



15 December 2015

UK Statistics on Waste

The purpose of this release is to announce UK estimates which have been calculated to comply with the EC Waste Framework Directive, EC Waste Statistics Regulation, EC Landfill Directive and EC Packaging and Packaging Waste Directive. This edition updates the 'Waste from households', 'BMW to landfill' and 'Packaging waste' sections. All statistics in this release are the most recent available, with reference periods ranging from 2010 up to 2014.

Key points from updated sections

- The UK recycling rate of 'waste from households' reached 44.9 per cent in 2014, rising from 44.1 per cent in 2013 and compares to 40.4 per cent in 2010. There is an EU target for the UK to recycle at least 50 per cent of household waste by 2020.
- UK Biodegradable Municipal Waste (BMW) sent to landfill has continued to reduce and in 2013 was 9.2 million tonnes. This represents 26 per cent of the 1995 baseline value, which comfortably met the 2013 EU target (no greater than 50 per cent of the 1995 baseline). The UK also comfortably met the 2010 target. There is a further EU target to restrict BMW landfilled to 35 per cent of the 1995 baseline by 2020.
- In 2013, 72.7 per cent of UK packaging waste was either recycled or recovered compared to 69.1 per cent in 2012. The 2013 EU target was for the UK to recycle or recover at least 60 per cent of packaging waste.

Key points from remaining sections

- The recovery rate from non-hazardous construction and demolition waste in the UK in 2012 was 86.5 per cent. There is an EU target for the UK to recover at least 70 per cent of this type of waste by 2020.
- The UK generated 200.0 million tonnes of total waste in 2012. Half of this (50 per cent) was generated by Construction. Commercial & Industrial activities generated almost a quarter (24 per cent), with households responsible for a further 14 per cent.

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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.

More information on the Official Statistics Code of Practice can be found at <http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html>.

- Almost half (50.0 per cent) of the 186.2 million tonnes of total waste that entered final treatment in the UK in 2012 was recovered. The proportion that went to landfill was 26.1 per cent.

Data revisions: Minor revisions have been made to the 'waste from households' figures for England for 2010-2012 and Wales for 2012 to synchronise calculation methods with other publications. There have also been revisions to the 2010-12 UK and Welsh figures for biodegradable municipal waste to landfill as Wales have updated biodegradability factors and backdated the series.

1 Waste from households

'Waste from Households' is the agreed harmonised UK measure used to report household recycling to comply with the Waste Framework Directive (2008/98/EC). Under this Directive the UK and other EC Member States must meet a target to recycle 50 per cent of 'household waste' by 2020. The UK currently defines 'household waste' using the 'waste from households' measure (for more information see Glossary).

Table 1.1: Waste from Households, UK and country split, 2010-14

Year	Measure	UK	England	NI	Scotland	Wales
2010	Arisings ('000 tonnes)	26,954	22,131	829	2,649	1,344
	Recycled ('000 tonnes)	10,879	9,112	315	861	591
	Recycling rate	40.4%	41.2%	38.0%	32.5%	44.0%
2011	Arisings ('000 tonnes)	26,793	22,170	810	2,484	1,329
	Recycled ('000 tonnes)	11,496	9,596	327	922	651
	Recycling rate	42.9%	43.3%	40.4%	37.1%	49.0%
2012	Arisings ('000 tonnes)	26,428	21,956	783	2,383	1,306
	Recycled ('000 tonnes)	11,603	9,684	326	912	681
	Recycling rate	43.9%	44.1%	41.7%	38.3%	52.1%
2013	Arisings ('000 tonnes)	25,929	21,564	781	2,311	1,274
	Recycled ('000 tonnes)	11,445	9,523	335	916	671
	Recycling rate	44.1%	44.2%	42.9%	39.6%	52.6%
2014	Arisings ('000 tonnes)	26,797	22,355	808	2,349	1,285
	Recycled ('000 tonnes)	12,044	10,025	352	962	705
	Recycling rate	44.9%	44.8%	43.6%	41.0%	54.8%

Recycling rate = Recycled ('000 tonnes) as a percentage of Arisings ('000 tonnes)

This update includes minor revisions to England figures 2010-12 and Wales figures 2012

