Disposal-based audit

Commercial and industrial waste stream in the regulated areas of New South Wales

Garbage bag audit report

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Executive summary

The NSW Government undertakes regular audits of the commercial and industrial (C&I) waste stream in New South Wales (NSW). Previous audits were conducted in 2003 and 2008.

In February 2013, the NSW Government announced the five-year $465.7 million Waste Less Recycle More (WLRM) initiative, including a $60 million Waste and Recycling Infrastructure Fund.

This fund includes two audits of the Commercial and Industrial (C&I) Waste Stream in the regulated areas of NSW.- Sydney Metropolitan Area (SMA), Extended Regulated Area (ERA) and Regional Regulated Area (RRA). These regions are as defined in Appendix A.

The first audit was completed in 2014 and a follow up audit is scheduled for 2017. These two audits aim to:

- inform infrastructure and other investment decisions made under the NSW Government's *Waste Less, Recycle More* program
- inform regional and sub-regional waste and resource recovery planning
- provide baseline data to assess the impact of the infrastructure funding program on resource recovery in the period 2013/14 to 2016/17 and beyond
- inform the waste and resource recovery industry and businesses from the key industry sectors about C&I waste composition, particularly information on recyclable materials
- inform the government, waste industry and businesses on the trends in the composition of the C&I waste stream in SMA for the period from 2003 to 2008 and 2014
- assist NSW EPA in developing business recycling programs to divert more materials away from landfills
- characterise the various streams or transport modes that enter landfills and transfer stations.

The 2014 C&I waste stream audit included a detailed audit of garbage bags, which is reported in this document. A previous audit of garbage bags was conducted in 2008. The garbage bag audit supports the visual audit reported in the document *Disposal-based audit: Commercial and industrial waste stream in the regulated areas of New South Wales (main report)*.

The garbage bag audit is important because garbage bags make up over a quarter (28 per cent) of the overall C&I waste disposed in NSW. This is over half a million tonnes per year (503,310 tonnes) of garbage bags disposed. A large proportion of the contents of the garbage bags is recyclable as shown in this report.

Visual auditing (or surveying) methods are the most cost effective way to obtain composition data on the overall C&I stream However, the contents of garbage bags cannot be assessed using visual auditing methods because the garbage bags are generally:

- sealed or tied
- spread throughout loads and while they can be seen during tipping, they are inaccessible once the full load has been placed in the landfill face
- filled with a diversity of small items in the contents
- made from non-transparent materials and therefore need to be opened to be sorted and analysed.

Therefore, to obtain detailed data on the composition of the C&I waste, this garbage bag audit was conducted whereby garbage bags were sampled and delivered to a sorting site for compositional analysis. This data was analysed and incorporated into the visual assessment of the C&I loads.

Data was obtained to support the visual audit, to a 90 per cent confidence level with an interval less than five per cent either side of the mean. This exceeds the level of accuracy required in the audit design (seven per cent).

The audit shows that the majority of C&I garbage bag waste is from the manufacturing, mixed small businesses, retail and healthcare/social assistance sectors, and that the main components of the waste are food, paper, plastic and cardboard.

Of the C&I garbage bag waste disposed of to landfill, 79 per cent is currently recyclable now. This is substantially higher than the 27 per cent in the overall C&I waste stream. Therefore, reducing the amount of recyclable material placed in garbage bags can have a substantial impact on overall C&I waste recovery.

The main opportunities for recovery now are unpackaged food, commingled paper, plastic film, other compostable paper such as tissues and napkins, commingled plastic and commingled cardboard.

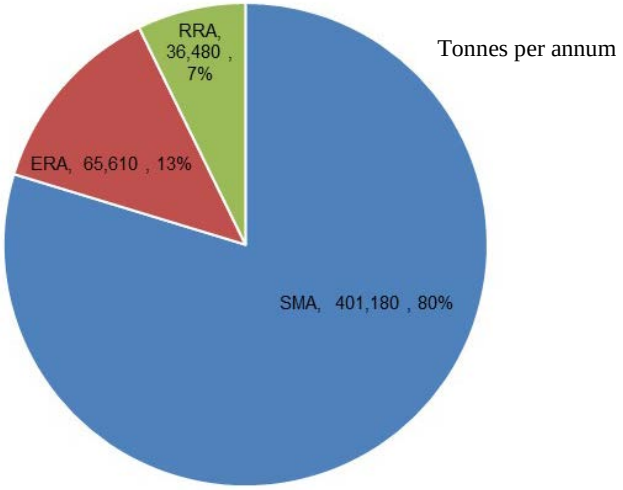
In the future, better source segregation, new technologies, expanded Alternative Waste Treatment (AWT) facilities and the commissioning of energy-from-waste plants will enable more materials to be accessed for recycling. Theoretically, up to 97 per cent of the C&I garbage bag waste currently landfilled could be potentially recovered for recycling. This compares to 83 per cent in the overall C&I waste stream.

A summary of the audit process and findings is presented below.

How much garbage bag waste is sent to landfill in the C&I waste stream in the regulated areas of NSW?

In 2013/14, over 0.5 million tonnes of garbage bag waste was sent to landfill from C&I businesses in the NSW regulated area.

Eighty per cent was disposed of in the Sydney Metropolitan Area, 13 per cent in the Extended Regulated Area and seven per cent in the Regional Regulated Area.

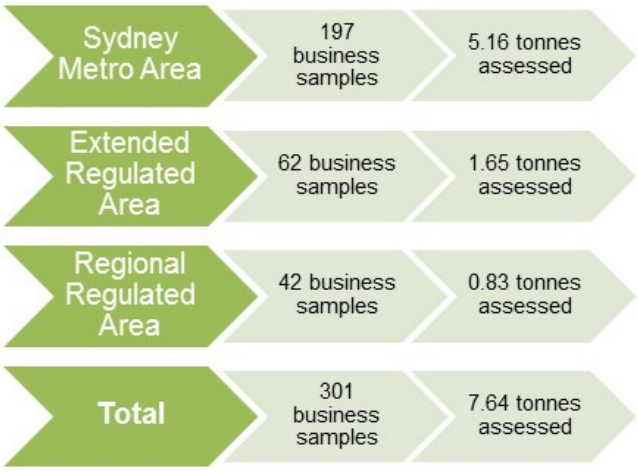


The field audit

The garbage bag audit took place at eight landfills and four transfer stations over 29 days during July and August 2014.

The total of 3010 bags audited weighed 7.64 tonnes. This constituted 301 samples (ten bags to a sample). The bags were sorted into 85 material categories to determine the composition of bags.

The contents were consolidated into the categories used in the visual audit and categories used to report recyclability.

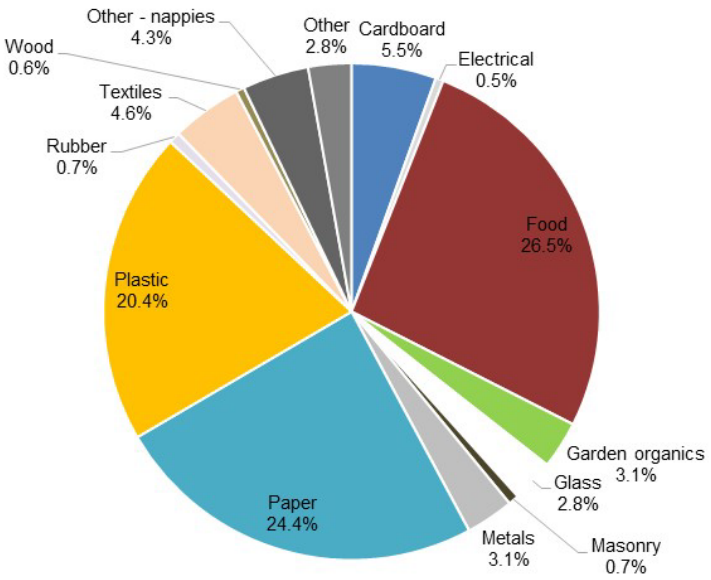


What are the contents of the garbage bags sorted in this study?

