Department for Environment Food & Rural Affairs

Government Statistical Service

15 December 2016

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. All statistics in this release are the most recent available, with reference periods ranging from 2010 up to 2015.

Key points

- The UK recycling rate for 'waste from households' was 44.3 per cent in 2015, falling from 44.9 per cent in 2014. This is the first time the rate has fallen since it began in 2010, though the 2015 figure still represents the second highest annual value on record. 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 2015 was 7.7 million tonnes. This represents 22 per cent of the 1995 baseline value. There is an EU target to restrict BMW landfilled to 35 per cent of the 1995 baseline by 2020. The UK comfortably met interim targets for 2010 and 2013.

- The recovery rate from non-hazardous construction and demolition waste in the UK in 2014 was 89.9 per cent. There is an EU target for the UK to recover at least 70 per cent of this type of waste by 2020.

- UK generation of commercial and industrial (C&I) waste was 27.7 million tonnes. This has fallen from 32.8 million tonnes in 2012.

- The UK generated 202.8 million tonnes of total waste in 2014. Over half of this (59.4 per cent) was generated by construction, demolition and excavation, with households responsible for a further 13.7 per cent.

- Of the 209.0 million tonnes of all waste that entered final treatment in the UK in 2014, 44.5% was recovered (including recycling and energy recovery). The proportion that went to landfill was 23.1 per cent.

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- In 2014, 64.1 per cent of UK packaging waste was either recycled or recovered compared to 72.7 per cent in 2013. The 2014 EU target was for the UK to recycle or recover at least 60 per cent of packaging waste.

Data revisions in this update:

The Northern Ireland waste from households (WfH) data previously reported in December 2015 did not fully exclude certain categories of construction and demolition waste from the residual recycling component. In order to provide a uniform comparison all previous year's rates for Northern Ireland have been recalculated. More details on methodology can be found in the Methodology section of this notice

The England 2012 estimate for Commercial & Industrial waste has been revised substantially following a review of the methodology. Modest revisions to the England Construction & Demolition waste recovery estimates for 2010-11 have been made to reflect improvements to the methodology. These two areas form part of the Waste Statistics Regulation generation template, so this in turn has been revised for 2012.

Biodegradable municipal waste (BMW) to landfill estimates for Scotland for 2010-14 have been revised to reflect improvements a factor used in the estimation process. More details on methodology can be found in the Methodology section of this notice.

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 the Methodology section).

Table 1.1: Waste from Households, UK and country split, 2010-15

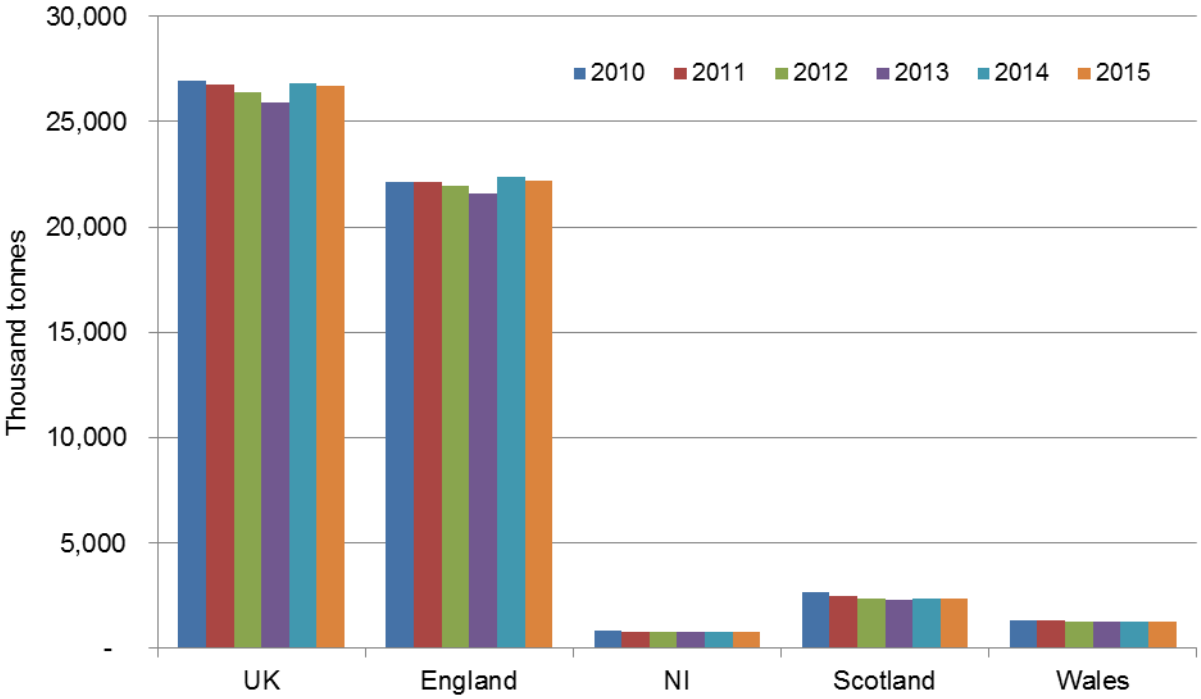
Year	Measure	UK	England	NI	Scotland	Wales
2010	Arisings ('000 tonnes)	26,954	22,131	829	2,649	1,344
	Recycled ('000 tonnes)	10,878	9,112	314	861	591
	Recycling rate	40.4%	41.2%	37.8%	32.5%	44.0%
2011	Arisings ('000 tonnes)	26,792	22,170	810	2,482	1,329
	Recycled ('000 tonnes)	11,492	9,596	324	921	651
	Recycling rate	42.9%	43.3%	40.0%	37.1%	49.0%
2012	Arisings ('000 tonnes)	26,428	21,956	783	2,383	1,306
	Recycled ('000 tonnes)	11,594	9,684	319	911	681
	Recycling rate	43.9%	44.1%	40.7%	38.2%	52.1%
2013	Arisings ('000 tonnes)	25,929	21,564	781	2,311	1,274
	Recycled ('000 tonnes)	11,434	9,523	324	916	671
	Recycling rate	44.1%	44.2%	41.5%	39.6%	52.6%
2014	Arisings ('000 tonnes)	26,797	22,355	808	2,349	1,285
	Recycled ('000 tonnes)	12,036	10,025	344	962	705
	Recycling rate	44.9%	44.8%	42.5%	41.0%	54.8%
2015	Arisings ('000 tonnes)	26,677	22,225	821	2,354	1,278
	Recycled ('000 tonnes)	11,805	9,758	344	989	713
	Recycling rate	44.3%	43.9%	42.0%	42.0%	55.8%

