

Residual Waste Composition Analysis results

Report of the Director of Climate Change, Environment and Transport

Please note that the following recommendations are subject to consideration and determination by the Committee before taking effect.

1) **Recommendations:** that:

- (a) the committee notes the results of the Waste Composition Analysis carried out in October 2022;
- (b) the committee approves the proposed actions detailed in Section 6 below.

2) **Summary**

An analysis of household kerbside residual waste bins was carried out in October 2022. Additionally, some residual waste from Household Waste Recycling Centres (HWRCs) and litter bins was analysed. This report summarises the results and proposes a number of actions as a result.

3) **Introduction**

An analysis of residual waste bins was last carried out in 2017. An analysis is commissioned approximately every 5 years in order to understand what types of waste residents are putting in their residual bins. Interventions can then be designed to assist residents to put the right waste in the right bin, thereby increasing recycling rates and reducing residual waste. A procurement exercise was undertaken and the contract awarded to MEL Waste Insights. During the first 3 weeks of October they sampled residual waste from 200 houses in each district and Torbay amounting to 1800 houses across Devon and Torbay. They also sampled the residual waste from 6 HWRCs and a number of litter bins in Teignbridge, Exeter, Torbay and East Devon. Details of packaging materials were also noted in order to inform the potential impact of the Extended Producer Responsibility for Packaging (pEPR) and Deposit Return Scheme (D.R.S.) in the future.

4) **Results**

The results were detailed in a number of individual reports for each authority, and an overall report for Devon and one for Torbay. HWRC and Litter reports were also produced.

4.1 **Kerbside collections**

The pie charts below show the percentages of each material in the Devon bins overall (Chart 1) and the Torbay bins (Chart 2). Appendix 1 shows the pie charts for each individual district. It can be seen that overall the most prevalent material is food waste at 28.2% in Devon and 23.2% in Torbay (although Torbay's garden waste was, at 24.3%, their most prevalent material). Given that all authorities have food waste collections (Exeter have begun rolling out a collection) this is a disappointing result. In terms of kilogrammes per household per week (kg/hh/wk), though overall in

Devon food waste has gone down from 1.49kg/hh/wk to 1.18kg/hh/wk a drop of 26%. In Torbay there was a very small increase of 2%.

The next most prevalent material in Devon is sanitary waste (9.9%) followed by paper (9.6%), plastic film (8.6%), dense plastics (6.8%) and garden waste (6.8%). Although other materials are present in smaller percentages they are nevertheless significant, in terms of carbon impact e.g. textiles and metals.

In Torbay, garden waste was the most prevalent although Torbay only launched an opt-in, charged garden waste collection from the end of October 2022, so the impact of this on residual waste composition will not be captured by this analysis. This was closely followed by food waste, and then sanitary (9%), paper (8.7%), dense plastic (6.4%) and plastic film (5.3%).

The results are divided by ACORN (A Classification of Residential Neighbourhoods) group ([Acorn consumer classification \(CACI\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/acorn-consumer-classification-caci)). Samples were taken from households according to the major distribution of groups in each district. A table of the ACORN groups chosen for Devon districts and Torbay can be seen at Appendix 2.

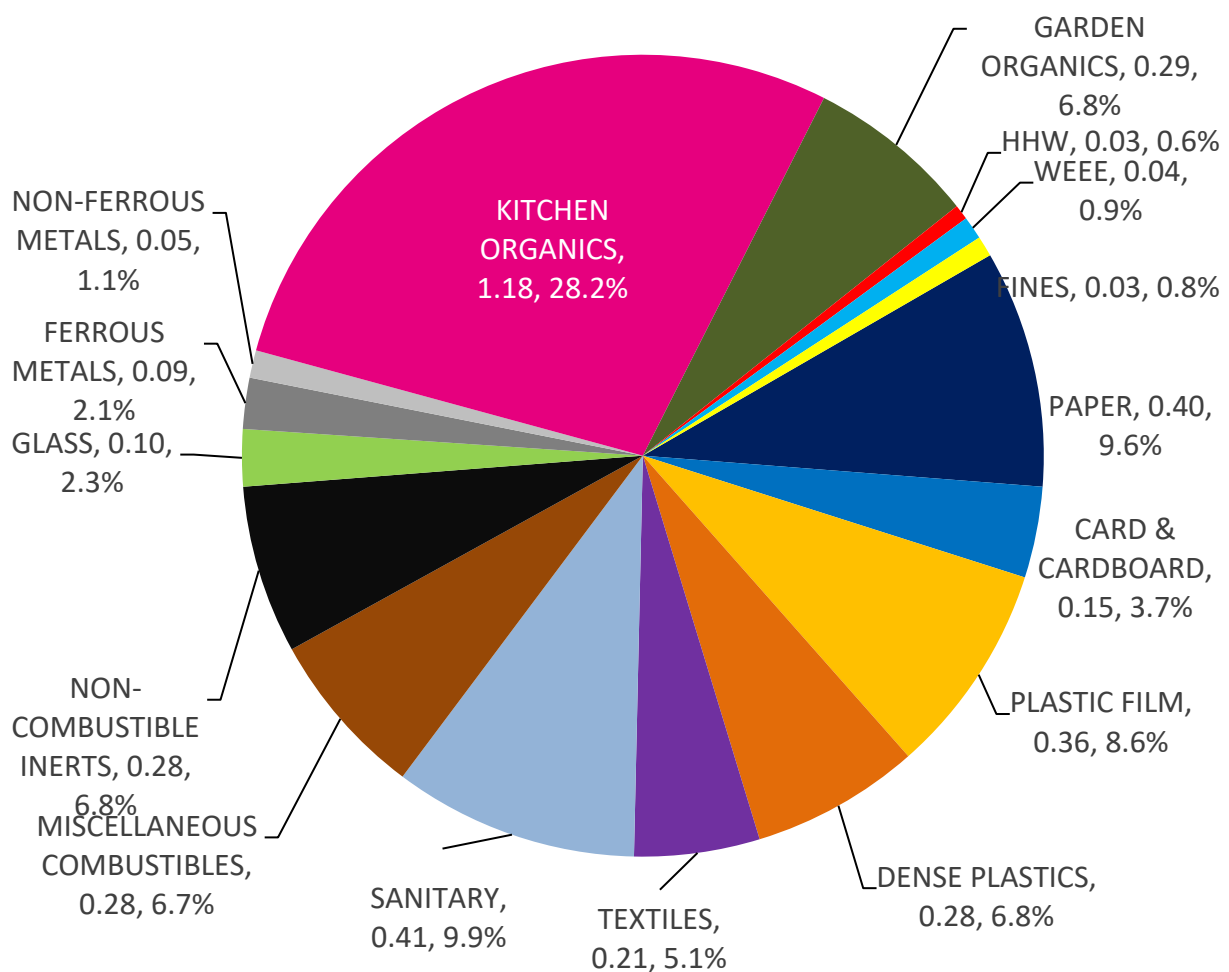


Chart 1 – Devon – Average contents of the residual bins - (decimal is kg/hh/wk and % of total residual waste)

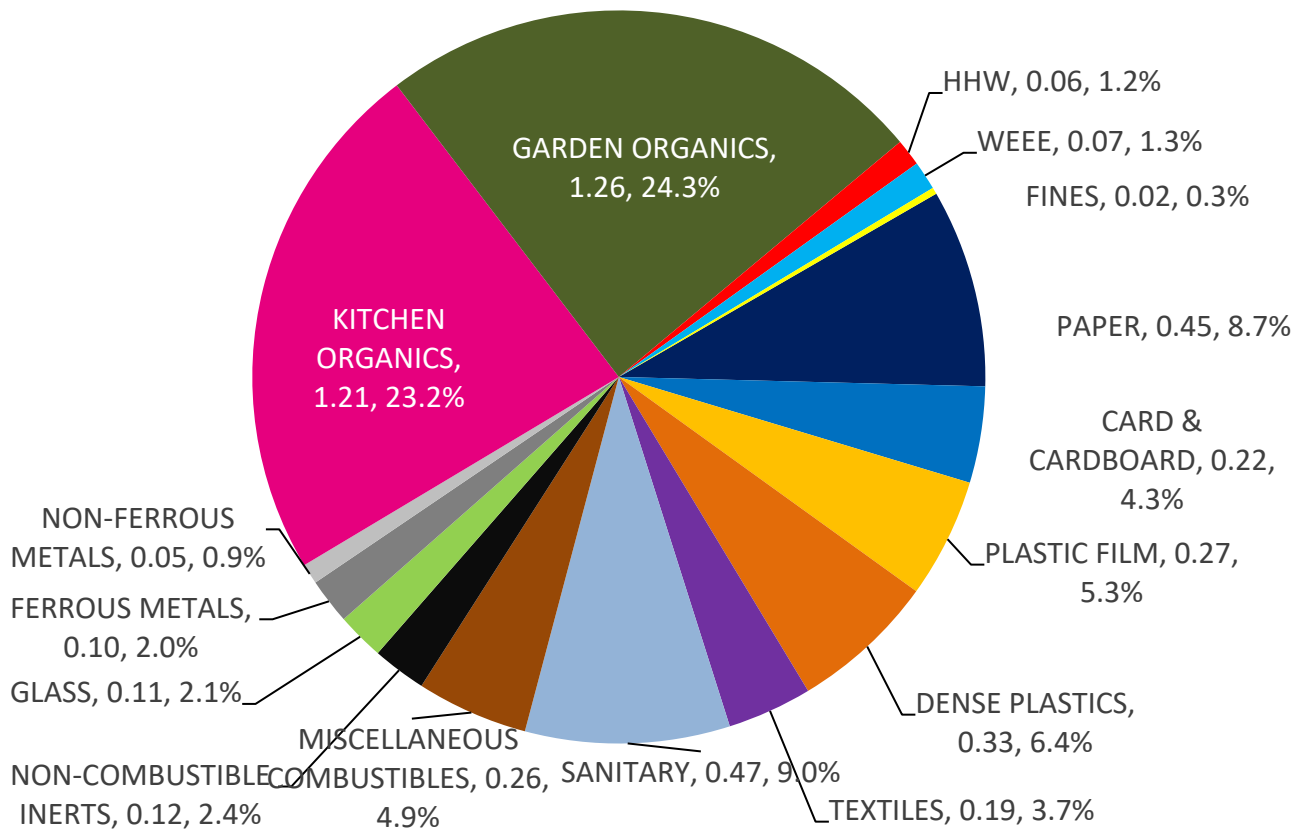


Chart 2 – Torbay – Average contents of residual bins (decimal is kg/hh/wk and % of total residual waste)

In Devon

Looking in more detail at the food waste the vast majority was avoidable. There is a significant amount (43.8%) of avoidable food waste disposed of in its packaging i.e. food that has been bought and thrown away without it even being opened. There are also high percentages of raw fruit and vegetables and cooked and prepared food. These results will help inform the proposed food waste campaign work.