Source: Waste Data Flow

Figure 1.1: Waste from Households arisings, UK and country split, 2010-14

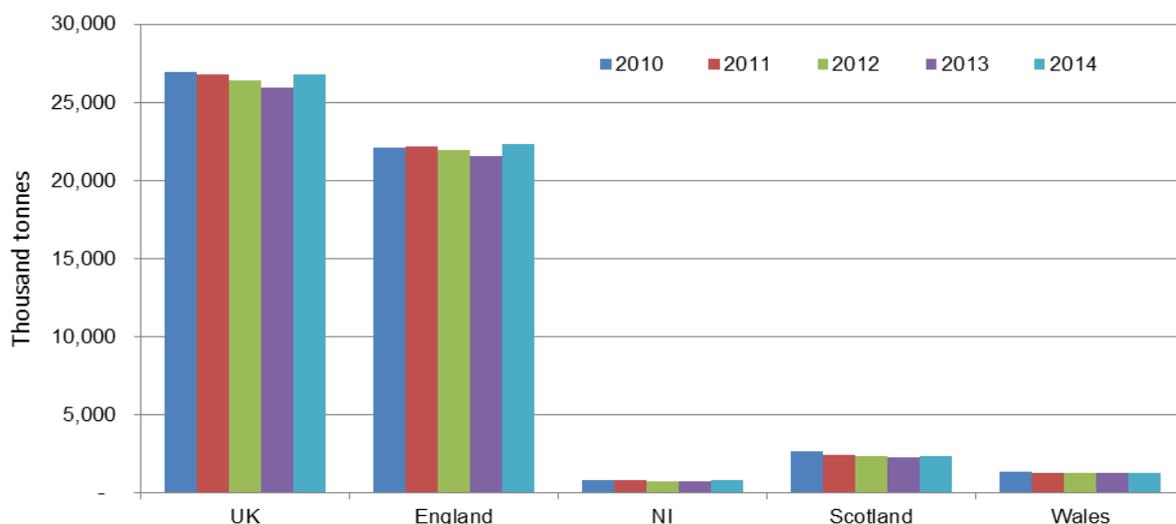


Figure 1.2: Recycling rate of Waste from Households, UK and country split, 2010-14



- The UK achieved a recycling rate of 44.9 per cent in 2014 compared to 40.4 per cent in 2010. Table 1.1 and Figure 1.2 show that the recycling rate increased in all UK countries and in every year from 2010 to 2014. Wales had the highest recycling rate of the UK countries in each of the five years 2010-2014, achieving 54.8 per cent in 2014.
- There is an EU target for the UK to recycle at least 50 per cent of household waste by 2020.
- Table 1.1 and figure 1.1 show that England is responsible for the vast proportion of UK Waste from Households, generating 22.4 million tonnes of the UK total 26.8 million tonnes of 'Waste from Households' in 2014. UK Waste from Households generation increased by 3.3% in 2014 compared to 2013, following year on year falls 2010-13.

2 Biodegradable municipal waste (BMW) sent to landfill

The Landfill Directive (1999/31/EC) aims to prevent or reduce as far as possible negative effects of landfilling waste, in particular on surface water, groundwater, soil, air, and on human health by introducing stringent technical requirements for waste and landfills. Biodegradable waste decomposes in landfill to produce methane, a potent greenhouse gas. Within the Landfill Directive the UK has three targets to meet, measured as a percentage of the tonnage of BMW generated in 1995 ('the 1995 baseline'). These require the tonnage of BMW to landfill to be:

- No greater than 75% of the 1995 baseline by 2010
- No greater than 50% of the 1995 baseline by 2013
- No greater than 35% of the 1995 baseline by 2020

Table 2.1: Municipal Waste and BMW to Landfill, UK and country split, 1995, 2010-13

thousand tonnes

Year	Measure	UK	England	NI	Scotland	Wales
1995	Municipal Waste to Landfill					
	<i>of which</i> BMW to Landfill	35,688	29,030	1,225	3,595	1,837
2010	Municipal Waste to Landfill	24,807	20,298	893	2,296	1,319
	<i>of which</i> BMW to Landfill	12,904	10,339	558	1,406	600
2011	Municipal Waste to Landfill	22,432	18,421	734	2,113	1,164
	<i>of which</i> BMW to Landfill	11,644	9,360	464	1,282	538
2012	Municipal Waste to Landfill	19,733	16,187	622	1,902	1,023
	<i>of which</i> BMW to Landfill	10,215	8,129	394	1,170	522
2013	Municipal Waste to Landfill	17,990	14,780	472	1,784	954
	<i>of which</i> BMW to Landfill	9,219	7,347	299	1,076	497

The 1995 target baseline was modelled and agreed in 2010

BMW = Biodegradable municipal waste

Wales introduced new biodegradability factors in 2013 and have backdated 2010-12 figures

