery)</b>	<b>11,836</b>	<b>8,075</b>	<b>68.2%</b>

Source: Defra Statistics

\* ‘Other’ includes materials such as cloth, corks, gel, glue, hessian sacks and wax used as packaging.

z = Not applicable

Percentages calculated using unrounded figures

Arising estimates made at point of manufacture. For further details see the [methodology section](#).

The packaging waste arising data (‘Placed on the Market’) has been revised based on the latest data available from the updated PackFlow Reports ([PackFlow Covid-19 Reports | WRAP](#)). The data from 2018 has been adjusted to take account of these reports, which indicated that the previous predictions for the amount of packaging arising had underestimated the total. This increase in total packaging waste arising has the impact of reducing the recycling rate, despite the increase in tonnages of waste recycled.

**Table 4.2 Packaging waste and recycling / recovery, split by material, UK 2019 (Provisional)**

	Packaging waste arising (thousand tonnes)	Total recovered / recycled (thousand tonnes)	Achieved recovery / recycling rate (%)
Metal	780	515	66.0%
<i>of which: Aluminium</i>	215	117	54.3%
<i>of which: Steel</i>	565	398	70.4%
Paper	5,524	3,828	69.2%
Glass	2,419	1,753	72.5%
Plastic	2,472	1,141	46.2%
Wood	1,382	612	44.3%
Other* materials	23	0	0.0%
<b>Total (for recycling)</b>	<b>12,600</b>	<b>7,848</b>	<b>62.3%</b>
Energy from Waste	z	613	4.9%
<b>Total (for recycling and recovery)</b>	<b>12,600</b>	<b>8,461</b>	<b>67.2%</b>

Source: Defra Statistics

\* 'Other' includes materials such as cloth, corks, gel, glue, hessian sacks and wax used as packaging.

z = Not applicable

Percentages calculated using unrounded figures.

Arisings estimates made at point of manufacture. For further details see the [methodology section](#).

The packaging waste arising ('Placed on the Market') figures for 2019 and 2020 are still subject to review and may be adjusted. The recycling rates for 2019 and 2020 should be regarded as provisional until confirmation of the packaging waste arisings ('Placed on the Market') data.

**Table 4.3 Packaging waste and recycling / recovery, split by material, UK 2020 (Provisional)**

	Packaging waste arising (thousand tonnes)	Total recovered / recycled (thousand tonnes)	Achieved recovery / recycling rate (%)
Metal	782	594	76.0%
<i>of which: Aluminium</i>	220	152	69.0%
<i>of which: Steel</i>	562	442	78.7%
Paper	5,533	3,628	65.6%
Glass	2,430	1,841	75.8%
Plastic	2,480	1,174	47.4%
Wood	1,360	600	44.1%
Other* materials	23	0	0.0%
<b>Total (for recycling)</b>	<b>12,608</b>	<b>7,838</b>	<b>62.2%</b>
Energy from Waste	z	639	5.1%
<b>Total (for recycling and recovery)</b>	<b>12,608</b>	<b>8,477</b>	<b>67.2%</b>

Source: Defra Statistics

\* 'Other' includes materials such as cloth, corks, gel, glue, hessian sacks and wax used as packaging.

z = Not applicable

Percentages calculated using unrounded figures.

Arisings estimates made at point of manufacture. For further details see the [methodology section](#).

The packaging waste arising ('Placed on the Market') figures for 2019 and 2020 are still subject to review and may be adjusted. The recycling rates for 2019 and 2020 should be regarded as provisional until confirmation of the packaging waste arisings ('Placed on the Market') data.



In 2018, 2019 (provisional) and 2020 (provisional), figures indicated that 68.2%, 67.2% and 67.2% of UK packaging waste was either recycled or recovered respectively. Equivalent figures for 2012-2017 can be seen in the accompanying [dataset](#).

Recycling accounted for 7.8 million tonnes of the 12.6 million tonnes of packaging waste arisings in 2020, with a further 0.6 million tonnes recovered by use in 'energy from waste' incineration. Paper and cardboard had the highest waste arisings, at 5.5 million tonnes. The highest recycling rate achieved in 2020 was 76.0% for metal, followed by 75.8% for glass and 65.6% for paper and cardboard.

#### 4 Recovery rate from non-hazardous construction and demolition (C&D) waste

New data for 2017 and 2018. Minor updates to figures for 2015 and 2016

UK estimates of recovery rates from non-hazardous C&D waste have been calculated for 2017 and 2018. Accurately quantifying C&D waste is challenging and whilst the absolute tonnage figures are subject to a relatively high level of uncertainty, there is not a significant impact on the final recovery rate.

**Table 5. Recovery rate from non-hazardous construction and demolition waste, UK and England, 2010-18**

*million tonnes and % rate*

	UK			England		
	Generation	Recovery	Recovery rate	Generation	Recovery	Recovery rate
	M tonnes	M tonnes	%	M tonnes	M tonnes	%
<b>2010</b>	59.2	53.1	89.7%	53.6	49.4	92.2%
<b>2011</b>	60.2	55.0	91.4%	54.9	50.8	92.5%
<b>2012</b>	55.8	50.8	91.1%	50.5	46.4	92.0%
<b>2013</b>	57.1	52.0	91.2%	51.7	47.6	92.0%
<b>2014</b>	61.5	56.3	91.5%	55.9	51.7	92.4%
<b>2015</b>	63.8	58.0	91.0%	57.7	53.3	92.3%
<b>2016</b>	66.2	60.0	90.7%	59.6	55.0	92.1%
<b>2017</b>	68.7	62.9	91.5%	62.2	57.9	93.1%
<b>2018</b>	67.8	62.6	92.3%	61.4	57.5	93.8%

Source: Defra Statistics

In this July 2021 release, minor revisions were made to the UK figures for 2015 and 2016 to reflect updated data from Scotland.

