

Resource Futures

Final Report to Defra: WR1002 Detailed
compositional assessment for municipal residual
waste and recycling streams in England

RF Project no 1015

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Contents

1.	Aims and Scope.....	1
2.	Methodology	2
2.1	Collated datasets.....	2
2.1.1	Residual waste compositional datasets	2
2.1.1.1	Assessment of coverage of residual waste datasets in terms of recycling performance.....	2
2.1.2	Recycling compositional datasets	3
2.2	Categorisation of municipal waste components.....	4
2.3	Calculating mean arisings of various waste components	6
3.	Estimated Composition of Municipal Waste and Recycling Streams in England.....	8
3.1	Kerbside waste and recycling.....	8
3.1.1	Kerbside residual waste	8
3.1.2	Kerbside recycling	9
3.1.3	Kerbside residual plus recycling.....	9
3.2	HWRC waste and recycling.....	16
3.2.1	HWRC residual waste	16
3.2.2	HWRC recycling	16
3.2.3	HWRC residual plus recycling.....	17
3.3	Bulky waste collections residual waste	24
3.4	Street cleansing, street sweepings and litter residual waste.....	27
3.5	Other household recycling streams.....	30
3.5.1	Bring banks recycling	30
3.5.2	Street recycling bins	30
3.5.3	Household recycling “other means”.....	30
3.6	Non-household municipal waste and recycling	37
3.6.1	Municipally collected commercial residual waste	37
3.6.2	Non-household residual waste collected at HWRCs.....	37
3.6.3	Municipally collected commercial recycling.....	38
3.7	Summary for all municipal waste streams.....	45

1. Aims and Scope

This project follows on from Defra WR0119: *Municipal Waste Composition: A Review of Municipal Waste Component Analyses, Resource Futures 2010*¹, which produced national compositional estimates for municipal waste and recycling at a primary category level. This study produces corresponding estimates at the secondary category level. Secondary level categorisation is important in understanding different municipal waste streams and can help identify quantities of targetable recyclables in residual waste.

We have analysed the datasets collated for the WR0119 project to produce secondary level national estimates for England. The baseline year for building the national compositional estimates produced for WR0119 was 2006/07 and the compositional estimates presented in this report are also for 2006/07.

The various waste streams included in these compositional estimates are detailed in Table 1.1, along with the tonnage arising for each waste stream, relating to England during 2006/07. These are all the municipal waste streams included in WasteDataFlow (WDF) for 2006/07. Further detailed on how municipal waste is divided up into the waste streams defined in WDF are included in Annex 4 of the WR0119 study.

Table 1.1: Tonnage arisings for municipal waste streams included in this study, England 2006/07

ENGLAND WasteDataFlow 2006/07		Residual	Recycling	Residual + Recycling
Household	Kerbside	14,050,000	4,656,625	18,706,625
	HWRC	2,576,000	2,556,704	5,132,704
	Bulky waste collections	269,790		269,790
	Street sweepings, cleansing and litter	903,210		903,210
	Bring site recycling		665,856	665,856
	Street bins recycling		19,165	19,165
	"Other means" recycling		77,649	77,649
	Subtotal	17,799,000	7,976,000	25,775,000
Non-household	Municipally collected commercial residual	2,137,994		2,137,994
	HWRC non-household residual	270,006		270,006
	Municipally collected commercial recycling		157,112	157,112
	Subtotal	2,408,000	157,112	2,565,112
ALL MUNICIPAL SOLID WASTE		20,207,000	8,133,112	28,340,112

Additionally 803,888 tonnes of rubble recycling (mostly at HWRCs) was reported, making a total of 29,144,000 tonnes of municipal waste in England during 2006/07. However this material was excluded from the national compositional estimates presented in WR0119, and is also excluded from these estimates.

¹ <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=15133>

2. Methodology

2.1 Collated datasets

As discussed in Section 1, this project (WR1002) builds upon work carried out for WR0119: *Municipal Waste Composition: A Review of Municipal Waste Component Analyses*. WR0119 and its appendices should be referred to for description of the method used to collate composition datasets, representativeness of data etc.

2.1.1 Residual waste compositional datasets

The following selection criteria were applied to kerbside compositional datasets:

- 2 or more phases of auditing carried out (some attempt to control for seasonality);
- ACORN, Council Tax band, or other socio-demographic stratification (some attempt to control for area types when generalising results for a district);
- start date no earlier than 2005.

Kerbside residual compositional datasets for 120 local authorities in England met these selection criteria. These same 120 datasets were also used to produce the secondary category level kerbside residual waste compositional estimates for England presented in this report.

Substantially fewer datasets were collated for other municipal waste streams (HWRC, street sweepings & litter, etc) as part of the WR0119 project. In order to maximise coverage of these waste streams, the selection criteria applied to kerbside datasets were not applied to these other waste streams.

The total numbers of datasets included for the secondary category level analyses presented in this report, are shown in Table 2.1. These relate to the total number of local authorities in England for which residual waste datasets have been collated and included for these analyses.

Table 2.1: Number of local authority level compositional datasets included in the secondary category level analyses

Waste stream	No. local authority level compositional datasets included in analysis
Kerbside residual	120
HWRC residual	34
Bulky waste collections residual	21
Street cleansing, sweeping and litter residual	19
Municipally collected commercial waste residual	25

These datasets were considered to be broadly representative of England and to provide considerably better coverage these datasets included in previous reviews of national municipal waste composition.

2.1.1.1 Assessment of coverage of residual waste datasets in terms of recycling performance

This study estimates the detailed composition of residual waste streams but not recycling streams. WR0119 integrated these streams, ie considering kerbside residual + kerbside recycling to assess the overall composition of all kerbside waste. This approach was taken partly

to circumvent the problem that the composition of residual is affected by the degree to which various materials are diverted into recycling streams.

We have assessed the degree to which the residual waste datasets included in this study are representative of recycling performance nationally. This issue is mainly relevant to kerbside and HWRC streams, because recycling is not as prevalent for other municipal waste streams.

Table 2.2 shows the average recycling rate for all England local authorities and for the local authorities for which compositional data have been included in this study, respectively for kerbside and HWRC streams.

Table 2.2: Comparison of average recycling rates for all England authorities and selected authorities

Baseline period: 2006/07		All England local authorities	Selected local authorities
Kerbside	No. authorities	354	120
	Average recycling rate	27.0%	25.5%
HWRC	No. authorities	120	34
	Average recycling rate	46.8%	47.9%

Note: data for Kerbside refer to all collection and unitary authorities; data for HWRC refer to all disposal and unitary authorities.

The recycling performances for the selected authorities included in this study agree fairly well with national recycling performance, for both kerbside and HWRC streams and we consider that the residual waste datasets included in the study represent good coverage in terms of recycling performance.

2.1.2 Recycling compositional datasets

For the WR0119 study, compositions for the various recycling streams was determined mainly through analysis of WasteDataFlow tonnages, as these tonnages reported recycling materials separately to some degree. Further details of the methodology used to determine recycling stream compositions are provided in Annex 4 of WR0119.

Secondary level compositional data was only available from waste audits carried out for kerbside recycling, comprising studies from 95 districts in England, all meeting the same selection criteria as those required for kerbside refuse datasets (see Section 2.1.1).

Due to lack of data for the other recycling streams, in most cases secondary level arisings for these streams have been estimated by assuming that the relative arising of each secondary level fraction within a primary component is the same as for kerbside recycling. For example, for kerbside recycling the secondary category of “Newspapers” was estimated to comprise 52% of the primary category “Paper”; and therefore it has been assumed that 52% of HWRC “Paper” recycling comprises of “Newspapers”.

However there have been some important exceptions to this, where it is known or suspected that the composition of a component in a particular recycling stream will be significantly different to that found in kerbside recycling:

- Bring bank glass colour recycling (with significantly fewer jars and clear glass than kerbside recycling); 2006/07 WDF tonnages for 103 districts which reported separate colours for glass recycling were analysed to produce a separate estimate for bring banks.
- HWRC glass colour recycling, assumed to be the same as for bring banks (rather than kerbside recycling).
- HWRC metals recycling, with a high proportion of scrap metal (as opposed to high arisings of cans and tins in kerbside recycling); estimates from a previous compositional review carried out by Dr Julian Parfitt for WRAP in 2007 were applied to arrive at a compositional breakdown of HWRC metal recycling.

- HWRC WEEE recycling, with a high proportion of white goods and larger WEEE (in comparison to kerbside recycling, which in 2006/07 had limited WEEE recycling, mostly focussing on smaller WEEE items, many of which were actually contaminants); estimates were obtained through analysis of two studies of HWRC inputs (i.e. analysis of waste delivered to HWRCs by site users).

2.2 Categorisation of municipal waste components

The primary categories used in the WR0119 study are shown in Table 2.3. A code number is used for each primary category for the purposes of this study.

Table 2.3: Primary level categories used for municipal waste compositional estimates in the WR0119 project

Code	Primary level categories
1	Food waste
2	Garden waste
3	Other organic
4	Paper
5	Card
6	Glass
7	Metals
8	Plastics
9	Textiles
10	Wood
11	WEEE
12	Hazardous
13	Sanitary
14	Furniture
15	Mattresses
16	Misc combustible
17	Misc non-combustible
18	Soil
19	Other wastes
20	Fines

The secondary and tertiary categories included for this project are shown in Table 2.4. These categories were specified by Defra at the outset of the project. The categorisation system consists of primary categories (the left-hand columns in Table 2.4) and corresponding secondary level categories (in the right-hand columns in Table 2.4). For glass and plastics, tertiary categories are also included:

- Glass: subcategories for Packaging Glass
- Plastics: subcategories for both Plastic Film and Dense Plastic.

Table 2.4: Categorisation system used for municipal waste components for this project

Code	Primary level categories	Code	Secondary (<i>and tertiary</i>) level categories
1	Food waste	1.1	Food waste
2	Garden waste	2.1	Garden waste
3	Other organic	3.1	Organic pet bedding/litter
		3.2	Other organics
4	Paper	4.1	Newspapers
		4.2	Magazines
		4.3	Recyclable paper (excl News and Mags)
		4.4	Other paper
5	Card	5.1	Card packaging
		5.2	Other card
6	Glass	6.1	Packaging glass
		6.1.1	<i>Green bottles</i>
		6.1.2	<i>Clear bottles</i>
		6.1.3	<i>Brown bottles</i>
		6.1.4	<i>Jars</i>
		6.2	Non-packaging glass
7	Metals	7.1	Ferrous food and drink cans
		7.2	Other ferrous metal
		7.3	Non-ferrous drinks cans (excl non-ferrous food tins)
		7.4	Foil
		7.5	Other non-ferrous metal
8	Plastics	8.1	Plastic film
		8.1.1	<i>Plastic bags</i>
		8.1.2	<i>Plastic film packaging</i>
		8.1.3	<i>Other plastic film (non-packaging)</i>
		8.2	Dense plastic
		8.2.1	<i>Dense plastic drinks bottles</i>
		8.2.2	<i>Dense plastic non-drinks bottles</i>
		8.2.3	<i>Other dense plastic packaging</i>
		8.2.4	<i>Other dense plastic (non-packaging)</i>
9	Textiles	9.1	Artificial textiles, excluding shoes
		9.2	Natural textiles, excluding shoes
		9.3	Shoes
10	Wood	10.1	Treated and composite wood
		10.2	Untreated wood
11	WEEE	11.1	White goods
		11.2	Large electronic goods (excluding CRT TVs and monitors)
		11.3	CRT TVs and monitors
		11.4	Other WEEE
12	Hazardous	12.1	Batteries
		12.2	Clinical waste
		12.3	Paint/varnish
		12.4	Oil
		12.5	Garden herbicides & pesticides
13	Sanitary	13.1	Disposable nappies
		13.2	Other (sanpro and dressings)
14	Furniture	14.1	Furniture
15	Mattresses	15.1	Mattresses
16	Misc combustible	16.1	Carpet/underlay
		16.2	Other combustibles
17	Misc non-combustible	17.1	Bricks, blocks, plaster
		17.2	Other non-combustibles
18	Soil	18.1	Soil
19	Other wastes	19.1	Other wastes
20	Fines	20.1	Unspecified Fine material <10mm

2.3 Calculating mean arisings of various waste components

One of the greatest challenges in analysing large groups of compositional data is that different studies often have different categorisation systems.

For example, the subcategories for paper used in this study are shown in Table 2.5, alongside the number of kerbside residual studies where these subcategories can be identified.

Table 2.5: Number of kerbside residual composition studies (local authority level) for which compositional estimates for paper subcategories can be derived

Category	Number of studies
Paper & Cardboard	120
Paper	85
Newspapers and Magazines	30
Subcategories applicable to this study:	
Newspapers	20
Magazines	20
Recyclable paper (excl News and Mags)	7
Other paper (ie non-recyclable paper)	48

Only 20 studies had a separate category for Newspapers. The same applies to Magazines, with only 20 studies identifying these separately. 30 studies have grouped Newspaper and Magazines together and 7 all recyclable paper together.

It is possible to work out the arisings of all different types of recyclable paper from a fairly large subset of studies, and from this infer arisings of the remaining paper reported in each audit, ie non-recyclable or "Other paper".

"Recyclable paper (excl News and Mags)" refers to different types of recyclable paper, such as catalogues, directories, envelopes and office type paper, though it is likely that it will mainly be made up of "pams" (ie pamphlets, flyers, etc). In the case of "Recyclable paper (excl News and Mags)", we require studies that either include this as a specific category (in fact, none of the studies did); or which both record arisings of all recyclable paper and arisings of all Newspapers and Magazines, so that arisings of "Recyclable paper (excl News and Mags)" can be inferred. There are in fact only a handful of kerbside residual studies (7) for which these data are available.

The approach taken in this project was to estimate primary fractions from the broadest possible range of studies and then calculate how these fractions break down from a narrower range of studies.

For example, all paper *plus* all card are shown in all of the studies. If we derive the mean values (in terms of percentage arisings in kerbside residual) across all the 120 studies, and consider this figure in the context of mean values for all other primary level components² (all organic wastes, all glass, all metals, etc), we find that all paper *plus* all card accounts for an estimated 18.06% of kerbside residual waste.

However it is not possible separately to identify paper and card in 35 of the 120 studies. This is most commonly because a category such as "Paper and card: packaging" has been included, which blurs the distinction between paper and card arisings. If we calculate the mean arisings (in terms of percentage arisings in kerbside residual waste) for, respectively, paper and card across the remaining 85 studies, we find that:

² Crudely speaking, in order to ensure that mean values for all primary level components add up to 100%.

- Paper consists of an average of 12.% of kerbside residual waste
- Card consists of an average of 5.04% of kerbside residual waste.