Source: Waste Data Interrogator, Defra Statistics

Figure 2.1: BMW to Landfill, UK and country split, 2010-13

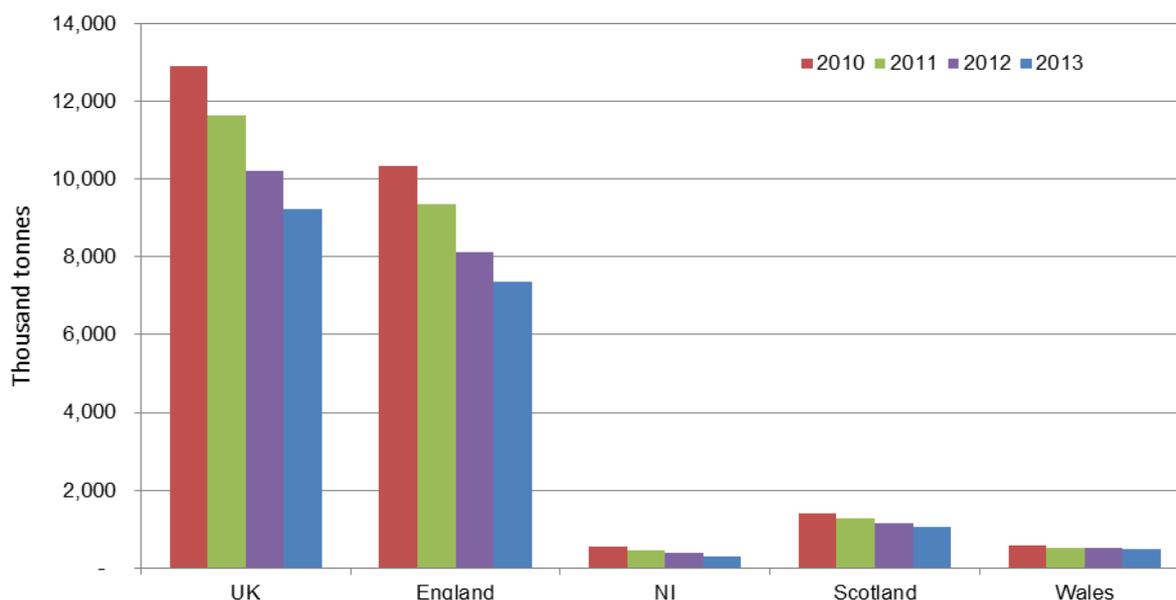


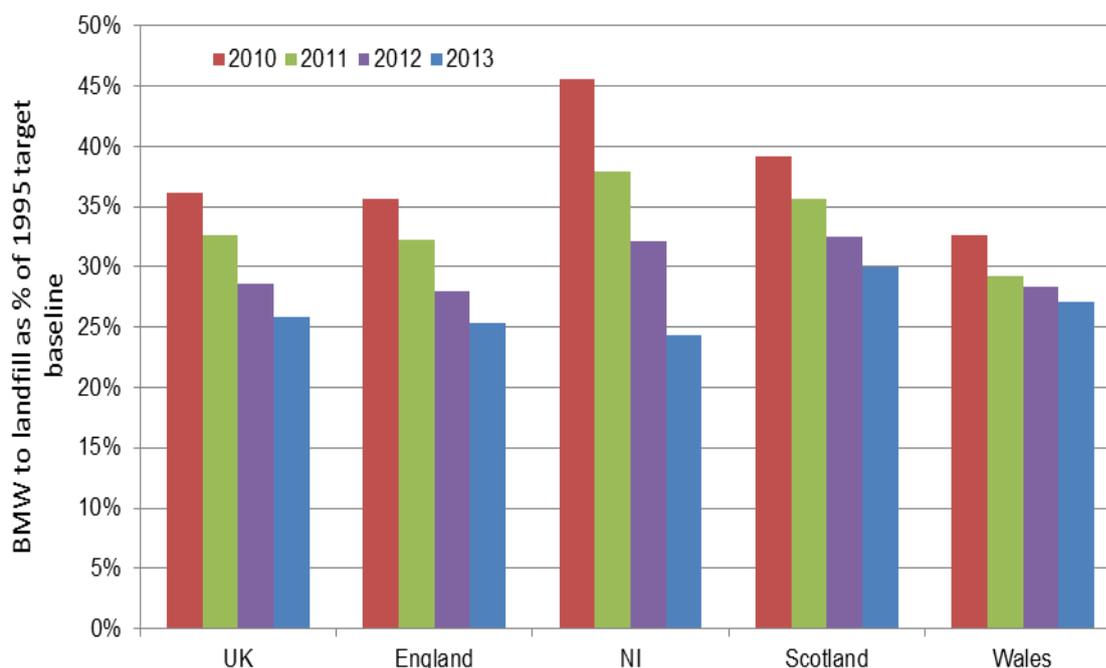
Table 2.2: BMW to Landfill as % of 1995 target baseline, UK and country split, 2010-13

Year	UK	England	NI	Scotland	Wales
2010	36%	36%	46%	39%	33%
2011	33%	32%	38%	36%	29%
2012	29%	28%	32%	33%	28%
2013	26%	25%	24%	30%	27%

BMW = Biodegradable Municipal Waste

Source: Defra Statistics

Figure 2.2: BMW to Landfill as a percentage of 1995 baseline, UK and country split, 2010-13



- Table 2.2 and figure 2.2 show that UK BMW sent to landfill in 2013 was 9.2 million tonnes. This represents 26 per cent of the 1995 baseline value, which comfortably met the 2013 EU target (no greater than 50 per cent of the 1995 baseline). The UK also comfortably met the 2010 target. There is a further EU target to restrict BMW landfilled to 35 per cent of the 1995 baseline by 2020.
- Table 2.1 and figure 2.1 show that all UK countries have reduced BMW to Landfill in each year between 2010 and 2013 and levels have fallen considerably since 1995.
- Table 2.1 and figure 2.1 show that England is responsible for the vast proportion of UK BMW to Landfill, generating 7.3 million tonnes of the UK total 9.2 million tonnes BMW to Landfill in 2013.