The garbage bags sorted in this study contain (by weight) mainly:

- Food (26.5 per cent).
- Paper (24.4 per cent).
- Plastic (20.4 per cent).
- Cardboard (5.5 per cent).

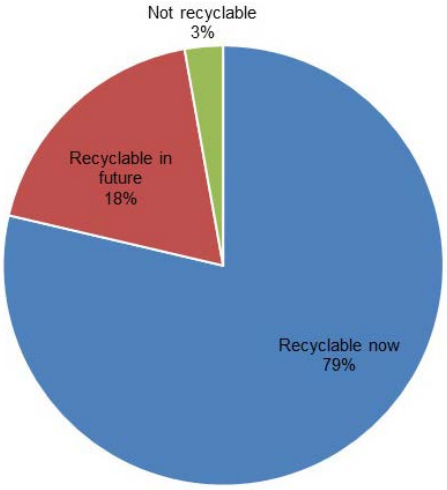
Garbage bags also contain textiles, nappies, garden organics, metals, glass and small amounts of masonry, rubber and wood.



Note: The results in this garbage bag report are based on the sorted weights by region. They vary slightly to those reported in the visual audit, which were based on factors of tonnages delivered to each site. Factoring was not required in this audit, as it was not based on whole loads.

How much could be recycled from the overall C&I garbage bag waste?

In C&I waste currently disposed, 79 per cent of the contents of the garbage bags is recyclable now. In addition, 18 per cent of the contents could be recycled in the future. Only three per cent of material is not recyclable.

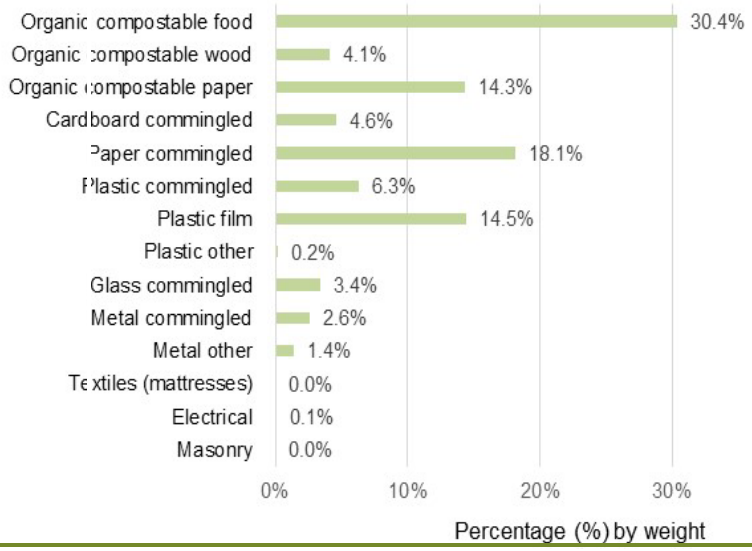


What could be recycled now from the overall C&I garbage bag waste?

Of the 78.7 per cent of material that is recyclable now, the main materials are:

- compostable food (30.4 per cent)
- commingled paper (18.1 per cent)
- plastic film (14.5 per cent)
- compostable paper (14.3 per cent).

Commingled cardboard, wood and other recyclable containers can now be recovered in increasing amounts, as are nappies and textiles within material recyclable in the future.



What are the trends in garbage bag composition compared to 2008?

The audits undertaken in 2008 and 2014 help to understand the trends in the composition of garbage bags and recovery of recyclables at source. The changes since 2008 include:

- ***Less in 2014***
  - organic compostable food
  - organic compostable paper
  - paper commingled recyclable now material
  - glass commingled recyclable now material
  - masonry recyclable in future material.
- ***More in 2014***
  - plastic film recyclable now material
  - cardboard commingled recyclable now material
  - plastic other recyclable in future material
  - nappies recyclable in future material
  - organic compostable wood recyclable now material.

The opportunity

This garbage bag audit provides an insight into materials in bags still disposed to landfills and the scope for recovery. The composition of garbage bags is a direct reflection of business practices and availability of storage/collection systems available onsite. The garbage bag compositional data is critical in the determination of the overall material composition of the C&I waste disposed at landfills.

These audit results inform the WLRM initiative and the various business recycling programs developed and implemented by the government. The results will also help the waste and recycling industry, local councils and businesses to increase recovery.

Innovative recovery options should be investigated, programs developed and implemented, to reduce recyclable materials still present in the garbage bags. This includes waste minimisation, separation of material at source, storage provisions onsite, cost effective collections, innovative processing technologies and markets for recycled products.

The target materials are organic compostable food, organic compostable paper and paper commingled, plastics and nappies. The other priority materials for the regulated areas of NSW are:

- ***SMA:***
  - Plastic film
  - Textiles other
  - Plastic commingled
  - Plastic other
  - Nappies as well as cardboard commingled
- ***ERA:***
  - Plastic film
  - Nappies
  - Organic compostable wood (including garden organics)
  - Plastic commingled
  - Organic other
- ***RRA:***
  - Plastic film
  - Plastic commingled
  - Nappies
  - Glass commingled
  - Textiles other as well as cardboard commingled

Programs should be developed and implemented to improve recovery of garbage bag contents in specific regions and at specific industry sectors using the data and recommendations within this report.

1. Introduction

1.1 Overview

The NSW Government undertakes regular audits of the commercial and industrial (C&I) waste stream in New South Wales (NSW). Previous audits were conducted in 2003 and 2008.

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These two audits aim to:

- inform infrastructure and other investment decisions made under the NSW Government's *Waste Less, Recycle More* program
- inform regional and sub-regional waste and resource recovery planning
- provide baseline data to assess the impact of the infrastructure funding program on resource recovery in the period 2013/14 to 2016/17 and beyond
- inform the waste and resource recovery industry and businesses from the key industry sectors about C&I waste composition, particularly information on recyclable materials
- inform the government, waste industry and businesses on the trends in the composition of the C&I waste stream in SMA for the period from 2003 to 2008 and 2014
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- characterise the various streams or transport modes that enter landfills and transfer stations.

The 2014 C&I waste stream audit included a detailed audit of garbage bags, which is reported in this document. A previous audit of garbage bags was conducted in 2008. The garbage bag audit supports the visual audit reported in the document *Disposal-based audit Commercial and industrial waste stream in the regulated areas of NSW: main report*.

The garbage bag audit is important because garbage bags make up over a quarter (28 per cent) of the overall C&I waste disposed in NSW. This is over half a million tonnes per year (503,310 tonnes) of garbage bags disposed. A large proportion of the contents of the garbage bags is recyclable as shown in this report.

Visual auditing (or surveying) methods are the most cost effective way to obtain composition data on the overall C&I stream. However, the contents of garbage bags cannot be assessed using visual auditing methods because the garbage bags are generally:

- Sealed or tied.
- Spread throughout loads and while they can be seen during tipping, they are inaccessible once the full load has been placed in the landfill face.
- Filled with a diversity of small items in the contents.
- Made from non-transparent materials and therefore need to be opened to be sorted and analysed.