This adds up to a different figure (17.50%) from the total arisings of paper and card derived from all 120 studies (18.06%). Therefore we adjusted the separate estimates for paper and card to match the overall arisings of paper and card derived from the large range of studies (the 18.06% figure derived from all 120 studies). This is accomplished as follows:

All paper = $(12.46\% / 17.50\%) \times 18.06\% = 12.86\%$

All card = $(5.04\% / 17.50\%) \times 18.06\% = 5.20\%$.

As part of the consideration of the reliability of the secondary categories, it is important to bear in mind the number of studies that have been used to derive mean values for each primary or secondary component. Therefore we recorded our findings on paper and card arisings in kerbside residual waste as follows:

All paper and card: 18.06% (derived from 120 studies)

All paper: 12.86% (derived from 85 studies)

All card: 5.20% (derived from 85 studies)

The compositional estimates in Section 3 of this report are presented in this manner (ie indicating the number of studies upon which data have been derived), albeit in abbreviated form. This provides a useful indicator of how robust each estimate is.

3. Estimated Composition of Municipal Waste and Recycling Streams in England

In this section compositional estimates are presented for the following municipal waste streams:

- Kerbside residual and recycling – Section 3.1
- HWRC residual (household) and recycling – Section 3.2
- Bulky Waste Collections residual waste – Section 3.3
- Street Sweepings, Street Cleansing and Litter residual waste – Section 3.4
- Other household recycling streams – Section 3.5
- Non-household municipal waste and recycling – Section 3.6
- Summary for all municipal waste streams – Section 3.7.

Please note: the figures in the tables presented here may not add up exactly to 100% due to rounding.

3.1 Kerbside waste and recycling

This section presents secondary level compositional estimates for kerbside residual, kerbside recycling and kerbside total.

3.1.1 Kerbside residual waste

Compositional estimates for kerbside residual waste in England for 2006-7 are presented in Table 3.1 below. Notes to Table 3.1 are as follows:

Code	Category	Comment
7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	The "Non-ferrous drinks cans" category excludes non-ferrous food tins, which are included in the "Other non-ferrous metal" category.
7.5	Other non-ferrous metal	
8.2.1	Dense plastic drinks bottles	No studies specifically differentiated between drinks and non-drinks bottles. It has been assumed that coloured HDPE (where this has been recorded in the collated studies) refers to non-drinks bottles.
8.2.2	Dense plastic non-drinks bottles	
11.3	CRT TVs and monitors	No studies identified arisings of "CRT TVs and monitors"
12.5	Garden herbicides & pesticides	Only 1 study identified "Garden herbicides & pesticides". The estimate for this category has been derived chiefly in the context of other "Hazardous Household Items" categories, through assuming that the remainder of hazardous materials not assigned to other categories arise in the "Garden herbicides & pesticides" category.

A separate analysis was carried out for subcategories of wood, distinguishing between packaging and non-packaging wood. Only 3 kerbside residual waste compositional studies identified these subcategories. The data from these studies indicated that the 1.09% arising of wood in kerbside residual waste (see Table 3.1) breaks down as follows:

- 0.04% packaging wood
- 1.05% non-packaging wood.

This finding should be treated with caution, due to the limited number of studies contributing to these estimates for packaging and non-packaging wood.

3.1.2 Kerbside recycling

Compositional estimates for kerbside recycling in England for 2006-7 are presented in Table 3.2 below.

The right-hand column indicates the number of districts contributing data to the estimates. Numbers not in italics in this column indicate that these relate data are from waste audits, whereas numbers in italics indicate that the data have been derived from WasteDataFlow reported tonnages.

Notes to Table 3.2 are as follows:

Code	Category	Comment
8.1.2	Plastic film packaging	No studies differentiated between these fractions. The same proportional breakdown as estimated for kerbside residual has been applied.
8.1.3	Other plastic film (non-packaging)	

3.1.3 Kerbside residual plus recycling

Compositional estimates for kerbside residual plus recycling are presented in Table 3.3 below.

Table 3.1: KERBSIDE RESIDUAL composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	% arising	Tonnes per annum	No. studies
1	Food waste	31.72%	4,457,189	120	1.1	Food waste	31.72%	4,457,189	120
2	Garden waste	6.22%	873,263	120	2.1	Garden waste	6.22%	873,263	120
3	Other organic	2.70%	379,210	120	3.1	Organic pet bedding/litter	0.70%	98,645	34
					3.2	Other organics	2.00%	280,565	34
4	Paper	12.86%	1,806,920	85	4.1	Newspapers	3.97%	557,287	20
					4.2	Magazines	2.44%	343,223	20
					4.3	Recyclable paper (excl News and Mags)	1.53%	215,495	7
					4.4	Other paper	4.92%	690,916	48
5	Card	5.20%	730,808	85	5.1	Card packaging	4.06%	569,999	10
					5.2	Other card	1.14%	160,809	10
6	Glass	4.88%	685,442	120	6.1	Packaging glass	4.30%	604,254	118
					6.1.1	<i>Green bottles</i>	0.89%	125,712	86
					6.1.2	<i>Clear bottles</i>	1.70%	238,337	86
					6.1.3	<i>Brown bottles</i>	0.29%	40,758	86
					6.1.4	<i>Jars</i>	1.42%	199,448	5
					6.2	Non-packaging glass	0.58%	81,188	118
7	Metals	3.40%	477,251	120	7.1	Ferrous food and drink cans	1.35%	189,441	87
					7.2	Other ferrous metal	1.14%	160,687	87
					7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.25%	35,799	11
					7.4	Foil	0.37%	51,936	77
					7.5	Other non-ferrous metal	0.28%	39,388	11
8	Plastics	13.52%	1,900,250	120	8.1	Plastic film	6.17%	866,982	93
					8.1.1	<i>Plastic bags</i>	1.57%	220,577	65
					8.1.2	<i>Plastic film packaging</i>	2.42%	339,569	5
					8.1.3	<i>Other plastic film (non-packaging)</i>	2.18%	306,835	5
					8.2	Dense plastic	7.35%	1,033,268	93
					8.2.1	<i>Dense plastic drinks bottles</i>	1.36%	190,625	93
					8.2.2	<i>Dense plastic non-drinks bottles</i>	0.56%	78,044	24
					8.2.3	<i>Other dense plastic packaging</i>	3.19%	448,594	62
					8.2.4	<i>Other dense plastic (non-packaging)</i>	2.25%	316,005	62

Table 3.1 (continued): KERBSIDE RESIDUAL composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	% arising	Tonnes per annum	No. studies
9	Textiles	3.68%	517,351	120	9.1	Artificial textiles, excluding shoes	1.18%	165,887	6
					9.2	Natural textiles, excluding shoes	2.15%	302,208	6
					9.3	Shoes	0.35%	49,256	106
10	Wood	1.09%	152,929	120	10.1	Treated and composite wood	0.76%	106,432	79
					10.2	Untreated wood	0.33%	46,497	79
11	WEEE	1.18%	165,971	120	11.1	White goods	0.05%	7,636	5
					11.2	Large electronic goods (excluding CRT TVs and monitors)	0.30%	41,995	5
					11.3	CRT TVs and monitors	no data	0	0
					11.4	Other WEEE	0.83%	116,339	5
12	Hazardous	0.50%	70,509	120	12.1	Batteries	0.09%	12,248	73
					12.2	Clinical waste	0.12%	16,541	23
					12.3	Paint/varnish	0.24%	34,216	39
					12.4	Oil	0.01%	1,814	27
					12.5	Garden herbicides & pesticides	0.04%	5,690	1
13	Sanitary	4.71%	662,259	120	13.1	Disposable nappies	4.38%	615,488	51
					13.2	Other (sanpro and dressings)	0.33%	46,771	51
14	Furniture	0.01%	1,034	120	14.1	Furniture	0.01%	1,034	120
15	Mattresses	0.00%	0	120	15.1	Mattresses	0.00%	0	120
16	Misc combustible	1.41%	198,750	120	16.1	Carpet/underlay	0.24%	34,184	25
					16.2	Other combustibles	1.17%	164,566	67
17	Misc non-combustible	2.06%	289,643	120	17.1	Bricks, blocks, plaster	0.56%	79,340	41
					17.2	Other non-combustibles	1.50%	210,303	70
18	Soil	0.00%	0	120	18.1	Soil	0.00%	0	120
19	Other wastes	2.80%	393,763	120	19.1	Other wastes	2.80%	393,763	120
20	Fines	2.05%	287,459	120	20.1	Unspecified Fine material <10mm	2.05%	287,459	120
TOTAL (Primary categories)		100.00%	14,050,000	na	TOTAL (Secondary categories)		100.00%	14,050,000	na

Table 3.2: KERBSIDE RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	% arising	Tonnes per annum	No. studies
1	Food waste	1.10%	51,096	354	1.1	Food waste	1.10%	51,096	354
2	Garden waste	35.29%	1,643,108	354	2.1	Garden waste	35.29%	1,643,108	354
3	Other organic	0.26%	12,118	354	3.1	Organic pet bedding/litter	0.20%	9,496	22
					3.2	Other organics	0.06%	2,621	22
4	Paper	39.27%	1,828,437	354	4.1	Newspapers	20.37%	948,385	12
					4.2	Magazines	11.22%	522,482	12
					4.3	Recyclable paper (excl News and Mags)	6.81%	316,981	7
					4.4	Other paper	0.87%	40,589	48
5	Card	6.06%	282,335	354	5.1	Card packaging	5.74%	267,283	11
					5.2	Other card	0.32%	15,052	11
6	Glass	10.30%	479,439	354	6.1	Packaging glass	10.20%	475,007	54
					6.1.1	<i>Green bottles</i>	3.37%	157,134	54
					6.1.2	<i>Clear bottles</i>	2.70%	125,509	54
					6.1.3	<i>Brown bottles</i>	0.76%	35,577	53
					6.1.4	<i>Jars</i>	3.37%	156,787	25
					6.2	Non-packaging glass	0.10%	4,433	42
7	Metals	3.02%	140,493	354	7.1	Ferrous food and drink cans	2.16%	100,703	87
					7.2	Other ferrous metal	0.20%	9,144	87
					7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.47%	21,833	11
					7.4	Foil	0.05%	2,281	77
					7.5	Other non-ferrous metal	0.14%	6,531	11
8	Plastics	3.06%	142,494	354	8.1	Plastic film	0.74%	34,586	75
					8.1.1	<i>Plastic bags</i>	0.19%	8,647	5
					8.1.2	<i>Plastic film packaging</i>	0.29%	13,627	0
					8.1.3	<i>Other plastic film (non-packaging)</i>	0.26%	12,313	0
					8.2	Dense plastic	2.32%	107,908	75
					8.2.1	<i>Dense plastic drinks bottles</i>	1.32%	61,570	15
					8.2.2	<i>Dense plastic non-drinks bottles</i>	0.35%	16,160	15
					8.2.3	<i>Other dense plastic packaging</i>	0.24%	10,974	18
					8.2.4	<i>Other dense plastic (non-packaging)</i>	0.41%	19,204	18

Table 3.2 (continued): KERBSIDE RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	% arising	Tonnes per annum	No. studies
9	Textiles	0.64%	29,923	354	9.1	Artificial textiles, excluding shoes	0.18%	8,458	5
					9.2	Natural textiles, excluding shoes	0.37%	17,190	5
					9.3	Shoes	0.09%	4,275	29
10	Wood	0.09%	4,163	354	10.1	Treated and composite wood	0.07%	3,222	35
					10.2	Untreated wood	0.02%	942	35
11	WEEE	0.57%	26,564	354	11.1	White goods	0.004%	181	0
					11.2	Large electronic goods (excluding CRT TVs and monitors)	0.02%	997	0
					11.3	CRT TVs and monitors	0.00%	0	0
					11.4	Other WEEE	0.55%	25,387	12
12	Hazardous	0.02%	773	354	12.1	Batteries	0.01%	500	36
					12.2	Clinical waste	0.001%	59	6
					12.3	Paint/varnish	0.0001%	5	2
					12.4	Oil	0.003%	149	12
					12.5	Garden herbicides & pesticides	0.001%	59	1
13	Sanitary	0.00%	0	354	13.1	Disposable nappies	0.00%	0	0
					13.2	Other (sanpro and dressings)	0.00%	0	0
14	Furniture	0.06%	2,779	354	14.1	Furniture	0.06%	2,779	354
15	Mattresses	0.00%	0	354	15.1	Mattresses	0.00%	0	354
16	Misc combustible	0.00%	0	354	16.1	Carpet/underlay	0.00%	0	0
					16.2	Other combustibles	0.00%	0	0
17	Misc non-combustible	0.00%	0	354	17.1	Bricks, blocks, plaster	0.00%	0	0
					17.2	Other non-combustibles	0.00%	0	0
18	Soil	0.00%	0	354	18.1	Soil	0.00%	0	354
19	Other wastes	0.28%	12,905	354	19.1	Other wastes	0.28%	12,905	354
20	Fines	0.00%	0	354	20.1	Unspecified Fine material <10mm	0.00%	0	354
TOTAL (Primary categories)		100.00%	4,656,625	na	TOTAL (Secondary categories)		100.00%	4,656,625	na

Table 3.3: KERBSIDE RESIDUAL PLUS RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	% arising	Tonnes per annum
1	Food waste	24.10%	4,508,285	1.1	Food waste	24.10%	4,508,285
2	Garden waste	13.45%	2,516,371	2.1	Garden waste	13.45%	2,516,371
3	Other organic	2.09%	391,327	3.1	Organic pet bedding/litter	0.58%	108,141
				3.2	Other organics	1.51%	283,186
4	Paper	19.43%	3,635,357	4.1	Newspapers	8.05%	1,505,672
				4.2	Magazines	4.63%	865,705
				4.3	Recyclable paper (excl News and Mags)	2.85%	532,476
				4.4	Other paper	3.91%	731,504
5	Card	5.42%	1,013,142	5.1	Card packaging	4.48%	837,281
				5.2	Other card	0.94%	175,861
6	Glass	6.23%	1,164,881	6.1	Packaging glass	5.77%	1,079,261
				6.1.1	<i>Green bottles</i>	1.51%	282,845
				6.1.2	<i>Clear bottles</i>	1.95%	363,846
				6.1.3	<i>Brown bottles</i>	0.41%	76,336
				6.1.4	<i>Jars</i>	1.90%	356,234
				6.2	Non-packaging glass	0.46%	85,620
7	Metals	3.30%	617,743	7.1	Ferrous food and drink cans	1.55%	290,145
				7.2	Other ferrous metal	0.91%	169,831
				7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.31%	57,631
				7.4	Foil	0.29%	54,217
				7.5	Other non-ferrous metal	0.25%	45,919
8	Plastics	10.92%	2,042,743	8.1	Plastic film	4.82%	901,568
				8.1.1	<i>Plastic bags</i>	1.23%	229,224
				8.1.2	<i>Plastic film packaging</i>	1.89%	353,196
				8.1.3	<i>Other plastic film (non-packaging)</i>	1.71%	319,148
				8.2	Dense plastic	6.10%	1,141,176
				8.2.1	<i>Dense plastic drinks bottles</i>	1.35%	252,195
				8.2.2	<i>Dense plastic non-drinks bottles</i>	0.50%	94,204
				8.2.3	<i>Other dense plastic packaging</i>	2.46%	459,568
				8.2.4	<i>Other dense plastic (non-packaging)</i>	1.79%	335,209