Excludes excavation waste.

Percentages calculated using unrounded figures.

**In 2018, the UK generated 67.8 million tonnes of non-hazardous C&D waste, of which 62.6 million tonnes was recovered. This represents a recovery rate of 92.3%.**

The recovery rate from non-hazardous C&D waste has remained at similar levels from 2010 to 2018.

#### 5 Waste from commercial and industrial (C&I) activities

Updated, with new England figures for 2019 and revisions to UK 2016 figures

Defra has worked closely with industry experts to improve the C&I methodology for England (for details see [Commercial and Industrial waste arisings methodology revisions for England](#)). Nonetheless, C&I waste generation remains extremely difficult to estimate owing to data limitations and data gaps. As a result, C&I estimates for England have a

much higher level of uncertainty than Waste from Households (or other Local Authority Collected Waste) and users should exercise caution in application of the figures and interpreting trends over time.

The methodology relies largely on known tonnages of waste processed at permitted sites and recycling facilities. It makes no attempt to estimate waste that maybe processed at exempt sites that is not captured in the available recycling data.

UK and England estimates for waste generation by the C&I sectors have been calculated as part of the Waste Statistics Regulation<sup>1</sup> returns for 2010, 2012, 2014, 2016 and 2018. The term ‘commercial and industrial’ spans a range of economic activities including manufacturing, industrial processes and service-based enterprises, but excluding sewage sludge.

Estimates presented below are “as received” tonnages and do not include an additional adjustment from wet weight to dry weight for sludges.

**Table 6. Total waste generated by the commercial and industrial sectors, UK and England, 2010-19**

*million tonnes*

	UK			England		
	Commercial	Industrial	Total C&I	Commercial	Industrial	Total C&I
<b>2010</b>	28.7	15.0	<b>43.7</b>	21.6	10.4	<b>32.0</b>
<b>2011</b>	:	:	:	21.4	12.0	<b>33.4</b>
<b>2012</b>	25.0	17.6	<b>42.6</b>	21.0	12.9	<b>33.9</b>
<b>2013</b>	:	:	:	20.8	12.0	<b>32.8</b>
<b>2014</b>	25.4	14.6	<b>40.0</b>	21.3	10.4	<b>31.7</b>
<b>2015</b>	:	:	:	22.5	9.4	<b>31.9</b>
<b>2016</b>	27.5	13.5	<b>41.0</b>	23.6	9.5	<b>33.1</b>
<b>2017</b>	:	:	:	25.8	10.3	<b>36.1</b>
<b>2018</b>	30.8	13.1	<b>43.9</b>	27.1	10.1	<b>37.2</b>
<b>2019</b>	:	:	:	26.6	10.5	<b>37.2</b>

Source: Defra statistics

: = Not available

Minor revisions made to 2016 UK figures (see [Data Revisions](#) section)

**The UK C&I sectors generated 43.9 million tonnes of waste in 2018, of which 37.2 million tonnes (around 85%) was produced in England.** By comparison, the 2016 UK C&I waste arisings figures was 41.0 million tonnes, of which 33.1 million tonnes was generated by England. Over two thirds of C&I waste is generated by the commercial sector, in both the UK and England.

**The latest estimates for England only, indicate that waste generation was around 37.2 million tonnes in 2019 and in 2018.** For 2017, the England estimate (36.1 million tonnes) was a relatively large increase from 33.1 million tonnes in 2016. Around half of this increase is accounted for by some treatment categories where EA have made improvements to capture additional installations from 2017 that were omitted for previous years; therefore, figures for 2017 onwards are not directly comparable with earlier years. Caution should generally be exercised in interpreting apparent year-on-year changes in the C&I data, owing to inherent uncertainties in the underlying data and methodology.

<sup>1</sup> This EU regulation was revoked by the UK Statistics (Amendment etc) (EU Exit) Regulations 2019 and we are no longer required to produce the Waste Statistics Regulation returns

## 6 Total Waste Generation and Final Treatment of All Waste

Updated with figures for 2018. Minor revisions to earlier years

UK and England tonnage estimates for generation and final treatment of all waste were calculated in order to report against the EC Waste Statistics Regulation<sup>2</sup> return for 2018.

There are some differences between the C&I figures presented here, and those shown in the C&I section of this release (Section 5). For the purposes of the Waste Statistics Regulation return (WStatR), for which the total waste figures have previously been compiled, sewage sludge is included in the C&I estimates. The WStatR returns required that figures for sludges are converted from wet to dry weight for reporting, the UK 2018 figure for C&I that is incorporated in Table 7 (42.6 million tonnes) does not differ greatly from that published in Section 5 on an 'as received' basis, but excluding sewage sludge (43.9 million tonnes). Minor additional revisions are detailed in the [methodology section](#).

Total waste generation is split by material and NACE economic activity responsible for generating it. Total waste generation is split by material and NACE economic activity responsible for generating it. Users should be aware that 'total waste' includes all waste produced by the economy and is therefore much broader than frequently analysed subsets such as 'municipal waste' or 'Waste from Households'. Users should also consider the varying natures and impacts of different waste materials included within total waste.