3 Recovery rate from non-hazardous construction & demolition waste

UK estimates of recovery rates from non-hazardous construction & demolition (C&D) waste have been calculated for reporting against the EC Waste Framework Directive. 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. Under this Directive there is a target for the UK to recover at least 70 per cent of non-hazardous C&D waste by 2020, which it is currently meeting.

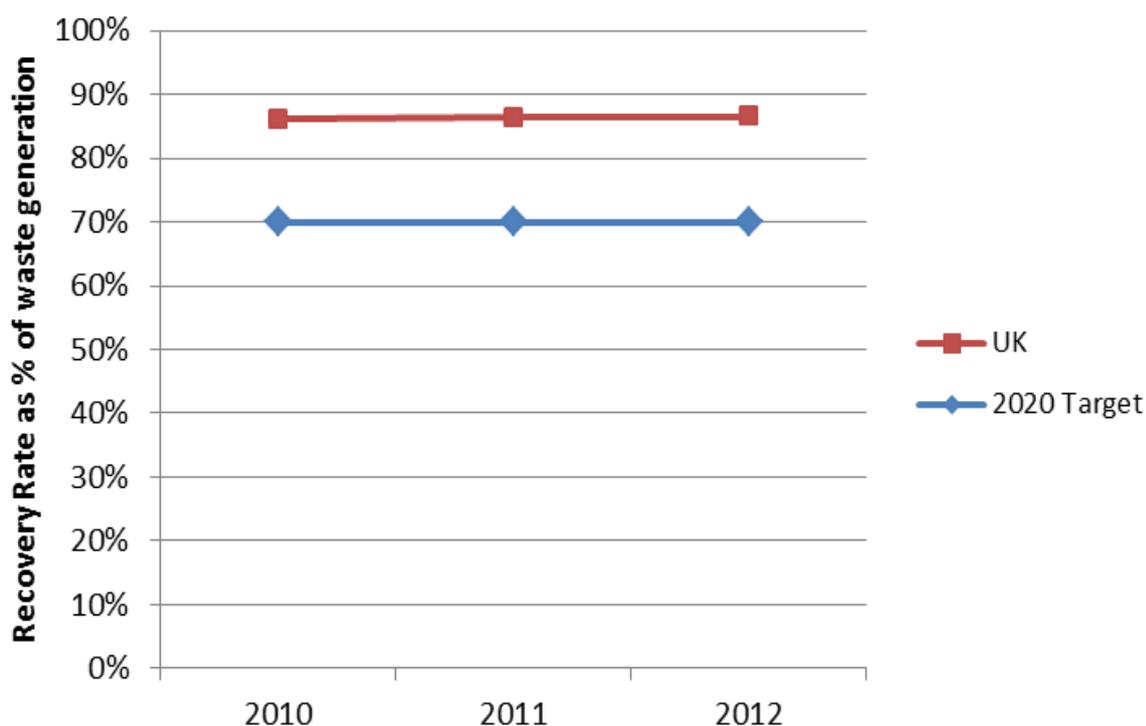
Table 3.1: Recovery Rate from Non-Hazardous Construction and Demolition Waste, UK and England, 2010-12

	UK			England		
	Generation	Recovery	Recovery rate	Generation	Recovery	Recovery rate
	000 tonnes	000 tonnes	%	000 tonnes	000 tonnes	%
2010	45,419	39,129	86.2%	39,832	35,480	89.1%
2011	47,067	40,622	86.3%	41,152	36,754	89.3%
2012	44,786	38,759	86.5%	38,938	34,714	89.2%

Excludes excavation waste

Source: Defra statistics

Figure 3.1: Recovery Rate from Non-Hazardous Construction and Demolition Waste, UK, 2010-12



- Table 3.1 shows that in 2012, the UK generated 44.8 million tonnes of non-hazardous C&D waste, of which 38.8 million tonnes was recovered. This represents a recovery rate of 86.5 per cent, which is above the target of 70 per cent which the UK must meet in 2020.

4 Waste from commercial and industrial activities

UK and England estimates for waste generation by the commercial and industrial (C&I) sector have been calculated as part of the Waste Statistics Regulation return 2012. The term 'commercial and industrial' spans a range of economic activities (based on the European NACE classification) including manufacturing, industrial processes and service based enterprises. The England estimates here are derived from the 'Reconcile Project' and represent a new methodology for this area and includes estimates for England only back to 2009.

Table 4.1: Total waste generation from the commercial and industrial sector, UK and England 2012

Source of estimate	<i>thousand tonnes</i>	
	UK	England
Waste Statistics Regulation return	47,567	38,976
Reconcile Project		43,839

Source: Waste Statistics Regulation return 2012, Reconcile Project
The Waste Statistics Regulation figures for UK and England were subject to minor revisions on 25 March 2015

- Table 4.1 shows that the Waste Statistics Return 2012 estimated waste generation from commercial and industrial economic activities to be 47.6 million tonnes in 2012, of which 39.0 million tonnes was from England.
- The estimated waste generation from commercial and industrial economic activities from the Reconcile Project was 43.8 million tonnes for England in 2012. The scope of the project was England only, so there is no equivalent at UK level. The Reconcile Project was commissioned by Defra to provide a new methodology for estimating commercial & industrial waste in England. The report was published in August 2014 and can be seen [here](#).
- A few adjustments to the Reconcile Project estimates were necessary in order to comply with the Waste Statistics Regulation reporting requirements, which explain the difference between the two estimates for England. The main difference was that sludges and dredging spoils, reported as measured weight in the Reconcile Project, are factored to a dry weight estimate in the Waste Statistics Regulation return. In addition, alternative sources are used for sewage and End of Life Vehicles in order to provide consistency across the UK.