Residual food waste	East Devon	Exeter	Mid Devon	North Devon	South Hams	Teignbridge	Torridge	West Devon	Devon Avg
Avoidable food waste - packaged	0.14	0.40	0.61	0.37	0.38	0.60	0.24	0.42	0.40
Avoidable food waste loose	0.13	0.53	0.57	0.72	0.51	0.52	0.62	0.51	0.51
Unavoidable food waste	0.11	0.42	0.11	0.21	0.28	0.26	0.18	0.21	0.24
Total food waste	0.38	1.35	1.30	1.29	1.17	1.37	1.04	1.13	1.14
Avoidable food waste	0.27	0.93	1.19	1.09	0.89	1.11	0.86	0.93	0.91
% Of food avoidable	72.27%	68.61%	91.56%	84.11%	76.03%	81.33%	82.73%	81.87%	79.31%

% Of avoidable food packaged	52.32%	42.98%	51.70%	33.70%	42.70%	53.56%	27.73%	45.13%	43.79%
% Of all food packaged	37.81%	29.49%	47.34%	28.35%	32.47%	43.56%	22.94%	36.95%	34.73%

Table 1 – Breakdown of residual food waste kg/hh/wk and % - Devon

The proportion of other recyclable materials in the residual waste and how much could have been recycled if householders put the right waste in the right bin is as follows:

Material	% of residual waste	% recyclable
Plastic	15.4	26
Paper	9.6	38
Textiles	5.1	54
Card	3.7	61
Metals	3.2	56
Glass	2.3	47

Table 2 – Percentages of recyclable material in the residual waste- Devon

- In total 41% of residual waste collected could have been recycled at the kerbside or 1.7kg/hh/wk.
- Around 55.1% or 2.30kg/hh/wk of residual waste is potentially recyclable if a full range of materials were offered by all Devon authorities.

In Torbay

Residual food waste	ACORN 1	ACORN 3	ACORN 4	ACORN 5	Avg
Avoidable food waste - packaged	0.21	0.13	0.32	0.22	0.22
Avoidable food waste loose	0.65	0.51	0.75	0.70	0.65
Unavoidable food waste	0.26	0.25	0.27	0.29	0.27
Total food waste	1.12	0.88	1.34	1.20	1.13
Avoidable food waste	0.87	0.63	1.08	0.92	0.87
% Of food avoidable	77.12%	71.84%	80.01%	76.01%	76.59%
% Of avoidable food packaged	24.58%	20.03%	30.16%	23.96%	25.34%
% Of all food packaged	18.96%	14.39%	24.13%	18.22%	19.41%

Table 3 – Breakdown of residual food waste kg/hh/wk and % – Torbay

- Garden waste made up 24.3% of the residual waste but this is expected to change as a charged for garden waste collection service launched late in 2023.

- Food waste was seen to be a major component of residual waste forming 23.2% of the total. Of this food waste 77% is avoidable with 19% of all discarded food still packaged.

The proportion of other recyclable materials in the residual waste and how much could have been recycled if the householders put the right waste in the right bin is as follows:

Material	% of residual waste	% recyclable
Plastic	11.8	26
Paper	8.7	29
Card	4.3	73
Textiles	3.7	84
Metals	2.9	61
Glass	2.1	93

Table 4 – Percentages of recyclable material in the residual waste - Torbay

- In total 58% of residual waste collected could have been recycled alternatively at the kerbside or 3.0kg/hh/wk.
- Around 62.9% or 3.23kg/hh/wk of residual waste is potentially recyclable if a full range of materials were offered by Torbay.

Appendix 3 shows a comparison between the kg/hh/wk of each material collected in 2017 and the kg/hh/wk collected in 2022. In most authorities (at least 6 out of 9) paper, card, glass, textiles, garden, hazardous (HazW) and WEEE waste went down. In 3 authorities (East Devon, Exeter and Torridge) the kg/hh/wk went down in every material but one. Across Devon counted as an average only the amount of plastic film in the residual waste went up. In West Devon kg/hh/wk went up in 8 out of 10 materials and in North Devon, South Hams and Torbay kg/hh/wk went up in 6 out of 12 materials. Overall, these figures are encouraging and show the positive impact of the communications sent out to residents as well as the impact of service modifications. Appendix 4 shows the percentage of each material in the residual bin in each authority and which material there is the most of in each district. Food waste is very much the main material for each authority except Torbay (garden waste) and East Devon (sanitary). It also shows that the material there is the least of (in terms of percentage) is generally glass except for Exeter where it is metals. Exeter don't have a kerbside collection of glass.

Kerbside residual collections – recyclable content

The pie charts below show the average recyclable content of Devon and Torbay residual waste. This shows that 41% of the residual waste is recyclable in Devon and 58% in Torbay under the current collection schemes. This would increase to 55% in Devon and 63% in Torbay if a service with a full range of materials was offered.

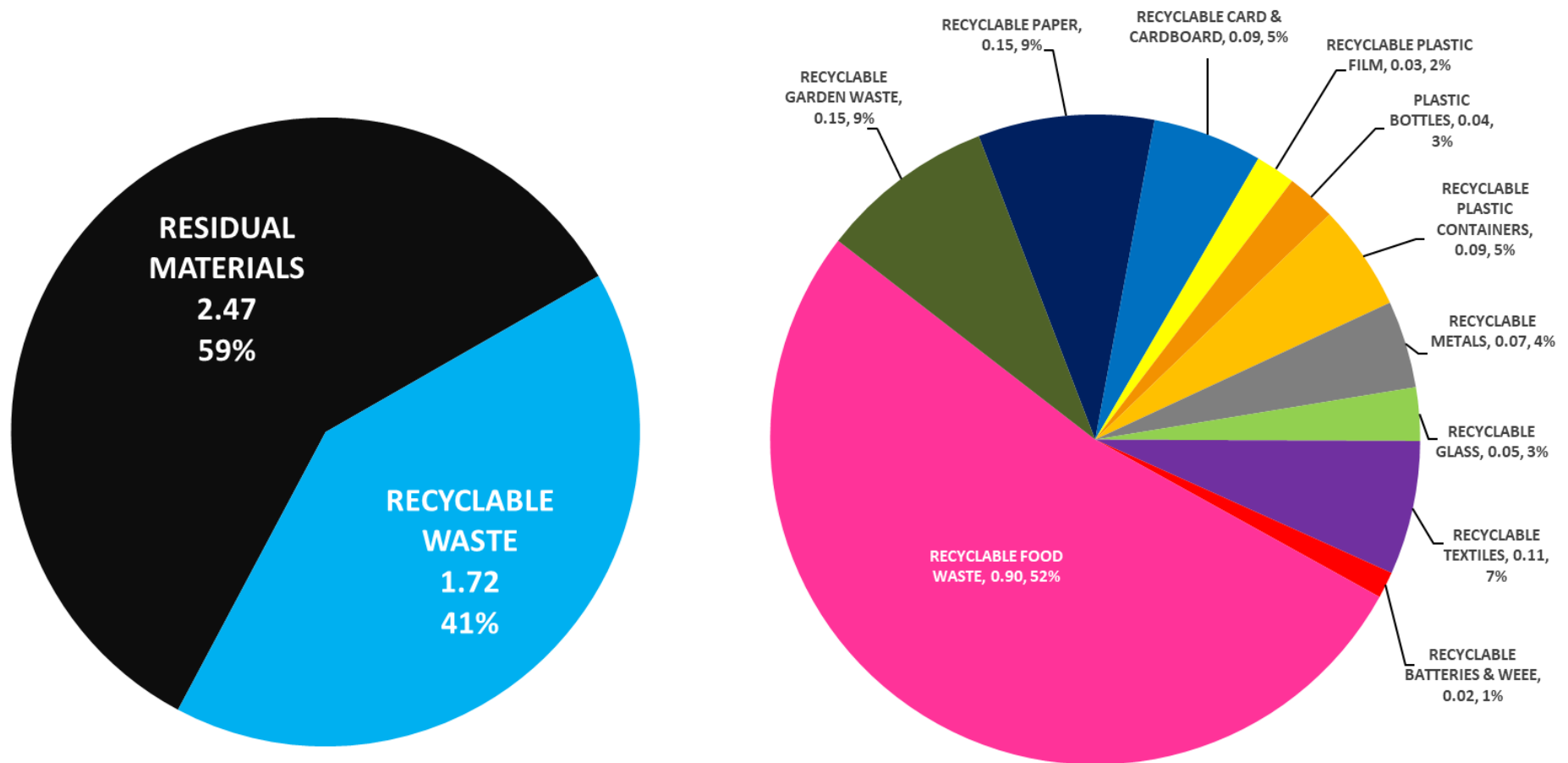


Chart 3 – Average recyclable content of Devon residual waste – decimals are kg/hh/wk