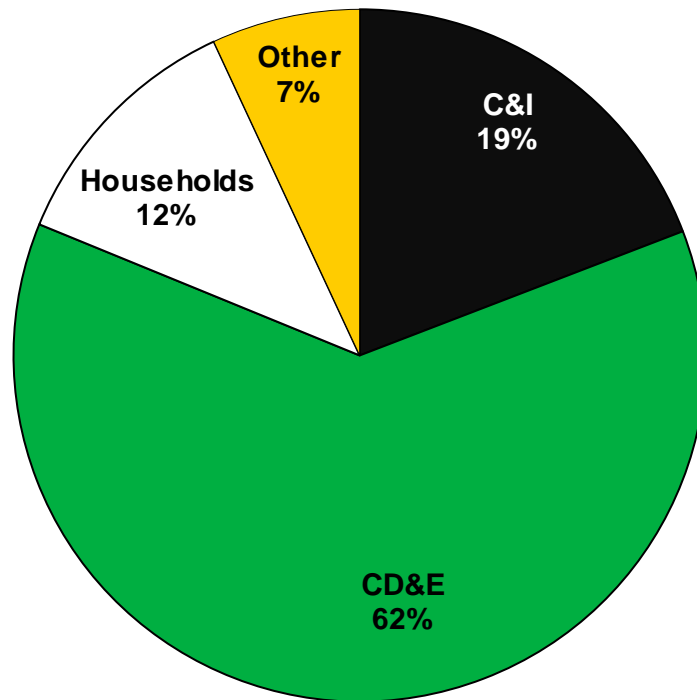
For the 2018 waste generation figures for England, the co-mingled recyclates collected exclusively from households have been separated into the individual materials using proportions derived from composition waste studies carried out by WRAP (Waste and Resources Action Programme). We have made revisions to the 2010, 2012, 2014 and 2016 waste generation data, for England, to separate out the co-mingled waste into individual waste types.

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<sup>2</sup> This EU regulation was revoked by the UK Statistics (Amendment etc) (EU Exit) Regulations 2019 and we are no longer required to produce the Waste Statistics Regulation returns. Figures covering 2018 were provided to Eurostat during the transition period.

## 6.1 Waste Generation

Figure 3. Waste generation split by source, UK, 2018



Source: Defra Statistics

Percentages may not sum to exactly 100% due to rounding

C&I figures presented here differ from those in the C&I section in that they include sewage sludge.

However, as these figures are from the WStatR return, which requires sludges to be converted to dry weight for reporting, the C&I figures do not differ greatly from those presented in the C&I section.

C,D&E figures include excavation waste and dredging.

Household figures are based on the WfH measure.

**Construction, demolition and excavation (CD&E; including dredging) generated around three fifths (62%) of total UK waste in 2018.** Commercial and Industrial (C&I) waste accounted for almost a fifth (19%) of total waste generation and the remaining fifth was split between 'Households' (12%) and 'Other' activities (7%). In England, the share of CD&E was higher at 64% of the total, 'Households' and C& I were similar to the UK, and the 'Other' contributions were slightly lower than the UK at 5%.

*Note: The 'Households' measure quoted here is the WfH measure, with mapping between the WasteDataFlow and EWC-STAT material categories.*

**Table 7. Waste generation split by responsible economic activity, UK and England, 2016-18**

*million tonnes and % change*

		Commercial & industrial	Construction, demolition & excavation (includes dredging)	Households	Other	Total
UK	2016	39.8	136.2	27.3	15.0	218.3
	2018	42.6	137.8	26.4	15.4	222.2
	Change	7.0%	1.2%	-3.3%	2.8%	1.8%
England	2016	32.1	120.3	22.8	9.5	184.6
	2018	36.1	119.4	22.0	9.7	187.3
	Change	12.4%	-0.7%	-3.2%	2.9%	1.4%

Source: Defra Statistics

Includes waste that may go for export, but excludes waste imported from outside the UK.

'Other' consists of waste from mining, agriculture, forestry and fishing.

Percentages calculated from unrounded figures; breakdowns may not exactly sum to totals due to rounding.