Therefore, to obtain detailed data on the composition, this garbage bag audit was conducted whereby 3010 bags were sampled and delivered to a sorting site for compositional analysis. This data was analysed and incorporated into the overall C&I composition report.

1.2 Purpose and objectives

The purpose of this project is to:

a. Provide garbage bag composition data to assist with the overall C&I waste stream composition based on a visual audit of loads delivered at selected landfills and transfer stations.
b. Measure progress in resource recovery:
    i. Since the previous audit in 2008.
    ii. Before the next audit in 2017, which will measure the impact of the Waste Less Recycle More (WLRM) initiative on the diversion from landfills of priority materials from the MSW and C&I waste streams
c. Determine the weight and percentage composition of the material components of garbage bags disposed:
    i. By region – SMA, ERA and RRA.
    ii. By industry sector – manufacturing, retail, hospitality (accommodation, cafes and restaurants), education and training, healthcare (and community services), shopping centres, offices and mixed small businesses (SMEs).
    iii. By recyclable material and potentially recyclable material type.

1.3 Document structure

This report provides:

- Project method used to obtain the data (Section 2).
- Limitations of the study (Section 3).
- Results of the audit by region (Section 4).
- Results of the audit comparison with 2008 (Section 5).
- Discussion (Section 6).
- Conclusions (Section 7).

2. Audit project method

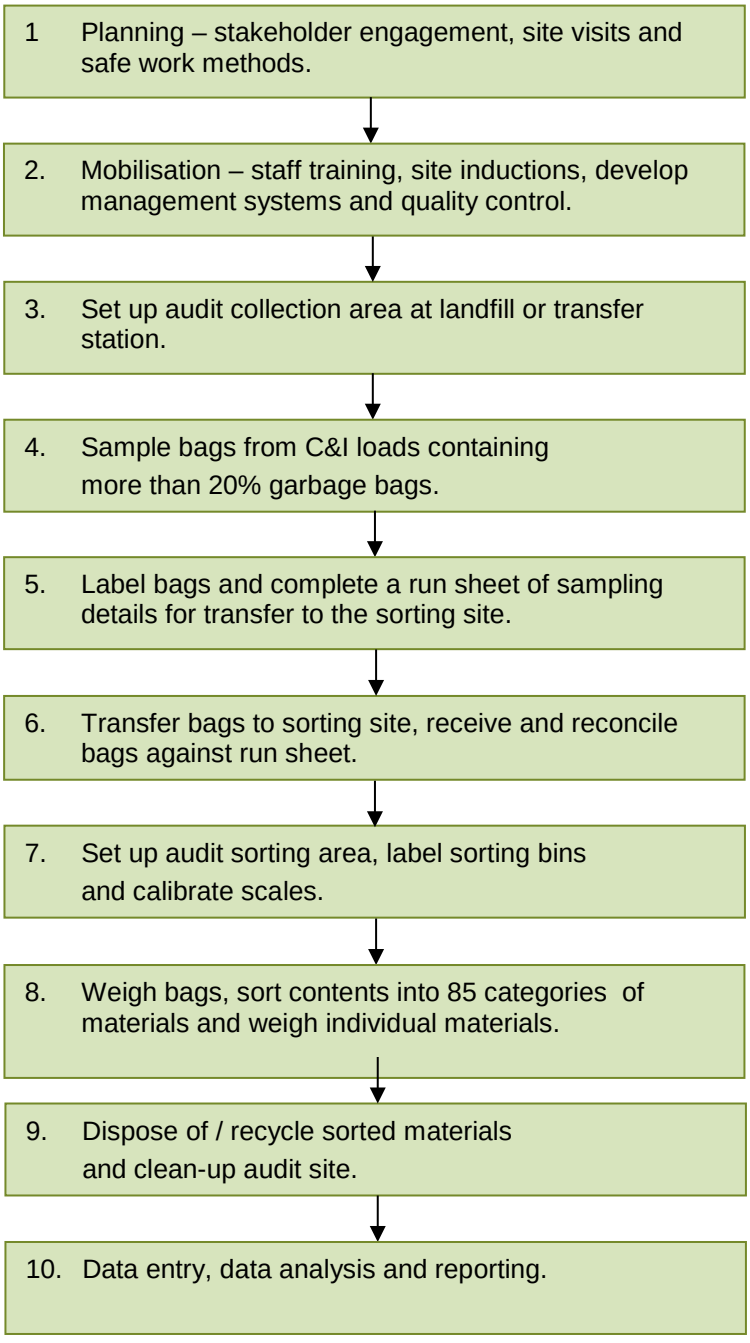
2.1 Overview

This section provides a summary of the project method. Work Health and Safety (WHS) is outlined in Appendix B, quality control in Appendix C and data forms in Appendix D. Figure 1 provides a summary of the structure of the audit methodology.

2.2 Timeframe

The audit was carried out over 37 consecutive days in July and August 2014. The data was collected during the winter season, after the new financial year.

Figure 1: Garbage bag audit methodology summary



2.3 Definition of garbage bags

Garbage bags are defined as:

Disposable plastic bags that are used to discard waste from onsite bins at C&I premises. Paper bags, hessian bags, bulka bags, small shopping carrier bags, bags containing bulk non-spec material from manufacturing processes, insulation wrap and packaging materials wrapped in plastic are excluded from this definition.

Figure 2: Garbage bag types included and excluded

Examples of the types of bag included and excluded from the study.

2.4 Sampling

2.4.1 Locations and sample size

The garbage bag audit was conducted at 12 sites across NSW, which is two less sites than the visual audit due to the exclusion of garbage bag sampling from two RRA sites. The types of sites and the number of bags audited by region are shown in Table 1.

Table 1: Garbage bag sample details

Site type	Number of sites audited by region				Number of bags audited by region			
	SMA	ERA	RRA	Overall	SMA	ERA	RRA	Overall
Landfills	4	3	1	8	930	620	420	1970
Transfer stations	4	0	0	4	1040	0	0	1040
Total	**8**	**3**	**1**	**12**	**1970**	**620**	**420**	**3010**

2.4.2 Bag sampling and collection process

Figure 3: Garbage bag sampling and collection method

Step1

The garbage bag audit team waits in the base audit area until a suitable load arrives at the facility. The two person team then leave the area and adopts a position in a safe distance from moving vehicles.

Step 2

A C&I waste truck unloads material at the waste and recycling facility. The registration number and delivery truck details are recorded and communication is made with gatehouse audit and visual audit teams, to check whether it is a C&I load and if so, from which industry source. The team will then examine the load to confirm garbage bags present is more than 20 per cent of the load

Step 3

The team approaches the load once the garbage delivery truck exits the area. The team then checks the surroundings to ensure a safe collection process and takes a trolley (or set of 240L Mobile Garbage Bins [MGBs]) to the delivered load to carry the bags with minimal manual handling risk.

Step 4

The team assess the proportion of the type and colour of bags delivered and the size of the bags in the load and randomly select a representative 12 bags from the industry sector. The bags are placed in hessian bags to facilitate secure transfer to the base audit area.

Step 5

The bags are taken to the base audit area so the bag sources can be checked and two bags of the 12 sampled are removed, if they are not from the same industry source or at random if all of the bags are from the same source. The bags are then weighed and the volume measured and loaded onto truck in hessian bags (one or two per sample of 10 bags). The sample details are recorded onto a run sheet and the bags are delivered to the sorting site.