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

NI figures for 2010-14 revised in December 2016. See methodological section for more details

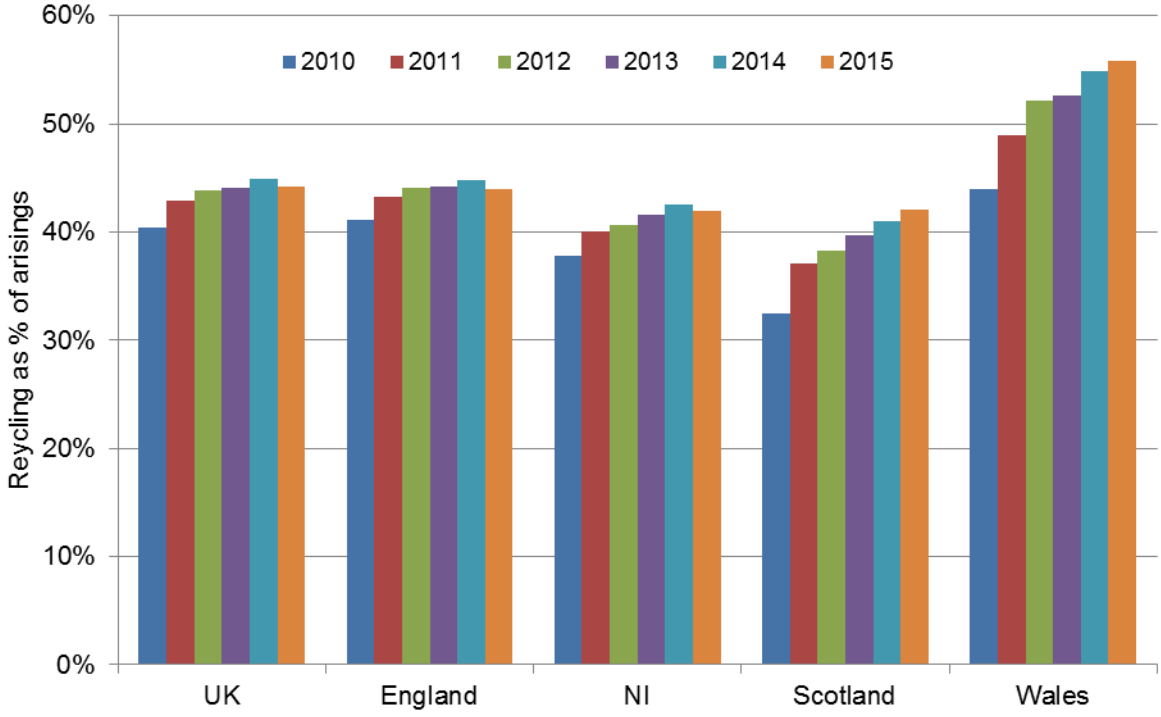
Source: WasteDataFlow

Figure 1.1: Quantity of Waste from Households, UK and country split, 2010-15



Source : WasteDataFlow

Figure 1.2: Recycling rate of Waste from Households, UK and country split, 2010-15



Source : WasteDataFlow

- The UK recycling rate for 'waste from households' was 44.3 per cent in 2015, falling from 44.9 per cent in 2014. This is the first time the rate has fallen since it began in 2010, though the 2015 figure still represents the second highest annual value on record. 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 1.2 show that the recycling rate increased in all UK countries and in every year from 2010 to 2014. The UK decrease seen between 2014 and 2015 is driven by falls in England (44.8 per cent to 43.9 per cent) and NI (42.5 per cent to 42.0 per cent). These counteracted the recycling rates in Wales and Scotland, which continued to rise. Wales had the highest recycling rate of the UK countries in all years, achieving 55.8 per cent in 2015.

- Table 1.1 and figure 1.1 show that England is responsible for the vast proportion of UK Waste from Households, generating 22.2 million tonnes of the UK total 26.7 million tonnes of 'Waste from Households' in 2015. Waste from Households generation fell in both the UK and England in 2015 following rises in 2014.