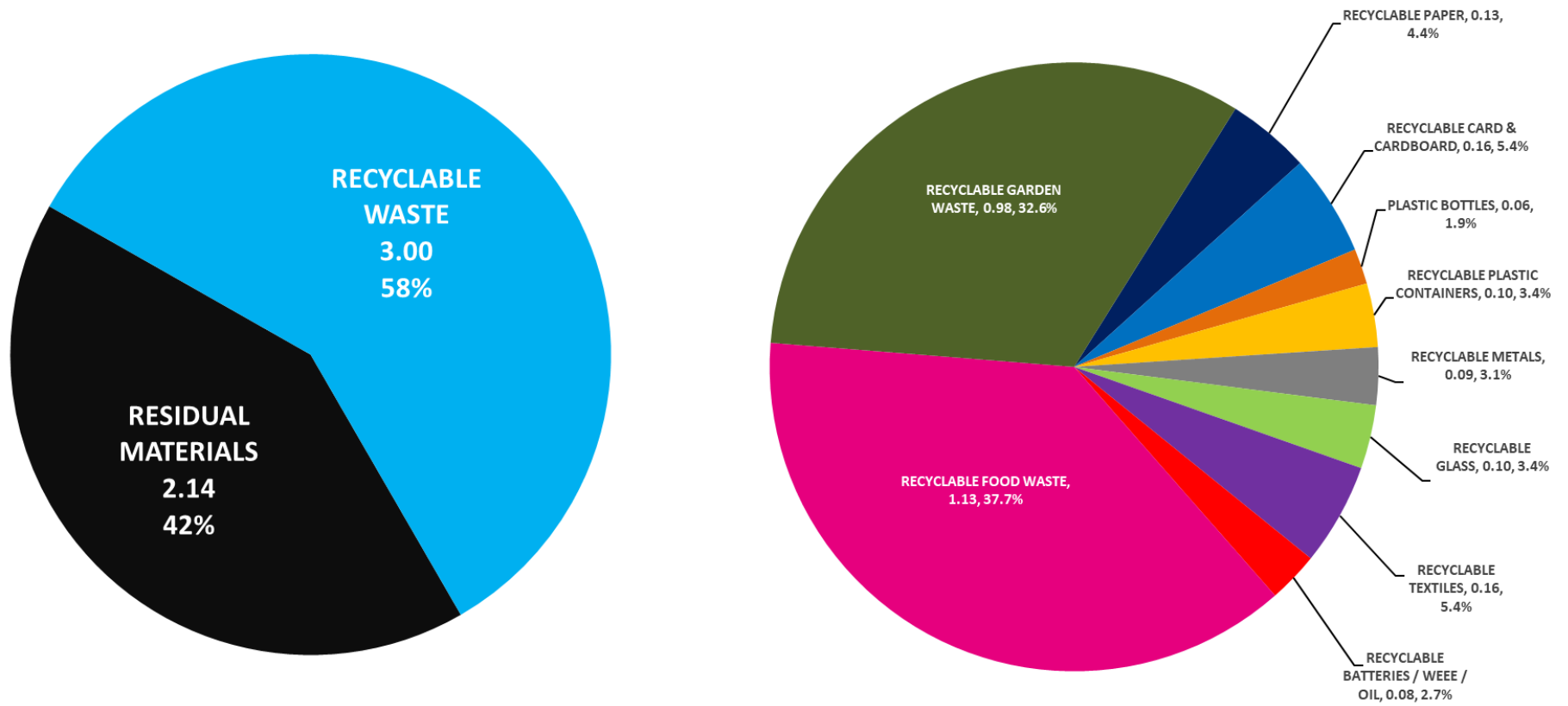


Chart 4 – Average recyclable content of Torbay residual waste- decimals are kg/hh/wk

4.2 Packaging

The amount of packaging in the residual bins is of interest due to the impending pEPR and D.R.S. schemes. These schemes should enable more recycling of packaging to take place and any data available to assist the Government in modelling the financial payments for local authorities will be useful. In addition, it will help Devon Authorities evaluate what their costs are for managing these materials as under pEPR these costs should be met by the producers from April 2024. On average, there is 0.78kg/hh/wk of packaging in Devon residual bins/sacks. Mid Devon households had the most packaging in their residual bins (1.19kg/hh/wk) with East Devon residual waste containing 0.38kg/hh/wk of packaging. Overall, around 18.7% of the residual waste from Devon can be considered to be packaging of which 8% is D.R.S. packaging. Around 15.0% of East Devon residual waste was packaging compared with 22.5% for Mid Devon. The tables below show the packaging materials contained in the residual bins.

Packaging content kg/hh/wk	East Devon	Exeter	Mid Devon	North Devon	South Hams	Teignbridge	Torridge	West Devon	Devon avg
Paper & card packaging	0.07	0.11	0.17	0.20	0.13	0.17	0.17	0.17	0.15
Plastic packaging	0.24	0.29	0.71	0.55	0.39	0.45	0.48	0.57	0.44
Metal packaging	0.03	0.07	0.11	0.05	0.11	0.09	0.04	0.11	0.07
Glass packaging	0.03	0.18	0.07	0.05	0.09	0.06	0.03	0.02	0.08
Packaged food related*	0.01	0.02	0.03	0.02	0.02	0.03	0.01	0.02	0.02
Other	0.00	0.00	0.09	0.00	0.00	0.05	0.00	0.11	0.02
Total	0.38	0.68	1.19	0.88	0.75	0.86	0.73	1.00	0.78

Table 5 – Packaging materials – kg/hh/wk

Packaging content (%)	East Devon	Exeter	Mid Devon	North Devon	South Hams	Teign-bridge	Torridge	West Devon	Devon Avg	Split*
Paper & card packaging	2.7%	3.0%	3.2%	4.5%	2.6%	3.9%	4.3%	3.5%	3.5%	18.6%
Plastic packaging	9.6%	8.0%	13.5%	12.3%	8.0%	10.1%	12.2%	11.5%	10.5%	56.1%
Metal packaging	1.3%	2.0%	2.1%	1.1%	2.3%	2.0%	1.1%	2.2%	1.8%	9.5%
Glass packaging	1.1%	5.0%	1.4%	1.2%	1.9%	1.4%	0.8%	0.4%	1.9%	10.1%
Packaged food related*	0.3%	0.6%	0.6%	0.5%	0.4%	0.7%	0.4%	0.4%	0.5%	2.8%

Other	0.0%	0.0%	1.7%	0.0%	0.0%	1.0%	0.0%	2.1%	0.5%	2.9%
Total	15.0%	18.6%	22.5%	19.6%	15.3%	19.1%	18.8%	20.1%	18.7%	100.0%

**Split is the proportional breakdown of the recyclable content. E.g., Recyclable paper forms 3.6% of the residual waste equating to 8.8% of the recyclable content*

Table 6 – Packaging materials – %

Of the packaging material present 56% was due to plastic packaging. This accounted for 10.5% or 0.44kg/hh/wk of the Devon residual waste. Around 18.6% of the packaging was due to paper and card packaging with 10.1% glass, 9.5% metal packaging and 2.8% food waste / liquid waste packaging.

Additionally, the analysis looked at materials which would potentially be captured in the Deposit Return Scheme (D.R.S.) which aims to increase capture of drinks containers for recycling. Consumers will pay a small deposit on PET plastic bottles, aluminium and steel cans. These can be refunded at a retailer return point or reverse vending machine. Overall, just 0.06kg/hh/wk of D.R.S. packaging is disposed of in the Devon residual waste. This accounts for 1.5% of the total. The majority of D.R.S. packaging will be located within the mixed recycling bins. Levels ranged between 0.02kg/hh/wk (0.4%) for West Devon and 0.15kg/hh/wk (4.0%) for Exeter.

D.R.S. in residual bins	East Devon	Exeter	Mid Devon	North Devon	South Hams	Teign-bridge	Torridge	West Devon	Devon Avg
Pet drinks bottles	0.00	0.02	0.01	0.01	0.02	0.02	0.04	0.01	0.01
Glass drinks bottles	0.01	0.12	0.01	0.03	0.07	0.02	0.02	0.00	0.04
Drink cans	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total kg/hh/wk	0.02	0.15	0.03	0.05	0.09	0.04	0.06	0.02	0.06
Total %	0.71%	4.02%	0.53%	1.12%	1.82%	0.97%	1.59%	0.41%	1.53%

Table 7 – D.R.S. packaging containers

Around 8.2% of all packaging in the residual waste is therefore compatible with future D.R.S. D.R.S. has the potential to remove all of this drinks packaging from the kerbside waste stream depending on the participation of the public. This will obviously reduce the amount of recyclable material in the residual waste, but also the amount of material collected in the kerbside dry recycling. This will have a potential impact on the amount of waste being diverted from residual to recycling or not appearing in the Local Authority collections at all if the D.R.S. scheme is successful.

For Torbay the results showed that an average of 0.84kg/hh/wk of total kerbside waste was due to packaging materials; 16.4% of the total. 53% of the packaging disposed of was formed of plastics. 0.08kg/hh/wk of total kerbside waste was due to D.R.S. drinks containers which is 1.7% of the total waste. Levels ranged between

<0.01kg/hh/wk (0.1%) for ACORN 3 and 0.18kg/hh/wk (3.2%) for ACORN 5. Finally, 10.0% of all packaging waste was therefore D.R.S. compatible.

Packaging content	ACORN 1	ACORN 3	ACORN 4	ACORN 5	Avg.
Kg/hh/wk	0.84	0.48	1.18	0.91	0.84
%	14.15%	12.05%	21.51%	16.58%	16.43%

Table 8 – Torbay – Packaging content

Packaging content kg/hh/wk	ACORN 1	ACORN 3	ACORN 4	ACORN 5	Avg
Paper & card packaging	0.16	0.13	0.22	0.24	0.19
Plastic packaging	0.48	0.31	0.61	0.42	0.45
Metal packaging	0.07	0.03	0.19	0.08	0.09
Glass packaging	0.12	0.00	0.14	0.16	0.10
Packaged food related*	0.01	0.01	0.02	0.01	0.01
Other	0.00	0.00	0.00	0.00	0.00
Total	0.84	0.48	1.18	0.91	0.84

Table 9 – Torbay – packaging materials kg/hh/wk

Packaging content (%)	ACORN 1	ACORN 3	ACORN 4	ACORN 5	Avg	Split
Paper & card packaging	2.7%	3.2%	4.0%	4.4%	3.6%	22.0%
Plastic packaging	8.0%	7.8%	11.2%	7.6%	8.8%	53.4%
Metal packaging	1.2%	0.7%	3.4%	1.4%	1.8%	10.9%
Glass packaging	2.0%	0.1%	2.6%	2.9%	2.0%	12.0%
Packaged food related*	0.2%	0.2%	0.4%	0.3%	0.3%	1.7%
Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	14.1%	12.0%	21.5%	16.6%	16.4%	100.0%

**estimated as 5% of packaged food / liquid weight.*

Table 10 – Torbay – packaging materials %

D.R.S. in residual bins	ACORN 1	ACORN 3	ACORN 4	ACORN 5	Avg
PET drinks bottles	0.01	0.00	0.02	0.02	0.01
Glass drinks bottles	0.05	0.00	0.04	0.12	0.05
Drink cans	0.01	0.00	0.04	0.03	0.02
Total kg/hh/wk	0.08	0.00	0.09	0.18	0.08
Total %	1.29%	0.11%	1.71%	3.23%	1.65%

Table 11 – Torbay – D.R.S. packaging containers

4.3 Household Waste Recycling Centres

Samples of residual waste from 5 HWRC sites in Devon and Torbay's site were sampled as part of the project. See table 12 below:

Site	Seven Bretheren	Pinbrook	Bideford	Sutton Barton	Sidmouth	Torbay	Devon Avg Excluding Torbay
Bagged household waste	16.86%	25.22%	18.78%	12.96%	19.10%	14.66%	18.58%
Paper	3.06%	4.52%	0.92%	2.68%	0.00%	0.48%	2.23%
Card & cardboard	1.61%	1.15%	0.00%	0.45%	0.27%	0.96%	0.70%
Plastic film	1.15%	1.64%	1.08%	0.75%	0.81%	0.64%	1.09%
Dense plastics	6.93%	12.07%	6.59%	11.13%	11.10%	11.80%	9.56%
Textiles	8.96%	8.85%	13.65%	10.36%	8.20%	4.78%	10.00%
Misc combustibles	42.05%	28.37%	29.71%	33.39%	30.29%	33.96%	32.76%
Misc non-combustibles	0.00%	0.31%	0.00%	0.21%	0.46%	14.59%	0.20%
Furniture non POPS*	15.66%	6.41%	15.92%	18.15%	22.73%	3.06%	15.78%
Furniture POPS*	0.00%	7.96%	10.82%	7.15%	4.43%	5.32%	6.07
Glass	0.43%	0.00%	0.36%	0.69%	0.30%	1.35%	0.36%
Ferrous metal	1.83%	1.80%	1.45%	0.00%	0.41%	5.00%	1.10%
Non-ferrous metal	0.29%	0.00%	0.00%	0.00%	0.65%	0.00%	0.19%
Putrescibles	0.00%	0.00%	0.00%	0.00%	0.00%	0.43%	0.00%
WEEE	0.21%	0.00%	0.55%	0.00%	0.26%	1.71%	0.20%
HazW	0.96%	1.70%	0.18%	2.08%	0.97%	1.25%	1.18%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

**POPS: Persistent Organic Pollutants*

Table 12 – Percentage of materials in the HWRC residual waste

Both Devon and Torbay offer a good range of recycling opportunities at their HWRCs. The average recycling rate at Devon sites is 73.5% and at Torbay sites 65.1%. The aim is for householders to sort their waste into the right containers and only non recyclable waste should go into the residual waste skips. However, it can be seen from tables 14, 15 and 16 that a considerable amount more of the residual waste could be recycled, 45% in Torbay and 46% in Devon. The figures are slightly lower if bagged waste is not included.