2.4.3 Industry sectors

The garbage bag audit focuses on industry sectors that generate garbage bags and these are categorised into eight Australian and New Zealand Standard Industry Classification (ANZSIC) industry sectors as shown in Table 2.

One sample was defined as 10 bags from a known individual business, except for SME samples which comprised 10 bags from a mixture of small businesses. Therefore, the 3,010 garbage bags were sourced from 301 individual samples. These 301 samples were coded into the industry sectors shown in Table 2.

Table 2: Industry sectors audited

Visual audit code	Sector name	Number of samples audited by region				Number of bags audited by region			
		SMA	ERA	RRA	Overall	SMA	ERA	RRA	Overall
M	Manufacturing	51	2	1	54	510	20	10	540
R	Retail trade	23	12	12	47	230	120	120	470
H	Accommodation, cafes and restaurants (Hospitality)	11	3	9	23	110	30	90	230
C	Health and social assistance (charity) ^	21	11	8	40	210	110	80	400
O	Offices	20	4	1	25	200	40	10	250
S	Shopping centres	10	7	2	19	100	70	20	190
E	Education (and training)	16	5	2	23	160	50	20	230
X	Mixed small business (SME)	29	13	6	48	290	130	60	480
Z	Other (businesses)	16	5	1	22	160	50	10	220
	Total	**197**	**62**	**42**	**301**	**1970**	**620**	**420**	**3010**
^ For additional information to match 2008, healthcare and social assistance (charity) was split into health services and community services as shown below.									
C1	Health services ^	10	7	3	20	100	70	30	200
C2	Social assistance (Community services in 2008 audit) ^	11	4	5	20	110	40	50	200

2.5 Material sorting

2.5.1 Sorting process

Figure 4: Garbage bag sorting method

Step1

The audit team receives the garbage bags at the sorting site and line them up in order of the sample number. Bags from the same load are placed on top of each other.

The gate fees were paid on entry to the sorting facility after the tonnages removed from the collection facility, to ensure that the appropriate levies were only paid once.

Step 2

In the sample number order, the bags are sorted by the sorting teams of up to eight staff. There are 2-4 people per team including one consultant per team for data entry, sorting compliance checking and general methods analysis.

The bags are first weighed as a complete sample to ensure the weight reconciles with the weight recorded at the collection site, and the weight of the separated materials following sorting.

Step 3

The composition of the ten bags in each of the sorting categories are sorted by the teams into 60L sorting bins each labelled with the material category using laminated sorting bin labels. The sorting categories are provided in Table 3.

Step 4

The consultant records the weight of each material category in the 60L sorting bins. A tare and gross bin weight is taken by the data recorder. The material is then tipped into 240L MGBs and removed for recycling or disposal at the sorting site.

2.5.2 Sorting categories

The materials were sorted and classified for analysis using the 85 categories shown in Table 3, labelled S-1 to S-85. Photos of the sorting are shown in Appendix E.

2.5.3 Consolidation of sorting categories

The consolidation of sorting categories for reporting was based on the groupings of materials shown in Table 3 in columns for:

- The visual auditing categories, the material categories used in the visual audit of C&I loads. This was conducted using the detailed 42 categories shown in Table 3 and using the consolidated 13 out of the 14 categories (garbage bag was one of the 14 categories used in the visual audits):

  - Cardboard
  - Electrical
  - Food
  - Garden organic
  - Glass
  - Masonry
  - Metals
  - Paper
  - Plastic
  - Rubber
  - Textiles
  - Wood
  - Other

- The analysis of recyclability using the material categories deemed to be recyclable. This was conducted using the detailed categories shown in Table 3 and using the consolidated three categories of:
  - Recyclable now ☑ meaning materials whereby collection provisions, processing and end-markets available are available at present.
  - Recyclable in future O meaning materials whereby collection provisions, processing and end-markets available may be available at in the future and may require additional separation at source.
  - Not Recyclable ☒ meaning materials for which neither of the above criteria apply in the foreseeable future.

- Degradable Organic Materials (DOM) : This includes material categories that would degrade and produce greenhouse gases when disposed in landfill, such as wood, paper, cardboard, food, textiles, vegetation, and nappies.

- Packaging materials: This includes material categories that are used in packaging, such as paper, cardboard, plastic, glass, steel, aluminium and liquid paperboard.

Table 3: Sorting categories and consolidation method

Category sorted		Analysis groups			
		Visual audit	Recyclability	DOM	Pack.
S-1	Food organics – unpackaged	Food organics – unpackaged	Organic compostable food ☑	☑	☒
S-2	Food organics – packaged	Food organics – packaged	Organic other O	☑	☒
S-3	Food organics – liquid	Food organics – packaged	Organic compostable food ☑	☑	☒
S-4	Garden organics	Garden organics	Organic compostable wood ☑	☑	☒
S-5	Wood/ untreated – board/ pole, untreated	Wood – untreated	Organic compostable wood ☑	☑	☒
S-6	Wood/ untreated – pallets/ furniture	Wood – untreated – pallets	Organic compostable wood ☑	☑	☒
S-7	Wood/ untreated – chipboard/MDF	Wood – untreated	Organic compostable wood ☑	☑	☒
S-8	Wood/ treated/ painted – board/ pole, treated	Wood – treated/ painted	Organic other O	☑	☒
S-9	Wood/ treated/ painted – pallets/ furniture	Wood – treated/ painted – pallets	Organic other O	☑	☒
S-10	Wood/treated/painted – chipboard/MDF	Wood – treated/ painted	Organic other O	☑	☒
S-11	Cardboard dry – packaging	Cardboard dry – loose	Cardboard commingled ☑	☑	☑
S-12	Cardboard dry – production spoils	Cardboard dry – loose	Cardboard commingled ☑	☑	☒
S-13	Cardboard dry – waxed	Cardboard – wet strength/ waxed – loose	Cardboard other O	☑	☑
S14	Cardboard wet – packaging	Cardboard – wet strength/ waxed – loose	Cardboard other O	☑	☑
S-15	Cardboard wet – production spoils	Cardboard – wet strength/ waxed – loose	Cardboard other O	☑	☒
S-16	Cardboard wet – waxed	Cardboard – wet strength/ waxed – loose	Cardboard other O	☑	☑
S-17	Paper– photocopy paper	Paper – office	Paper commingled ☑	☑	☒
S-18	Pape – magazines/catalogues	Paper – other	Paper commingled ☑	☑	☒
S-19	Paper– brochures and leaflets	Paper – other	Paper commingled ☑	☑	☒
S-20	Pape – books	Paper – other	Paper commingled ☑	☑	☒
S-21	Paper – printing/ writing (other office)	Paper – office	Paper commingled ☑	☑	☒
S-22	Paper–other packaging	Paper – packaging	Paper commingled ☑	☑	☑
S-23	Paper– newsprint	Paper – other	Paper commingled ☑	☑	☒
S-24	Paper– brown Kraft paper	Paper – packaging	Paper commingled ☑	☑	☑
S-25	Paper– rolls of low grade	Paper – packaging	Paper commingled ☑	☑	☒