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

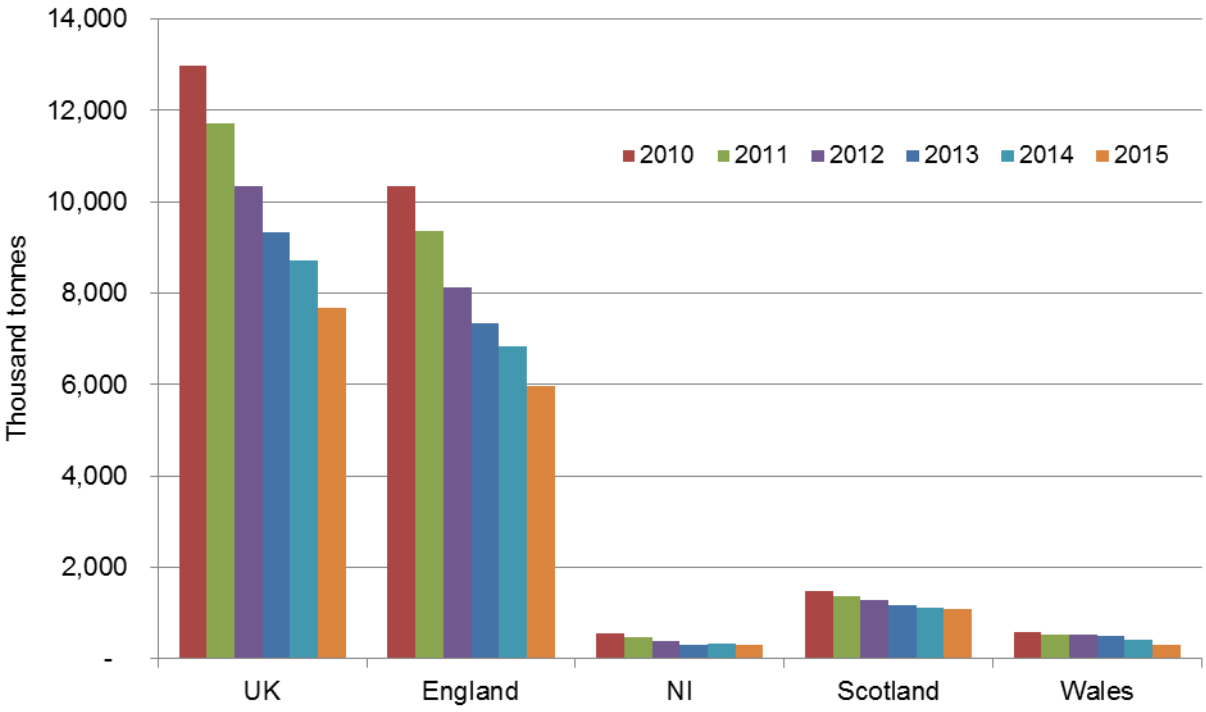
Table 2.1: Municipal Waste and BMW to Landfill, UK and country split, 2010-15

thousand tonnes

Year	Measure	UK	England	NI	Scotland	Wales
1995	BMW generated (baseline)	35,688	29,030	1,225	3,595	1,837
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	22,654	18,421	734	2,335	1,164
	of which BMW to Landfill	11,719	9,360	464	1,358	538
2012	Municipal Waste to Landfill	20,016	16,187	622	2,185	1,023
	of which BMW to Landfill	10,337	8,129	394	1,292	522
2013	Municipal Waste to Landfill	18,201	14,780	472	1,995	954
	of which BMW to Landfill	9,326	7,347	299	1,183	497
2014	Municipal Waste to Landfill	16,955	13,714	511	1,868	862
	of which BMW to Landfill	8,711	6,843	322	1,122	424
2015	Municipal Waste to Landfill	15,258	12,215	484	1,916	642
	of which BMW to Landfill	7,682	5,980	307	1,084	311

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
Scotland revised figures for 2010-14 in 15/12/2016 update
Source: Waste Data Interrogator, Defra Statistics

Figure 2.1: BMW to Landfill, UK and country split, 2010-15



Source: Waste Data Interrogator, Defra Statistics

Table 2.2: BMW to Landfill as % of 1995 target baseline, UK and country split, 2010-15

Year	UK	England	NI	Scotland	Wales
2010	36%	36%	46%	41%	33%
2011	33%	32%	38%	38%	29%
2012	29%	28%	32%	36%	28%
2013	26%	25%	24%	33%	27%
2014	24%	24%	26%	31%	23%
2015	22%	21%	25%	30%	17%

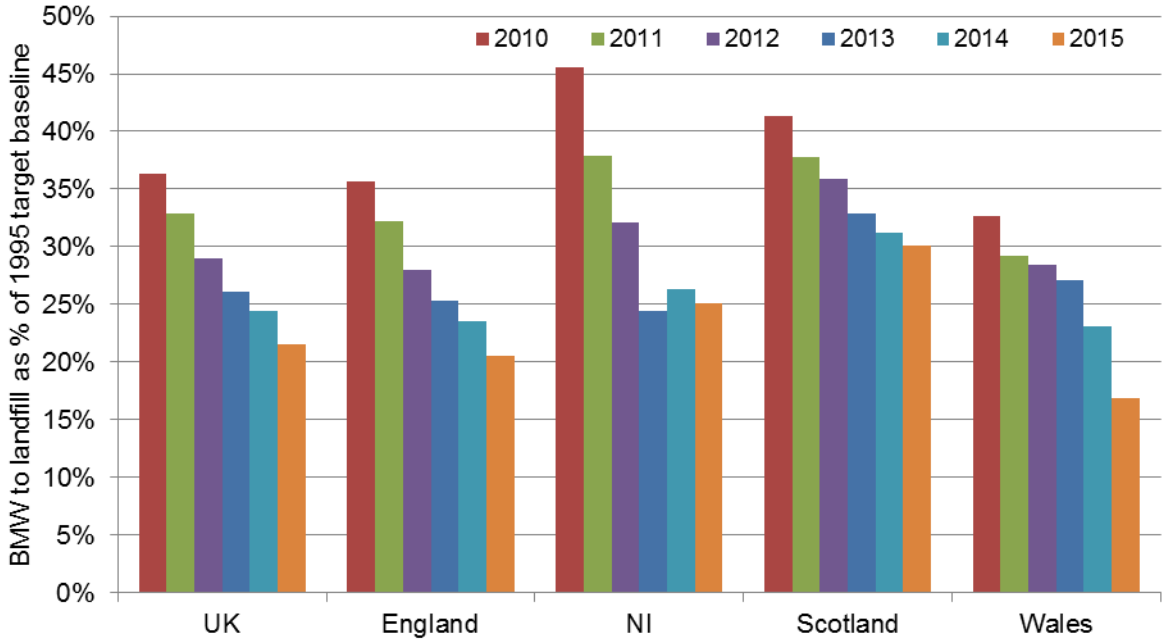
BMW = Biodegradable Municipal Waste

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

Scotland revised figures for 2010-14 in 15/12/2016 update

Source: Waste Data Interrogator, Defra Statistics

Figure 2.2: BMW to Landfill as a percentage of 1995 baseline, UK and country split, 2010-15



Source: Waste Data Interrogator, Defra Statistics

- Table 2.1 and figure 2.1 show that UK BMW sent to landfill in 2015 was 7.7 million tonnes, representing 22 per cent of the 1995 baseline value. There is an EU target to restrict BMW landfilled to 35 per cent of the 1995 baseline by 2020. The UK comfortably met interim targets for 2010 and 2013.