Table 3.3 (continued): KERBSIDE RESIDUAL PLUS RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum
9	Textiles	2.93%	547,274	9.1	Artificial textiles, excluding shoes	0.93%	174,345
				9.2	Natural textiles, excluding shoes	1.71%	319,398
				9.3	Shoes	0.29%	53,531
10	Wood	0.84%	157,092	10.1	Treated and composite wood	0.59%	109,654
				10.2	Untreated wood	0.25%	47,439
11	WEEE	1.03%	192,535	11.1	White goods	0.04%	7,817
				11.2	Large electronic goods (excluding CRT TVs and monitors)	0.23%	42,992
				11.3	CRT TVs and monitors	0.00%	0
				11.4	Other WEEE	0.76%	141,726
12	Hazardous	0.38%	71,281	12.1	Batteries	0.07%	12,748
				12.2	Clinical waste	0.09%	16,600
				12.3	Paint/varnish	0.18%	34,221
				12.4	Oil	0.01%	1,963
				12.5	Garden herbicides & pesticides	0.03%	5,749
13	Sanitary	3.54%	662,259	13.1	Disposable nappies	3.29%	615,488
				13.2	Other (sanpro and dressings)	0.25%	46,771
14	Furniture	0.02%	3,813	14.1	Furniture	0.02%	3,813
15	Mattresses	0.00%	0	15.1	Mattresses	0.00%	0
16	Misc combustible	1.06%	198,750	16.1	Carpet/underlay	0.18%	34,184
				16.2	Other combustibles	0.88%	164,566
17	Misc non-combustible	1.55%	289,643	17.1	Bricks, blocks, plaster	0.42%	79,340
				17.2	Other non-combustibles	1.12%	210,303
18	Soil	0.00%	0	18.1	Soil	0.00%	0
19	Other wastes	2.17%	406,668	19.1	Other wastes	2.17%	406,668
20	Fines	1.54%	287,459	20.1	Unspecified Fine material <10mm	1.54%	287,459
TOTAL (Primary categories)		100.00%	18,706,625	TOTAL (Secondary categories)		100.00%	18,706,625

3.2 HWRC waste and recycling

This section presents secondary level compositional estimates for HWRC residual (household only), HWRC recycling and HWRC total. HWRC non-household residual waste is included in Section 3.6. HWRC rubble recycling has been excluded from these national compositional estimates (see Section 1).

3.2.1 HWRC residual waste

Compositional estimates for HWRC residual waste (household only) in England for 2006-7 are presented in Table 3.4 below. Notes to Table 3.4 are as follows:

Code	Category	Comment
3.1	Organic pet bedding/litter	Only 2 studies differentiated between Organic pet bedding/litter and Other organics
3.2	Other organics	
4.1	Newspapers	No studies provided data which distinguished between Newspapers and Magazines. Relative arisings of Newspapers and Magazines in HWRC residual have been inferred from their relative arisings in kerbside residual.
4.2	Magazines	
6.1.4	Jars	No studies separately identified Jars. Relative arisings of Jars in relation to other glass packaging subfractions have been
7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	This category excludes non-ferrous food tins, which are allocated to the "Other non-ferrous metals" category. The
8.2.1	Dense plastic drinks bottles	No studies differentiated between drinks and non-drinks bottles. Non-drinks bottles arisings have been inferred from the arising of coloured HDPE bottles in kerbside residual.
8.2.2	Dense plastic non-drinks bottles	
13.1	Disposable nappies	No studies distinguished between Disposal nappies and Other sanitary wastes. The relative breakdown of these categories has been inferred from kerbside residual data.
13.2	Other (sanpro and dressings)	

A separate analysis was carried out for subcategories of wood, distinguishing between packaging and non-packaging wood. Only one HWRC residual waste compositional study identified these subcategories. The data from this study indicated that the 15.12% arising of wood in HWRC residual waste (see Table 3.2) breaks down as follows:

- 0.23% packaging wood
- 14.89% non-packaging wood.

This finding should be treated with caution, as only one study contributed to these estimates for packaging and non-packaging wood.

3.2.2 HWRC recycling

Compositional estimates for HWRC recycling in England for 2006-7 are presented in Table 3.5 below. These exclude rubble separated for recycling at HWRCs (see Section 1).

The right-hand column indicates the number of districts contributing data to the estimates. Numbers not in italics in this column indicate that these relate data are from waste audits, whereas numbers in italics indicate that the data have been derived from WasteDataFlow reported tonnages.

Due to lack of data, in most cases secondary level arisings for HWRC recycling have been estimated by assuming that the relative arising of each secondary level fraction within a primary component is the same as for kerbside recycling. However there are some important exceptions

to this, where it is known or suspected that the composition of a component will be significantly different to that found in kerbside recycling:

- HWRC glass colour recycling, assumed to be the same as for bring banks; estimates for bring banks derived from 2006/07 WDF tonnages for 103 districts which reported separate colours for glass recycling.
- HWRC metals recycling: estimates from a previous compositional review carried out by Dr Julian Parfitt for WRAP in 2007 applied, with reference to cans recycling reported in WDF tonnages for England in 2006/07. The proportional breakdown of ferrous and non-ferrous categories for cans was determined with reference to relative arisings estimated for kerbside recycling.
- HWRC WEEE recycling: estimates obtained through analysis of two studies of HWRC inputs (i.e. analysis of waste delivered to HWRCs by site users).

3.2.3 HWRC residual plus recycling

Compositional estimates for kerbside residual plus recycling are presented in Table 3.6 below.

Table 3.4: HWRC RESIDUAL composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
1	Food waste	3.54%	91,234	34	1.1	Food waste	3.54%	91,234	34
2	Garden waste	5.25%	135,269	34	2.1	Garden waste	5.25%	135,269	34
3	Other organic	0.96%	24,706	34	3.1	Organic pet bedding/litter	0.77%	19,876	2
					3.2	Other organics	0.19%	4,830	2
4	Paper	4.82%	124,223	34	4.1	Newspapers	0.80%	20,511	9
					4.2	Magazines	0.49%	12,632	9
					4.3	Recyclable paper (excl News and Mags)	2.14%	55,152	9
					4.4	Other paper	1.39%	35,927	29
5	Card	2.71%	69,736	34	5.1	Card packaging	2.47%	63,577	6
					5.2	Other card	0.24%	6,158	6
6	Glass	2.46%	63,483	34	6.1	Packaging glass	0.72%	18,503	33
					6.1.1	<i>Green bottles</i>	0.20%	5,263	8
					6.1.2	<i>Clear bottles</i>	0.18%	4,646	8
					6.1.3	<i>Brown bottles</i>	0.10%	2,487	8
					6.1.4	<i>Jars</i>	0.24%	6,107	0
					6.2	Non-packaging glass	1.75%	44,980	33
7	Metals	2.23%	57,552	34	7.1	Ferrous food and drink cans	0.26%	6,640	6
					7.2	Other ferrous metal	1.55%	39,910	6
					7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.03%	760	5
					7.4	Foil	0.02%	452	3
					7.5	Other non-ferrous metal	0.38%	9,790	5
8	Plastics	10.46%	269,518	34	8.1	Plastic film	2.05%	52,740	33
					8.1.1	<i>Plastic bags</i>	0.66%	16,874	4
					8.1.2	<i>Plastic film packaging</i>	0.71%	18,402	4
					8.1.3	<i>Other plastic film (non-packaging)</i>	0.68%	17,464	4
					8.2	Dense plastic	8.42%	216,778	33
					8.2.1	<i>Dense plastic drinks bottles</i>	0.32%	8,358	31
					8.2.2	<i>Dense plastic non-drinks bottles</i>	0.13%	3,422	0
					8.2.3	<i>Other dense plastic packaging</i>	1.82%	46,865	22
					8.2.4	<i>Other dense plastic (non-packaging)</i>	6.14%	158,133	22

Table 3.4 (continued): HWRC RESIDUAL composition estimates for England, 2006/07

Code	Primary level categories		Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
9	Textiles	4.50%	115,939	34	9.1	Artificial textiles, excluding shoes	2.81%	72,473	6
					9.2	Natural textiles, excluding shoes	1.29%	33,146	6
					9.3	Shoes	0.40%	10,320	25
10	Wood	15.12%	389,380	34	10.1	Treated and composite wood	13.41%	345,404	32
					10.2	Untreated wood	1.71%	43,976	32
11	WEEE	2.44%	62,744	34	11.1	White goods	0.30%	7,776	10
					11.2	Large electronic goods (excluding CRT TVs and monitors)	0.85%	21,963	11
					11.3	CRT TVs and monitors	0.19%	4,896	13
					11.4	Other WEEE	1.09%	28,110	13
12	Hazardous	1.53%	39,417	34	12.1	Batteries	0.02%	641	33
					12.2	Clinical waste	0.05%	1,241	27
					12.3	Paint/varnish	1.08%	27,754	30
					12.4	Oil	0.02%	544	29
					12.5	Garden herbicides & pesticides	0.36%	9,237	29
13	Sanitary	0.26%	6,818	34	13.1	Disposable nappies	0.25%	6,336	0
					13.2	Other (sanpro and dressings)	0.02%	481	0
14	Furniture	8.33%	214,481	34	14.1	Furniture	8.33%	214,481	34
15	Mattresses	2.39%	61,658	34	15.1	Mattresses	2.39%	61,658	34
16	Misc combustible	13.71%	353,068	34	16.1	Carpet/underlay	9.53%	245,469	32
					16.2	Other combustibles	4.18%	107,599	32
17	Misc non-combustible	14.94%	384,901	34	17.1	Bricks, blocks, plaster	6.49%	167,198	31
					17.2	Other non-combustibles	8.45%	217,702	32
18	Soil	1.83%	47,065	34	18.1	Soil	1.83%	47,065	34
19	Other wastes	1.72%	44,373	34	19.1	Other wastes	1.72%	44,373	34
20	Fines	0.79%	20,437	34	20.1	Unspecified Fine material <10mm	0.79%	20,437	34
TOTAL (Primary categories)		100.00%	2,576,000	na	TOTAL (Secondary categories)		100.00%	2,576,000	na

Table 3.5: HWRC RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
1	Food waste	0.01%	298	133	1.1	Food waste	0.01%	298	133
2	Garden waste	44.25%	1,131,248	133	2.1	Garden waste	44.25%	1,131,248	133
3	Other organic	0.00%	1	133	3.1	Organic pet bedding/litter	0.00%	1	0
					3.2	Other organics	0.00%	0	0
4	Paper	4.41%	112,687	133	4.1	Newspapers	2.29%	58,449	0
					4.2	Magazines	1.26%	32,201	0
					4.3	Recyclable paper (excl News and Mags)	0.76%	19,536	0
					4.4	Other paper	0.10%	2,501	0
5	Card	4.36%	111,578	133	5.1	Card packaging	4.13%	105,630	0
					5.2	Other card	0.23%	5,949	0
6	Glass	2.36%	60,428	133	6.1	Packaging glass	2.34%	59,869	0
					6.1.1	<i>Green bottles</i>	1.30%	33,205	0
					6.1.2	<i>Clear bottles</i>	0.62%	15,969	0
					6.1.3	<i>Brown bottles</i>	0.26%	6,703	0
					6.1.4	<i>Jars</i>	0.16%	3,992	0
					6.2	Non-packaging glass	0.02%	559	0
7	Metals	15.21%	388,834	133	7.1	Ferrous food and drink cans	0.28%	7,245	0
					7.2	Other ferrous metal	8.57%	219,201	0
					7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.06%	1,571	0
					7.4	Foil	0.01%	164	0
					7.5	Other non-ferrous metal	6.28%	160,653	0
8	Plastics	0.41%	10,536	133	8.1	Plastic film	0.10%	2,557	0
					8.1.1	<i>Plastic bags</i>	0.02%	639	0
					8.1.2	<i>Plastic film packaging</i>	0.04%	1,007	0
					8.1.3	<i>Other plastic film (non-packaging)</i>	0.04%	910	0
					8.2	Dense plastic	0.31%	7,979	0
					8.2.1	<i>Dense plastic drinks bottles</i>	0.18%	4,550	0
					8.2.2	<i>Dense plastic non-drinks bottles</i>	0.05%	1,194	0
					8.2.3	<i>Other dense plastic packaging</i>	0.03%	811	0
					8.2.4	<i>Other dense plastic (non-packaging)</i>	0.06%	1,419	0

Table 3.5 (continued): HWRC RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
9	Textiles	1.02%	26,141	133	9.1	Artificial textiles, excluding shoes	0.29%	7,389	0
					9.2	Natural textiles, excluding shoes	0.59%	15,018	0
					9.3	Shoes	0.15%	3,734	0
10	Wood	14.37%	367,367	133	10.1	Treated and composite wood	11.12%	284,268	0
					10.2	Untreated wood	3.25%	83,099	0
11	WEEE	9.05%	231,466	133	11.1	White goods	4.16%	106,474	2
					11.2	Large electronic goods (excluding CRT TVs and monitors)	1.85%	47,359	2
					11.3	CRT TVs and monitors	2.44%	62,349	2
					11.4	Other WEEE	0.60%	15,284	2
12	Hazardous	1.17%	29,832	133	12.1	Batteries	0.76%	19,313	0
					12.2	Clinical waste	0.09%	2,285	0
					12.3	Paint/varnish	0.01%	202	0
					12.4	Oil	0.22%	5,747	0
					12.5	Garden herbicides & pesticides	0.09%	2,284	0
13	Sanitary	0.00%	4	133	13.1	Disposable nappies	0.00%	4	0
					13.2	Other (sanpro and dressings)	0.00%	0	0
14	Furniture	0.88%	22,509	133	14.1	Furniture	0.88%	22,509	133
15	Mattresses	0.00%	0	133	15.1	Mattresses	0.00%	0	133
16	Misc combustible	0.05%	1,322	133	16.1	Carpet/underlay	0.01%	227	0
					16.2	Other combustibles	0.04%	1,095	0
17	Misc non-combustible	0.00%	2	133	17.1	Bricks, blocks, plaster	0.00%	2	0
					17.2	Other non-combustibles	0.00%	0	0
18	Soil	0.00%	0	133	18.1	Soil	0.00%	0	133
19	Other wastes	2.44%	62,447	133	19.1	Other wastes	2.44%	62,447	133
20	Fines	0.00%	4	133	20.1	Unspecified Fine material <10mm	0.00%	4	133
TOTAL (Primary categories)		100.00%	2,556,704	na	TOTAL (Secondary categories)		100.00%	2,556,704	na