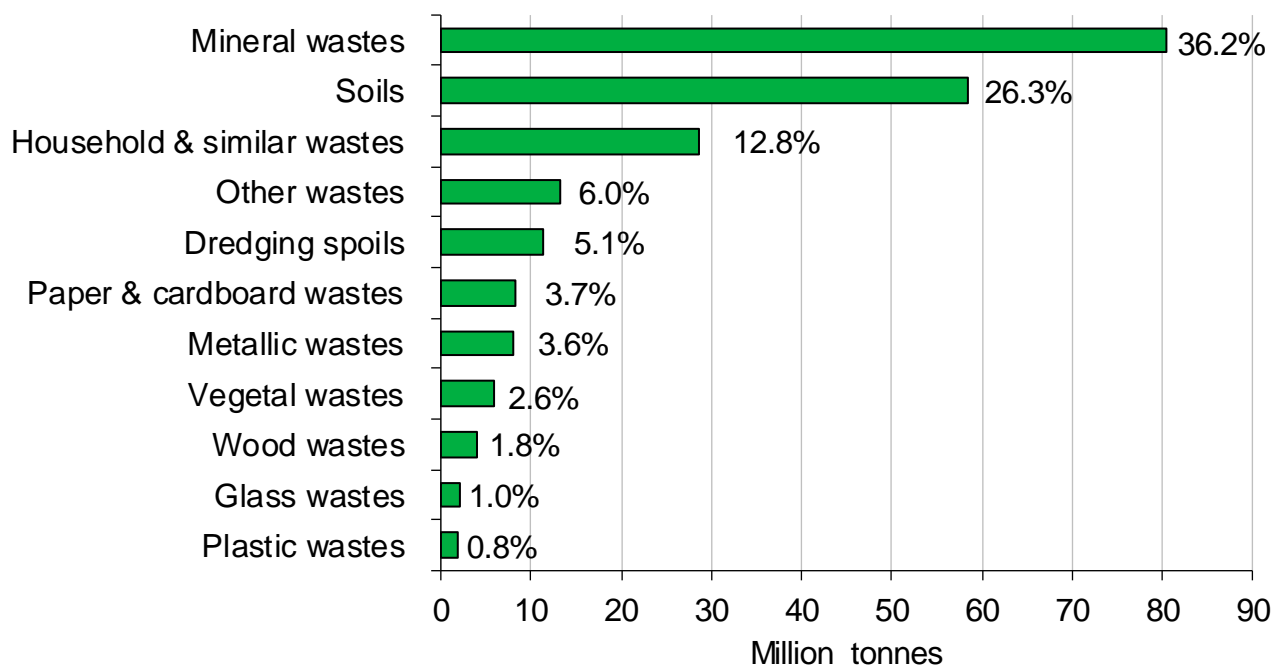
Revisions made to 2016 'Commercial & Industrial' figures for England (see [Data Revisions](#) section).

**The UK generated 222.2 million tonnes of total waste in 2018**, an increase of 1.8% from the 218.3 million tonnes generated in 2016. England generated 187.3 million tonnes of total waste in 2018, an increase of 1.4% from 2016, and 84% of the UK total.

**The largest waste material categories generated in the UK in 2018 were 'Mineral Wastes' (80.4 million tonnes), and 'Soils' (58.5 million tonnes).** Together, these make up almost two thirds (63%) of total UK waste.

*Note: Figure 4 splits all waste generated in the UK by waste materials, which are categorised by European Waste Catalogue (EWC) codes. Care should be taken when interpreting this information as some categories, e.g. 'Household & similar wastes' will include mixtures of waste. As a result, an individual material stream such as 'Plastic wastes' will not represent total tonnages of plastic waste, because there will also be some in mixed waste streams (e.g. black bag waste) that are categorised as 'Household and similar wastes'.*

**Figure 4. Waste generation by waste material, UK, 2018**



Source: Defra Statistics

Includes waste that may go on to be exported, but excludes waste imported from outside the UK.

Any type of waste can be generated by any economic activity. E.g. 'Household & similar wastes' are not solely generated by 'Households'.

Percentages may not sum to exactly 100% due to rounding.

A more detailed material split is available in the accompanying [dataset](#).

## 6.2 Waste Treatment

**Table 8. All waste at final treatment, split by method, UK and England, 2016-18**

*million tonnes and % change*

		Recycling and other recovery	Incineration with Energy recovery (R1)*	Incineration (excl. R1)	Backfilling	Landfill	Land treatment and release into water bodies	Total
UK	<b>2016</b>	103.9	7.3	5.7	16.8	52.3	25.5	211.5
	<b>2018</b>	108.4	8.5	7.3	14.2	50.8	25.7	214.8
	<b>Change</b>	4.3%	15.5%	28.3%	-15.8%	-2.8%	1.1%	1.6%
England	<b>2016</b>	92.4	6.2	5.4	13.3	44.7	17.9	179.9
	<b>2018</b>	96.5	7.4	7.0	11.1	44.1	16.8	182.8
	<b>Change</b>	4.4%	18.5%	28.8%	-16.6%	-1.4%	-6.0%	1.6%

Source: Defra Statistics

\*where formal R1 accreditation has been awarded

Includes waste that may have been imported, but excludes waste exported for treatment outside the UK. Around two thirds of 'Recycling and other recovery' is recovery of C,D&E wastes. The remainder is predominantly recycling (dry recyclates and composting) but also includes some non-recycling activities, e.g. wood used for biomass.

See [methodology section](#) for more details on the Eurostat treatment categories.

Percentages calculated from unrounded figures; Breakdowns may not exactly sum to totals due to rounding.

**‘Recycling and other recovery’ was the most common final waste treatment type in the UK, accounting for 108.4 million tonnes (50.4%) in 2018.** Around two thirds of ‘Recycling and other recovery’ is recovery of mineral wastes and soils from the construction, demolition and excavation sector. The remainder is predominantly recycling (glass, plastic, metal, wood, composting etc.) but also includes some non-recycling activities that are not captured elsewhere, e.g. wood used for biomass. Landfill is the second most used waste treatment in the UK, with 23.6% (50.8 million tonnes) of waste disposed of at landfill in 2018.

Energy recovery at facilities with R1 accreditation increased to 8.5 million tonnes in 2018 from 7.3 million tonnes in 2016. Larger tonnages of waste are now treated at energy recovery facilities (R1 accredited) than at incineration without R1 accreditation, coinciding with policies to divert waste away from landfill.