5 Total Waste Generation and Final Treatment of Total Waste

UK and England tonnage estimates for generation and final treatment of total waste have been calculated in order to report against the EC Waste Statistics Regulation return 2012. 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.

In line with the requirements, total waste generation is split by material and generating NACE economic activity. It should be noted that the Construction figures shown in this section include excavation waste and dredging spoils that are out of scope for the recovery rate shown in Section 3 above. Household figures in this section are based on the same 'Waste from Households' measure shown in Section 1, but include some additional categories such as End of Life Vehicles in order to meet the reporting requirements of the EC Waste Statistics Regulation.

Final treatment of total waste is split by material and six treatment methods.

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

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.

Equivalent figures for 2010 are available in the dataset that accompanies this statistical notice.

Table 5.1: Waste generation split by NACE economic activity, UK and England, 2012

thousand tonnes

	C&I	Construction	Households	Other	Total
UK	47,567	100,230	27,506	24,716	200,020
<i>of which hazardous</i>	3,173	1,057	1,306	395	5,931
England	38,976	85,240	22,744	16,291	163,252
<i>of which hazardous</i>	2,546	881	1,080	202	4,708

Source: Waste Statistics Regulation return

NACE = Nomenclature of Economic Activities

C&I = Commercial & Industrial

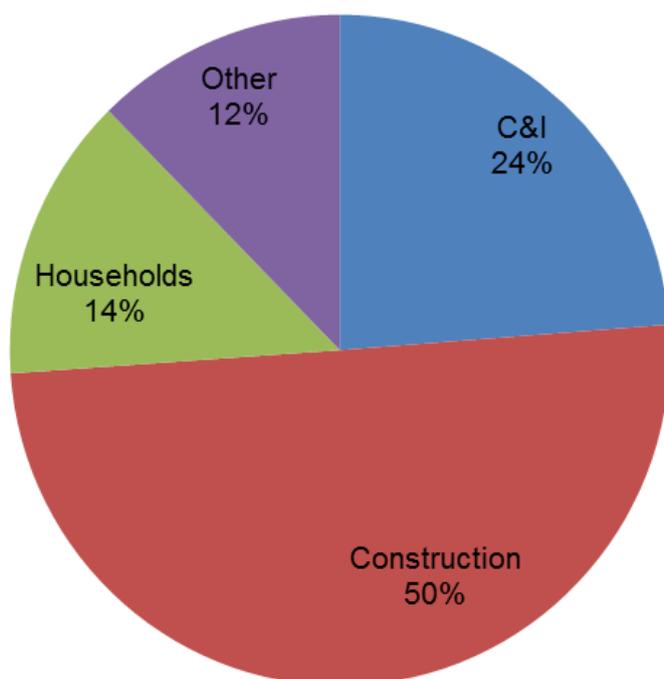
Economic activity 'Construction' includes dredging spoils

Economic activity 'Other' consists of 'Agriculture, forestry and fishing' and 'Mining and quarrying'

Excludes secondary waste

Includes waste which may go on to be exported

Figure 5.1: Waste generation split by NACE economic activity, UK 2012



Source: Waste Statistics Regulation return

Table 5.2: Waste generation split by waste material, UK and England, 2012

thousand tonnes

Waste material	UK		England	
	Tonnage	Proportion of total	Tonnage	Proportion of total
Metallic wastes	6,060	3.0%	4,962	3.0%
Glass wastes	2,250	1.1%	1,915	1.2%
Paper & cardboard wastes	3,659	1.8%	2,615	1.6%
Plastic wastes	3,199	1.6%	2,805	1.7%
Wood wastes	2,306	1.2%	1,805	1.1%
Vegetal wastes	6,602	3.3%	5,411	3.3%
Household & similar wastes	26,446	13.2%	21,402	13.1%
Mineral wastes	69,205	34.6%	55,904	34.2%
Soils	41,625	20.8%	36,008	22.1%
Dredging spoils	14,721	7.4%	10,941	6.7%
Other wastes	23,948	12.0%	19,485	11.9%
All wastes	200,020	100.0%	163,252	100.0%