Table 3.6: HWRC RESIDUAL PLUS RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum
1	Food waste	1.78%	91,531	1.1	Food waste	1.78%	91,531
2	Garden waste	24.68%	1,266,517	2.1	Garden waste	24.68%	1,266,517
3	Other organic	0.48%	24,707	3.1	Organic pet bedding/litter	0.39%	19,877
				3.2	Other organics	0.09%	4,830
4	Paper	4.62%	236,909	4.1	Newspapers	1.54%	78,960
				4.2	Magazines	0.87%	44,833
				4.3	Recyclable paper (excl News and Mags)	1.46%	74,688
				4.4	Other paper	0.75%	38,429
5	Card	3.53%	181,314	5.1	Card packaging	3.30%	169,207
				5.2	Other card	0.24%	12,107
6	Glass	2.41%	123,911	6.1	Packaging glass	1.53%	78,372
				6.1.1	<i>Green bottles</i>	0.75%	38,468
				6.1.2	<i>Clear bottles</i>	0.40%	20,615
				6.1.3	<i>Brown bottles</i>	0.18%	9,190
				6.1.4	<i>Jars</i>	0.20%	10,099
				6.2	Non-packaging glass	0.89%	45,539
7	Metals	8.70%	446,387	7.1	Ferrous food and drink cans	0.27%	13,885
				7.2	Other ferrous metal	5.05%	259,112
				7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.05%	2,331
				7.4	Foil	0.01%	616
				7.5	Other non-ferrous metal	3.32%	170,443
8	Plastics	5.46%	280,054	8.1	Plastic film	1.08%	55,297
				8.1.1	<i>Plastic bags</i>	0.34%	17,513
				8.1.2	<i>Plastic film packaging</i>	0.38%	19,409
				8.1.3	<i>Other plastic film (non-packaging)</i>	0.36%	18,374
				8.2	Dense plastic	4.38%	224,757
				8.2.1	<i>Dense plastic drinks bottles</i>	0.25%	12,908
				8.2.2	<i>Dense plastic non-drinks bottles</i>	0.09%	4,616
				8.2.3	<i>Other dense plastic packaging</i>	0.93%	47,676
				8.2.4	<i>Other dense plastic (non-packaging)</i>	3.11%	159,553

Table 3.6 (continued): HWRC RESIDUAL PLUS RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum
9	Textiles	2.77%	142,080	9.1	Artificial textiles, excluding shoes	1.56%	79,862
				9.2	Natural textiles, excluding shoes	0.94%	48,163
				9.3	Shoes	0.27%	14,055
10	Wood	14.74%	756,747	10.1	Treated and composite wood	12.27%	629,672
				10.2	Untreated wood	2.48%	127,076
11	WEEE	5.73%	294,210	11.1	White goods	2.23%	114,250
				11.2	Large electronic goods (excluding CRT TVs and monitors)	1.35%	69,322
				11.3	CRT TVs and monitors	1.31%	67,244
				11.4	Other WEEE	0.85%	43,394
12	Hazardous	1.35%	69,249	12.1	Batteries	0.39%	19,954
				12.2	Clinical waste	0.07%	3,526
				12.3	Paint/varnish	0.54%	27,956
				12.4	Oil	0.12%	6,291
				12.5	Garden herbicides & pesticides	0.22%	11,520
13	Sanitary	0.13%	6,822	13.1	Disposable nappies	0.12%	6,340
				13.2	Other (sanpro and dressings)	0.01%	482
14	Furniture	4.62%	236,990	14.1	Furniture	4.62%	236,990
15	Mattresses	1.20%	61,658	15.1	Mattresses	1.20%	61,658
16	Misc combustible	6.90%	354,390	16.1	Carpet/underlay	4.79%	245,696
				16.2	Other combustibles	2.12%	108,693
17	Misc non-combustible	7.50%	384,903	17.1	Bricks, blocks, plaster	3.26%	167,200
				17.2	Other non-combustibles	4.24%	217,702
18	Soil	0.92%	47,065	18.1	Soil	0.92%	47,065
19	Other wastes	2.08%	106,820	19.1	Other wastes	2.08%	106,820
20	Fines	0.40%	20,441	20.1	Unspecified Fine material <10mm	0.40%	20,441
TOTAL (Primary categories)		100.00%	5,132,704	TOTAL (Secondary categories)		100.00%	5,132,704

3.3 Bulky waste collections residual waste

Compositional estimates for bulky waste collections residual waste in England for 2006-7 are presented in Table 3.7 below. We have treated bulky waste collections residual as a separate municipal waste stream and estimated the arising of bulky waste collections residual from "Other household residual" tonnages reported in WasteDataFlow. It should be noted that most of the bulky waste collections composition studies focused on identifying the bulkier fractions in the waste stream. Therefore there are often only a few studies which provide data on the non-bulky fractions.

Notes to Table 3.7 are as follows:

Code	Category	Comment
3.1	Organic pet bedding/litter	No studies separately identified Organic pet bedding/litter. Arisings of this fraction have been inferred from kerbside residual data on the relative arisings of Organic pet bedding/litter and Other organics
4.1	Newspapers	No studies provided data which distinguished between Newspapers and Magazines. Relative arisings of Newspapers and Magazines for this waste stream have been inferred from their relative arisings in kerbside residual.
4.2	Magazines	
6.1.1	Green bottles	No studies satisfactorily distinguished between the various glass packaging subfractions. The relative breakdown of these fractions has been inferred from kerbside residual data.
6.1.2	Clear bottles	
6.1.3	Brown bottles	
6.1.4	Jars	
7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	This category excludes non-ferrous food tins, which are allocated to the "Other non-ferrous metals" category. The
8.1.1	Plastic bags	No studies provided data on the breakdown of plastic film. Relative arisings of plastic film fractions have been inferred from HWRC residual data
8.1.2	Plastic film packaging	
8.1.3	Other plastic film (non-packaging)	
8.2.1	Dense plastic drinks bottles	No studies differentiated between drinks and non-drinks bottles. Non-drinks bottles arisings have been inferred from the arising of coloured HDPE bottles in kerbside residual.
8.2.2	Dense plastic non-drinks bottles	
10.1	Treated and composite wood	No studies distinguished between treated and composite wood, and untreated wood. The relative breakdown of these categories has been inferred from kerbside residual data.
10.2	Untreated wood	
13.1	Disposable nappies	No studies distinguished between Disposal nappies and Other sanitary wastes. The relative breakdown of these categories has been inferred from kerbside residual data.
13.2	Other (sanpro and dressings)	

It may be the case that arisings of *8.2.4 Other dense plastic (non-packaging)* are greater than indicated in Table 3.7, since some dense plastic furniture items may be included in category *14.1 Furniture*. However there is no way of determining whether this is actually the case from the studies available.

Whilst a separate analysis of packaging and non-packaging wood was carried out for other waste streams, no studies were available that identified these subcategories of wood in bulky waste collections residual waste.

Table 3.7: BULKY WASTE COLLECTIONS RESIDUAL composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	% arising	Tonnes per annum	No. studies
1	Food waste	0.07%	183	17	1.1	Food waste	0.07%	183	17
2	Garden waste	2.27%	6,128	17	2.1	Garden waste	2.27%	6,128	17
3	Other organic	0.03%	88	17	3.1	Organic pet bedding/litter	0.01%	23	0
					3.2	Other organics	0.02%	65	4
4	Paper	0.23%	630	17	4.1	Newspapers	0.06%	173	1
					4.2	Magazines	0.04%	106	1
					4.3	Recyclable paper (excl News and Mags)	0.09%	232	4
					4.4	Other paper	0.04%	119	4
5	Card	0.19%	511	17	5.1	Card packaging	0.17%	460	1
					5.2	Other card	0.02%	50	1
6	Glass	0.19%	501	17	6.1	Packaging glass	0.05%	129	4
					6.1.1	<i>Green bottles</i>	0.01%	27	0
					6.1.2	<i>Clear bottles</i>	0.02%	51	0
					6.1.3	<i>Brown bottles</i>	0.00%	9	0
					6.1.4	<i>Jars</i>	0.02%	43	0
					6.2	Non-packaging glass	0.14%	372	9
7	Metals	0.65%	1,748	17	7.1	Ferrous food and drink cans	0.00%	0	2
					7.2	Other ferrous metal	0.32%	859	2
					7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.00%	0	2
					7.4	Foil	0.00%	0	2
					7.5	Other non-ferrous metal	0.33%	889	2
8	Plastics	0.94%	2,535	17	8.1	Plastic film	0.11%	284	3
					8.1.1	<i>Plastic bags</i>	0.03%	91	0
					8.1.2	<i>Plastic film packaging</i>	0.04%	99	0
					8.1.3	<i>Other plastic film (non-packaging)</i>	0.03%	94	0
					8.2	Dense plastic	0.83%	2,251	4
					8.2.1	<i>Dense plastic drinks bottles</i>	0.02%	67	3
					8.2.2	<i>Dense plastic non-drinks bottles</i>	0.01%	27	0
					8.2.3	<i>Other dense plastic packaging</i>	0.00%	10	1
					8.2.4	<i>Other dense plastic (non-packaging)</i>	0.80%	2,147	3

Table 3.7 (continued): BULKY WASTE COLLECTIONS RESIDUAL composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
9	Textiles	0.47%	1,274	17	9.1	Artificial textiles, excluding shoes	0.45%	1,224	1
					9.2	Natural textiles, excluding shoes	0.00%	9	1
					9.3	Shoes	0.02%	41	3
10	Wood	4.12%	11,123	17	10.1	Treated and composite wood	2.87%	7,741	0
					10.2	Untreated wood	1.25%	3,382	0
11	WEEE	36.13%	97,474	17	11.1	White goods	25.72%	69,378	16
					11.2	Large electronic goods (excluding CRT TVs and monitors)	3.94%	10,632	9
					11.3	CRT TVs and monitors	1.00%	2,705	10
					11.4	Other WEEE	5.47%	14,759	17
12	Hazardous	0.10%	264	17	12.1	Batteries	0.00%	0	3
					12.2	Clinical waste	0.00%	0	3
					12.3	Paint/varnish	0.07%	185	3
					12.4	Oil	0.00%	0	3
					12.5	Garden herbicides & pesticides	0.03%	79	2
13	Sanitary	0.01%	27	17	13.1	Disposable nappies	0.01%	25	0
					13.2	Other (sanpro and dressings)	0.00%	2	0
14	Furniture	36.40%	98,199	17	14.1	Furniture	36.40%	98,199	17
15	Mattresses	1.50%	4,042	17	15.1	Mattresses	1.50%	4,042	17
16	Misc combustible	7.44%	20,059	17	16.1	Carpet/underlay	1.80%	4,844	16
					16.2	Other combustibles	5.64%	15,215	12
17	Misc non-combustible	0.98%	2,631	17	17.1	Bricks, blocks, plaster	0.02%	61	3
					17.2	Other non-combustibles	0.95%	2,570	9
18	Soil	0.00%	0	17	18.1	Soil	0.00%	0	17
19	Other wastes	8.04%	21,691	17	19.1	Other wastes	8.04%	21,691	17
20	Fines	0.25%	682	17	20.1	Unspecified Fine material <10mm	0.25%	682	17
TOTAL (Primary categories)		100.00%	269,790	na	TOTAL (Secondary categories)		100.00%	269,790	na

3.4 Street cleansing, street sweepings and litter residual waste

Compositional estimates for an aggregated category of street cleansing, street sweepings and litter residual waste in England for 2006-7 are presented in Table 3.8 below.

In WasteDataFlow these waste streams are reported under the heading “Other household residual” and the street cleansing, street sweepings and litter elements cannot be differentiated. The “Other household residual” category also includes bulky waste collections (see Section 3.3). Additionally, while some of the collated studies reported street cleansing, street sweepings or litter separately the numbers of studies for each sub-category are too low to produce reliable separate estimates. However sufficient compositional studies included aggregated figures for street cleansing, street sweepings and litter, so these wastes are reported here as a single municipal waste stream.

Notes to Table 3.8 are as follows:

Code	Category	Comment
6.1.4	Jars	No studies identified arisings of "Jars".
7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	The "Non-ferrous drinks cans" category excludes non-ferrous food tins, which are included in the "Other non-ferrous metal" category.
7.5	Other non-ferrous metal	
11.3	CRT TVs and monitors	No studies identified arisings of "CRT TVs and monitors".
12.5	Garden herbicides & pesticides	No studies specifically identified "Garden herbicides & pesticides". The estimate for this category has been derived in the context of other "Hazardous Household Items" categories, through assuming that the remainder of hazardous materials not assigned to other categories arise in the "Garden herbicides & pesticides" category.

A separate analysis was carried out for subcategories of wood, distinguishing between packaging and non-packaging wood. These subcategories were identified in only 3 street cleansing, street sweepings and/or litter compositional studies. The data from these studies indicated that the 0.47% arising of wood in street cleansing, street sweepings and litter residual waste (see Table 3.4) breaks down as follows:

- 0.09% packaging wood
- 0.38% non-packaging wood.

This finding should be treated with caution, due to the limited number of studies contributing to these estimates for packaging and non-packaging wood.