**Table 9. Material breakdown for each final treatment method, UK, 2018 - proportion of tonnages**

*% waste material, by treatment type*

Waste material	Recycling and other recovery	Incineration with Energy recovery (R1)*	Incineration (excl. R1)	Backfilling	Landfill	Land treatment and release into water bodies
Metallic wastes	15%	0%	0%	0%	0%	0%
Glass wastes	2%	0%	0%	0%	0%	0%
Paper & cardboard wastes	4%	0%	0%	0%	0%	0%
Plastic wastes	1%	0%	0%	0%	0%	0%
Wood wastes	2%	6%	27%	1%	0%	0%
Vegetal wastes	4%	0%	1%	0%	0%	0%
Household & similar wastes	1%	80%	34%	0%	10%	0%
Mineral wastes	55%	0%	0%	6%	6%	56%
Soils	12%	0%	0%	90%	58%	0%
Dredging spoils	0%	0%	0%	1%	0%	44%
Other wastes	5%	13%	37%	3%	26%	0%
<b>All wastes</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: Waste Statistics Regulation return

\*where formal R1 accreditation has been awarded

Includes waste that may have been imported, but excludes waste exported for treatment outside the UK.

‘Recycling and other recovery’ is predominantly recycling (glass, plastic, metal, wood, composting etc.) but also includes some non-recycling activities that are not captured elsewhere, e.g. wood used for biomass.

‘Other wastes’ include residues following physical treatment and incineration of waste, residues from industrial processes and sewage.

**More than half (55%) of waste recorded as ‘recycling and other recovery’ is ‘mineral wastes’, while a further 12% is ‘soils’.** The ‘mineral wastes’ category is typically construction wastes such as bricks, stone and road planings that are converted into usable aggregates. ‘Metallic wastes’ is the second biggest material group at 15%, partially a reflection of their high value. The remaining tonnage going to ‘recycling and other recovery’ consists of a variety of material types that each make a small contribution.

**The majority (80%) of waste treated at energy recovery facilities is 'Household & similar wastes'.** Incineration without energy recovery has a different profile with only 34% of the waste accepted being 'Household & similar' and 37% being classed as 'Other wastes', which includes residues following physical treatment and incineration of waste, residues from industrial processes and sewage.

The vast majority (90%) of 'Backfilling' is 'soils', with 'mineral wastes' being the next biggest contributor at 6%.

**'Soils' make up 58% and 'mineral wastes' 6% of the tonnage received by landfills, demonstrating that it is not just residual waste using this outlet.** The two other main components of landfilled waste are 'household & similar wastes' (10% of the total) and 'other wastes' (26%). The 'other wastes' category includes 'sorting residues' which will typically be mixed wastes following processing to remove recyclates.

A more detailed material split along with 2010, 2012, 2014 and 2016 data and England only figures are available in the accompanying [dataset](#).

*Note: Generation and final treatment are at opposite ends of what can be a complex and multiple staged treatment process. Different methodology is used to estimate generation and final treatment figures. Furthermore, final treatment excludes some treatment processes identified as predominantly intermediate, which nevertheless may effectively be the final treatment for some waste. As a result, there is no direct reconciliation between generation and final treatment of total waste. Users should also be aware that in most cases it is not possible to estimate the final treatment of waste generated by specific economic activities. Users should take care to understand the material and economic activity categories. Further information is available in the [methodology](#) and [Useful Links](#) sections.*



## 7 Waste Infrastructure

Updated with figures for 2018

Defra collates summaries from the environment agencies of all four UK countries on facilities authorised by mandatory permit or license. Capacity is based on the level authorised by permit or license with the exception of some small scale incinerators where the permit did not feature capacity. In these cases, operational capacity is used. Please see the [methodology section](#) for more detail.

**Table 10. Number and capacity of permitted final treatment facilities, UK and England, 2016-18**

Facility type	Measure	UK		England	
		2016	2018	2016	2018
Recovery other than energy recovery (includes backfilling)	Number of facilities	3,506	3,536	1,944	1,857
	Capacity	:	:	:	:
Energy recovery (R1)	Number of facilities	37	40	23	25
	Capacity (thousand tonnes/year)	9,808	11,437	7,202	8,449
Incineration (excl. R1)	Number of facilities	78	91	57	72
	Capacity (thousand tonnes/year)	8,474	12,265	8,193	10,995
Deposit onto or into land (landfill)	Number of facilities (includes closed facilities)	604	629	510	534
	Rest (remaining) capacity (thousand m <sup>3</sup> )	554,751	415,069	464,891	404,569

Source: Defra Statistics

: = Not available

Energy recovery refers to facilities where the main purpose is generation of energy and formal R1 accreditation has been awarded.

Excludes: Recovery facilities operating solely under a waste exemption; facilities permitted only for intermediate treatment (including most anaerobic digesters); facilities that were formally closed throughout 2018 (except landfills).

**From 2016 to 2018, energy recovery facilities with R1 accreditation in the UK increased in number from 37 to 40, with capacity increasing from 9.8 million tonnes to 11.4 million tonnes per year, coinciding with policies aimed at diverting waste away from landfill.** Energy from waste is generally the best management option for waste that cannot be reused or recycled in terms of environmental impact and getting value from the waste as a resource.

## What you need to know about this release

### Contact details

Responsible statisticians: Katherine Merrett and Adele Storr

Email: [WasteStatistics@Defra.gov.uk](mailto:WasteStatistics@Defra.gov.uk)

Media enquiries: 0330 041 6560 (Defra Press Office) or refer to Defra's [media enquiries page](#).