- Table 2.1 and figure 2.1 show that England is responsible for the vast majority of UK BMW to Landfill, generating 6.0 million tonnes of the UK total 7.7 million tonnes BMW to Landfill in 2015.

- Table 2.1 and figure 2.1 show that the UK tonnage of BMW to Landfill has reduced each year between 2010 and 2015 and levels have fallen considerably since 1995. The large drop seen for Wales in 2015 can be attributed to an energy-from-waste plant becoming fully operational.

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, 2010-14

million tonnes and % recovery rate

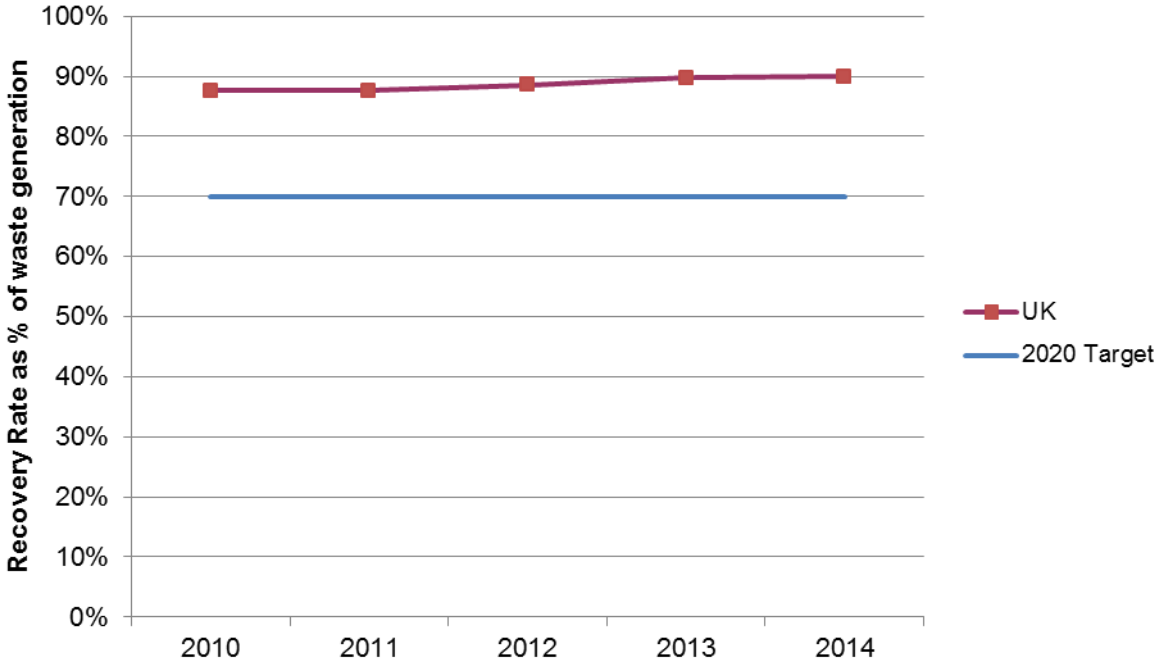
	UK			England		
	Generation	Recovery	Recovery rate	Generation	Recovery	Recovery rate
	M tonnes	M tonnes	%	M tonnes	M tonnes	%
2010	49.5	43.4	87.6%	43.9	39.7	90.5%
2011	50.0	43.8	87.6%	44.1	39.9	90.6%
2012	51.2	45.3	88.6%	45.3	41.3	91.1%
2013	51.9	46.6	89.8%	46.3	42.1	91.1%
2014	55.0	49.4	89.9%	49.1	44.9	91.4%

Source: Defra statistics

Excludes excavation waste

England estimates for 2010-12 have been revised since previous publications following methodological improvements

Figure 3.1: Recovery Rate from Non-Hazardous Construction and Demolition Waste, UK, 2010-14



- Table 3.1 shows that in 2014, the UK generated 55.0 million tonnes of non-hazardous C&D waste, of which 49.4 million tonnes was recovered. This represents a recovery rate of 89.9 per cent, which is above the target of 70 per cent which the UK must meet in 2020.

- Figure 3.1 shows that the recovery rate from non-hazardous construction and demolition waste has remained at similar levels from 2010 to 2014 and has at all times been comfortably 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) sectors have been calculated as part of the Waste Statistics Regulation returns for 2012 and 2014. The term 'commercial and industrial' spans a range of economic activities (based on the European NACE statistical classification of economic activities in the European Community) including manufacturing, industrial processes and service based enterprises.

C&I waste generation is 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). Users should consider this when drawing conclusions from the results and refrain from using them where outcomes are sensitive to exact values. Now that three years have been produced using the same methodology, some conclusions can be drawn from changes between years, however caution should still be exercised. England 2012 estimates have been revised substantially from previous publications due to methodological improvements

Table 4.1: Total waste generation from the commercial and industrial sectors, UK and England, 2012-14

million tonnes

	UK			England		
	Commercial	**Industrial**	**Total C&I**	**Commercial**	**Industrial**	**Total C&I**
2012	16.9	15.9	32.8	12.9	11.3	24.2
2013	UK 2013 Estimates not available			11.6	10.4	21.9
2014	15.1	12.6	27.7	11.1	8.7	19.8

Source: Defra statistics

Commercial and Industrial defined using NACE. See methodological section for further details

England 2012 estimates have been revised substantially from previous publications due to methodological improvements

- Table 4.1 shows that the UK Commercial and Industrial sectors generated 27.7 million tonnes of waste in 2014, of which 19.8 million tonnes was in England. A little more than half of this waste was Commercial waste in both the UK and England.

- Table 4.1 shows that waste generation from both the commercial and industrial sectors fell between 2012 and 2014 in the UK. Decreases also occurred in England.