Table 3.8: STREET CLEANSING, STREET SWEEPINGS AND LITTER RESIDUAL composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
1	Food waste	12.17%	109,924	21	1.1	Food waste	12.17%	109,924	21
2	Garden waste	8.69%	78,458	21	2.1	Garden waste	8.69%	78,458	21
3	Other organic	7.05%	63,696	21	3.1	Organic pet bedding/litter	0.10%	937	5
					3.2	Other organics	6.95%	62,759	5
4	Paper	12.96%	117,015	21	4.1	Newspapers	2.81%	25,424	6
					4.2	Magazines	3.40%	30,713	6
					4.3	Recyclable paper (excl News and Mags)	5.13%	46,366	19
					4.4	Other paper	1.61%	14,511	19
5	Card	5.05%	45,568	21	5.1	Card packaging	4.74%	42,796	6
					5.2	Other card	0.31%	2,772	6
6	Glass	6.85%	61,856	21	6.1	Packaging glass	6.71%	60,600	19
					6.1.1	<i>Green bottles</i>	2.71%	24,480	19
					6.1.2	<i>Clear bottles</i>	3.32%	29,946	19
					6.1.3	<i>Brown bottles</i>	0.68%	6,174	19
					6.1.4	<i>Jars</i>	<i>no data</i>	0	0
					6.2	Non-packaging glass	0.14%	1,257	19
7	Metals	4.29%	38,783	21	7.1	Ferrous food and drink cans	1.11%	10,003	16
					7.2	Other ferrous metal	0.43%	3,845	16
					7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	2.60%	23,507	17
					7.4	Foil	0.11%	972	11
					7.5	Other non-ferrous metal	0.05%	456	11
8	Plastics	16.33%	147,485	21	8.1	Plastic film	6.13%	55,407	16
					8.1.1	<i>Plastic bags</i>	2.62%	23,633	7
					8.1.2	<i>Plastic film packaging</i>	3.51%	31,664	2
					8.1.3	<i>Other plastic film (non-packaging)</i>	0.01%	110	2
					8.2	Dense plastic	10.19%	92,078	16
					8.2.1	<i>Dense plastic drinks bottles</i>	5.36%	48,448	16
					8.2.2	<i>Dense plastic non-drinks bottles</i>	0.32%	2,865	2
					8.2.3	<i>Other dense plastic packaging</i>	1.57%	14,138	8
8.2.4	<i>Other dense plastic (non-packaging)</i>	2.95%	26,627	8					

Table 3.8 (continued): STREET CLEANSING, STREET SWEEPINGS AND LITTER RESIDUAL composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
9	Textiles	1.41%	12,710	21	9.1	Artificial textiles, excluding shoes	0.74%	6,670	6
					9.2	Natural textiles, excluding shoes	0.51%	4,592	6
					9.3	Shoes	0.16%	1,448	11
10	Wood	0.47%	4,264	21	10.1	Treated and composite wood	0.18%	1,607	7
					10.2	Untreated wood	0.29%	2,657	7
11	WEEE	0.19%	1,701	21	11.1	White goods	0.00%	0	2
					11.2	Large electronic goods (excluding CRT TVs and monitors)	0.00%	0	2
					11.3	CRT TVs and monitors	no data	0	0
					11.4	Other WEEE	0.19%	1,701	13
12	Hazardous	0.14%	1,225	21	12.1	Batteries	0.03%	243	8
					12.2	Clinical waste	0.00%	0	2
					12.3	Paint/varnish	0.00%	0	5
					12.4	Oil	0.00%	0	7
					12.5	Garden herbicides & pesticides	0.11%	982	0
13	Sanitary	0.91%	8,181	21	13.1	Disposable nappies	0.78%	7,049	8
					13.2	Other (sanpro and dressings)	0.13%	1,132	8
14	Furniture	0.00%	0	21	14.1	Furniture	0.00%	0	21
15	Mattresses	0.00%	0	21	15.1	Mattresses	0.00%	0	21
16	Misc combustible	0.62%	5,609	21	16.1	Carpet/underlay	0.00%	43	2
					16.2	Other combustibles	0.62%	5,565	13
17	Misc non-combustible	1.88%	16,947	21	17.1	Bricks, blocks, plaster	1.03%	9,275	5
					17.2	Other non-combustibles	0.85%	7,673	5
18	Soil	0.00%	0	21	18.1	Soil	0.00%	0	21
19	Other wastes	7.72%	69,689	21	19.1	Other wastes	7.72%	69,689	21
20	Fines	13.30%	120,099	21	20.1	Unspecified Fine material <10mm	13.30%	120,099	21
TOTAL (Primary categories)		100.00%	903,210	na	TOTAL (Secondary categories)		100.00%	903,210	na

3.5 Other household recycling streams

This section presents secondary level compositional estimates for household recycling streams, other than kerbside or HWRC. These streams are:

- Bring banks recycling – Section 3.5.1
- Street recycling bins – Section 3.5.2
- Household recycling “other means” – Section 3.5.3.

3.5.1 Bring banks recycling

Compositional estimates for bring banks recycling in England for 2006-7 are presented in Table 3.9 below.

The right-hand column indicates the number of districts contributing data to the estimates. Numbers not in italics in this column indicate that these relate data are from waste audits, whereas numbers in italics indicate that the data have been derived from WasteDataFlow reported tonnages.

Due to lack of data, in most cases secondary level arisings for bring banks recycling have been estimated by assuming that the relative arising of each secondary level fraction within a primary component is the same as for kerbside recycling. The one exception to this relates to glass, where the arisings of different colours of glass have been determined through analysing 2006/07 WasteDataFlow tonnages for 103 districts which reported separate colours for glass recycling for bring banks.

3.5.2 Street recycling bins

Compositional estimates for street bins recycling in England for 2006-7 are presented in Table 3.10 below.

The right-hand column indicates the number of districts contributing data to the estimates. Numbers not in italics in this column indicate that these relate data are from waste audits, whereas numbers in italics indicate that the data have been derived from WasteDataFlow reported tonnages.

Due to lack of data, in most cases secondary level arisings for street bins recycling have been estimated by assuming that the relative arising of each secondary level fraction within a primary component is the same as for kerbside recycling, with the exception of glass which is assumed to have the same composition as found in bring banks recycling. It should be noted that the total arising of street bins recycling is small in comparison to all municipal waste in England (0.07% of municipal waste).

3.5.3 Household recycling “other means”

Compositional estimates for *household recycling “other means”* in England for 2006-7 are presented in Table 3.11 below. This waste stream is included in WasteDataFlow tonnages for England in 2006/07. There is some uncertainty as to what types of recycling these tonnages refer to, although it is thought that they are a combination of garden waste collected from community skips and recycling or reuse from bulky waste collections. Further comments on this waste stream can be found in Annex 4 of the WR0119 report.

The right-hand column indicates the number of districts contributing data to the estimates. Numbers not in italics in this column indicate that these relate data are from waste audits, whereas numbers in italics indicate that the data have been derived from WasteDataFlow reported tonnages.

Due to lack of data, in most cases secondary level arisings for *household recycling “other means”* have been estimated by assuming that the relative arising of each secondary level fraction within a primary component is the same as for kerbside recycling. It should be noted that the total arising of *household recycling “other means”* is small in comparison to all municipal waste in England (0.27% of municipal waste).

Table 3.9: BRING BANKS RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	% arising	Tonnes per annum	No. studies
1	Food waste	0.31%	2,071	354	1.1	Food waste	0.31%	2,071	354
2	Garden waste	1.59%	10,607	354	2.1	Garden waste	1.59%	10,607	354
3	Other organic	0.07%	480	354	3.1	Organic pet bedding/litter	0.06%	376	0
					3.2	Other organics	0.02%	104	0
4	Paper	24.88%	165,693	354	4.1	Newspapers	12.91%	85,943	0
					4.2	Magazines	7.11%	47,347	0
					4.3	Recyclable paper (excl News and Mags)	4.31%	28,725	0
					4.4	Other paper	0.55%	3,678	0
5	Card	9.41%	62,647	354	5.1	Card packaging	8.91%	59,307	0
					5.2	Other card	0.50%	3,340	0
6	Glass	52.18%	347,443	354	6.1	Packaging glass	52.06%	346,640	0
					6.1.1	<i>Green bottles</i>	28.87%	192,256	103
					6.1.2	<i>Clear bottles</i>	13.89%	92,459	103
					6.1.3	<i>Brown bottles</i>	5.83%	38,810	103
					6.1.4	<i>Jars</i>	3.47%	23,115	0
					6.2	Non-packaging glass	0.12%	803	0
7	Metals	1.74%	11,604	354	7.1	Ferrous food and drink cans	1.25%	8,318	0
					7.2	Other ferrous metal	0.11%	755	0
					7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.27%	1,803	0
					7.4	Foil	0.03%	188	0
					7.5	Other non-ferrous metal	0.08%	539	0
8	Plastics	2.31%	15,394	354	8.1	Plastic film	0.56%	3,736	0
					8.1.1	<i>Plastic bags</i>	0.14%	934	0
					8.1.2	<i>Plastic film packaging</i>	0.22%	1,472	0
					8.1.3	<i>Other plastic film (non-packaging)</i>	0.20%	1,330	0
					8.2	Dense plastic	1.75%	11,658	0
					8.2.1	<i>Dense plastic drinks bottles</i>	1.00%	6,652	0
					8.2.2	<i>Dense plastic non-drinks bottles</i>	0.26%	1,746	0
					8.2.3	<i>Other dense plastic packaging</i>	0.18%	1,186	0
					8.2.4	<i>Other dense plastic (non-packaging)</i>	0.31%	2,075	0

Table 3.9 (continued): BRING BANKS RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
9	Textiles	6.61%	44,003	354	9.1	Artificial textiles, excluding shoes	1.87%	12,438	0
					9.2	Natural textiles, excluding shoes	3.80%	25,279	0
					9.3	Shoes	0.94%	6,286	0
10	Wood	0.50%	3,315	354	10.1	Treated and composite wood	0.39%	2,565	0
					10.2	Untreated wood	0.11%	750	0
11	WEEE	0.21%	1,415	354	11.1	White goods	0.00%	10	0
					11.2	Large electronic goods (excluding CRT TVs and monitors)	0.01%	53	0
					11.3	CRT TVs and monitors	0.00%	0	0
					11.4	Other WEEE	0.20%	1,353	0
12	Hazardous	0.04%	271	354	12.1	Batteries	0.03%	175	0
					12.2	Clinical waste	0.00%	21	0
					12.3	Paint/varnish	0.00%	2	0
					12.4	Oil	0.01%	52	0
					12.5	Garden herbicides & pesticides	0.00%	21	0
13	Sanitary	0.00%	13	354	13.1	Disposable nappies	0.00%	12	354
					13.2	Other (sanpro and dressings)	0.00%	1	354
14	Furniture	0.03%	202	354	14.1	Furniture	0.03%	202	354
15	Mattresses	0.00%	0	354	15.1	Mattresses	0.00%	0	354
16	Misc combustible	0.00%	24	354	16.1	Carpet/underlay	0.00%	4	354
					16.2	Other combustibles	0.00%	20	354
17	Misc non-combustible	0.00%	6	354	17.1	Bricks, blocks, plaster	0.00%	2	354
					17.2	Other non-combustibles	0.00%	5	354
18	Soil	0.00%	0	354	18.1	Soil	0.00%	0	354
19	Other wastes	0.10%	654	354	19.1	Other wastes	0.10%	654	354
20	Fines	0.00%	14	354	20.1	Unspecified Fine material <10mm	0.00%	14	354
TOTAL (Primary categories)		100.00%	665,856	na	TOTAL (Secondary categories)		100.00%	665,856	na

Table 3.10: STREET BINS RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
1	Food waste	0.00%	0	3	1.1	Food waste	0.00%	0	3
2	Garden waste	0.00%	0	3	2.1	Garden waste	0.00%	0	3
3	Other organic	0.00%	0	3	3.1	Organic pet bedding/litter	0.00%	0	3
					3.2	Other organics	0.00%	0	3
4	Paper	31.52%	6,041	3	4.1	Newspapers	16.35%	3,134	0
					4.2	Magazines	9.01%	1,726	0
					4.3	Recyclable paper (excl News and Mags)	5.46%	1,047	0
					4.4	Other paper	0.70%	134	0
5	Card	8.91%	1,708	3	5.1	Card packaging	8.44%	1,617	0
					5.2	Other card	0.48%	91	0
6	Glass	43.80%	8,394	3	6.1	Packaging glass	43.69%	8,374	0
					6.1.1	<i>Green bottles</i>	24.23%	4,645	0
					6.1.2	<i>Clear bottles</i>	11.65%	2,234	0
					6.1.3	<i>Brown bottles</i>	4.89%	938	0
					6.1.4	<i>Jars</i>	2.91%	558	0
					6.2	Non-packaging glass	0.10%	19	0
7	Metals	4.99%	955	3	7.1	Ferrous food and drink cans	3.57%	685	0
					7.2	Other ferrous metal	0.32%	62	0
					7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.77%	148	0
					7.4	Foil	0.08%	16	0
					7.5	Other non-ferrous metal	0.23%	44	0
8	Plastics	10.79%	2,067	3	8.1	Plastic film	2.62%	502	0
					8.1.1	<i>Plastic bags</i>	0.65%	125	0
					8.1.2	<i>Plastic film packaging</i>	1.03%	198	0
					8.1.3	<i>Other plastic film (non-packaging)</i>	0.93%	179	0
					8.2	Dense plastic	8.17%	1,565	0
					8.2.1	<i>Dense plastic drinks bottles</i>	4.66%	893	0
					8.2.2	<i>Dense plastic non-drinks bottles</i>	1.22%	234	0
					8.2.3	<i>Other dense plastic packaging</i>	0.83%	159	0
					8.2.4	<i>Other dense plastic (non-packaging)</i>	1.45%	279	0

Table 3.10 (continued): STREET BINS RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
9	Textiles	0.00%	0	3	9.1	Artificial textiles, excluding shoes	0.00%	0	3
					9.2	Natural textiles, excluding shoes	0.00%	0	3
					9.3	Shoes	0.00%	0	3
10	Wood	0.00%	0	3	10.1	Treated and composite wood	0.00%	0	3
					10.2	Untreated wood	0.00%	0	3
11	WEEE	0.00%	0	3	11.1	White goods	0.00%	0	3
					11.2	Large electronic goods (excluding CRT TVs and monitors)	0.00%	0	3
					11.3	CRT TVs and monitors	0.00%	0	3
					11.4	Other WEEE	0.00%	0	3
12	Hazardous	0.00%	0	3	12.1	Batteries	0.00%	0	3
					12.2	Clinical waste	0.00%	0	3
					12.3	Paint/varnish	0.00%	0	3
					12.4	Oil	0.00%	0	3
					12.5	Garden herbicides & pesticides	0.00%	0	3
13	Sanitary	0.00%	0	3	13.1	Disposable nappies	0.00%	0	3
					13.2	Other (sanpro and dressings)	0.00%	0	3
14	Furniture	0.00%	0	3	14.1	Furniture	0.00%	0	3
15	Mattresses	0.00%	0	3	15.1	Mattresses	0.00%	0	3
16	Misc combustible	0.00%	0	3	16.1	Carpet/underlay	0.00%	0	3
					16.2	Other combustibles	0.00%	0	3
17	Misc non-combustible	0.00%	0	3	17.1	Bricks, blocks, plaster	0.00%	0	3
					17.2	Other non-combustibles	0.00%	0	3
18	Soil	0.00%	0	3	18.1	Soil	0.00%	0	3
19	Other wastes	0.00%	0	3	19.1	Other wastes	0.00%	0	3
20	Fines	0.00%	0	3	20.1	Unspecified Fine material <10mm	0.00%	0	3
TOTAL (Primary categories)		100.00%	19,165	na	TOTAL (Secondary categories)		100.00%	19,165	na