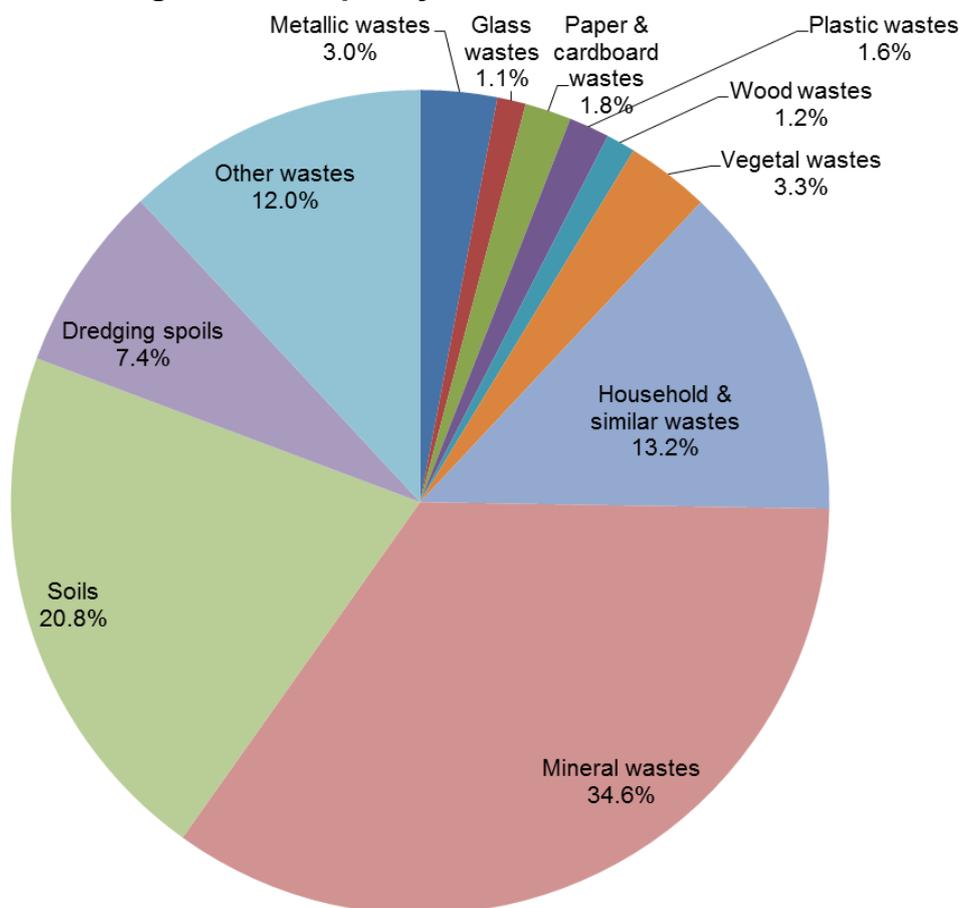
Source: Waste Statistics Regulation return

Excludes secondary waste

Includes waste which may go on to be exported

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

Figure 5.2: Waste generation split by waste material, UK 2012



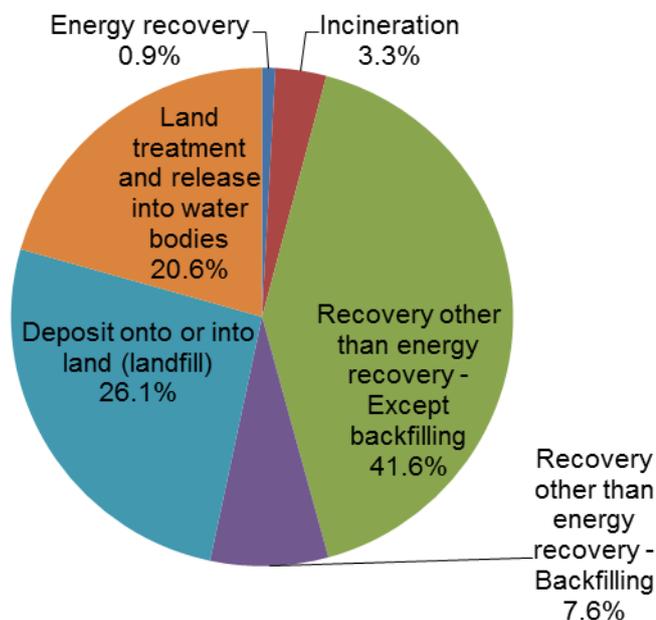
- Table 5.1 shows that the UK generated 200.0 million tonnes of total waste in 2012. Of this, 5.9 million tonnes was hazardous waste.
- Figure 5.1 shows that Construction generated half (50 per cent) of total UK waste in 2012. Commercial & Industrial activities generated almost a quarter (24 per cent), with households responsible for 14 per cent of total waste.
- Table 5.2 and figure 5.2 show that mineral wastes (mostly from Construction and Mining & Quarrying), Soils and Dredging spoils constituted 62.8 per cent of total waste generated in the UK in 2012.
- The composition of total waste in England in 2012 was similar to that of the UK as a whole.