5 Total Waste Generation and Final Treatment of All Waste

UK and England tonnage estimates for generation and final treatment of all waste have been calculated in order to report against the EC Waste Statistics Regulation return for 2014. 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 Regulation requirements, total waste generation is split by material and NACE economic activity responsible for generating it. Users should note that the 'Construction, Demolition and Excavation' (CD&E) figures shown in this section include excavation waste and dredging spoils that are out of scope for the recovery rate shown in Section 3 (Recovery rate from non-hazardous construction & demolition waste) above. 'Household' figures in this section are based on the same 'Waste from Households' measure shown in Section 1, but in addition include an estimate for End of Life Vehicles in order to meet the reporting requirements of the EC Waste Statistics Regulation. Final treatment of all 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 for both 2012 and 2014, England and UK 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. Users should take care to understand the material and economic activity categories. Further information is available in the Methodology and Useful Links sections.

Table 5.1: Waste generation tonnages split by responsible economic activity, UK and England, 2012-14

million tonnes and % change

		C&I	CD&E	Households	Other	Total
UK	**2012**	32.8	108.8	27.4	24.7	193.8
UK	**2014**	27.7	120.4	27.7	26.9	202.8
UK	**Change**	-15.6%	10.6%	1.2%	9.0%	4.6%
England	**2012**	24.2	93.8	22.7	16.3	157.1
England	**2014**	19.8	107.6	23.2	17.1	167.6
England	**Change**	-18.1%	14.6%	1.8%	4.8%	6.7%

Source: Defra Statistics
Excludes secondary waste
C&I = Commercial & Industrial
'CD&E' = Construction, Demolition & Excavation and includes dredging
'Other' consists of waste from mining, agriculture, forestry and fishing
Includes waste that may go for export
Figures for 2012 have been revised since previous publications

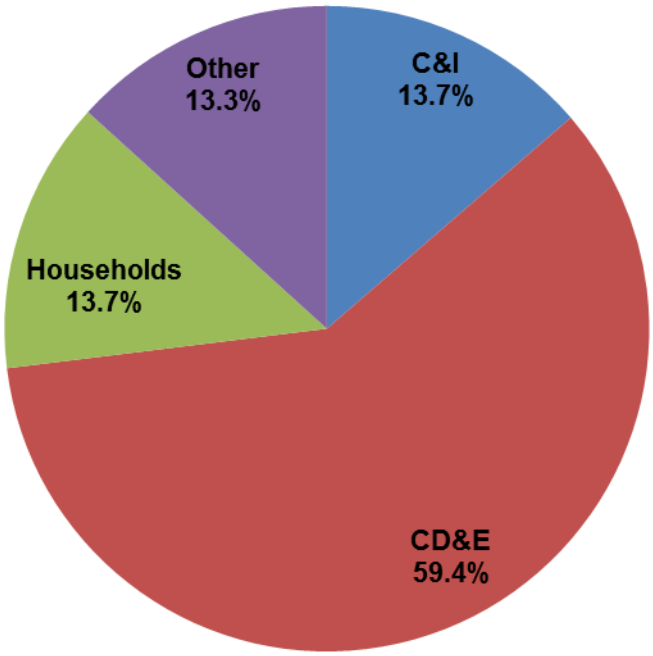
Table 5.2: Waste generation split by responsible economic activity, UK and England, 2012-14 - proportion of tonnages

% of total waste tonnage and % point change between years

		C&I	CD&E	Households	Other	Total
UK	**2012**	16.9%	56.2%	14.1%	12.8%	100.0%
UK	**2014**	13.7%	59.4%	13.7%	13.3%	100.0%
UK	**Change**	-3.3%	3.2%	-0.5%	0.5%	
England	**2012**	15.4%	59.7%	14.5%	10.4%	100.0%
England	**2014**	11.8%	64.2%	13.8%	10.2%	100.0%
England	**Change**	-3.6%	4.4%	-0.7%	-0.2%	

Source: Defra Statistics
Excludes secondary waste
C&I = Commercial & Industrial
'CD&E' = Construction, Demolition & Excavation and includes dredging
'Other' consists of waste from mining, agriculture, forestry and fishing
Includes waste that may go for export
Figures for 2012 have been revised since previous publications

Figure 5.1: Waste generation split by source, UK 2014



Source: Defra Statistics

- Table 5.1 shows that the UK generated 202.8 million tonnes of total waste in 2014. This represents an increase of 4.6% from 2012. England generated 167.6 million tonnes of total waste in 2014.

- Table 5.2 and Figure 5.1 shows that CD&E (including dredging) generated over half (60 per cent) of total UK waste in 2014. The remaining waste generation was fairly evenly split between 'Commercial & Industrial', 'Household' and 'Other' activities. Each of these categories accounted for between 13% and 14% of total waste generation. In England, the share of 'Construction' was higher at 64% of the total. The 'Households' contribution was similar, with C&I and 'Other' slightly lower than the UK.

- The proportion of total waste generated by 'Households' fell slightly in both UK and England between 2012 and 2014. The 'Households' here is the 'Waste from Households' measure (used for household recycling reporting against the Waste Framework Directive) with an adjustment made to account for end of life vehicles.

Table 5.3: Waste generation split by waste material, UK, 2012-14

million tonnes and % of all wastes tonnage

	UK 2012		UK 2014	
Waste material	**Million Tonnes**	**Proportion of total**	**Million Tonnes**	**Proportion of total**
Metallic wastes	7.4	3.8%	6.1	3.0%
Glass wastes	1.4	0.7%	1.3	0.6%
Paper & cardboard wastes	2.4	1.2%	2.4	1.2%
Plastic wastes	1.1	0.5%	1.0	0.5%
Wood wastes	1.9	1.0%	2.3	1.1%
Vegetal wastes	5.3	2.7%	5.9	2.9%
Household & similar wastes	22.2	11.4%	20.3	10.0%
Mineral wastes	72.9	37.6%	79.0	39.0%
Soils	43.6	22.5%	54.2	26.7%
Dredging spoils	14.7	7.6%	11.5	5.7%
Other wastes	21.0	10.8%	18.7	9.2%
All wastes	**193.8**	**100.0%**	**202.8**	**100.0%**