S-26	Paper– hand towels	Paper – other	Organic compostable paper ☑	☑	☒
S-27	Paper– contaminated	Paper – other	Organic compostable paper ☑	☑	☒
S-28	Plastic – PET bev. cont. (P1)	Plastic – rigid packaging	Plastic commingled ☑	☒	☑
S-29	Plastic – PET pack. (excl. bev cont.) (P1)	Plastic – rigid packaging	Plastic commingled ☑	☒	☑
S-30	Plastic – PET other non-bev/ non-pack. (P1)	Plastic – other	Plastic other O	☒	☒
S-31	Plastic – HDPE bev. cont. (P2)	Plastic – rigid packaging	Plastic commingled ☑	☒	☑
S-32	Plastic – HDPE pack. (excl. bev cont.) (P2)	Plastic – rigid packaging	Plastic commingled ☑	☒	☑
S-33	Plastic – HDPE other non-bev/ non-pack. (P2)	Plastic – other	Plastic other O	☒	☒
S-34	Plastic – PVC bev. cont. (P3)	Plastic – rigid packaging	Plastic commingled ☑	☒	☑
S-35	Plastic – PVC pack. (excl. bev cont.) (P3)	Plastic – rigid packaging	Plastic commingled ☑	☒	☑
S-36	Plastic – PVC other non-bev/ non-pack. (P3)	Plastic – other	Plastic other O	☒	☒
S-37	Plastic – LDPE pack. (P4)	Plastic – rigid packaging	Plastic commingled ☑	☒	☑
S-38	Plastic – LDPE non-pack (P4)	Plastic – other	Plastic other O	☒	☒
S-39	Plastic – PP pack. (P5)	Plastic – rigid packaging	Plastic commingled ☑	☒	☑
S-40	Plastic – PP non-pack. (P5)	Plastic – other	Plastic other O	☒	☒
S-41	Plastic – PS pack. (P6)	Plastic – rigid packaging	Plastic commingled ☑	☒	☑
S-42	Plastic – EPS pack cont. (P6)	Plastic – EPS foam	Plastic other ☑	☒	☑
S-43	Plastic – PS & EPS non-pack. (P6)	Plastic – other	Plastic other O	☒	☒
S-44	Plastic – Other plastic cont. (P7)	Plastic – rigid packaging	Plastic commingled ☑	☒	☑
S-45	Plastic – film packaging (bags and film)	Plastic – film packaging	Plastic film ☑	☒	☑
S-46	Plastic – polystyrene foam (EPS)	Plastic – EPS foam	Plastic other ☑	☒	☑
S-47	Plastic – other	Plastic – other	Plastic other O	☒	☒
S-48	Glass – containers bev	Glass – packaging	Glass commingled ☑	☒	☑
S-49	Glass – containers non-bev	Glass – packaging	Glass commingled ☑	☒	☑
S-50	Glass – containers (fines)	Glass – packaging	Glass commingled ☑	☒	☑
S-51	Glass – plate/ non-pack. (other glass)	Glass – non-packaging	Glass other O	☒	☒
S-52	Metal (ferrous) – packaging bev	Metal (ferrous) – packaging	Metal commingled ☑	☒	☑

S-53	Metal (ferrous) – packaging non-bev	Metal (ferrous) – packaging	Metal commingled ☑	☒	☑
S-54	Metal (ferrous) – non-packaging	Metal (ferrous) – non-packaging (low density)	Metal other ☑	☒	☒
S-55	Metal (non-ferrous) – packaging bev	Metal (non-ferrous) – packaging	Metal commingled ☑	☒	☑
S-56	Metal (non-ferrous) – packaging non-bev	Metal (non-ferrous) – packaging	Metal commingled ☑	☒	☑
S-57	Metal (non-ferrous) – non-packaging	Metal (non-ferrous) – non-packaging (low density)	Metal other ☑	☒	☒
S-58	Textiles – carpet and underlay	Textiles – carpet and underlay	Textiles other O	☑	☒
S-59	Textiles – cloth	Textiles and leather	Textiles other O	☑	☒
S-60	Textiles – covered furniture	Textiles – covered furniture	Textiles other O	☑	☒
S-61	Textiles – mattresses	Textiles – mattresses	Textiles (mattresses) ☑	☑	☒
S-62	Textiles – other	Textiles and leather	Textiles other O	☑	☒
S-63	Rubber – tyres, tubes	Rubber	Rubber O	☒	☒
S-64	Rubber – other	Rubber	Rubber O	☒	☒
S-65	Electrical and electronic – TVs	Electrical – TVs	Electrical ☑	☒	☒
S-66	Electrical – computers and peripherals	Electrical – computers and peripherals	Electrical ☑	☒	☒
S-67	Electrical – toner cartridges	Electrical – other	Electrical O ^	☒	☒
S-68	Electrical – whitegoods	Electrical – whitegoods	Electrical ☑	☒	☒
S-69	Electrical – WEEE (other)	Electrical – other	Electrical O	☒	☒
S-70	C&D – concrete	Masonry materials – concrete/bricks	Masonry ☑	☒	☒
S-71	C&D – bricks	Masonry materials – concrete/bricks	Masonry ☑	☒	☒
S-72	C&D – tiles	Masonry materials – other	Masonry O >	☒	☒
S-73	C&D – rock/dirt/soil	Masonry materials – other	Masonry O >	☒	☒
S-74	C&D – asphalt	Masonry materials – other	Masonry O >	☒	☒
S-75	C&D – plasterboard	Masonry materials – other	Masonry O >	☒	☒
S-76	Contaminated soils and processing residuals	Other (incl. fines <10 mm)	Other ☒	☒	☒
S-77	Hazardous / special – batteries	Other – batteries	Other ☒	☒	☒
S-78	Hazardous / special – gas bottles	Other – gas bottles	Other ☒	☒	☒
S-79	Hazardous / special – fluorescent tubes	Other (incl. fines <10 mm)	Other ☒	☒	☒

S-80	Hazardous/ special – chemicals	Other (incl. fines <10 mm)	Other ☒	☒	☒
S-81	Hazardous/ special – clinical	Other (incl. fines <10 mm)	Other ☒	☒	☒
S-82	Fines (<10mm) not able to be categorised	Other (incl. fines <10 mm)	Other ☒	☒	☒
S-83	Liquid paperboard (cardboard)	Cardboard – wet strength/ waxed – loose	Paper commingled ☑ <	☑	☑
S-84	Nappies (incl. Absorbent Hygiene Waste)	Other – nappies	Nappies O	☑	☒
S-85	Other	Other (incl. fines <10 mm)	Other ☒	☒	☒

^ The toners sorted in garbage bags were generally not recyclable now, being pieces and damaged units.

> The masonry material - other sorted in garbage bags was generally not recyclable now, being odd materials and residuals in very small quantities, rather than volumes of material that could be processed.

< In the visual audit, liquid paperboard would be seen as wet strength cardboard, but more detailed analysis during garbage bag sorting can identify liquid paperboard as recyclable commingled containers.

2.5.4 Recyclability of C&I waste currently disposed

Each material in the C&I waste was classified as one of the three types of material based on recyclability as shown in Figure 5:

- **Recyclable now** – using available technology and storage/collection systems.
- **Recyclable in the future** – through better source separation and/or emerging technologies and markets; or
- **Not recyclable** – no current or emerging technologies that can feasibly recycle this material.