### Official Statistics

This is an Official Statistics publication. These statistics have been produced to the high professional standards set out in the Code of Practice for Official Statistics, which sets out eight principles including meeting user needs, impartiality and objectivity, integrity, sound methods and assured quality, frankness and accessibility. For more information, please see the [Official Statistics Code of Practice](#)

### About these statistics

The purpose of this release is to announce UK waste estimates that are produced in relation to official reporting requirements

### User Statement

Data on waste generation and management is collected to monitor policy effectiveness, particularly the commitments in the [Waste Review](#) and to support policy development, including the [Resource and Waste Strategy](#) published in December 2018. The data are used extensively by local and central government, the waste industry, academia and the public.

### Feedback

We welcome feedback on the data from all users including how and why the data is used. This helps us to understand the value of the statistics to external users. Please see our contact details section of this notice.

### Methodology

#### Waste from Households (WfH)

WfH is the agreed harmonised UK measure used to report household recycling. Waste management and recycling is a devolved matter and different countries have used their own data to adopt the definition.

WfH includes waste from:

- Regular household collection
- Civic amenity sites
- 'Bulky waste'
- 'Other household waste'.

WfH excludes waste from:

- Street cleaning/sweeping
- Gully emptying
- Separately collected healthcare waste
- Soil, Rubble, Plasterboard & Asbestos waste

All UK countries base the WfH measure on output from the WasteDataFlow database, which records Local Authority Collected Waste. Whilst the general approach and principles of the calculation is consistent across UK countries, there may be some differences in the specifics of the calculations as there are some differences in the structure and wording of some of the questions.

Users should be aware that individual UK countries other than England publish their own independent national household recycling estimates other than WfH recycling. Local Authorities in England may also use an alternative measure.

A change was introduced from the February 2018 release to include **metal recovered and recycled after incineration** as recycling, instead of being reported as 'recovery'. The amount this contributes to recycling depends on the amount of the residual waste being incinerated and the metal content of the residual waste.

Inclusion of IBA metal has been facilitated through the new Q100 reporting structure for waste treatment which all local authorities have been using since April 2015. This has provided the opportunity for more complete recording of waste treatment, including outputs from incineration. The majority of local authorities are reporting more fully, but not in all cases. While reporting and associated quality assurance are developing and being refined, the figures need to be regarded as more indicative until it becomes fully established and embedded.

This methodological change for IBA metal has been applied to all UK countries from 2015. England data only includes IBA metal from April 2015, when Q100 came into full use by all local authorities. For Wales, Q100 was introduced in 2012 and IBA metals have been included from 2015 in line with the other UK countries. Northern Ireland did not have any incinerators that burnt local authority collected municipal waste in these years and so their figures are unaffected by the change.

At an overall UK level this change in methodology raised the recycling rate for 2019 by around 0.8 percentage points (equivalent to 211 thousand tonnes).

In the March 2020 release, minor revisions were made to the Scotland 2017 Recycling rate for Waste from Households (WfH), due to routine revision of site returns provided by operators. Wales made minor revisions to WfH recycling figures for 2013-2017, reflecting an amendment to their calculation methodology. These changes for Wales have been made to improve the accuracy of the identification of recycling rejects for use in their calculations and to improve consistency with other current and future reporting requirements.

### **Biodegradable municipal waste (BMW) to landfill**

UK estimates for biodegradable municipal waste (BMW) to landfill have been calculated using a UK wide approach in accordance with relevant legislation. BMW is 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. Tonnage data is collated from mandatory returns made for landfills to the Environment Agencies of each of the four UK countries. Tonnages are split by [European Waste Catalogue](#) (EWC) categorisation codes, as determined by landfill operators. For this reporting obligation, the UK countries have agreed a set of EWC codes to represent 'municipal waste'. Scotland applies a factor to EWC code 19 12 12 on the basis that only a proportion is 'municipal', however other countries do not do this. Scotland also includes one additional EWC code. Factors

on the proportion of waste that is biodegradable are applied to each code. Countries use broadly similar, but non-identical sets of factors. The factors are multiplied by the tonnages and then summed to give final country level estimates for BMW to landfill. New factors were adopted by England in 2014 for the two EWC codes that dominate Municipal Waste, based upon a [commissioned study of landfill waste composition](#). All England figures published here have been produced using these new factors. Wales adopted these new factors from 2013 and have now backdated their estimates for 2010-2012.

In the March 2020 release, minor revisions were made to the Scotland 2017 Biodegradable Municipal Waste to Landfill figures, due to routine revision of site returns provided by operators. Scotland also made minor amendments to one of the waste codes (19 12 12) for their 2011-2017 Municipal Waste to Landfill figures, to correct an error in the apportionment between municipal and non-municipal waste.

## **Packaging waste**

UK estimates for recovery/recycling of packaging waste are made at a UK level. Estimates of packaging waste arisings ('placed on the market') have been updated based on research done in 2018 and 2020. Placed on the market tonnages for the reporting of recovery/recycling rates for 2018 and 2019 are based on the research undertaken in 2018 and the 2020 rates based on the work undertaken in 2020. The arisings figures for all years exclude exports, but include filled and unfilled imports. Because these estimates are recorded at point of manufacture, materials are all separately identifiable and therefore may appear large in comparison to material type estimates based on collected waste (such as those in the Waste Statistics Regulation return), where a substantial proportion of packaging waste will be captured under mixed waste categories.