Table 5.3: Waste entering final treatment, split by final treatment method, UK and England, 2012

	<i>thousand tonnes</i>						
	Energy recovery	Incineration	Recovery other than energy recovery - Except backfilling	Recovery other than energy recovery - Backfilling	Deposit onto or into land (landfill)	Land treatment and release into water bodies	Total
UK	1,585	6,102	77,467	14,114	48,512	38,383	186,163
England	1,248	5,975	69,518	12,023	41,334	26,897	156,994

Source: Waste Statistics Regulation return
 No Municipal Waste Incinerators had officially accredited R1 status in 2012. Therefore they are reported as 'Incineration' rather than 'Energy Recovery'
 Includes waste which may have been imported

Figure 5.3: Waste entering final treatment, split by final treatment method, UK 2012



- Figure 5.3 shows that almost half (50.0 per cent) of the 186.2 million tonnes of waste that entered final treatment in the UK in 2012 was recovered. The majority of this (77.5Mt) was 'Recovery except backfilling', with 'Backfilling' (14.1Mt) and 'Energy recovery' (1.6Mt) making smaller contributions.
- Just over a quarter (26.1 per cent) of all waste entering final treatment in the UK in 2012 was landfilled.

6 Infrastructure

Table 6.1 contains information on the number and capacity of various facilities for the final treatment of waste. Defra collates summaries from the environment agencies of all four UK countries of facilities authorised by mandatory permit or license. The data excludes facilities that were formally closed throughout 2012 but does not identify permitted facilities which were non-operational in 2012. Facilities permitted only for treatment operations identified as intermediate (which includes most anaerobic digesters) are excluded from Table 6.1. 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. 'Energy recovery' in table 6.1 refers to facilities where the main purpose is generation of energy, or formal R1 accreditation has been awarded. No Municipal Waste Incinerators had officially accredited R1 status in 2012. Therefore they are reported as 'Incineration' rather than 'Energy Recovery'. Please see the Methodology section for more detail.

Table 6.1: Number and Capacity of Final Treatment Facilities, UK and England, 2012

Facility type (EU definitions)	Measure	UK	England
Energy recovery	Number of facilities	27	13
	<i>of which dedicated to the processing of MSW</i>	0	0
	Capacity (thousand tonnes/year)	2,893	2,111
Incineration	Number of facilities	87	65
	Capacity (thousand tonnes/year)	8,385	7,992
Recovery other than energy recovery (includes backfilling)	Number of facilities	3,542	1,895
	Capacity		
Deposit onto or into land (landfill)	Number of facilities	594	478
	Rest (remaining) capacity (000 m ³)	633,203	505,438

'Energy recovery' in this table refers to facilities where the main purpose is generation of energy, or formal R1 accreditation has been awarded.

MSW = Municipal Solid Waste

Revised on 25 March 2015 to reflect more accurate classification of energy recovery facilities

Source: Waste Statistics Regulation return 2012

7 Packaging waste

UK estimates of recovery/recycling rates for packaging materials have been calculated for reporting against material specific targets set by the EC Directive 94/62/EC on packaging and packaging waste. The Packaging and Packaging Waste Directive (as amended) set minimum recovery targets (60 per cent) and recycling targets (55 per cent) for packaging waste, to be met by 31 December 2008, as well as material-specific recycling targets. These are 60% for glass, 60 per cent for paper and board, 50 per cent for metals, 22.5 per cent for plastics, and 15 per cent for wood. Since 2008, Member States must continue to meet these minimum targets, but they have the freedom to set higher domestic targets if they so choose.

Arising estimates as reported in Table 7.1 are made at the point of manufacture. Further details are included in the Methodology section below. Equivalent figures for 2012 are available in the dataset that accompanies this statistical notice.

Table 7.1: Packaging waste and recycling / recovery, split by material, UK 2013

	Total packaging waste arising (thousand tonnes)	Total recovered / recycled (thousand tonnes)	Achieved recovery / recycling rate (%)	EU target recovery / recycling rate (%)
Metal	806	462	57.4%	50.0%
<i>of which Aluminium</i>	164	71	43.4%	n/a
<i>of which Steel</i>	642	391	60.9%	n/a
Paper	3,868	3,459	89.4%	60.0%
Glass	2,399	1,639	68.3%	60.0%
Plastic	2,260	714	31.6%	22.5%
Wood	1,029	436	42.3%	15.0%
Other materials	23	0	0.0%	n/a
Total (for recycling)	10,384	6,710	64.6%	55.0%
Total (for recovery)	10,384	838	8.1%	n/a
Total (for recycling and recovery)	10,384	7,548	72.7%	60.0%

- Table 7.1 shows that in 2013 in the UK, 72.7 per cent of packaging waste was either recycled or recovered. This was above the EU target of 60 per cent and compares to 69.1 per cent achieved in 2012.
- Recycling accounted for 6.7 million tonnes of the 10.4 million tonnes of packaging waste arisings, with a further 0.8 million tonnes recovered by use in 'energy from waste' incineration.
- The highest recycling rate for a specific packaging material was 89.4 per cent, achieved for paper, which also had the highest waste arisings at 3.9 million tonnes. The rate achieved for glass was 68.3 per cent and for plastic was 31.6 per cent.