Source: Defra Statistics
Excludes secondary waste
Includes waste that may go on to be exported

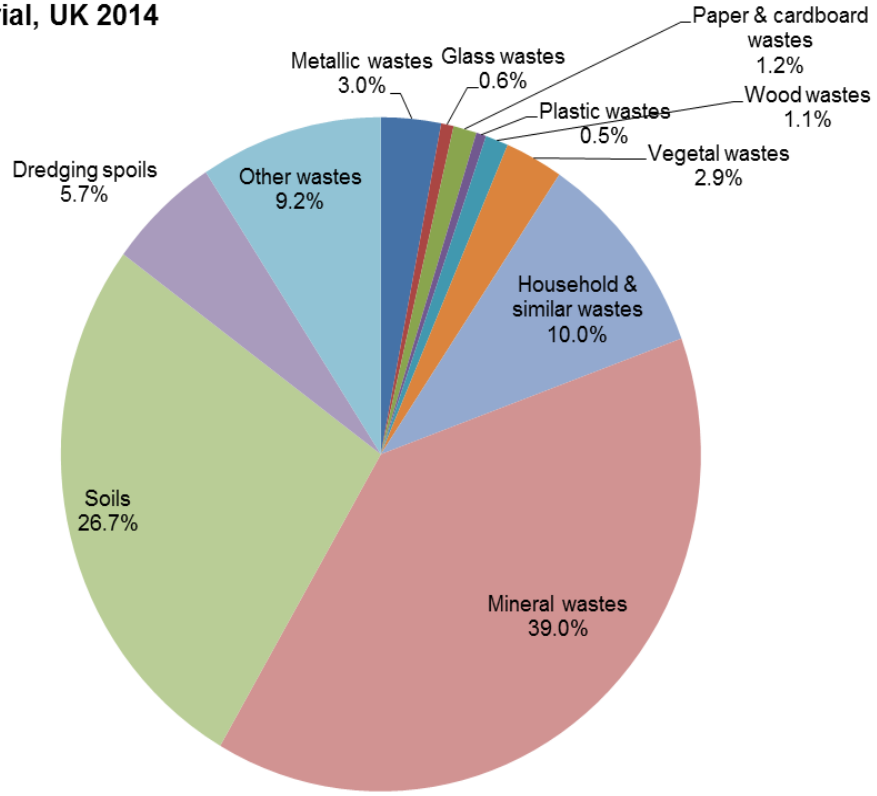
Any type of waste can be generated by any economic activity. E.g. 'Household & similar wastes' are not solely generated by 'Households'.

A more detailed material split is available in the accompanying dataset
Figures for 2012 have been revised since previous publications

- Table 5.3 and Figure 5.2 show total waste generation in the UK split by broad material types. In 2014, the largest material type was 'Mineral Wastes' at 79.0 million tonnes, followed by 'Soils' at 54.2 million tonnes. These two categories represent 39% and 27% respectively of all waste generated in the UK and together make up almost two thirds (66%) of the total.

- The split of waste generation between waste types has not changed much between 2012 and 2014, though the contribution of the 'Household & similar' waste type has fallen from 11.4% to 10.0%.

Figure 5.2: Waste generation tonnage split by waste material, UK 2014



Source: Defra Statistics

Table 5.4: All waste at final treatment, split by method, UK and England, 2012-14 - tonnages

million tonnes and % change between years

		Energy recovery	Incinerat--ion	Recycling and other recovery	Backfilli--ng	Deposit onto or into land (landfill)	Land treatment and release into water bodies	Total
2012	UK	1.6	6.1	84.4	14.1	48.5	38.4	**193.1**
2014	UK	1.9	7.6	91.1	21.7	48.2	38.5	**209.0**
Change	UK	22.3%	23.8%	7.9%	53.8%	-0.7%	0.2%	**8.2%**
2012	England	1.2	6.0	76.5	12.0	41.3	26.9	**164.0**
2014	England	1.3	7.3	81.4	19.1	41.3	27.2	**177.7**
Change	England	4.7%	22.0%	6.5%	59.2%	-0.1%	1.1%	**8.4%**

Source: Defra Statistics

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

'Recycling and other recovery' refers to the Eurostat category 'Recovery other than energy recovery - Except backfilling'

Includes waste that may have been imported

Table 5.5: All waste at final treatment, split by method, UK and England, 2012-14 - proportion of tonnages

% of total waste tonnage and % point change between years

		Energy recovery	Incinerat--ion	Recycling and other recovery	Backfilli--ng	Deposit onto or into land (landfill)	Land treatment and release into water bodies	Total
2012	UK	0.8%	3.2%	43.7%	7.3%	25.1%	19.9%	100.0%
2014	UK	0.9%	3.6%	43.6%	10.4%	23.1%	18.4%	100.0%
Change	UK	0.1%	0.5%	-0.1%	3.1%	-2.1%	-1.5%	
2012	England	0.8%	3.6%	46.6%	7.3%	25.2%	16.4%	100.0%
2014	England	0.7%	4.1%	45.8%	10.8%	23.2%	15.3%	100.0%
Change	England	0.0%	0.5%	-0.8%	3.4%	-2.0%	-1.1%	