Estimates of tonnages recycled in each year are based on Packaging Recovery Notes (PRNs) and Packaging Export Recovery Notes (PERNs) reported to the Environment Agency and held in the National Packaging Waste Database (NPWD). Obligated producers or Compliance schemes on their behalf acquire PRNs and PERNs from accredited reproducers and exporters. All packaging producers that have a turnover of at least £2m and handle at least 50 tonnes of packaging per year are required to obtain sufficient PRNs/PERNs to evidence that they meet their individual obligations. The recycling / recovery targets on producers are set by Government and prior to the UK leaving the European Union were set to ensure that the aggregated obligation for all producers was sufficient to ensure the UK met the Packaging and Packaging Waste Directive targets.

The tonnage recorded against 'Total (for recovery)' is incinerated in facilities that have either been granted formal R1 accreditation (an EC standard on efficiency factors) by the relevant Environment Agency, or meet the Waste Directive description of 'Energy from Waste': "the use of combustible packaging waste as a means to generate energy through direct incineration with or without other waste but with recovery of the heat".

## **Recovery rate from non-hazardous construction and demolition (C&D) waste**

Accurately quantifying C&D waste is challenging and whilst the absolute tonnage figures are subject to a relatively high level of uncertainty, sensitivity analysis suggests there is not a significant impact on the final recovery rate. Whilst efforts were made to synchronise approaches across UK countries, methodologies are not identical. The England methodology was originally devised in conjunction with industry. Estimates are dependent on several key assumptions relating to the role of permitted sites, simple registrations and the volume of aggregate production. Within the UK, some C&D waste is transferred across borders for treatment, primarily into England. This may slightly inflate the England recovery rate and deflate rates for Devolved Administrations.

In the February 2019 release, revisions were made to the full time series for the recovery rate from non-hazardous C&D waste. This is due to updates made to the underlying Mineral Products Association data, following revisions to the ONS construction industry growth index on which their estimates are based. The revisions resulted in increases of 10-20% in absolute tonnages for all years, in comparison to the previously published figures. However, as the scale of change was similar for both generation and recovery, this had little impact on the recovery rate, which remains around 90% throughout the time-series.

In this July 2021 release, minor revisions were made to the C&D figures for the UK for 2015 - 2016, due to revised figures from Scotland. The revised data for Scotland takes account of routine revisions of site returns provided by operators and the methodology to estimate C&D metal wastes generated has also been refined.

## **Waste from commercial and industrial (C&I) activities**

UK estimates for waste generation by the C&I sectors have been calculated as part of the Waste Statistics Regulation<sup>3</sup> returns for 2010, 2012, 2014, 2016 and 2018. Data sources and detailed approaches may differ slightly between UK countries, but overarching principles will be consistent.

For the purpose of this statistics release, C&I is defined as a specific collection of economic activities described by NACE (“statistical classification of economic activities in the European Community”). Those considered to be C&I here are: C, D, E36, 37& 39 (excluding sewage sludge) and G-U (excluding G46.7.7). (For details see the [Europa List of NACE Codes](#)).

While considerable effort has been spent reviewing the methodology for England, this remains a very challenging area. Data revisions published in December 2016 identified outstanding issues with the original ‘Reconcile’ methodology. Defra took this opportunity to develop a further modified version alongside industry experts, which was felt to improve the transparency of the methodology and better reflect current waste management processes. Previously published estimates for 2010 and 2012-2014 for England have been substantially revised and England estimates for 2011 and 2015-2017 have been produced using the same methodology. The latest methodology has been developed with considerable input from industry experts and sense-checked against alternative data sources. As the historical data has been revised using the same methodology, some conclusions can be drawn from changes between years; however

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<sup>3</sup> This EU regulation was revoked by the UK Statistics (Amendment etc) (EU Exit) Regulations 2019 and we are no longer required to produce the Waste Statistics Regulation returns. Figures covering 2018 were provided to Eurostat during the transition period.

caution should still be exercised. Full details of the current methodology are available in the [Commercial and Industrial waste arisings methodology revisions for England report](#).

In the March 2020 release, the 2017 Commercial & Industrial (C&I) waste arisings estimate for England has been revised to correct an error in Defra calculations to estimate the proportion of incinerated waste that was attributable to C&I. This correction has resulted in a decrease in the England 2017 C&I estimate of around 1.8 million tonnes (5%).

In this July 2021 release, the 2016 Commercial & Industrial (C&I) waste arisings estimate for the UK has been revised to correct an error whereby the wet-to-dry weight factors had not been applied correctly to the NI data. This correction has resulted in a decrease in the UK 2016 C&I estimate of around 120 thousand tonnes.

*Note: The historical waste generation and waste treatment figures produced in line with WStatR reporting requirements, and which use these C&I estimates, have been revised in line with the new C&I methodology.*

## **Waste Statistics Regulation (WStatR)**

### **Total waste generation, final treatment of total waste and waste infrastructure**

In the February 2019 release, some double-counting of end-of-life vehicles was corrected in historical figures for Scotland and Wales. In the March 2019 update, revisions were made to the 2010 mining waste figures for all UK countries, in line with previous corrections to the slate waste factor. Additional minor revisions were made to data for 2012 and 2014, to correct some double-counting in the previously reported data for Wales.