At the Devon sites the miscellaneous combustibles (32.76%) were the most prevalent material with furniture (21.85%) and bagged household waste (18.58%) the next most prevalent. In Torbay miscellaneous combustibles (33.96%) were the most prevalent followed by bagged household waste (14.66%) and miscellaneous non combustibles (14.59%). Table 13 below shows the content of the miscellaneous combustibles. The most prevalent materials were carpet for Torbay and furniture for Devon.

Site	Seven Bretheren	Pinbrook	Bideford	Sutton Barton	Sidmouth	Torbay	Devon Average
Disposable nappies	0.17%	0.00%	0.00%	0.07%	0.00%	0.23%	0.05%
Wood waste	1.69%	3.36%	4.75%	1.91%	7.84%	2.71%	3.91%
Carpet	13.71%	19.74%	6.43%	17.85%	15.57%	29.09%	14.66%
Furniture	15.66%	14.37%	26.74%	25.30%	27.16%	8.38%	21.85%
Mattresses	26.31%	8.04%	20.09%	13.97%	10.09%	2.53%	15.70%
All other	1.54%	0.82%	0.63%	0.07%	3.21%	2.21%	1.25%
Total	59.09%	46.32%	58.64%	59.16%	63.86%	45.15%	57.41%

Table 13 – Miscellaneous combustibles

Site	Seven Bretheren	Pinbrook	Bideford	Sutton Barton	Sidmouth	Torbay	Devon Avg
Kerbside recyclable	6.48%	5.97%	2.12%	3.82%	2.42%	5.43%	4.16%
Onsite divertible	27.34%	18.29%	27.12%	33.28%	38.17%	22.43%	28.84%
Onsite restricted / chargeable	0.00%	0.39%	0.00%	0.19%	0.46%	12.58%	0.21%
Total recyclable	33.82%	24.66%	29.24%	37.29%	41.05%	40.44%	33.21%

Table 14 – Potential recyclability of waste as delivered

Site	Seven Bretheren	Pinbrook	Bideford	Sutton Barton	Sidmouth	Torbay	Devon Avg
Kerbside Recyclable	23.14%	26.85%	45.23%	30.04%	30.74%	46.67%	31.20%
Onsite Divertible	33.36%	41.84%	27.60%	26.32%	29.44%	15.06%	31.71%
Onsite Restricted / Chargeable	7.94%	4.36%	4.06%	6.24%	14.90%	5.73%	7.50%
Total Recyclable	64.44%	73.05%	76.90%	62.60%	75.09%	67.46%	70.41%

Table 15 – Potential recyclability of bagged materials

Site	Seven Bretheren	Pinbrook	Bideford	Sutton Barton	Sidmouth	Torbay	Devon Avg
Kerbside recyclable	12.00%	13.23%	10.94%	7.80%	8.47%	12.42%	10.49%
Onsite divertible	31.08%	28.69%	31.98%	36.53%	43.45%	24.48%	34.35%
Onsite restricted / chargeable	1.34%	1.49%	0.76%	0.99%	2.85%	7.70%	1.49%
Total recyclable	44.42%	43.41%	43.68%	45.33%	54.77%	44.60%	46.32%

Table 16 – Potential recyclability of all materials combined

The Devon and Torbay authorities will work with their site operators to try to ensure that a higher percentage of materials are recycled and hence diverted from energy recovery. Torbay has also introduced HWRC recycling for rigid plastic since the analysis was done. See Section 6 below.

4.4 Litter bins

The project included a small sample (80kg in total) of litter bins including sea front bins in East Devon (6.8kg), town centre bins in Exeter (35.1kg), market town bins in Teignbridge (7.5kg) and bins in Brixham (31.3kg). Table 17 below shows the composition results. The results showed clear evidence of very different wastes being prevalent at the different locations. For example, glass in the East Devon seafront waste, bagged waste in Exeter city centre, and dog waste in Teignbridge and Torbay. The bagged waste in Exeter came entirely from commercial sources whereas in Torbay it was household waste. The paper waste was newspapers and magazines in Teignbridge and food and drinks packaging at the other locations. The food and drink waste included 11% in Exeter, 41% of which was alcohol related, and across the samples approximately one third of the food waste was still packaged.

Litter waste	East Devon	Exeter	Teignbridge	Torbay	Devon Average excluding Torbay
	Seafront Waste	City Centre	Market Town	Brixham	
Bagged waste	0.0%	57.8%	0.0%	10.5%	19.3%
Paper	11.9%	3.0%	18.2%	4.3%	11.1%
Card & cardboard	15.8%	3.8%	5.0%	8.6%	8.2%
Confectionary packaging	2.2%	0.2%	1.1%	0.7%	1.1%
Smoking waste	0.0%	0.4%	1.0%	0.2%	0.5%
Sandwich packaging	0.0%	0.0%	0.0%	0.4%	0.0%
Plastic film	11.1%	1.6%	5.2%	5.4%	6.0%
Dense plastics	6.3%	3.8%	7.6%	6.6%	5.9%
Textiles	0.0%	3.7%	0.0%	0.0%	1.2%
Dog waste	10.2%	0.5%	38.2%	48.7%	16.3%
Miscellaneous combustibles	1.2%	1.8%	0.7%	0.0%	1.2%

Non-combustible inerts	0.0%	0.0%	0.0%	1.3%	0.0%
Glass	21.2%	3.4%	8.6%	3.2%	11.1%
Metals	6.8%	2.8%	1.4%	4.0%	3.7%
Food waste	13.2%	17.1%	9.9%	6.1%	13.4%
Garden organic	0.0%	0.2%	0.0%	0.0%	0.1%
HazW	0.0%	0.0%	3.0%	0.0%	1.0%
WEEE	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Table 17 – Litter waste composition across the samples

Further analysis showed that an average of 33.5% of the litter was recyclable either at home or on street. See Table 18 below. Figures show that glass waste was responsible for 33.1% of the recyclable material present in litter bins where it formed 11.1% of the total. Glass was responsible for 45% of seafront litter. The D.R.S. scheme in England does not include glass which may be a missed opportunity with regard to helping to prevent littering of glass drinks bottles.

Litter waste	East Devon	Exeter	Teignbridge	Torbay	Devon Average	Split*
	Seafront Waste	City Centre	Market Town	Brixham		
Recyclable paper	2.94%	0.54%	12.73%	2.14%	5.40%	16.14%
Recyclable card & cardboard	1.08%	2.11%	2.26%	3.42%	1.82%	5.44%
Recyclable plastic film	0.00%	0.42%	0.00%	0.00%	0.14%	0.42%
Plastic bottles	2.48%	2.42%	5.66%	2.51%	3.52%	10.50%
Recyclable plastic containers	0.93%	0.79%	0.85%	2.75%	0.85%	2.55%
Recyclable metals	4.95%	2.72%	1.13%	3.29%	2.93%	8.76%
Recyclable glass	21.21%	3.38%	8.63%	3.15%	11.07%	33.06%
Total mixed recyclables	33.59%	12.38%	31.26%	17.26%	25.74%	76.87%
Recyclable garden waste	0.00%	0.18%	0.00%	0.00%	0.06%	0.18%
Recyclable food waste	13.16%	0.00%	9.90%	6.14%	7.69%	22.95%
Total recyclable content	46.75%	12.56%	41.16%	23.40%	33.49%	100%

*Split is the proportional breakdown of the recyclable content. E.g., Recyclable paper forms 5.4% of the litter waste equating to 16.1% of the recyclable content

Table 18 – Proportion of litter classed as recyclable (%)

These results will assist authorities when looking at the potential for and value of “Recycle on the go” facilities. They may also give an indication of the packaging waste which may reduce when the Deposit Return Scheme is introduced. They will also be useful to the Clean Devon Partnership when considering actions to reduce litter.

5) Costs of putting the wrong thing in the wrong bin

The approximate cost of dealing with the waste in the residual bins in Devon is almost £16 million. For Devon, if the recyclable waste (41%) had been put in the recycling bins this would have saved approximately £3.9 million. For Torbay, the cost of dealing with residual is £3.62 million. Equally if the right material was put in the right bin in Torbay (58%) savings of £2 million could have been made.

6) Proposed Actions

The Waste Prevention and Reuse Strategy Action Plan forms the basis for the behavioural change work required to implement the Resource and Waste Management Strategy for Devon and Torbay. This is updated each year. This new data will be valuable in deciding which areas to focus on.

Kerbside collections

Food Waste

Given the amount of food waste in the kerbside residual bins, a report is being brought to this committee detailing the scope of a range of actions to reduce this waste over the coming 2023/24 financial year. Much of the focus of the RecycleDevon work is already on food waste but this will be increased.

Other key materials

- Sanitary – East Devon are researching the possibility of recycling this waste.
- Plastics – It is important that plastic recycling is increased per se but also because it has a negative carbon impact when disposed of within the residual waste in the energy recovery facilities. There will be increased focus on assisting the public to recycle all of their plastic bottles, tubs and trays. Nationally other authorities are currently running trials of recycling plastic film and the results of these trials will be of interest to the Devon and Torbay authorities. The pEPR is still being developed over the coming year and this should have a significant effect on increasing plastic recycling within the next few years.
- Paper – the authorities will continue to engage with the public on what sorts of paper can be recycled.
- Textiles – these have the highest carbon impact of all materials and further behavioural change work is required to increase the amounts reused and also further research is required on how best to find markets to recycle the wide variety of materials of different qualities that arise in the waste stream. The Reuse Project will continue to highlight reuse at charity shops, swishing events and on sites such as ebay and vinted.
- Garden waste – home composting will continue to be promoted across Devon and Torbay. Torbay will continue to promote and increase customer numbers for its newly launched garden waste collection service.