Table 3.11: HOUSEHOLD RECYCLING “OTHER MEANS” composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
1	Food waste	0.00%	0	354	1.1	Food waste	0.00%	0	354
2	Garden waste	54.65%	42,436	354	2.1	Garden waste	54.65%	42,436	354
3	Other organic	0.00%	0	354	3.1	Organic pet bedding/litter	0.00%	0	354
					3.2	Other organics	0.00%	0	354
4	Paper	0.13%	104	354	4.1	Newspapers	0.07%	54	0
					4.2	Magazines	0.04%	30	0
					4.3	Recyclable paper (excl News and Mags)	0.02%	18	0
					4.4	Other paper	0.00%	2	0
5	Card	0.11%	84	354	5.1	Card packaging	0.10%	80	0
					5.2	Other card	0.01%	4	0
6	Glass	0.11%	82	354	6.1	Packaging glass	0.11%	82	0
					6.1.1	<i>Green bottles</i>	0.03%	27	0
					6.1.2	<i>Clear bottles</i>	0.03%	22	0
					6.1.3	<i>Brown bottles</i>	0.01%	6	0
					6.1.4	<i>Jars</i>	0.03%	27	0
					6.2	Non-packaging glass	0.00%	1	0
7	Metals	0.37%	288	354	7.1	Ferrous food and drink cans	0.27%	206	0
					7.2	Other ferrous metal	0.02%	19	0
					7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.06%	45	0
					7.4	Foil	0.01%	5	0
					7.5	Other non-ferrous metal	0.02%	13	0
8	Plastics	0.54%	417	354	8.1	Plastic film	0.13%	101	0
					8.1.1	<i>Plastic bags</i>	0.03%	25	0
					8.1.2	<i>Plastic film packaging</i>	0.05%	40	0
					8.1.3	<i>Other plastic film (non-packaging)</i>	0.05%	36	0
					8.2	Dense plastic	0.41%	316	0
					8.2.1	<i>Dense plastic drinks bottles</i>	0.23%	180	0
					8.2.2	<i>Dense plastic non-drinks bottles</i>	0.06%	47	0
					8.2.3	<i>Other dense plastic packaging</i>	0.04%	32	0
					8.2.4	<i>Other dense plastic (non-packaging)</i>	0.07%	56	0

Table 3.11 (continued): HOUSEHOLD RECYCLING “OTHER MEANS” composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	% arising	Tonnes per annum	No. studies
9	Textiles	0.27%	210	354	9.1	Artificial textiles, excluding shoes	0.08%	59	0
					9.2	Natural textiles, excluding shoes	0.16%	120	0
					9.3	Shoes	0.04%	30	0
10	Wood	2.36%	1,830	354	10.1	Treated and composite wood	1.82%	1,416	0
					10.2	Untreated wood	0.53%	414	0
11	WEEE	20.66%	16,039	354	11.1	White goods	0.14%	109	0
					11.2	Large electronic goods (excluding CRT TVs and monitors)	0.77%	602	0
					11.3	CRT TVs and monitors	0.00%	0	0
					11.4	Other WEEE	19.74%	15,328	0
12	Hazardous	0.00%	0	354	12.1	Batteries	0.00%	0	354
					12.2	Clinical waste	0.00%	0	354
					12.3	Paint/varnish	0.00%	0	354
					12.4	Oil	0.00%	0	354
					12.5	Garden herbicides & pesticides	0.00%	0	354
13	Sanitary	0.00%	0	354	13.1	Disposable nappies	0.00%	0	354
					13.2	Other (sanpro and dressings)	0.00%	0	354
14	Furniture	20.81%	16,159	354	14.1	Furniture	20.81%	16,159	354
15	Mattresses	0.00%	0	354	15.1	Mattresses	0.00%	0	354
16	Misc combustible	0.00%	0	354	16.1	Carpet/underlay	0.00%	0	354
					16.2	Other combustibles	0.00%	0	354
17	Misc non-combustible	0.00%	0	354	17.1	Bricks, blocks, plaster	0.00%	0	354
					17.2	Other non-combustibles	0.00%	0	354
18	Soil	0.00%	0	354	18.1	Soil	0.00%	0	354
19	Other wastes	0.00%	0	354	19.1	Other wastes	0.00%	0	354
20	Fines	0.00%	0	354	20.1	Unspecified Fine material <10mm	0.00%	0	354
TOTAL (Primary categories)		100.00%	77,649	na	TOTAL (Secondary categories)		100.00%	77,649	na

3.6 Non-household municipal waste and recycling

This section presents secondary level compositional estimates for non-household municipal streams. These streams are:

- Municipally collected commercial residual waste – Section 3.6.1
- Non-household residual waste collected at HWRCs – Section 3.6.2
- Municipally collected commercial recycling – Section 3.6.3

3.6.1 Municipally collected commercial residual waste

Compositional estimates for municipally collected commercial residual waste in England for 2006-7 are presented in Table 3.12 below. The compositional estimates are averages derived across all available studies, covering a range of businesses. We are unable to comment on the degree to which the collated studies are reasonably representative of municipally collected commercial residual waste.

Notes to Table 3.12 are as follows:

Code	Category	Comment
3.1	Organic pet bedding/litter	No studies identified arisings of "Organic pet bedding/litter".
7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	The "Non-ferrous drinks cans" category excludes non-ferrous food tins, which are included in the "Other non-ferrous metal" category.
7.5	Other non-ferrous metal	
10.1	Treated and composite wood	No studies distinguished between treated and composite wood, and untreated wood. The relative breakdown of these categories has been inferred from kerbside residual data.
10.2	Untreated wood	
11.1	White goods	No data was available on subfractions of WEEE. The proportional breakdown of WEEE found in kerbside residual has been applied.
11.2	Large electronic goods (excluding CRT T	
11.3	CRT TVs and monitors	
11.4	Other WEEE	
12.1	Batteries	Insufficient data was available on subfractions of hazardous wastes. The proportional breakdown of hazardous wastes found in kerbside residual has been applied.
12.2	Clinical waste	
12.3	Paint/varnish	
12.4	Oil	
12.5	Garden herbicides & pesticides	

A separate analysis was carried out for subcategories of wood, distinguishing between packaging and non-packaging wood. These subcategories were identified in only 3 municipally collected commercial residual waste compositional studies. The data from these studies indicated that the 3.81% arising of wood in municipally collected commercial residual waste (see Table 3.4) breaks down as follows:

- 1.25% packaging wood
- 2.56% non-packaging wood.

This finding should be treated with caution, due to the limited number of studies contributing to these estimates for packaging and non-packaging wood.

3.6.2 Non-household residual waste collected at HWRCs

Compositional estimates for non-household residual waste collected at HWRCs in England for 2006-7 are presented in Table 3.13 below. Due to lack of available data, it has been assumed that the composition of non-household HWRC residual waste is the same as household HWRC residual waste. It should be noted that the total arising of non-household HWRC residual waste is relatively small in comparison to all municipal waste in England (0.95% of municipal waste).

3.6.3 Municipally collected commercial recycling

Compositional estimates for municipally collected commercial recycling in England for 2006-7 are presented in Table 3.14 below. This excludes rubble collected for recycling (mostly at HWRCs).

The right-hand column indicates the number of districts contributing data to the estimates. Numbers not in italics in this column indicate that these relate data are from waste audits, whereas numbers in italics indicate that the data have been derived from WasteDataFlow reported tonnages.

It should be noted that the total arising of municipally collected commercial recycling is relatively small in comparison to all municipal waste in England (0.55% of municipal waste).

Table 3.12: MUNICIPALLY COLLECTED COMMERCIAL RESIDUAL composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	% arising	Tonnes per annum	No. studies
1	Food waste	15.65%	334,702	25	1.1	Food waste	15.65%	334,702	25
2	Garden waste	2.58%	55,086	25	2.1	Garden waste	2.58%	55,086	25
3	Other organic	0.35%	7,465	25	3.1	Organic pet bedding/litter	no data	0	0
					3.2	Other organics	0.35%	7,465	5
4	Paper	21.15%	452,241	25	4.1	Newspapers	2.23%	47,753	6
					4.2	Magazines	2.51%	53,675	6
					4.3	Recyclable paper (excl News and Mags)	8.73%	186,722	19
					4.4	Other paper	7.67%	164,091	19
5	Card	18.14%	387,801	25	5.1	Card packaging	16.47%	352,135	6
					5.2	Other card	1.67%	35,667	6
6	Glass	5.93%	126,711	25	6.1	Packaging glass	4.34%	92,803	19
					6.1.1	<i>Green bottles</i>	1.14%	24,375	19
					6.1.2	<i>Clear bottles</i>	2.23%	47,633	19
					6.1.3	<i>Brown bottles</i>	0.74%	15,805	19
					6.1.4	<i>Jars</i>	0.23%	4,990	0
					6.2	Non-packaging glass	1.59%	33,907	19
7	Metals	4.03%	86,158	25	7.1	Ferrous food and drink cans	1.76%	37,707	16
					7.2	Other ferrous metal	1.13%	24,077	16
					7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.52%	11,182	17
					7.4	Foil	0.22%	4,721	11
					7.5	Other non-ferrous metal	0.40%	8,470	11
8	Plastics	14.36%	307,045	25	8.1	Plastic film	7.09%	151,518	16
					8.1.1	<i>Plastic bags</i>	2.86%	61,182	7
					8.1.2	<i>Plastic film packaging</i>	3.64%	77,806	2
					8.1.3	<i>Other plastic film (non-packaging)</i>	0.59%	12,529	2
					8.2	Dense plastic	7.27%	155,527	16
					8.2.1	<i>Dense plastic drinks bottles</i>	1.20%	25,645	16
					8.2.2	<i>Dense plastic non-drinks bottles</i>	0.35%	7,405	2
					8.2.3	<i>Other dense plastic packaging</i>	2.12%	45,299	8
8.2.4	<i>Other dense plastic (non-packaging)</i>	3.61%	77,178	8					

Table 3.12 (continued): MUNICIPALLY COLLECTED COMMERCIAL RESIDUAL composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
9	Textiles	2.02%	43,113	25	9.1	Artificial textiles, excluding shoes	0.90%	19,205	6
					9.2	Natural textiles, excluding shoes	0.85%	18,274	6
					9.3	Shoes	0.26%	5,633	11
10	Wood	3.81%	81,562	25	10.1	Treated and composite wood	2.66%	56,764	0
					10.2	Untreated wood	1.16%	24,798	0
11	WEEE	0.50%	10,615	25	11.1	White goods	0.02%	488	2
					11.2	Large electronic goods (excluding CRT TVs and monitors)	0.13%	2,686	2
					11.3	CRT TVs and monitors	no data	0	0
					11.4	Other WEEE	0.35%	7,441	13
12	Hazardous	0.14%	2,975	25	12.1	Batteries	0.02%	517	8
					12.2	Clinical waste	0.03%	698	2
					12.3	Paint/varnish	0.07%	1,444	5
					12.4	Oil	0.00%	77	7
					12.5	Garden herbicides & pesticides	0.01%	240	0
13	Sanitary	1.59%	33,998	25	13.1	Disposable nappies	0.93%	19,832	8
					13.2	Other (sanpro and dressings)	0.66%	14,167	8
14	Furniture	0.09%	1,939	25	14.1	Furniture	0.09%	1,939	25
15	Mattresses	0.00%	0	25	15.1	Mattresses	0.00%	0	25
16	Misc combustible	2.61%	55,827	25	16.1	Carpet/underlay	0.56%	12,062	2
					16.2	Other combustibles	2.05%	43,765	13
17	Misc non-combustible	3.01%	64,361	25	17.1	Bricks, blocks, plaster	1.27%	27,075	5
					17.2	Other non-combustibles	1.74%	37,286	5
18	Soil	0.01%	147	25	18.1	Soil	0.01%	147	25
19	Other wastes	2.24%	47,957	25	19.1	Other wastes	2.24%	47,957	25
20	Fines	1.79%	38,289	25	20.1	Unspecified Fine material <10mm	1.79%	38,289	25
TOTAL (Primary categories)		100.00%	2,137,994	na	TOTAL (Secondary categories)		100.00%	2,137,994	na

Table 3.13: NON-HOUSEHOLD HWRC RESIDUAL WASTE composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	% arising	Tonnes per annum	No. studies
1	Food waste	3.54%	9,563	0	1.1	Food waste	3.54%	9,563	0
2	Garden waste	5.25%	14,178	0	2.1	Garden waste	5.25%	14,178	0
3	Other organic	0.96%	2,590	0	3.1	Organic pet bedding/litter	0.77%	2,083	0
					3.2	Other organics	0.19%	506	0
4	Paper	4.82%	13,021	0	4.1	Newspapers	0.80%	2,150	0
					4.2	Magazines	0.49%	1,324	0
					4.3	Recyclable paper (excl News and Mags)	2.14%	5,781	0
					4.4	Other paper	1.39%	3,766	0
5	Card	2.71%	7,309	0	5.1	Card packaging	2.47%	6,664	0
					5.2	Other card	0.24%	645	0
6	Glass	2.46%	6,654	0	6.1	Packaging glass	0.72%	1,939	0
					6.1.1	<i>Green bottles</i>	0.20%	552	0
					6.1.2	<i>Clear bottles</i>	0.18%	487	0
					6.1.3	<i>Brown bottles</i>	0.10%	261	0
					6.1.4	<i>Jars</i>	0.24%	640	0
					6.2	Non-packaging glass	1.75%	4,715	0
7	Metals	2.23%	6,032	0	7.1	Ferrous food and drink cans	0.26%	696	0
					7.2	Other ferrous metal	1.55%	4,183	0
					7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.03%	80	0
					7.4	Foil	0.02%	47	0
					7.5	Other non-ferrous metal	0.38%	1,026	0
8	Plastics	10.46%	28,250	0	8.1	Plastic film	2.05%	5,528	0
					8.1.1	<i>Plastic bags</i>	0.66%	1,769	0
					8.1.2	<i>Plastic film packaging</i>	0.71%	1,929	0
					8.1.3	<i>Other plastic film (non-packaging)</i>	0.68%	1,831	0
					8.2	Dense plastic	8.42%	22,722	0
					8.2.1	<i>Dense plastic drinks bottles</i>	0.32%	876	0
					8.2.2	<i>Dense plastic non-drinks bottles</i>	0.13%	359	0
					8.2.3	<i>Other dense plastic packaging</i>	1.82%	4,912	0
					8.2.4	<i>Other dense plastic (non-packaging)</i>	6.14%	16,575	0

Table 3.13 (continued): NON-HOUSEHOLD HWRC RESIDUAL WASTE composition estimates for England, 2006/07