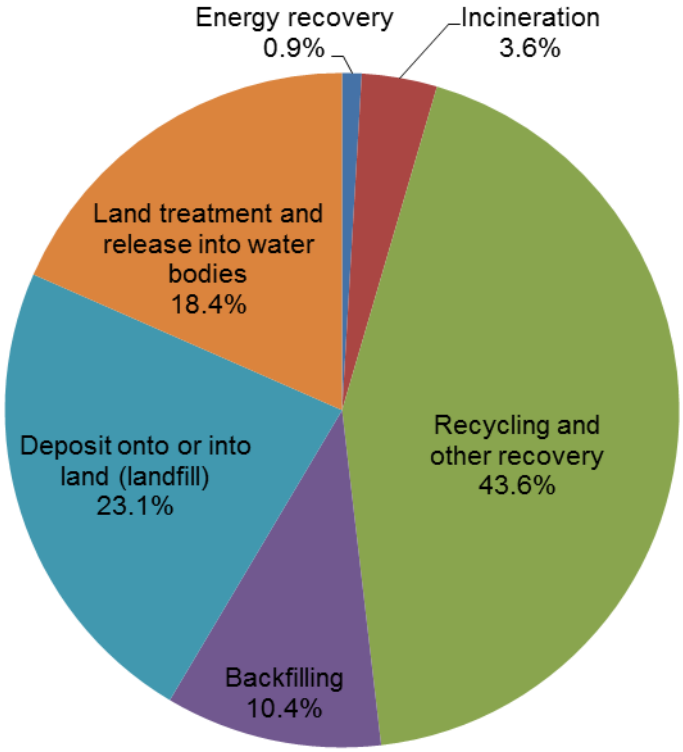
Source: Defra Statistics

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

'Recycling and other recovery' refers to the Eurostat category 'Recovery other than energy recovery - Except backfilling'

Includes waste that may have been imported

Figure 5.2: Waste split by final treatment method, UK 2014



Source: Defra Statistics

- Table 5.4, Table 5.5 and Figure 5.2 show waste at final treatment split by treatment method. 'Recycling and other recovery' was the most common treatment type for waste treated in the UK in 2014, accounting for 91.1 million tonnes (43.6%). The proportion is very similar to 2012.

- Although the share of total waste disposed of in landfill fell from 25.1% in 2012 to 23.1% in 2014, landfill remained the second most used treatment method in the UK for all waste.

- Backfilling showed the biggest percentage change in tonnage, increasing by 53.8% from 14.1 million tonnes in 2012 to 21.7 million tonnes in 2014.

Table 5.6: Waste materials split by final treatment method, UK, 2014 - proportion of tonnages

% proportion of waste material tonnages

Waste material	Energy recovery	Incinerati--on	Recycling and other recovery	Backfilling	Deposit onto or into land (landfill)	Land treatment and release into water bodies	Total
Metallic wastes	0%	0%	100%	0%	0%	0%	**100%**
Glass wastes	0%	0%	96%	0%	4%	0%	**100%**
Paper & cardboard wastes	0%	0%	100%	0%	0%	0%	**100%**
Plastic wastes	0%	0%	97%	0%	3%	0%	**100%**
Wood wastes	24%	7%	65%	3%	1%	0%	**100%**
Vegetal wastes	0%	0%	98%	0%	2%	0%	**100%**
Household & similar wastes	0%	40%	7%	0%	53%	0%	**100%**
Mineral wastes	0%	0%	60%	2%	4%	34%	**100%**
Soils	0%	0%	18%	39%	43%	0%	**100%**
Dredging spoils	0%	0%	0%	0%	1%	99%	**100%**
Other wastes	5%	5%	27%	2%	61%	0%	**100%**
All wastes	**1%**	**4%**	**44%**	**10%**	**23%**	**18%**	**100%**

Source: Defra Statistics

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

'Recycling and other recovery' refers to the Eurostat category 'Recovery other than energy recovery - Except backfilling'

Includes waste that may have been imported

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

A more detailed material split is available in the accompanying dataset

- Tables 5.6 and shows how tonnages of waste materials in the UK were split between final treatment methods in 2014. The vast majority of many *separately identified* dry recyclates such as metals, glass, paper & cardboard and plastic go to 'Recycling and other recovery'. However some of these waste will also exist as components of residual mixed waste and be recorded here under 'Household & similar' and 'Other' wastes with the majority of these categories ending up in landfill.

- The majority (60%) of 'Mineral wastes' go to 'Recycling and other recovery' with almost all of the remainder (34%) being disposed of via 'Land treatment and release into water bodies'. This latter treatment method is typical of dredging spoils and mining waste, both of which are treated in large volume.

Table 5.7: Final treatment methods for waste, split by material, UK, 2014 - proportion of tonnages

% proportion of treatment type tonnages

Waste material	Energy recovery	Incinerati--on	Recycling and other recovery	Backfilling	Deposit onto or into land (landfill)	Land treatment and release into water bodies	Total
Metallic wastes	0%	0%	16%	0%	0%	0%	**7%**
Glass wastes	0%	0%	2%	0%	0%	0%	**1%**
Paper & cardboard wastes	0%	0%	5%	0%	0%	0%	**2%**
Plastic wastes	0%	0%	3%	0%	0%	0%	**1%**
Wood wastes	32%	2%	2%	0%	0%	0%	**1%**
Vegetal wastes	0%	0%	5%	0%	0%	0%	**2%**
Household & similar wastes	1%	81%	1%	0%	17%	0%	**7%**
Mineral wastes	0%	0%	50%	6%	7%	68%	**36%**
Soils	0%	0%	10%	91%	45%	0%	**24%**
Dredging spoils	0%	0%	0%	0%	0%	32%	**6%**
Other wastes	66%	17%	7%	2%	31%	0%	**12%**
All wastes	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Waste Statistics Regulation return

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

'Recycling and other recovery' refers to the Eurostat category 'Recovery other than energy recovery - Except backfilling'

Includes waste that may have been imported

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

A more detailed material split is available in the accompanying dataset

- Table 5.7 shows how tonnages of waste reaching final treatment in the UK in 2014 are split between materials types. Incineration is dominated by 'Household & similar waste' which represent 81% of the tonnage taken in. Energy recovery has a different profile with almost a third (32%) of the waste accepted is wood, with the remainder being a variety of materials all bundled under 'Other wastes'.

- The overwhelming majority (91%) of 'Backfilling' is 'Soils', with 'Mineral wastes' being the next biggest contributor at 6%.

- Soils make up 45% and 'Mineral wastes' 7% of the tonnage received by landfills, showing that it is not just residual waste using this outlet. The two other big components going to landfill are 'Household & similar wastes' (17% of the total) and 'Other wastes' (31%). The 'Other wastes' category includes 'Sorting residues' which will typically be mixed wastes following processing to remove recyclates.