Figure 5: Material recyclability aggregation

Recyclable now

- cardboard – dry, loose
- cardboard – dry, compacted
- electrical – computers and peripherals
- electrical – TVs
- electrical – white goods
- food organics – unpackaged
- garden organics
- glass – packaging
- masonry materials – concrete/bricks
- metal (ferrous) – packaging
- metal (ferrous) – non-packaging, LD and HD
- metal (non-ferrous) – packaging
- metal (non-ferrous) – non-packaging, LD and HD
- paper – office
- paper – other
- paper – packaging
- plastic – EPS foam
- plastic – film packaging
- plastic – rigid packaging
- textiles – mattresses
- wood – untreated
- wood – untreated, pallets
- sawdust

Recyclable in the future

- cardboard – wet strength/wax, loose
- cardboard – wet/wax, compacted
- electrical – other
- food organics – packaged
- glass – non-packaging
- masonry materials – other
- plastic – other
- rubber
- textiles and leather
- textiles – carpet
- textiles – covered furniture
- wood – treated/painted
- wood – treated – pallets
- pulp
- insulation
- sludge

Not recyclable

- fines
- floc (plastic and metal residue from shredding)
- building waste (composites)
- pharmaceutical
- asbestos
- clinical
- miscellaneous (this included mixed boxes of items, luggage, bric-a-brac, brake residue, drums of charcoal, air filters, glue, linoleum flooring cut pieces, synthetic grass, ducting)

2.6 Data verification and accuracy

Several quality control measures were used including third party checking of data and weighing aggregated samples prior to sub-sorting to achieve accuracy. In addition, some random bins were re-sorted by an audit supervisor to check the sorting quality.

Rounding has been applied to this data; therefore the data represented is a calculated approximation of the raw data and its exact mathematical value. The rounding of figures may cause some variances with totals.

2.7 Unit of measurement

All results in the tables, the charts and the text are represented as percentage by weight unless otherwise stated.

2.8 Raw data

The raw data is provided in Appendix F (by region), Appendix G (by industry sector) and Appendix H (by year).

2.9 Comparison of 2014 audit project method with 2008

Table 4 provides a comparison of the garbage bag sample size and categories sorted for the 2008 and 2014 audits.

Table 4: Comparison of the 2014 audit project method with 2008

Item	2008 garbage bag audit		2014 garbage bag audit target	
Minimum bags	2400		3000 ^	
Minimum sets of 10 bags	240		300 ^	
Sampling region	SMA		SMA, ERA and RRA	
Interception points	Landfills	5	Landfills	8
	Transfer stations	4	Transfer stations	4
Number of sampling sites	9		10 two extra ERA, one extra RRA, one less SMA)	
Number of sorting categories	50		85	

^ In 2014, 3010 bags were sorted from 301 samples of 10 bags each.

In 2008, the sample size for each select industry sector was pre-determined, resulting in difficulties in achieving the set targets. To more accurately profile the bag composition in 2014, the bags were picked up from the loads delivered that represented the selected industry sectors.

3. Limitations

The following limitations of the study are noted: The sampling included only 12 waste disposal sites.

- The sample size of 3000 bags was targeted to achieve a confidence level of 90 per cent with an interval of +/-7 per cent error for each of the 42 visual auditing categories. At 90 per cent confidence level, the following error margins were achieved for the consolidated and detailed material categories:
  - Consolidated visual auditing categories have a maximum interval of +/- 4.2 per cent error for paper.
  - Detailed visual auditing categories have a maximum interval of +/- 4 per cent error for food organics - unpackaged.

  These values are calculated based on the percentage composition of all samples sorted as one overall region. The garbage bag audit did not obtain true generation weights for any unit such as a source generator or truckload, therefore, the percentages have been used. The confidence intervals are only calculated for the visual auditing categories to match the original design specification of the audit. Appendix I provides the confidence intervals for each material.
- The audit did not account for season, or the impact of holidays and festivals on C&I waste composition.
- Sampling was conducted just after the end of the financial year which may have resulted in increased amounts of paper in the waste from records disposed by businesses that were not recycled. However, this impact is deemed to be minimal based on comparisons with the previous data from 2008 which was conducted in April/May.
- The target garbage bag sample size of 2400 bags for SMA was not reached based on the number of audit days specified for the audit. This shortfall paved the way to extend the garbage bag audit to cover the RRA, which was initially not included. This provides data for all three regulated areas.
- The garbage bags were mainly sourced from mixed loads. (i.e. predominantly front lifts and rear lifts, which comprised approximately two thirds of all samples). The garbage bag audit staff then separated up to three source sectors of bags from within the load. This method provides a higher level of detail on the source sectors of wastes received in mixed loads. However, there can be a discrepancy between the sectors coded in the visual audit based on data supplied by the driver, compared to a detailed physical inspection of the load. The garbage bag audit provides additional data on the source sectors of wastes received in mixed loads.
- The weight of bags decrease from the time of collection (start weight) to the time of sorting (individual category weights). This is likely to be due to evaporation occurring between collection and sorting. Some additional weight needed to be added to the liquid category in the sorting data for liquid correction.
- In 2008, the industry sector of education and training was not reported separately. However, since the organisation names were recorded, these organisations were re-coded for use in this report from health and community services to education and training. A couple of educational premises in 2008 were listed as offices, because the waste was administrative. These were not recoded to education and training.
- The results in this report vary slightly to those reported in the visual audit. This is due to the garbage bag report being developed based on the sorted weights by region and the visual audit being based on the results by site factored to the tonnes delivered to each site. Factoring was not required in the visual audit, because whole loads were not audited.

4. Results by region

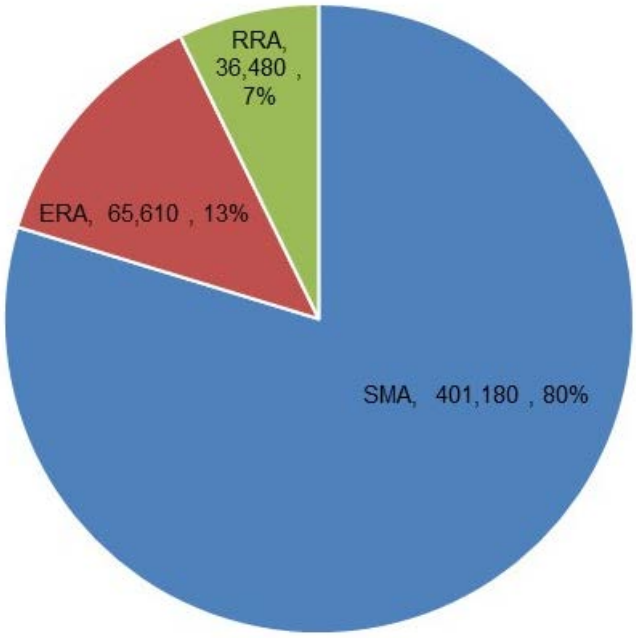
4.1 Overview

The visual audit identified the following generation rate of garbage bags in each of SMA, ERA and RRA as shown in Figure 6 in tonnes per annum:

- Four-fifths of garbage bags are generated in the SMA;
- Slightly more garbage bags are generated in the ERA at 13 per cent of all garbage bags compared to seven per cent of all garbage bags in the RRA.

These numbers highlight the importance of garbage bag composition and analysis within the overall C&I waste stream composition.

Figure 5: Generation rate of garbage bags (tonnes per annum) – by region



As a percentage of the C&I stream within each region, RRA has the highest percentage of bags in the C&I waste, followed by the SMA and ERA which have a similar percentage.

Within the industry sectors, the following sources are the biggest contributors of garbage bags to the C&I waste stream: accommodation/food services, retail, manufacturing and mixed small businesses.

4.2 Detailed composition using all sorted categories

Table 5 provides the detailed generation rate of each material category by percentage audited in this garbage bag audit using the 85 sorting categories. Three decimal places are provided because a large number of categories were used with many present in small percentages.