Code	Primary level categories		Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
9	Textiles	4.50%	12,152	0	9.1	Artificial textiles, excluding shoes	2.81%	7,596	0
					9.2	Natural textiles, excluding shoes	1.29%	3,474	0
					9.3	Shoes	0.40%	1,082	0
10	Wood	15.12%	40,813	0	10.1	Treated and composite wood	13.41%	36,204	0
					10.2	Untreated wood	1.71%	4,609	0
11	WEEE	2.44%	6,577	0	11.1	White goods	0.30%	815	0
					11.2	Large electronic goods (excluding CRT TVs and monitors)	0.85%	2,302	0
					11.3	CRT TVs and monitors	0.19%	513	0
					11.4	Other WEEE	1.09%	2,946	0
12	Hazardous	1.53%	4,132	0	12.1	Batteries	0.02%	67	0
					12.2	Clinical waste	0.05%	130	0
					12.3	Paint/varnish	1.08%	2,909	0
					12.4	Oil	0.02%	57	0
					12.5	Garden herbicides & pesticides	0.36%	968	0
13	Sanitary	0.26%	715	0	13.1	Disposable nappies	0.25%	664	0
					13.2	Other (sanpro and dressings)	0.02%	50	0
14	Furniture	8.33%	22,481	0	14.1	Furniture	8.33%	22,481	0
15	Mattresses	2.39%	6,463	0	15.1	Mattresses	2.39%	6,463	0
16	Misc combustible	13.71%	37,007	0	16.1	Carpet/underlay	9.53%	25,729	0
					16.2	Other combustibles	4.18%	11,278	0
17	Misc non-combustible	14.94%	40,344	0	17.1	Bricks, blocks, plaster	6.49%	17,525	0
					17.2	Other non-combustibles	8.45%	22,819	0
18	Soil	1.83%	4,933	0	18.1	Soil	1.83%	4,933	0
19	Other wastes	1.72%	4,651	0	19.1	Other wastes	1.72%	4,651	0
20	Fines	0.79%	2,142	0	20.1	Unspecified Fine material <10mm	0.79%	2,142	0
TOTAL (Primary categories)		100.00%	270,006	na	TOTAL (Secondary categories)		100.00%	270,006	na

Table 3.14: MUNICIPALLY COLLECTED RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	% arising	Tonnes per annum	No. studies
1	Food waste	0.00%	0	354	1.1	Food waste	0.00%	0	354
2	Garden waste	0.00%	0	354	2.1	Garden waste	0.00%	0	354
3	Other organic	0.00%	0	354	3.1	Organic pet bedding/litter	0.00%	0	354
					3.2	Other organics	0.00%	0	354
4	Paper	57.99%	91,102	354	4.1	Newspapers	30.08%	47,253	0
					4.2	Magazines	16.57%	26,033	0
					4.3	Recyclable paper (excl News and Mags)	10.05%	15,794	0
					4.4	Other paper	1.29%	2,022	0
5	Card	7.27%	11,414	354	5.1	Card packaging	6.88%	10,806	0
					5.2	Other card	0.39%	609	0
6	Glass	26.33%	41,366	354	6.1	Packaging glass	26.09%	40,984	0
					6.1.1	<i>Green bottles</i>	8.63%	13,557	0
					6.1.2	<i>Clear bottles</i>	6.89%	10,829	0
					6.1.3	<i>Brown bottles</i>	1.95%	3,070	0
					6.1.4	<i>Jars</i>	8.61%	13,528	0
					6.2	Non-packaging glass	0.24%	382	0
7	Metals	4.86%	7,636	354	7.1	Ferrous food and drink cans	3.48%	5,473	0
					7.2	Other ferrous metal	0.32%	497	0
					7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.76%	1,187	0
					7.4	Foil	0.08%	124	0
					7.5	Other non-ferrous metal	0.23%	355	0
8	Plastics	3.56%	5,594	354	8.1	Plastic film	0.86%	1,358	0
					8.1.1	<i>Plastic bags</i>	0.22%	339	0
					8.1.2	<i>Plastic film packaging</i>	0.34%	535	0
					8.1.3	<i>Other plastic film (non-packaging)</i>	0.31%	483	0
					8.2	Dense plastic	2.70%	4,236	0
					8.2.1	<i>Dense plastic drinks bottles</i>	1.54%	2,417	0
					8.2.2	<i>Dense plastic non-drinks bottles</i>	0.40%	634	0
					8.2.3	<i>Other dense plastic packaging</i>	0.27%	431	0
8.2.4	<i>Other dense plastic (non-packaging)</i>	0.48%	754	0					

Table 3.14 (continued): MUNICIPALLY COLLECTED RECYCLING composition estimates for England, 2006/07

Code	Primary level categories	% arising	Tonnes per annum	No. studies	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum	No. studies
9	Textiles	0.00%	0	354	9.1	Artificial textiles, excluding shoes	0.00%	0	354
					9.2	Natural textiles, excluding shoes	0.00%	0	354
					9.3	Shoes	0.00%	0	354
10	Wood	0.00%	0	354	10.1	Treated and composite wood	0.00%	0	354
					10.2	Untreated wood	0.00%	0	354
11	WEEE	0.00%	0	354	11.1	White goods	0.00%	0	354
					11.2	Large electronic goods (excluding CRT TVs and monitors)	0.00%	0	354
					11.3	CRT TVs and monitors	0.00%	0	354
					11.4	Other WEEE	0.00%	0	354
12	Hazardous	0.00%	0	354	12.1	Batteries	0.00%	0	354
					12.2	Clinical waste	0.00%	0	354
					12.3	Paint/varnish	0.00%	0	354
					12.4	Oil	0.00%	0	354
					12.5	Garden herbicides & pesticides	0.00%	0	354
13	Sanitary	0.00%	0	354	13.1	Disposable nappies	0.00%	0	354
					13.2	Other (sanpro and dressings)	0.00%	0	354
14	Furniture	0.00%	0	354	14.1	Furniture	0.00%	0	354
15	Mattresses	0.00%	0	354	15.1	Mattresses	0.00%	0	354
16	Misc combustible	0.00%	0	354	16.1	Carpet/underlay	0.00%	0	354
					16.2	Other combustibles	0.00%	0	354
17	Misc non-combustible	0.00%	0	354	17.1	Bricks, blocks, plaster	0.00%	0	354
					17.2	Other non-combustibles	0.00%	0	354
18	Soil	0.00%	0	354	18.1	Soil	0.00%	0	354
19	Other wastes	0.00%	0	354	19.1	Other wastes	0.00%	0	354
20	Fines	0.00%	0	354	20.1	Unspecified Fine material <10mm	0.00%	0	354
TOTAL (Primary categories)		100.00%	157,112	na	TOTAL (Secondary categories)		100.00%	157,112	na

3.7 Summary for all municipal waste streams

This section summarises compositional estimates for all residual and recycling streams in England for 2006/07, as follows:

- Table 3.15: tonnage arisings for each household waste and recycling stream described in this report, with total tonnages and percentage arisings calculated for all household streams collectively
- Table 3.16: tonnage arisings for all non-household waste and recycling streams, with total tonnages and percentage arisings calculated for all non-household streams collectively
- Table 3.17: primary and secondary level compositional estimates for all household waste and recycling
- Table 3.18: primary and secondary level compositional estimates for all municipal waste and recycling.

Table 3.15: Compositional Estimates for ALL HOUSEHOLD WASTE AND RECYCLING STREAMS, ENGLAND 2006/07

Code	Secondary level categories (Tertiary level categories in italics)	Tonnes per annum									% arising ALL HOUSEHOLD	
		Kerbside residual	Kerbside recycling	HWRC residual (household)	HWRC recycling	BWC residual	Street cleansing etc	Bring site recycling	Street bins recycling	"Other means" recycling		
1.1	Food waste	4,457,189	51,096	91,234	298	183	109,924	2,071	0	0	4,711,994	18.28%
2.1	Garden waste	873,263	1,643,108	135,269	1,131,248	6,128	78,458	10,607	0	42,436	3,920,517	15.21%
3.1	Organic pet bedding/litter	98,645	9,496	19,876	1	23	937	376	0	0	129,354	0.50%
3.2	Other organics	280,565	2,621	4,830	0	65	62,759	104	0	0	350,943	1.36%
4.1	Newspapers	557,287	948,385	20,511	58,449	173	25,424	85,943	3,134	54	1,699,360	6.59%
4.2	Magazines	343,223	522,482	12,632	32,201	106	30,713	47,347	1,726	30	990,461	3.84%
4.3	Recyclable paper (excl News and Mags)	215,495	316,981	55,152	19,536	232	46,366	28,725	1,047	18	683,551	2.65%
4.4	Other paper	690,916	40,589	35,927	2,501	119	14,511	3,678	134	2	788,378	3.06%
5.1	Card packaging	569,999	267,283	63,577	105,630	460	42,796	59,307	1,617	80	1,110,748	4.31%
5.2	Other card	160,809	15,052	6,158	5,949	50	2,772	3,340	91	4	194,225	0.75%
6.1	Packaging glass	604,254	475,007	18,503	59,869	129	60,600	346,640	8,374	82	1,573,458	6.10%
6.1.1	<i>Green bottles</i>	125,712	157,134	5,263	33,205	27	24,480	192,256	4,645	27	542,747	2.11%
6.1.2	<i>Clear bottles</i>	238,337	125,509	4,646	15,969	51	29,946	92,459	2,234	22	509,171	1.98%
6.1.3	<i>Brown bottles</i>	40,758	35,577	2,487	6,703	9	6,174	38,810	938	6	131,463	0.51%
6.1.4	<i>Jars</i>	199,448	156,787	6,107	3,992	43	0	23,115	558	27	390,076	1.51%
6.2	Non-packaging glass	81,188	4,433	44,980	559	372	1,257	803	19	1	133,611	0.52%
7.1	Ferrous food and drink cans	189,441	100,703	6,640	7,245	0	10,003	8,318	685	206	323,242	1.25%
7.2	Other ferrous metal	160,687	9,144	39,910	219,201	859	3,845	755	62	19	434,482	1.69%
7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	35,799	21,833	760	1,571	0	23,507	1,803	148	45	85,466	0.33%
7.4	Foil	51,936	2,281	452	164	0	972	188	16	5	56,014	0.22%
7.5	Other non-ferrous metal	39,388	6,531	9,790	160,653	889	456	539	44	13	218,305	0.85%
8.1	Plastic film	866,982	34,586	52,740	2,557	284	55,407	3,736	502	101	1,016,895	3.95%
8.1.1	<i>Plastic bags</i>	220,577	8,647	16,874	639	91	23,633	934	125	25	271,545	1.05%
8.1.2	<i>Plastic film packaging</i>	339,569	13,627	18,402	1,007	99	31,664	1,472	198	40	406,078	1.58%
8.1.3	<i>Other plastic film (non-packaging)</i>	306,835	12,313	17,464	910	94	110	1,330	179	36	339,271	1.32%
8.2	Dense plastic	1,033,268	107,908	216,778	7,979	2,251	92,078	11,658	1,565	316	1,473,801	5.72%
8.2.1	<i>Dense plastic drinks bottles</i>	190,625	61,570	8,358	4,550	67	48,448	6,652	893	180	321,342	1.25%
8.2.2	<i>Dense plastic non-drinks bottles</i>	78,044	16,160	3,422	1,194	27	2,865	1,746	234	47	103,740	0.40%
8.2.3	<i>Other dense plastic packaging</i>	448,594	10,974	46,865	811	10	14,138	1,186	159	32	522,769	2.03%
8.2.4	<i>Other dense plastic (non-packaging)</i>	316,005	19,204	158,133	1,419	2,147	26,627	2,075	279	56	525,945	2.04%

Table 3.15 (continued): Compositional Estimates for ALL HOUSEHOLD WASTE AND RECYCLING STREAMS, ENGLAND 2006/07

Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	Tonnes per annum									% arising	
		Kerbside residual	Kerbside recycling	HWRC residual (household)	HWRC recycling	BWC residual	Street cleansing etc	Bring site recycling	Street bins recycling	"Other means" recycling	ALL HOUSEHOLD	ALL HOUSEHOLD
9.1	Artificial textiles, excluding shoes	165,887	8,458	72,473	7,389	1,224	6,670	12,438	0	59	274,599	1.07%
9.2	Natural textiles, excluding shoes	302,208	17,190	33,146	15,018	9	4,592	25,279	0	120	397,561	1.54%
9.3	Shoes	49,256	4,275	10,320	3,734	41	1,448	6,286	0	30	75,391	0.29%
10.1	Treated and composite wood	106,432	3,222	345,404	284,268	7,741	1,607	2,565	0	1,416	752,655	2.92%
10.2	Untreated wood	46,497	942	43,976	83,099	3,382	2,657	750	0	414	181,717	0.71%
11.1	White goods	7,636	181	7,776	106,474	69,378	0	10	0	109	191,564	0.74%
11.2	Large electronic goods (excluding CRT TVs and monitors)	41,995	997	21,963	47,359	10,632	0	53	0	602	123,600	0.48%
11.3	CRT TVs and monitors	0	0	4,896	62,349	2,705	0	0	0	0	69,949	0.27%
11.4	Other WEEE	116,339	25,387	28,110	15,284	14,759	1,701	1,353	0	15,328	218,260	0.85%
12.1	Batteries	12,248	500	641	19,313	0	243	175	0	0	33,120	0.13%
12.2	Clinical waste	16,541	59	1,241	2,285	0	0	21	0	0	20,147	0.08%
12.3	Paint/varnish	34,216	5	27,754	202	185	0	2	0	0	62,365	0.24%
12.4	Oil	1,814	149	544	5,747	0	0	52	0	0	8,306	0.03%
12.5	Garden herbicides & pesticides	5,690	59	9,237	2,284	79	982	21	0	0	18,351	0.07%
13.1	Disposable nappies	615,488	0	6,336	4	25	7,049	12	0	0	628,914	2.44%
13.2	Other (sanpro and dressings)	46,771	0	481	0	2	1,132	1	0	0	48,387	0.19%
14.1	Furniture	1,034	2,779	214,481	22,509	98,199	0	202	0	16,159	355,363	1.38%
15.1	Mattresses	0	0	61,658	0	4,042	0	0	0	0	65,700	0.25%
16.1	Carpet/underlay	34,184	0	245,469	227	4,844	43	4	0	0	284,772	1.10%
16.2	Other combustibles	164,566	0	107,599	1,095	15,215	5,565	20	0	0	294,060	1.14%
17.1	Bricks, blocks, plaster	79,340	0	167,198	2	61	9,275	2	0	0	255,878	0.99%
17.2	Other non-combustibles	210,303	0	217,702	0	2,570	7,673	5	0	0	438,252	1.70%
18.1	Soil	0	0	47,065	0	0	0	0	0	0	47,065	0.18%
19.1	Other wastes	393,763	12,905	44,373	62,447	21,691	69,689	654	0	0	605,521	2.35%
20.1	Unspecified Fine material <10mm	287,459	0	20,437	4	682	120,099	14	0	0	428,696	1.66%
TOTAL (Secondary categories)		14,050,000	4,656,625	2,576,000	2,556,704	269,790	903,210	665,856	19,165	77,649	25,775,000	100.00%