Other kerbside actions

- Enforcement of side waste policies – all authorities agreed in June 2021 to enforce their side waste policies within 12 months so this should now be happening across the county and Torbay. This helps to encourage residents to put the right waste in the right bin.
- Offer a full range of materials for recycling preferably weekly – Authorities committed to this within the Resource and Waste Management Strategy for Devon and Torbay.
- The Devon Community Action Groups Project and the Waste and Recycling Advisors' contractors will be made aware of the results of this waste analysis and ensure their targeted work takes the issues into account.
- Given the best results have been achieved in East Devon a 3 weekly residual waste collection service could be considered further by those authorities who haven't addressed the potential of this service option so far.
- The packaging data will be useful when analysing how the pEPR and D.R.S. will impact on the Devon authorities.

Household Waste Recycling Centres (HWRCs)

For Devon, working with the contractors there will be renewed focus on checking that the public understand where to put their waste, with the residual waste skip manned, waste checked and the householders re-directed to the relevant recycling skip if appropriate. Torbay are also looking into this and since the analysis took place have already increased the level of direction away from residual waste at the HWRC.

The Devon HWRC contract is operated on an incentive system in terms of waste re-used or recycled (diverted from disposal) at the sites. As such, the contractor is financially incentivised to reuse or recycle as much as possible and minimise the amount of residual waste requiring final disposal. In 2021/22 74.6% of waste was recycled at the Devon HWRCs.

Mattresses and Carpets

The county council and Torbay continue to monitor the markets for mattress and carpet recycling. However, processing costs are very high and processing facilities are distant to Devon (hence high transport costs and associated carbon impact issues). Many of the mattress and carpet processing companies simply shred the material which is then used as a fuel. Devon can achieve the same locally by sending this material to a local Energy Recovery Facility where it is used for heat and electricity generation.

Sofas/Soft Furnishings (Waste Upholstered Domestic Seating – WUDS)

The Environment Agency have advised that due to containing persistent organic pollutants (POPS) upholstered domestic seating (for example sofas, sofa beds, armchairs, kitchen and dining room chairs, stools, foot stools, home office chairs, futons, bean bags, floor and sofa cushions) will now need to be sent to an Energy Recovery Facility for disposal. As such, this waste stream will remain in the residual waste stream for the foreseeable future.

Recyclable materials quality/processor specifications

Items containing mixed materials will be present in the residual waste. For example, a plastic child's pedal car/trike is mainly plastic but contains embedded metal axles/components. The plastics recycler will not accept the item with the metal components and the metal recycler will not accept the item as it's mostly plastic. Where such items are not straightforward to separate, they will go into the residual waste container. Waste items containing multiple materials will always be problematic in terms of recycling.

In addition, recyclable materials that may be contaminated and not fit for recycling will also become residual waste.

Re-use

Suitable items are recovered where possible for sale/re-use through the HWRC shops. However, items not suitable/too damaged etc for re-use will become residual waste. In 2021/22 over 1000 tonnes of re-usable items were recovered from the waste stream and sold back to the public at the Devon HWRCs. Income from the sale of these items is used to help to support the cost of the HWRC service.

Space at the Torbay site is limited which reduces the opportunity to divert items for re-use.

Extended Producer Responsibility schemes

Both Devon and Torbay are pleased that packaging will be managed under pEPR from April 2024. However other wastes such as carpets, mattresses and soft furnishings should be managed under Extended Producer Responsibility obligations such that the costs of managing these wastes are not met by the public purse. This would influence future product design by the manufacturers.

7) Options/Alternatives

There are not considered to be any alternatives to reducing the amount of recyclables in the residual waste. This will result in increased recycling rates and reduced residual waste costs.

8) Strategic Plan

Responding to the climate emergency is the key area in the Devon Strategic Plan that this work relates to. Focusing on reducing the amount of recyclables in the residual waste will assist residents to further reduce, reuse and recycle waste and conserve resources thereby aligning with the Strategic Plan's aim of "Ensuring resources are used more efficiently by waste reduction, re-use and recycling".

9) Financial Considerations

There is a budget paper being brought to this Committee (Report No CET/23/8) which proposes the allocation of £82,850 to carry out food waste campaign work.

DASWC authorities need to continue to work together as well as individually to promote behaviour change such that the right waste is put in the right bin. Funding through pEPR has yet to be clarified but in theory the producers should meet full net costs of all packaging that they are responsible for from April 2024.

10) Legal Considerations

There are no specific legal considerations.

11) Environmental Impact Considerations (Including Climate Change)

The proposed initiatives to reduce the amount of recyclables in the residual waste will have a positive effect on the environment and climate change.

12) Equality Considerations

It is not considered that the proposals will result in any equality issues. They will be aimed at helping residents do more to reduce, reuse and recycle.

13) Risk Management Considerations

No risks have been identified.

14) Public Health Impact

Dealing with waste in a safe way in line with the waste hierarchy is a fundamental approach when allocating the DASWC budget. There are not expected to be any negative impacts on Public Health as a result of these proposals.

15) Summary

The report has summarised the results of the residual bin analysis and put forward some proposals to reduce the amount of recyclables in the residual waste.

Meg Booth
Director of Climate Change, Environment and Transport

Electoral Divisions: All

Local Government Act 1972: List of background papers

Nil

Contact for enquiries:

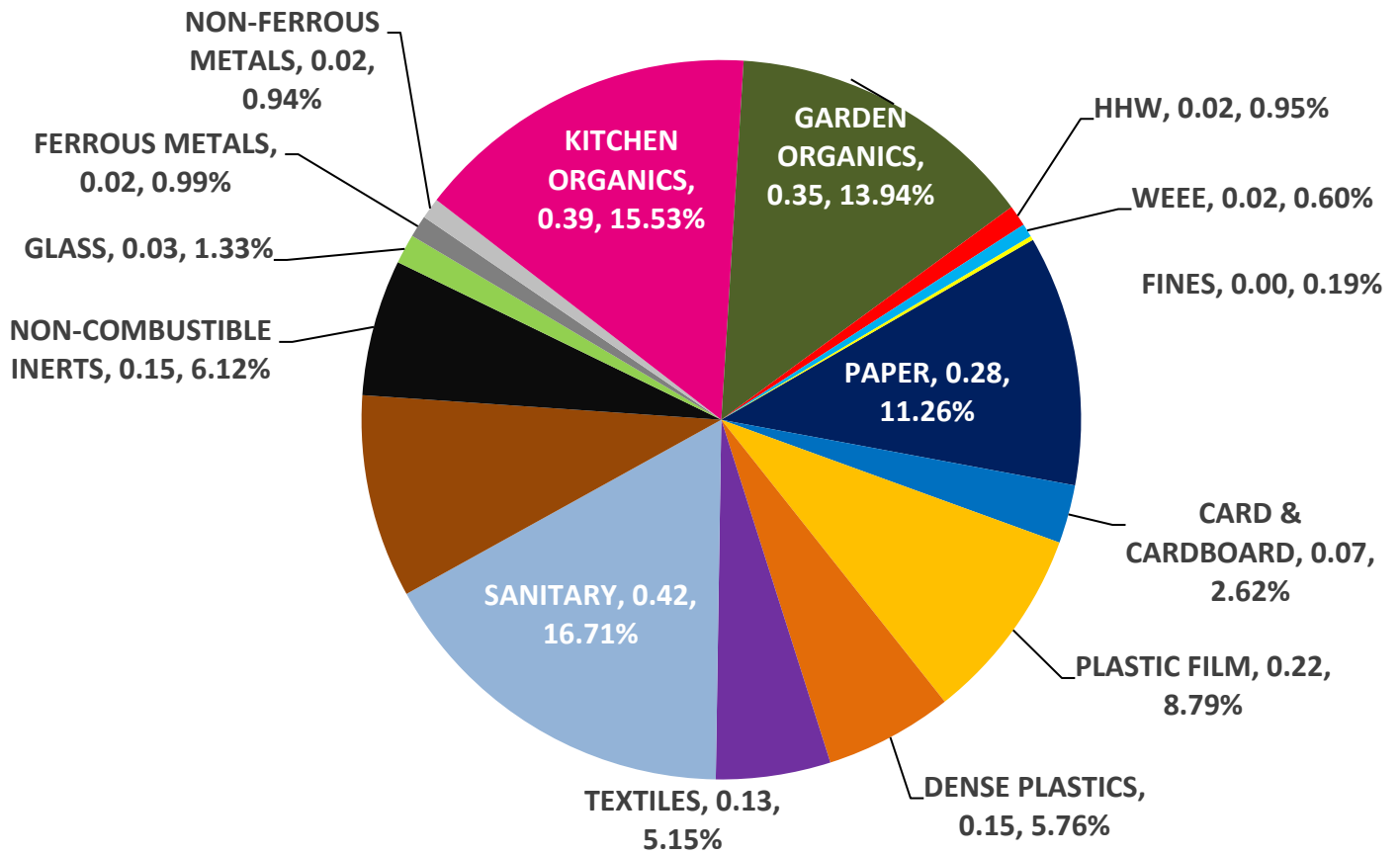
Name: Annette Dentith

Telephone: 01392 383190

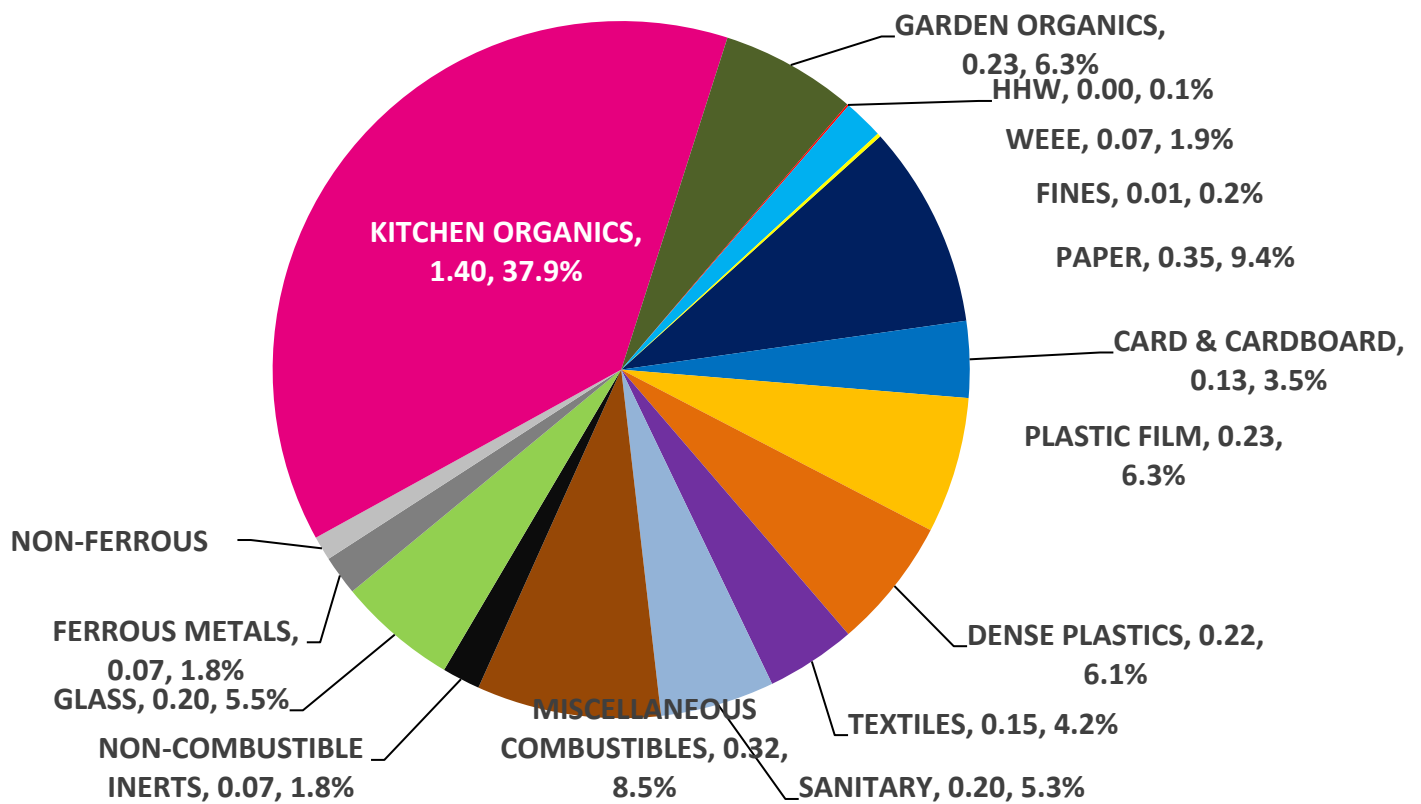
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Residual Waste Composition Analysis results - Final