DATA USES, METHODOLOGY, GLOSSARY, FEEDBACK AND REFERENCES

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. The data also meet legislative reporting targets on recycling targets set out in the Waste Framework Directive (2008/98/EC), the Packaging and packaging waste Directive (94/62 EC) and supply data for the Waste Statistics Regulation (2002/2150/EC). 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 use the contact details at the bottom of the first page of this notice.

Methodology and glossary

UK estimates for '**waste from households**' have been calculated in accordance with the EC Waste Framework Directive. The 'waste from households' measure has been chosen as the UK interpretation of the EC term 'household waste', which they define as "waste generated by households". Waste management and recycling is a devolved matter and different countries have used their own data to adopt to the EU definition. The statistics are the best estimates that provide the conformity to the EU definition.

'Waste from households' includes waste from:

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

'Waste from households' excludes waste from:

- Street cleaning/sweeping
- Gully emptying
- Separately collected healthcare waste
- Asbestos waste

All UK countries base the 'waste from households' measure on output from the 'WasteDataFlow' database, which records Local Authority Collected Waste. Whilst the general approach is consistent across UK countries, aggregation method and the wording of some questions completed by Local Authorities varies. Users should be aware that individual UK countries other than England publish independent household recycling estimates using alternative measures and as such may differ from the estimates published here. Local Authorities in England may also use an alternative measure.

UK estimates for **biodegradable municipal waste (BMW) to landfill** have been calculated in accordance with the Waste Framework Directive and a consistent approach is used by all UK countries. Biodegradable Municipal Waste 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 EWC (European Waste Classification) codes, as determined by landfill operators. For this reporting obligation, the UK countries have agreed a set of EWC codes to represent 'municipal waste' 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. The England figures published here for 2010-12 have been produced using these new factors. Wales adopted these new factors for 2013 and have now backdated their estimates for 2010-2012.

UK estimates for **recovery rate from non-hazardous construction & demolition waste** have been calculated in accordance with the EC Waste Framework Directive. 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. Methodologies have recently been extensively reviewed across all UK countries. Within the UK, some C&D waste is transferred across borders for treatment, primarily into England. This effect may slightly inflate the England recovery rate.

UK estimates for waste generation from **commercial and industrial** sectors and waste treatment infrastructure have been compiled in accordance with the Waste Statistics Regulation reporting requirements. 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, E37, E39 and G-U (excluding G46.7.7). The descriptions of these can be found here: (http://ec.europa.eu/competition/mergers/cases/index/nace_all.html).

UK estimates for **generation and final treatment of total waste** have been calculated in accordance with the EC Waste Statistics Regulation. 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 sources. Whilst efforts were made to synchronise approaches across UK countries, methodological differences do exist for Construction, Demolition & Excavation (CD&E) and Commercial & Industrial (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. 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. 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.

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. In 2012, no Municipal Waste Incinerators had been granted formal R1 status. These facilities are included in the 'Incineration' category. Small scale 'LAPPC' (Local Authority Pollution Prevention and Control) incinerators in England have not been included as sufficiently detailed data is not available.

Recovery operations covered by simple exemptions or simple registrations are not included in table 6.1. These operations are classed as low risk or low volume and do not have to report activity to Environment Agencies. The permitted capacity of Energy Recovery and Incineration facilities includes municipal, commercial and industrial waste, and will be higher than the actual volume of waste treated.

UK estimates for **recovery/recycling from packaging** have been compiled in accordance with the packaging and packaging waste directive reporting requirements. All estimates are made at a UK level and cannot be broken down into individual UK countries. Estimates of packaging waste arisings ('placed on the market') are reviewed on an ad-hoc basis by government and industry stakeholders and some are currently under review. The arisings figures 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 estimates based on collected waste (such as those in the Waste Statistics Regulation return), where there is a substantial residual proportion.

Estimates of tonnages recycled 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). PRNs and PERNs are sold by accredited reprocessors and exporters to packaging producers. All packaging producers that have a turnover of at least £2m and handle at least 50 tonnes of packaging per year are obligated to purchase sufficient PRNs/PERNs to meet an individual target. 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 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".

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 environment statistics	http://www.scotland.gov.uk/Topics/Statistics/Browse/Environment
Welsh Government statistics	http://wales.gov.uk/statistics-and-research/?lang=en
Northern Ireland Department of Environment statistics	http://www.doeni.gov.uk/index/information/asb/statistics.htm#environmentalstatistics
Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/introduction/
Environment Agency	https://www.gov.uk/government/organisations/environment-agency
Waste Data Interrogator	http://www.geostore.com/environment-agency/WebStore?xml=staticweb/xml/dataLayers_WDI.xml
Wastedataflow portal	http://www.wastedataflow.org/login.aspx?ReturnUrl=%2fnews%2fwelcome.aspx
Scottish Environment Web – Discover Data	http://www.environment.scotland.gov.uk/get-interactive/discover-data/
Estimates of Commercial and Industrial Waste Generation in England ('Reconcile' project)	http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=19118&FromSearch=Y&Publisher=1&SearchText=ev0804&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description
Analysis of biodegradability of residual waste project	http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=1&ProjectID=19389
National Packaging Waste Database	http://npwd.environment-agency.gov.uk/