- Half (50%) of waste recorded as 'Recycling and other recovery' is 'Mineral wastes'. This 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 16%, partially a reflection of their high value. The remaining tonnage going to 'Recycling and other recovery' consists of a variety of material types each making a small contribution.

- A more detailed material split along with 2012 and England versions of this data are available in the accompanying dataset.

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 2014 (except landfills) but may include facilities which despite being permitted were non-*operational* in 2014. 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. 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'. Please see the Methodology section for more detail.

Table 6.1: Number and Capacity of Permitted Final Treatment Facilities, UK and England, 2014

Facility type	Measure	UK	England
Energy recovery	Number of facilities	29	13
	of which dedicated to the processing of MSW	5	4
	Capacity ('000 t/yr)	4,862	2,803
	of which dedicated to the processing of MSW	2,317	1,967
Incineration	Number of facilities	83	60
	Capacity ('000 t/yr)	9,859	9,040
Recovery other than energy recovery (includes backfilling)	Number of facilities	2,660	1,699
	Capacity	Not available	Not available
Deposit onto or into land (landfill)	Number of facilities (includes closed facilities)	608	493
	Rest (remaining) capacity (000 m^3)	602,223	484,370

Source: Defra Statistics

000 t/yr = Thousand tonnes per year

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

MSW = Municipal Solid Waste

Excludes recovery facilities operating solely under a waste exemption

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 per cent 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.

Arisings 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 and 2013 are available in the dataset that accompanies this statistical notice.

Table 7.1: Packaging waste and recycling / recovery, split by material, UK 2014

	Packaging waste arising (thousand tonnes)	Total recovered / recycled (thousand tonnes)	Achieved recovery / recycling rate (%)	EU target recovery / recycling rate (%)
Metal	736	428	58.2%	50.0%
of which: Aluminium	177	73	41.0%	n/a
of which: Steel	559	356	63.7%	n/a
Paper and cardboard	4,749	3,470	73.1%	60.0%
Glass	2,399	1,613	67.2%	60.0%
Plastic	2,220	842	37.9%	22.5%
Wood	1,310	412	31.4%	15.0%
Other materials	23	0	0.0%	n/a
Total (for recycling)	**11,436**	**6,765**	**59.2%**	**55.0%**
Energy from Waste		566	4.9%	n/a
Total (for recycling and recovery)	**11,436**	**7,331**	**64.1%**	**60.0%**

Source: Defra Statistics

- Table 7.1 shows that in 2014 in the UK, 64.1 per cent of packaging waste was either recycled or recovered. This was above the EU target of 60 per cent and compares to 72.7 per cent achieved in 2013. The main driver for this drop is the adoption of a new paper and cardboard 'placed on market' estimate published in a bespoke industry report. This represents a significant increase in the estimated level of waste arisings compared to that assumed for 2012 and 2013. Equivalent figures for 2012 and 2013 can be seen in the accompanying dataset.

- Recycling accounted for 6.8 million tonnes of the 11.4 million tonnes of packaging waste arisings, with a further 0.6 million tonnes recovered by use in 'energy from waste' incineration.

- The highest recycling rate for a specific packaging material was 73.1 per cent, achieved for paper and cardboard, which also had the largest waste arisings at 4.7 million tonnes. The rate achieved for glass was 67.2 per cent and for plastic it was 37.9 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

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
- Soil, Rubble, Plasterboard & 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 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 'waste from households' recycling. Local Authorities in England may also use an alternative measure.

The Northern Ireland (NI) waste from households data previously reported in Dec 2015 used the England WfH calculation of recycling from the residual stream for the years

2013 and 2014. A new WfH calculation specific to NI has been used for 2015 which now correctly excludes certain Construction & Demolition wastes from the Recycled tonnage. In order to provide a uniform comparison *all* previous years for NI have been recalculated. This alternative approach is not so readily adopted or appropriate for England because of the more complex treatment of residual waste, and in particular the production of other compostable waste from mechanical biological treatment which makes it more complicated to distinguish the recycling materials in the residual stream.

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'. 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. 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.

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. The England methodology has recently been reviewed and improved. All figures in this publication have been backdated to use the revised methodology. 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.

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).

Whilst considerable effort has been spent reviewing the methodology for England, this remains a very challenging area. Significant limitations to the available data (e.g. no reporting requirement for operators using waste exemptions) mean there is a high level of uncertainty in the outputs for commercial and industrial waste generation. The recent review has substantially reduced the size of the estimates compared to those previously published (2012 UK estimate revised from 47.5Mt to 32.8Mt), mainly due to the identification and subsequent removal of tonnages that were likely to have been double counted. We continue to work to improve the methodology and assumptions to enhance the accuracy and reliability of these estimates.

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 are 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. 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.

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.

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 operators 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 (see section 5 instead for estimates of actual waste treatment).

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. A new paper and cardboard 'placed on market' estimate published in a bespoke industry report has been adopted for 2014. This represents a significant increase in the level of waste arisings compared to that assumed for 2012 and 2013

(see accompanying dataset). 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 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 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 obtain sufficient PRNs/PERNs to evidence that they meet an individual target. The targets are set by Defra to ensure that the aggregated obligation for all producers is sufficient to ensure the UK meets the 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 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 Agriculture, Environment and Rural Affairs	*https://www.daera-ni.gov.uk/articles/northern-ireland-local-authority-collected-municipal-waste-management-statistics*
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*
Manual on Waste Statistics	*http://ec.europa.eu/eurostat/documents/3859598/5915865/KS-RA-10-011-EN.PDF/39cda22f-3449-4cf6-98a6-280193bf770c*
EWC-STAT (used for Waste Statistics Regulation waste types)	*http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:253:0002:0041:EN:PDF*
List of NACE codes (used for Waste Statistics Regulation economic activities)	*http://ec.europa.eu/competition/mergers/cases/index/nace_all.html*
National Packaging Waste Database	*http://npwd.environment-agency.gov.uk/*