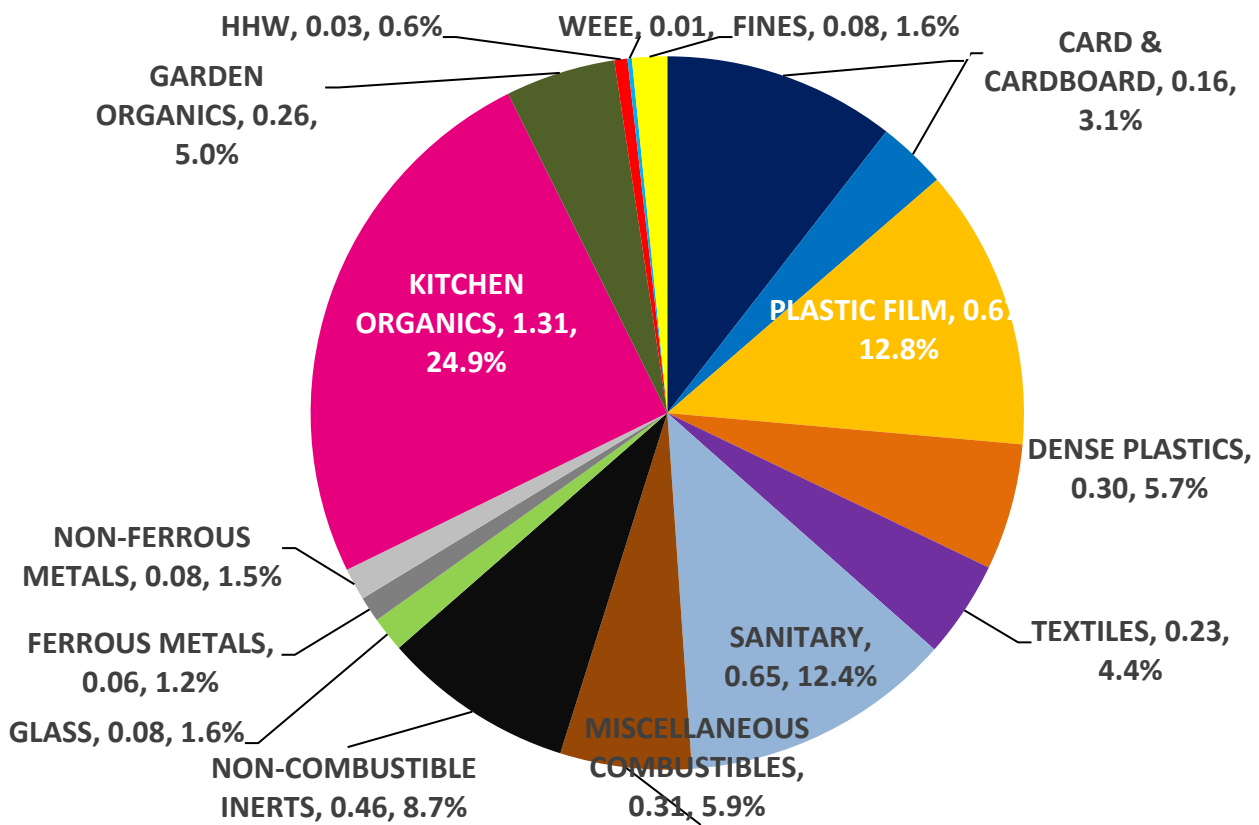
Appendix 1 to CET/23/7



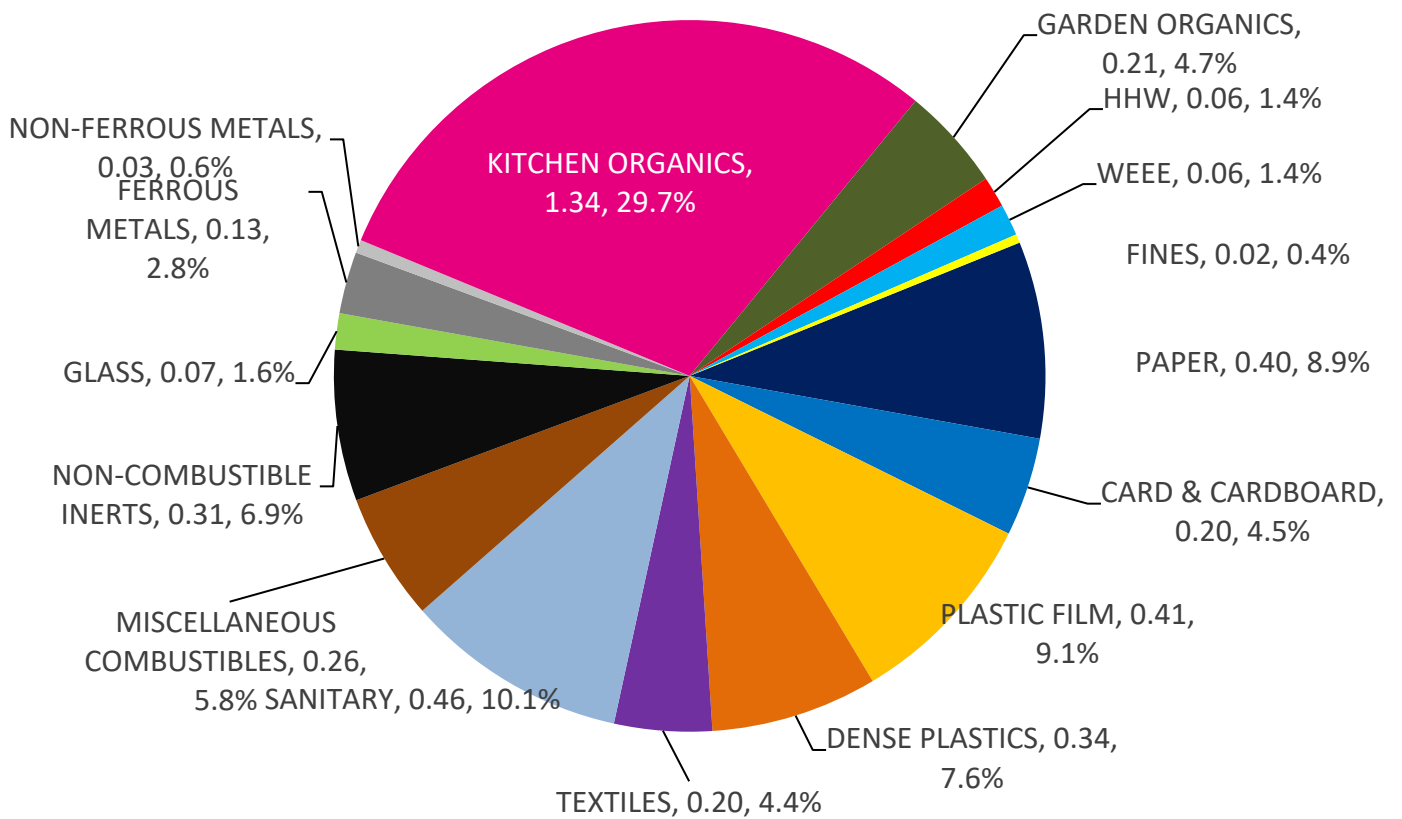
Average bin contents East Devon



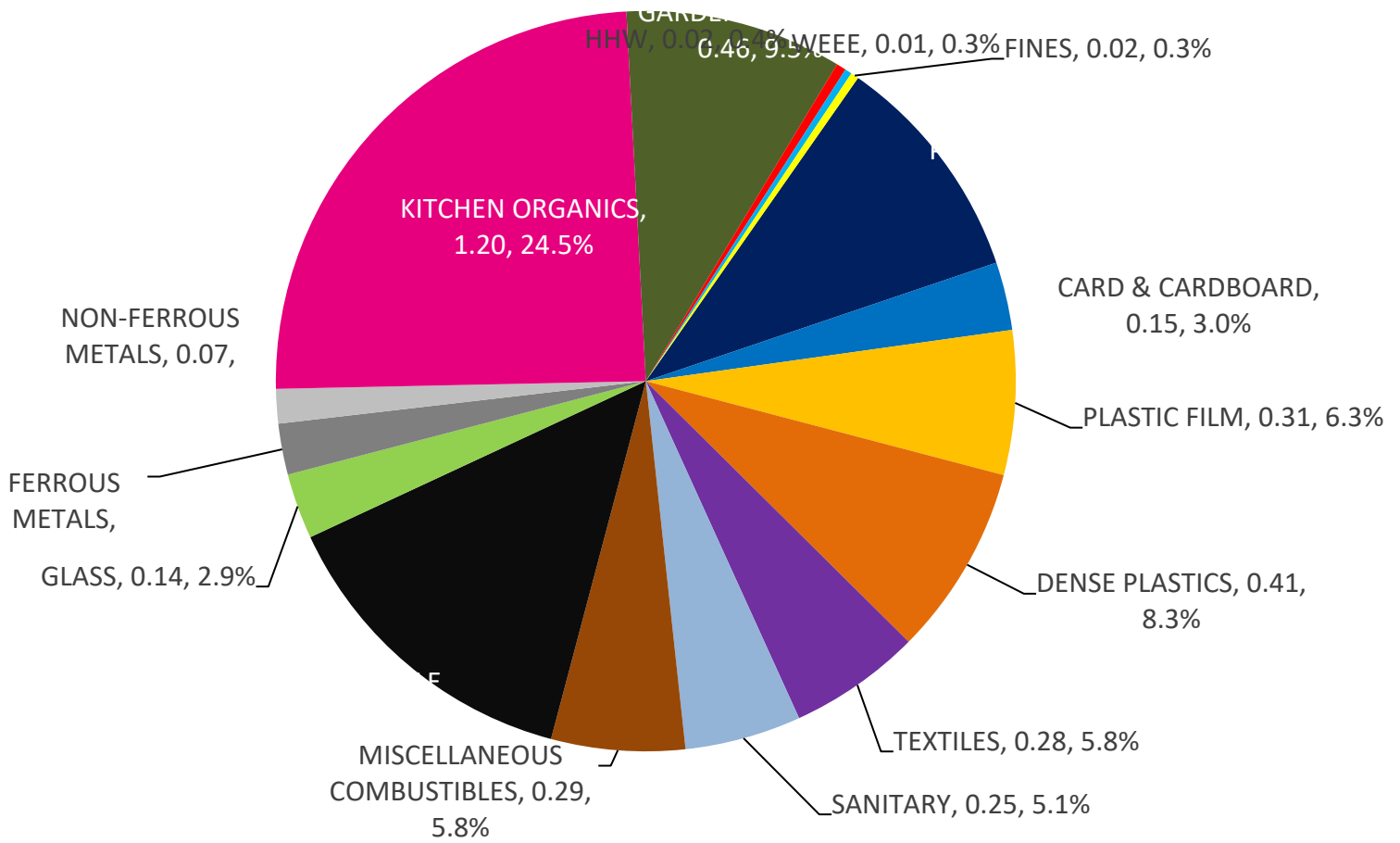
Average contents of the residual bins - Exeter



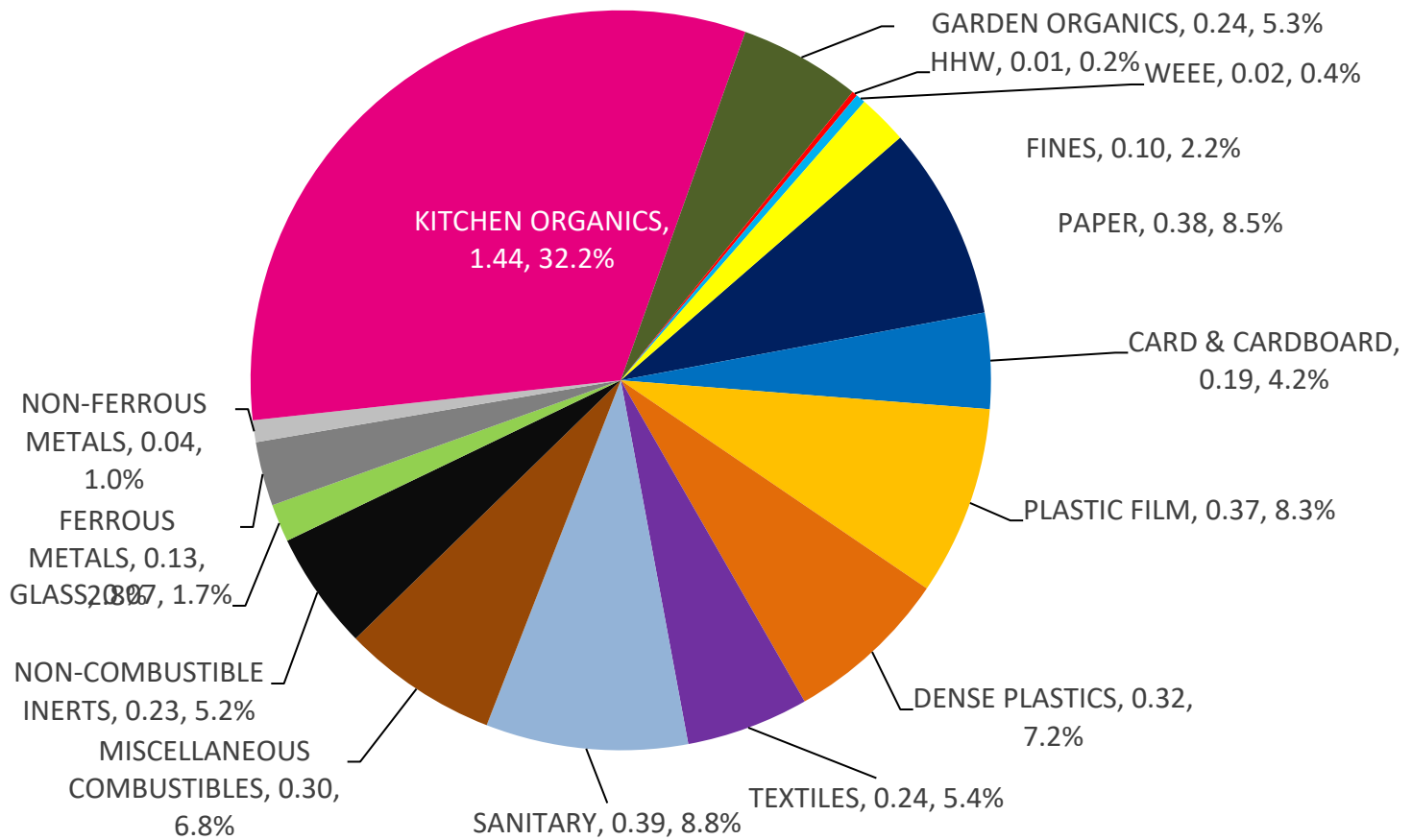
Average contents of the residual bins – Mid Devon



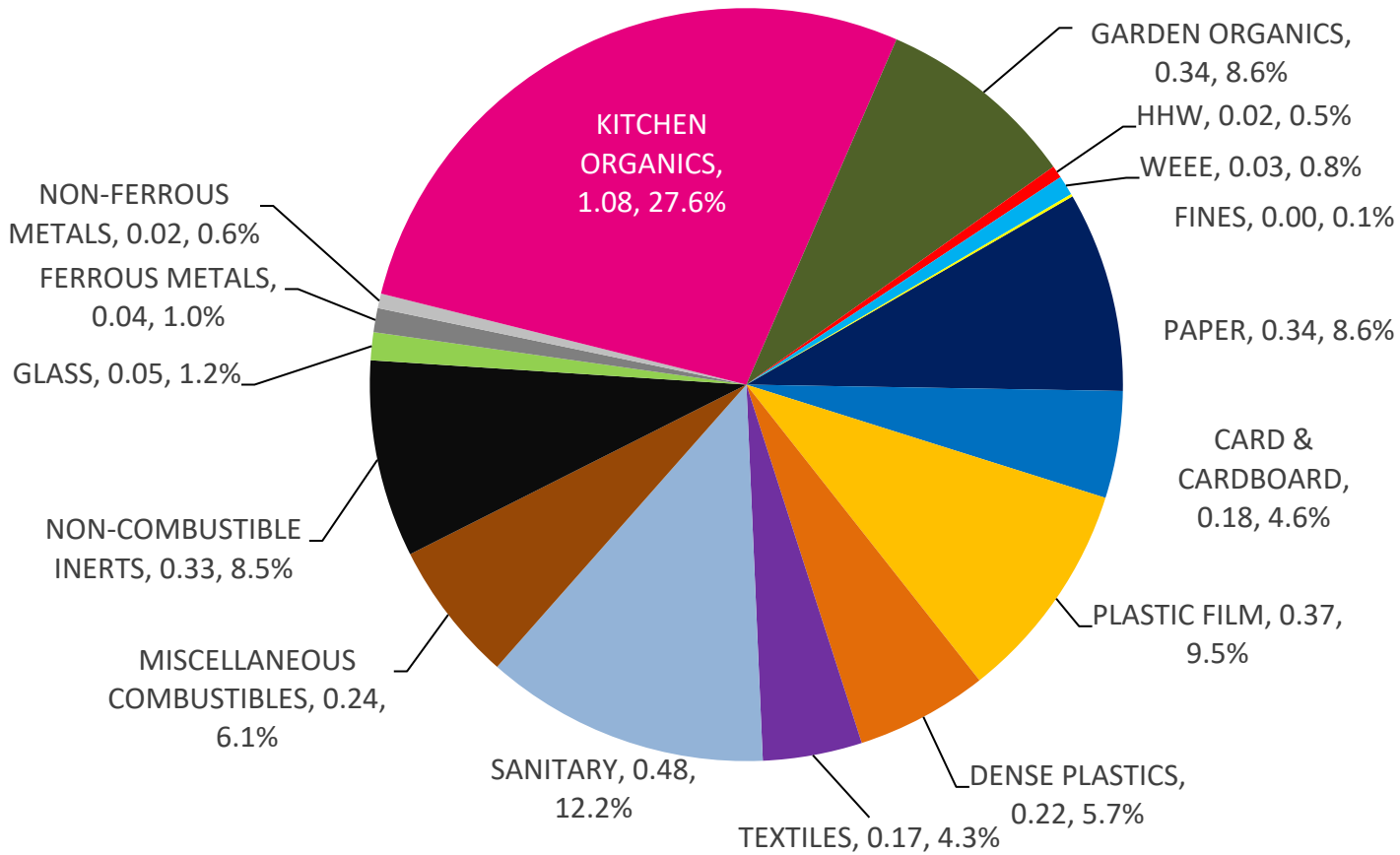
Average contents of the residual bins – North Devon