Table 3.16: Compositional Estimates for ALL MUNICIPAL NON-HOUSEHOLD WASTE AND RECYCLING STREAMS, ENGLAND 2006/07

Code	Secondary level categories (Tertiary level categories in italics)	Tonnes per annum				% arising
		Commercial residual	HWRC residual - non-household	Commercial recycling	ALL NON-HOUSEHOLD	ALL NON-HOUSEHOLD
1.1	Food waste	334,702	9,563	0	344,265	13.42%
2.1	Garden waste	55,086	14,178	0	69,265	2.70%
3.1	Organic pet bedding/litter	0	2,083	0	2,083	0.08%
3.2	Other organics	7,465	506	0	7,971	0.31%
4.1	Newspapers	47,753	2,150	47,253	97,156	3.79%
4.2	Magazines	53,675	1,324	26,033	81,032	3.16%
4.3	Recyclable paper (excl News and Mags)	186,722	5,781	15,794	208,297	8.12%
4.4	Other paper	164,091	3,766	2,022	169,879	6.62%
5.1	Card packaging	352,135	6,664	10,806	369,604	14.41%
5.2	Other card	35,667	645	609	36,921	1.44%
6.1	Packaging glass	92,803	1,939	40,984	135,726	5.29%
6.1.1	<i>Green bottles</i>	24,375	552	13,557	38,484	1.50%
6.1.2	<i>Clear bottles</i>	47,633	487	10,829	58,949	2.30%
6.1.3	<i>Brown bottles</i>	15,805	261	3,070	19,135	0.75%
6.1.4	<i>Jars</i>	4,990	640	13,528	19,158	0.75%
6.2	Non-packaging glass	33,907	4,715	382	39,004	1.52%
7.1	Ferrous food and drink cans	37,707	696	5,473	43,877	1.71%
7.2	Other ferrous metal	24,077	4,183	497	28,757	1.12%
7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	11,182	80	1,187	12,448	0.49%
7.4	Foil	4,721	47	124	4,892	0.19%
7.5	Other non-ferrous metal	8,470	1,026	355	9,852	0.38%
8.1	Plastic film	151,518	5,528	1,358	158,404	6.18%
8.1.1	<i>Plastic bags</i>	61,182	1,769	339	63,290	2.47%
8.1.2	<i>Plastic film packaging</i>	77,806	1,929	535	80,270	3.13%
8.1.3	<i>Other plastic film (non-packaging)</i>	12,529	1,831	483	14,843	0.58%
8.2	Dense plastic	155,527	22,722	4,236	182,486	7.11%
8.2.1	<i>Dense plastic drinks bottles</i>	25,645	876	2,417	28,939	1.13%
8.2.2	<i>Dense plastic non-drinks bottles</i>	7,405	359	634	8,398	0.33%
8.2.3	<i>Other dense plastic packaging</i>	45,299	4,912	431	50,642	1.97%
8.2.4	<i>Other dense plastic (non-packaging)</i>	77,178	16,575	754	94,507	3.68%

Table 3.16 (continued): Compositional Estimates for ALL MUNICIPAL NON-HOUSEHOLD WASTE AND RECYCLING STREAMS, ENGLAND 2006/07

Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	Tonnes per annum				% arising
		Commercial residual	HWRC residual - non-household	Commercial recycling	ALL NON-HOUSEHOLD	ALL NON-HOUSEHOLD
9.1	Artificial textiles, excluding shoes	19,205	7,596	0	26,801	1.04%
9.2	Natural textiles, excluding shoes	18,274	3,474	0	21,748	0.85%
9.3	Shoes	5,633	1,082	0	6,715	0.26%
10.1	Treated and composite wood	56,764	36,204	0	92,968	3.62%
10.2	Untreated wood	24,798	4,609	0	29,408	1.15%
11.1	White goods	488	815	0	1,303	0.05%
11.2	Large electronic goods (excluding CRT TVs and monitors)	2,686	2,302	0	4,988	0.19%
11.3	CRT TVs and monitors	0	513	0	513	0.02%
11.4	Other WEEE	7,441	2,946	0	10,387	0.40%
12.1	Batteries	517	67	0	584	0.02%
12.2	Clinical waste	698	130	0	828	0.03%
12.3	Paint/varnish	1,444	2,909	0	4,353	0.17%
12.4	Oil	77	57	0	134	0.01%
12.5	Garden herbicides & pesticides	240	968	0	1,208	0.05%
13.1	Disposable nappies	19,832	664	0	20,496	0.80%
13.2	Other (sanpro and dressings)	14,167	50	0	14,217	0.55%
14.1	Furniture	1,939	22,481	0	24,420	0.95%
15.1	Mattresses	0	6,463	0	6,463	0.25%
16.1	Carpet/underlay	12,062	25,729	0	37,791	1.47%
16.2	Other combustibles	43,765	11,278	0	55,043	2.15%
17.1	Bricks, blocks, plaster	27,075	17,525	0	44,600	1.74%
17.2	Other non-combustibles	37,286	22,819	0	60,105	2.34%
18.1	Soil	147	4,933	0	5,080	0.20%
19.1	Other wastes	47,957	4,651	0	52,608	2.05%
20.1	Unspecified Fine material <10mm	38,289	2,142	0	40,431	1.58%
TOTAL (Secondary categories)		2,137,994	270,006	157,112	2,565,112	100.00%

Table 3.17: Compositional Estimates for ALL HOUSEHOLD WASTE AND RECYCLING, ENGLAND 2006/07, Primary and Secondary level

Code	Primary level categories	% arising	Tonnes per annum	Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	% arising	Tonnes per annum
1	Food waste	18.28%	4,711,994	1.1	Food waste	18.28%	4,711,994
2	Garden waste	15.21%	3,920,517	2.1	Garden waste	15.21%	3,920,517
3	Other organic	1.86%	480,297	3.1	Organic pet bedding/litter	0.50%	129,354
				3.2	Other organics	1.36%	350,943
4	Paper	16.15%	4,161,749	4.1	Newspapers	6.59%	1,699,360
				4.2	Magazines	3.84%	990,461
				4.3	Recyclable paper (excl News and Mags)	2.65%	683,551
				4.4	Other paper	3.06%	788,378
5	Card	5.06%	1,304,974	5.1	Card packaging	4.31%	1,110,748
				5.2	Other card	0.75%	194,225
6	Glass	6.62%	1,707,069	6.1	Packaging glass	6.10%	1,573,458
				6.1.1	<i>Green bottles</i>	2.11%	542,747
				6.1.2	<i>Clear bottles</i>	1.98%	509,171
				6.1.3	<i>Brown bottles</i>	0.51%	131,463
				6.1.4	<i>Jars</i>	1.51%	390,076
				6.2	Non-packaging glass	0.52%	133,611
7	Metals	4.34%	1,117,509	7.1	Ferrous food and drink cans	1.25%	323,242
				7.2	Other ferrous metal	1.69%	434,482
				7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.33%	85,466
				7.4	Foil	0.22%	56,014
				7.5	Other non-ferrous metal	0.85%	218,305
8	Plastics	9.66%	2,490,696	8.1	Plastic film	3.95%	1,016,895
				8.1.1	<i>Plastic bags</i>	1.05%	271,545
				8.1.2	<i>Plastic film packaging</i>	1.58%	406,078
				8.1.3	<i>Other plastic film (non-packaging)</i>	1.32%	339,271
				8.2	Dense plastic	5.72%	1,473,801
				8.2.1	<i>Dense plastic drinks bottles</i>	1.25%	321,342
				8.2.2	<i>Dense plastic non-drinks bottles</i>	0.40%	103,740
				8.2.3	<i>Other dense plastic packaging</i>	2.03%	522,769
				8.2.4	<i>Other dense plastic (non-packaging)</i>	2.04%	525,945

Table 3.17: (Continued) Compositional Estimates for ALL HOUSEHOLD WASTE AND RECYCLING, ENGLAND 2006/07, Primary and Secondary level

Code	Primary level categories	% arising	Tonnes per annum	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum
9	Textiles	2.90%	747,551	9.1	Artificial textiles, excluding shoes	1.07%	274,599
				9.2	Natural textiles, excluding shoes	1.54%	397,561
				9.3	Shoes	0.29%	75,391
10	Wood	3.63%	934,372	10.1	Treated and composite wood	2.92%	752,655
				10.2	Untreated wood	0.71%	181,717
11	WEEE	2.34%	603,374	11.1	White goods	0.74%	191,564
				11.2	Large electronic goods (excluding CRT TVs and monitors)	0.48%	123,600
				11.3	CRT TVs and monitors	0.27%	69,949
				11.4	Other WEEE	0.85%	218,260
12	Hazardous	0.55%	142,289	12.1	Batteries	0.13%	33,120
				12.2	Clinical waste	0.08%	20,147
				12.3	Paint/varnish	0.24%	62,365
				12.4	Oil	0.03%	8,306
				12.5	Garden herbicides & pesticides	0.07%	18,351
13	Sanitary	2.63%	677,302	13.1	Disposable nappies	2.44%	628,914
				13.2	Other (sanpro and dressings)	0.19%	48,387
14	Furniture	1.38%	355,363	14.1	Furniture	1.38%	355,363
15	Mattresses	0.25%	65,700	15.1	Mattresses	0.25%	65,700
16	Misc combustible	2.25%	578,832	16.1	Carpet/underlay	1.10%	284,772
				16.2	Other combustibles	1.14%	294,060
17	Misc non-combustible	2.69%	694,131	17.1	Bricks, blocks, plaster	0.99%	255,878
				17.2	Other non-combustibles	1.70%	438,252
18	Soil	0.18%	47,065	18.1	Soil	0.18%	47,065
19	Other wastes	2.35%	605,521	19.1	Other wastes	2.35%	605,521
20	Fines	1.66%	428,696	20.1	Unspecified Fine material <10mm	1.66%	428,696
TOTAL (Primary categories)		100.00%	25,775,000	TOTAL (Secondary categories)		100.00%	25,775,000

Table 3.18: Compositional Estimates for ALL MUNICIPAL WASTE AND RECYCLING, ENGLAND 2006/07, Primary and Secondary level

Code	Primary level categories	% arising	Tonnes per annum	Code	Secondary level categories <i>(Tertiary level categories in italics)</i>	% arising	Tonnes per annum
1	Food waste	17.84%	5,056,259	1.1	Food waste	17.84%	5,056,259
2	Garden waste	14.08%	3,989,782	2.1	Garden waste	14.08%	3,989,782
3	Other organic	1.73%	490,352	3.1	Organic pet bedding/litter	0.46%	131,437
				3.2	Other organics	1.27%	358,915
4	Paper	16.65%	4,718,113	4.1	Newspapers	6.34%	1,796,516
				4.2	Magazines	3.78%	1,071,493
				4.3	Recyclable paper (excl News and Mags)	3.15%	891,848
				4.4	Other paper	3.38%	958,256
5	Card	6.04%	1,711,499	5.1	Card packaging	5.22%	1,480,353
				5.2	Other card	0.82%	231,146
6	Glass	6.64%	1,881,799	6.1	Packaging glass	6.03%	1,709,184
				6.1.1	<i>Green bottles</i>	2.05%	581,232
				6.1.2	<i>Clear bottles</i>	2.00%	568,121
				6.1.3	<i>Brown bottles</i>	0.53%	150,598
				6.1.4	<i>Jars</i>	1.44%	409,234
				6.2	Non-packaging glass	0.61%	172,616
7	Metals	4.30%	1,217,335	7.1	Ferrous food and drink cans	1.30%	367,118
				7.2	Other ferrous metal	1.63%	463,240
				7.3	Non-ferrous drinks cans (excl non-ferrous food tins)	0.35%	97,915
				7.4	Foil	0.21%	60,906
				7.5	Other non-ferrous metal	0.81%	228,156
8	Plastics	9.99%	2,831,585	8.1	Plastic film	4.15%	1,175,298
				8.1.1	<i>Plastic bags</i>	1.18%	334,835
				8.1.2	<i>Plastic film packaging</i>	1.72%	486,348
				8.1.3	<i>Other plastic film (non-packaging)</i>	1.25%	354,114
				8.2	Dense plastic	5.84%	1,656,286
				8.2.1	<i>Dense plastic drinks bottles</i>	1.24%	350,281
				8.2.2	<i>Dense plastic non-drinks bottles</i>	0.40%	112,138
				8.2.3	<i>Other dense plastic packaging</i>	2.02%	573,411
				8.2.4	<i>Other dense plastic (non-packaging)</i>	2.19%	620,452

Table 3.18 (Continued): Compositional Estimates for ALL MUNICIPAL WASTE AND RECYCLING, ENGLAND 2006/07, Primary and Secondary level

Code	Primary level categories	% arising	Tonnes per annum	Code	Secondary level categories (Tertiary level categories in italics)	% arising	Tonnes per annum
9	Textiles	2.83%	802,816	9.1	Artificial textiles, excluding shoes	1.06%	301,400
				9.2	Natural textiles, excluding shoes	1.48%	419,310
				9.3	Shoes	0.29%	82,106
10	Wood	3.73%	1,056,748	10.1	Treated and composite wood	2.98%	845,623
				10.2	Untreated wood	0.74%	211,125
11	WEEE	2.19%	620,566	11.1	White goods	0.68%	192,868
				11.2	Large electronic goods (excluding CRT TVs and monitors)	0.45%	128,588
				11.3	CRT TVs and monitors	0.25%	70,462
				11.4	Other WEEE	0.81%	228,648
12	Hazardous	0.53%	149,396	12.1	Batteries	0.12%	33,704
				12.2	Clinical waste	0.07%	20,975
				12.3	Paint/varnish	0.24%	66,717
				12.4	Oil	0.03%	8,440
				12.5	Garden herbicides & pesticides	0.07%	19,559
13	Sanitary	2.51%	712,015	13.1	Disposable nappies	2.29%	649,410
				13.2	Other (sanpro and dressings)	0.22%	62,605
14	Furniture	1.34%	379,783	14.1	Furniture	1.34%	379,783
15	Mattresses	0.25%	72,162	15.1	Mattresses	0.25%	72,162
16	Misc combustible	2.37%	671,666	16.1	Carpet/underlay	1.14%	322,563
				16.2	Other combustibles	1.23%	349,103
17	Misc non-combustible	2.82%	798,836	17.1	Bricks, blocks, plaster	1.06%	300,478
				17.2	Other non-combustibles	1.76%	498,358
18	Soil	0.18%	52,144	18.1	Soil	0.18%	52,144
19	Other wastes	2.32%	658,130	19.1	Other wastes	2.32%	658,130
20	Fines	1.66%	469,127	20.1	Unspecified Fine material <10mm	1.66%	469,127
TOTAL (Primary categories)		100.00%	28,340,112	TOTAL (Secondary categories)		100.00%	28,340,112