Table 5: Detailed composition – 85 sorting categories – by region

Category sorted		Percentage by weight			
		SMA	ERA	RRA	Overall
S-1	Food organics – unpackaged	20.016	32.382	31.32	23.917
S-2	Food organics – packaged	0.83	1.387	0.483	0.912
S-3	Food organics – liquid	1.612	2.116	0.826	1.635
S-4	Garden organics	3.025	4.705	0.272	3.087
S-5	Wood/untreated – board/pole, untreated	0.189	0.001	0.027	0.131
S-6	Wood/untreated – pallets/furniture	0	0	0	0
S-7	Wood/untreated – chipboard / MDF	0.002	0	0	0.001
S-8	Wood/treated/painted – board/pole, treated	0.383	0.461	0.001	0.358
S-9	Wood/treated/painted – pallets/furniture	0.007	0	0	0.005
S-10	Wood/treated/painted – chipboard / MDF	0.082	0	0	0.055
S-11	Cardboard dry – packaging	3.954	2.628	2.673	3.528
S-12	Cardboard dry – production spoils	0.069	0.177	0.373	0.126
S-13	Cardboard dry – waxed	0.154	0.023	0.062	0.116
S-14	Cardboard wet – packaging	0.439	0.524	0.558	0.47
S-15	Cardboard wet – production spoils	0.103	0	0.008	0.071
S-16	Cardboard wet – waxed	0.087	0.259	0.021	0.117
S-17	Paper – photocopy paper	3.574	1.536	1.748	2.935
S-18	Paper – magazines / catalogues	1.050	1.069	0.694	1.015
S-19	Paper – brochures and leaflets	0.566	0.884	0.794	0.659
S-20	Paper – books	0.911	0.973	0.368	0.865
S-21	Paper – printing/writing (other office)	3.601	2.709	1.657	3.197
S-22	Paper – other packaging	2.308	1.02	0.928	1.879
S-23	Paper – newsprint	1.353	1.792	2.051	1.524
S-24	Paper – brown Kraft paper	1.048	0.754	0.565	0.932
S-25	Paper – rolls of low grade	0.181	0.003	0.376	0.163
S-26	Paper – hand towels	4.933	3.885	4.087	4.615
S-27	Paper – contaminated (inc. tissue/excl. hand towels)	6.091	7.169	8.852	6.625
S-28	Plastic – PET bev. cont. (P1)	1.2	0.875	0.796	1.086
S-29	Plastic – PET pack. (excl. bev cont.) (P1)	0.386	0.745	0.645	0.492
S-30	Plastic – PET other non-bev/non-pack. (P1)	0.096	0.008	0.05	0.072
S-31	Plastic – HDPE bev. cont. (P2)	1.149	1.127	1.814	1.217
S-32	Plastic – HDPE pack. (excl. bev cont.) (P2)	0.449	0.353	0.474	0.431
S-33	Plastic – HDPE other non-bev/non-pack. (P2)	0.137	0.001	0	0.093
S-34	Plastic – PVC bev. cont. (P3)	0	0.004	0.019	0.003
S-35	Plastic – PVC pack. (excl. bev cont.) (P3)	0.026	0.028	0.104	0.035

S-36	Plastic – PVC other non-bev/non-pack. (P3)	0.053	0.018	0.004	0.04
S-37	Plastic –- LDPE pack. (P4)	0.013	0.009	0.016	0.012
S-38	Plastic – LDPE non-pack (P4)	0.112	0	0	0.075
S-39	Plastic – PP pack. (P5)	1.212	1.221	2.268	1.329
S-40	Plastic – PP non-pack. (P5)	0.893	0.251	0.191	0.678
S-41	Plastic – PS pack. (P6)	0.177	0.196	0.14	0.177
S-42	Plastic – EPS pack cont. (P6) not pack foam	0.135	0.125	0.148	0.134
S-43	Plastic – PS & EPS non-pack. (P6)	1.249	0.589	0.348	1.008
S-44	Plastic – Other plastic cont. (P7)	0.228	0.006	0.136	0.17
S-45	Plastic – film packaging (bags and film)	11.581	10.571	11.682	11.374
S-46	Plastic – polystyrene foam (EPS)	0.019	0	0.05	0.019
S-47	Plastic – other	2.06	1.447	2.523	1.978
S-48	Glass – containers bev	1.819	2.456	2.677	2.05
S-49	Glass – containers non-bev	0.304	0.597	1.293	0.475
S-50	Glass – containers (fines)	0.131	0.189	0.473	0.181
S-51	Glass – plate / non-pack. (other glass)	0.074	0.018	0.061	0.061
S-52	Metal (ferrous) – packaging bev	0.217	0.056	0.024	0.161
S-53	Metal (ferrous) – packaging non-bev	1.04	1.069	1.875	1.138
S-54	Metal (ferrous) – non-packaging	1.008	0.196	0.220	0.747
S-55	Metal (non-ferrous) – packaging bev	0.633	0.586	0.311	0.587
S-56	Metal (non-ferrous) – packaging non-bev	0.172	0.097	0.062	0.144
S-57	Metal (non-ferrous) – non-packaging	0.381	0.339	0.192	0.351
S-58	Textiles – carpet and underlay	0.296	0	0.710	0.278
S-59	Textiles – cloth	4.092	0.971	2.033	3.195
S-60	Textiles – covered furniture	0	0	0	0
S-61	Textiles – mattresses	0	0	0	0
S-62	Textiles – other	1.152	1.072	0.993	1.117
S-63	Rubber – tyres, tubes	0.018	0.239	0	0.063
S-64	Rubber – other	0.629	0.859	0.534	0.668
S-65	Electrical and electronic – TVs	0.053	0	0	0.036
S-66	Electrical – computers and peripherals	0.012	0	0.075	0.016
S-67	Electrical – toner cartridges	0.088	0.013	0	0.062
S-68	Electrical and electronic – whitegoods	0	0	0.005	0.001
S-69	Electrical - WEEE (other)	0.448	0.391	0.041	0.392
S-70	C&D – concrete	0	0	0	0
S-71	C&D – bricks	0.01	0	0	0.006
S-72	C&D – tiles	0.085	0.099	0.142	0.094
S-73	C&D – rock/dirt/soil	0.307	0.17	0.467	0.295
S-74	C&D – asphalt	0	0	0	0

S-75	C&D – plasterboard	0.426	0	0.026	0.29
S-76	Contaminated soils and processing residuals	0.233	0.039	0.026	0.169
S-77	Hazardous / special – batteries	0.028	0.014	0.038	0.026
S-78	Hazardous / special – gas bottles	0.004	0	0	0.002
S-79	Hazardous / special – fluorescent tubes	0.013	0	0	0.009
S-80	Hazardous / special – chemicals	0.241	0.136	0.45	0.241
S-81	Hazardous / special – clinical	0.497	0.368	0.909	0.514
S-82	Fines (<10mm) not able to be categorised	0.257	0.052	0	0.185
S-83	Liquid paperboard	1.262	0.889	0.445	1.092
S-84	Nappies	4.103	4.759	4.862	4.327
S-85	Other	2.226	0.296	0.902	1.666
	Total	**100**	**100**	**100**	**100**

The top 15 materials by percentage in each region are shown in Table 6. Figure 7 (SMA), Figure 8 (ERA), Figure 9 (RRA) and Figure 10 (overall) provides this information graphically. The top three materials in all regions are (in order) food organics - unpackaged, plastic - film packaging (bags and film) and paper - contaminated (inc. tissue/excl. hand towels). Other high percentage materials are Paper - hand towels, nappies, garden organics, textiles - cloth, liquid and various types of commingled recyclables.