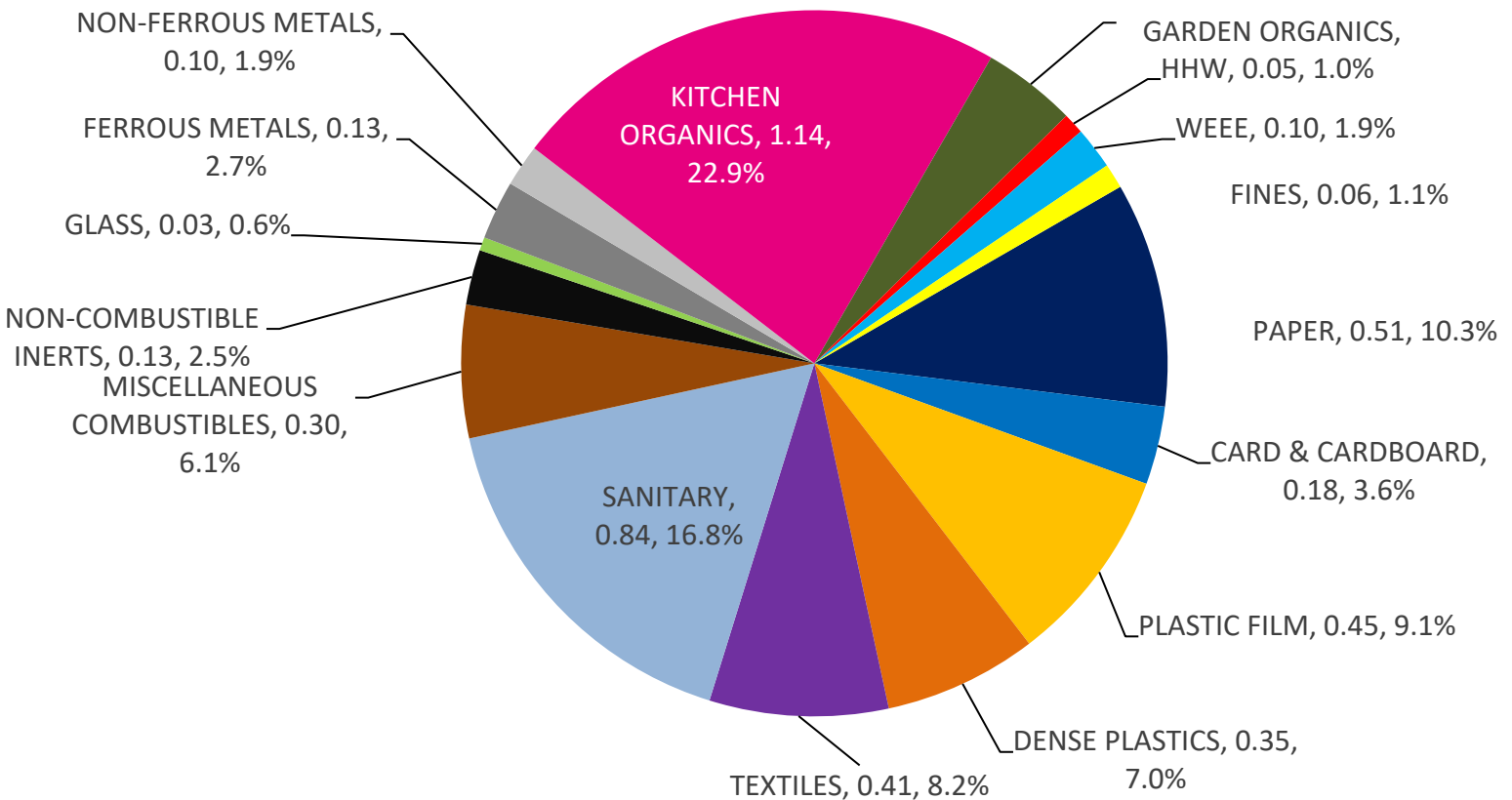
Average contents of the residual bins – South Hams



Average contents of the residual bins – Teignbridge



Average contents of the residual bins – Torridge



Average contents of the residual bins – West Devon

Appendix 2 to CET/23/7

Acorn groupings for Devon and Torbay

ACORN CATEGORY		% FOR EAST DEVON
ACORN 1	AFFLUENT ACHIEVERS	40.3%
ACORN 3	COMFORTABLE COMMUNITIES	34.0%
ACORN 4	FINANCIALLY STRETCHED	18.9%
ACORN 5	URBAN ADVERSITY	6.8%
ACORN CATEGORY		% FOR EXETER
ACORN 1	AFFLUENT ACHIEVERS	16.3%
ACORN 2	RISING PROSPERITY	10.1%
ACORN 3	COMFORTABLE COMMUNITIES	30.3%
ACORN 4	FINANCIALLY STRETCHED	26.3%
ACORN 5	URBAN ADVERSITY	17.1%
ACORN CATEGORY		% FOR MID DEVON
ACORN 1	AFFLUENT ACHIEVERS	20.8%
ACORN 3	COMFORTABLE COMMUNITIES	45.2%
ACORN 4	FINANCIALLY STRETCHED	24.9%
ACORN 5	URBAN ADVERSITY	9.2%
ACORN CATEGORY		% FOR NORTH DEVON
ACORN 1	AFFLUENT ACHIEVERS	27.1%
ACORN 3	COMFORTABLE COMMUNITIES	38.2%
ACORN 4	FINANCIALLY STRETCHED	22.1%
ACORN 5	URBAN ADVERSITY	12.6%
ACORN CATEGORY		% FOR SOUTH HAMS
ACORN 1	AFFLUENT ACHIEVERS	51.1%
ACORN 3	COMFORTABLE COMMUNITIES	30.5%
ACORN 4	FINANCIALLY STRETCHED	18.3%
ACORN CATEGORY		% FOR TEIGNBRIDGE

ACORN 1	AFFLUENT ACHIEVERS	35.8%
ACORN 3	COMFORTABLE COMMUNITIES	32.7%
ACORN 4	FINANCIALLY STRETCHED	22.3%
ACORN 5	URBAN ADVERSITY	9.1%
ACORN CATEGORY		% FOR TORRIDGE
ACORN 1	AFFLUENT ACHIEVERS	16.4%
ACORN 3	COMFORTABLE COMMUNITIES	50.3%
ACORN 4	FINANCIALLY STRETCHED	25.8%
ACORN 5	URBAN ADVERSITY	7.5%
ACORN CATEGORY		% FOR WEST DEVON
ACORN 1	AFFLUENT ACHIEVERS	29.9%
ACORN 3F	COUNTRYSIDE COMMUNITIES	37.1%
ACORN 3G	SUCCESSFUL SUBURBS	10.8%
ACORN 4	FINANCIALLY STRETCHED	22.3%
ACORN CATEGORY		% FOR TORBAY
ACORN 1	AFFLUENT ACHIEVERS	20.3%
ACORN 3	COMFORTABLE COMMUNITIES	28.6%
ACORN 4	FINANCIALLY STRETCHED	27.0%
ACORN 5	URBAN ADVERSITY	24.1%

Appendix 3 to CET/23/7

	Paper	Card	Plastic film	Plastic dense	Glass	metals	Textiles	Sanitary	Food	Garden	Haz	WEEE
East Devon	0.35/0.28	0.13/0.07	0.24/0.22	0.19/0.15	0.06/0.03	0.09/0.04	0.13/0.13	0.45/0.42	0.54/0.39	0.28/0.35	0.02/0.02	0.05/0.02
Exeter	0.63/0.31	0.32/0.13	0.36/0.23	0.42/0.22	0.41/0.20	0.26/0.11	0.20/0.15	0.41/0.20	3.19/1.40	0.26/0.23	0.02/0.00	0.04/0.07
Mid Devon	0.61/0.56	0.23/0.16	0.39/0.67	0.47/0.30	0.07/0.08	0.13/0.14	0.42/0.23	0.52/0.65	0.98/1.31	0.30/0.26	0.10/0.03	0.02/0.01
North Devon	0.52/0.40	0.19/0.20	0.29/0.41	0.33/0.34	0.15/0.07	0.13/0.16	0.35/0.20	0.34/0.46	1.29/1.34	0.50/0.21	0.02/0.06	0.06/0.06
South Hams	0.30/0.49	0.15/0.05	0.31/0.31	0.41/0.41	0.19/0.14	0.12/0.18	0.22/0.28	0.25/0.25	0.98/1.20	0.16/0.46	0.01/0.02	0.03/0.01
Teignbridge	0.51/0.38	0.23/0.19	0.41/0.37	0.37/0.32	0.06/0.07	0.22/0.17	0.32/0.24	0.35/0.39	1.02/1.44	0.56/0.24	0.02/0.01	0.04/0.02
Torridge	0.93/0.34	0.42/0.18	0.41/0.37	0.50/0.22	0.20/0.05	0.23/0.06	0.22/0.17	0.90/0.48	2.32/1.08	0.06/0.34	0.03/0.02	0.06/0.03
West Devon	0.41/0.51	0.18/0.18	0.28/0.45	0.39/0.35	0.13/0.03	0.11/0.23	0.22/0.41	0.83/0.84	0.99/1.14	0.36/0.21	0.03/0.05	0.05/0.10
Devon	0.53/0.40	0.23/0.15	0.34/0.36	0.37/0.28	0.16/0.10	0.17/0.13	0.26/0.21	0.47/0.41	1.49/1.18	0.32/0.29	0.03/0.03	0.05/0.04
Torbay	0.45/0.45	0.15/0.22	0.30/0.27	0.43/0.33	0.12/0.11	0.18/0.15	0.30/0.19	0.44/0.47	1.10/1.21	0.77/1.26	0.01/0.06	0.02/0.07

A comparison of Kg/hh/wk for each material and authority between the waste analysis from 2017 and that in 2022

Orange shows an increase between 2017 and 2022

Black bold shows the district with the highest amount of kg/hh/wk for each material in 2022

Blue shows the district with the lowest amount of kg/hh/wk for each material in 2022

Appendix 4 to CET/23/7

	Paper	Card	Plastic film	Plastic dense	Glass	Metals	Textiles	Sanitary	Food	Garden	Haz	WEEE
East	11.3	2.6	8.8	5.8	1.3	1.9	5.2	16.7	15.5	13.9	0.95	0.60
Exeter	9.4	3.5	6.3	6.1	5.5	3.0	4.2	5.3	38.0	6.3	0.08	1.85
Mid	10.5	3.1	12.8	5.7	1.6	2.6	4.4	12.4	24.9	5.0	0.60	0.20
North	8.9	4.5	9.1	7.6	1.6	3.4	4.4	10.1	29.7	4.7	1.40	1.44
Shams	10.0	3.0	6.3	8.3	2.9	3.7	5.8	5.1	24.5	9.5	0.40	0.30
Teign	8.5	4.2	4.2	7.2	1.7	3.8	5.4	8.8	32.2	5.3	0.24	0.43
Torr	8.6	4.6	9.5	5.7	1.2	1.7	4.3	12.2	27.6	8.6	0.50	0.90
West	10.3	3.6	9.1	7.0	0.6	2.7	8.2	16.8	22.3	4.3	1.00	1.90
Devon	9.6	3.7	8.6	6.8	2.3	3.2	5.1	9.9	28.2	6.9	0.6	0.9
Torbay	8.7	4.3	5.3	6.4	2.2	2.9	3.7	9.0	23.2	24.3	1.20	1.30

Percentage content of materials in the residual waste

Key

Highest for each district - green

Lowest for each district – blue excluding WEEE and Hazardous waste