In this July 2021 release, various revisions were made to the historical WStatR data, as a result of minor issues identified while compiling the 2018 data:

- Revisions were made to the 2010, 2012, 2014 and 2016 mining waste figures for all UK countries to reflect updated data. As an example, this reduced the UK mining figures in 2016 by 2.3 million tonnes.
- Revisions were made to the 2016 waste generation and treatment data for NI to correct an error whereby the wet-to-dry weight factors had not been applied correctly
- For the 2018 waste generation figures for England, the co-mingled recyclates (recorded as 'Mixed and undifferentiated') collected exclusively from households have been separated into the individual materials using proportions derived from composition waste studies carried out by WRAP (Waste and Resources Action Programme). We have made revisions to the 2010, 2012, 2014 and 2016 waste generation data, for England, to separate out the co-mingled waste into individual waste types.

UK estimates for generation and final treatment of total waste and waste infrastructure have been calculated in accordance with the EC Waste Statistics Regulation<sup>4</sup>. The final datasets are built up from a large number of estimation processes and draw upon data from WasteDataFlow, Environment Agency (EA) permitted site returns and many other

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<sup>4</sup> This EU regulation was revoked by the UK Statistics (Amendment etc) (EU Exit) Regulations 2019 and we are no longer required to produce the Waste Statistics Regulation returns. Figures covering 2018 were provided to Eurostat during the transition period.

sources. Whilst efforts are made to synchronise approaches across UK countries, methodological differences do exist for construction, demolition & excavation (CD&E) and C&I waste. All sludges and dredging spoils have been reported dry weight (requiring conversion in some cases). The estimates are primarily designed for reporting at a UK level rather than comparison between UK countries.

The CD&E figures include excavation waste and dredging spoils that are out of scope for the recovery rate shown in Section 3 of this release. 'Household' figures are based on the same WfH measure shown in Section 1, with slight adjustments made in order to map to the EWC-STAT material categories. Where specific materials (such as glass and plastic) are reported, they represent separately identifiable materials. Residual waste categories will also include some of these materials in a less usable form. Estimates for tonnages received by landfill here are based on EA permitted site returns and differ from estimates published in HMRC Landfill Tax Bulletins which are sourced from landfill tax receipts.

Treatment categories<sup>5</sup> are:

**Recovery** 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.'

**Recycling** is a subset of recovery and means '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** refers to facilities where the main purpose is generation of energy, and formal R1 accreditation has been awarded. Only a subset of these are dedicated to the processing of 'municipal waste'. Facilities without formal R1 accreditation are reported as 'Incineration' rather than 'Energy Recovery' even if they produce some energy.

**Backfilling** means '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** means 'any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy' (e.g. landfill, incineration).

Waste generation and treatment are estimated by separate processes and use multiple different data sources based largely administrative data sources. Elements of the calculations will use assumptions where there are data gaps so the figures for generation and treatment will not exactly correlate.

Both generation and final treatment of waste can also be split into hazardous and non-hazardous wastes. The full datasets for 2010-2018, for England and UK, can be found in the accompanying [dataset](#).

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<sup>5</sup> Further detail on Treatment categories can be found in the [Manual on Waste Statistics](#) which was used in the production of the Waste Statistics Regulation returns.

Information on **infrastructure** is based on mandatory reporting of permitted and licensed sites for waste treatment which is collated by the environment agencies in each of the countries in the UK. Categories are defined according to EC guidance. The 'Energy Recovery' category only includes facilities where the primary function is generating energy (e.g. cement kilns) and Municipal Waste Incinerators that have applied for and been granted formal R1 accreditation (an EC standard on efficiency factors) by the relevant Environment Agency. Small scale 'LAPPC' (Local Authority Pollution Prevention and Control) incinerators in England have not been included as sufficiently detailed data is not available.

The data excludes facilities that were formally *closed* throughout 2018 (except landfills) but may include facilities which despite being permitted were *non-operational* in 2018. Facilities permitted only for treatment operations that are identified as intermediate (which includes most anaerobic digesters) are excluded.

Recovery operations covered by simple exemptions or simple registrations are not included. These operations are classed as low risk or low volume and operators do not have to report activity to Environment Agencies. The permitted capacity of Energy Recovery and Incineration facilities includes municipal and C&I waste, and will be higher than the actual volume of waste treated (shown in Section 6 of this release).

## **Revisions Policy**

Defra will provide information about any revisions made to published information in this statistics release and the associated datasets. Revisions could occur for various reasons, including when data from third parties is unavailable or provisional at the time of publishing or if there are subsequent methodological improvements or refinements.

## **Useful links**

[Scottish Government statistics](#)

[Welsh Government statistics](#)

[Northern Ireland Department of Agriculture, Environment and Rural Affairs statistics](#)

[Environment Agency](#)

[Waste Data Interrogator](#)

[WasteDataFlow portal](#)

[Estimates of Commercial and Industrial Waste Generation in England \('Reconcile' project\)](#)

[2018 England C&I Methodology revisions paper](#)

[Analysis of biodegradability of residual waste project](#)

[2020 Wrap study quantifying composition of municipal waste at point of collection](#)

[Manual on Waste Statistics](#)



[EWC-STAT \(used for Waste Statistics Regulation waste types\)](#)

[List of NACE codes \(used for Waste Statistics Regulation economic activities\)](#)

[List of Waste \(European Waste Catalogue codes\)](#)

[National Packaging Waste Database](#)

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