The results are subsequently analysed in more detail within this report based on recyclability and the visual audit categories.

Table 6: Top 15 materials – by region – percentage by weight

Order	SMA		ERA		RRA		Overall	
1	Food organics - unpackaged	20	Food organics – unpackaged	32.4	Food organics - unpackaged	31.3	Food organics - unpackaged	23.9
2	Plastic - film packaging (bags and film)	11.6	Plastic - film packaging (bags and film)	10.6	Plastic - film packaging (bags and film)	11.7	Plastic - film packaging (bags and film)	11.4
3	Paper - contaminated (inc. tissue/excl. hand towels)	6.1	Paper - contaminated (inc. tissue/excl. hand towels)	7.2	Paper - contaminated (inc. tissue/excl. hand towels)	8.9	Paper - contaminated (inc. tissue/excl. hand towels)	6.6
4	Paper - hand towels	4.9	Nappies	4.8	Nappies	4.9	Paper - hand towels	4.6
5	Nappies	4.1	Garden organics	4.7	Paper - hand towels	4.1	Nappies	4.3
6	Textiles – cloth	4.1	Paper - hand towels	3.9	Glass - containers bev	2.7	Cardboard dry - packaging	3.5
7	Cardboard dry - packaging	4	Paper - printing/writing (other office)	2.7	Cardboard dry - packaging	2.7	Paper - printing/writing (other office)	3.2
8	Paper - printing/writing (other office)	3.6	Cardboard dry - packaging	2.6	Plastic - other	2.5	Textiles - cloth	3.2
9	Paper - photocopy paper	3.6	Glass - containers bev	2.5	Plastic - PP pack. (P5)	2.3	Garden organics	3.1
10	Garden organics	3	Liquid	2.1	Paper - newsprint	2.1	Paper - photocopy paper	2.9
11	Paper - other packaging	2.3	Paper – newsprint	1.8	Textiles - cloth	2	Glass - containers bev	2.1
12	Other	2.2	Paper - photocopy paper	1.5	Metal (ferrous) - packaging non-bev	1.9	Plastic - other	2
13	Plastic – other	2.1	Plastic – other	1.4	Plastic - HDPE bev. cont. (P2)	1.8	Paper - other packaging	1.9
14	Glass - containers bev	1.8	Food organics - packaged	1.4	Paper - photocopy paper	1.7	Other	1.7
15	Liquid	1.6	Plastic - PP pack. (P5)	1.2	Paper - printing/writing (other office)	1.7	Liquid	1.6
	Other waste	25	Other waste	26.6	Other waste	27.0	Other waste	33.2
	Total	**100**	**Total**	**100**	**Total**	**100**	**Total**	**100**

Figure 7: Top 15 materials – SMA

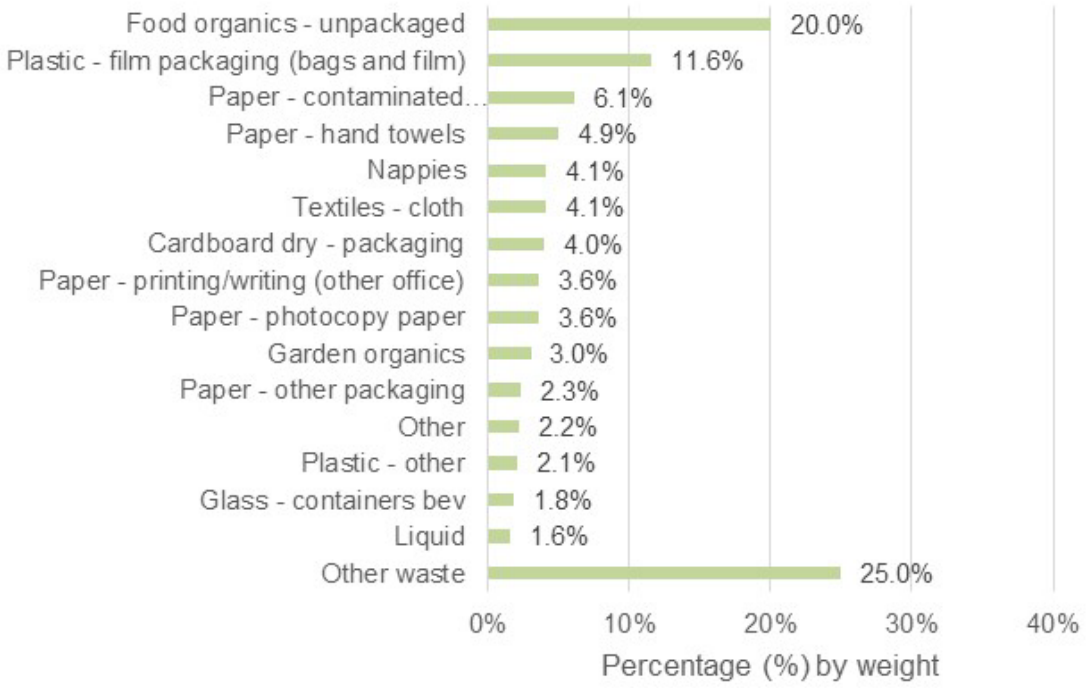


Figure 8: Top 15 materials – ERA

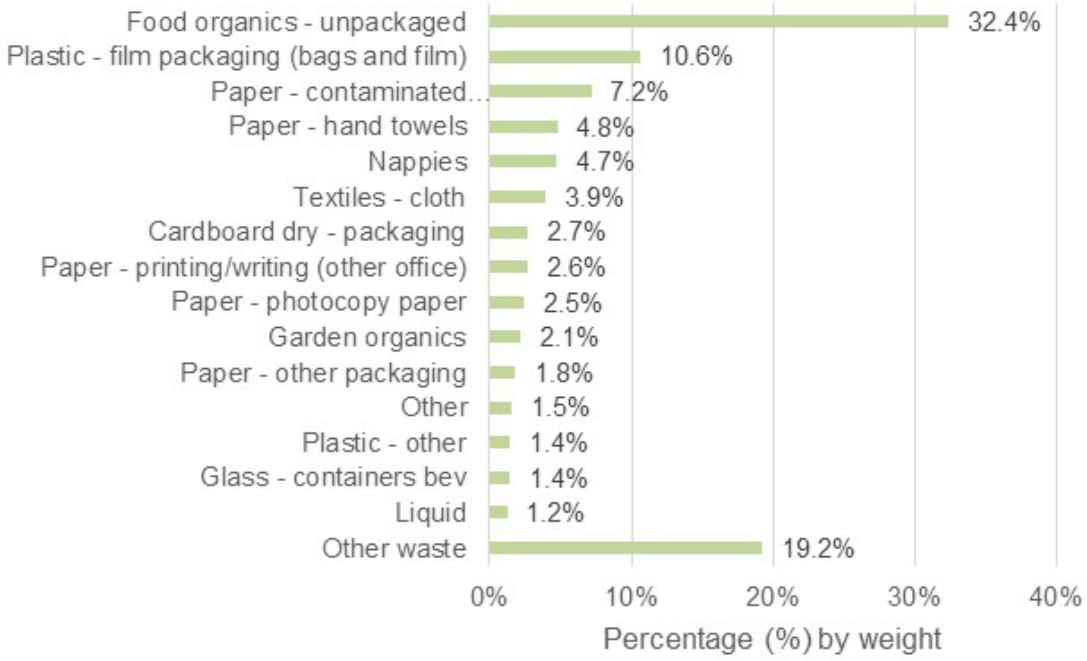


Figure 9: Top 15 materials - RRA

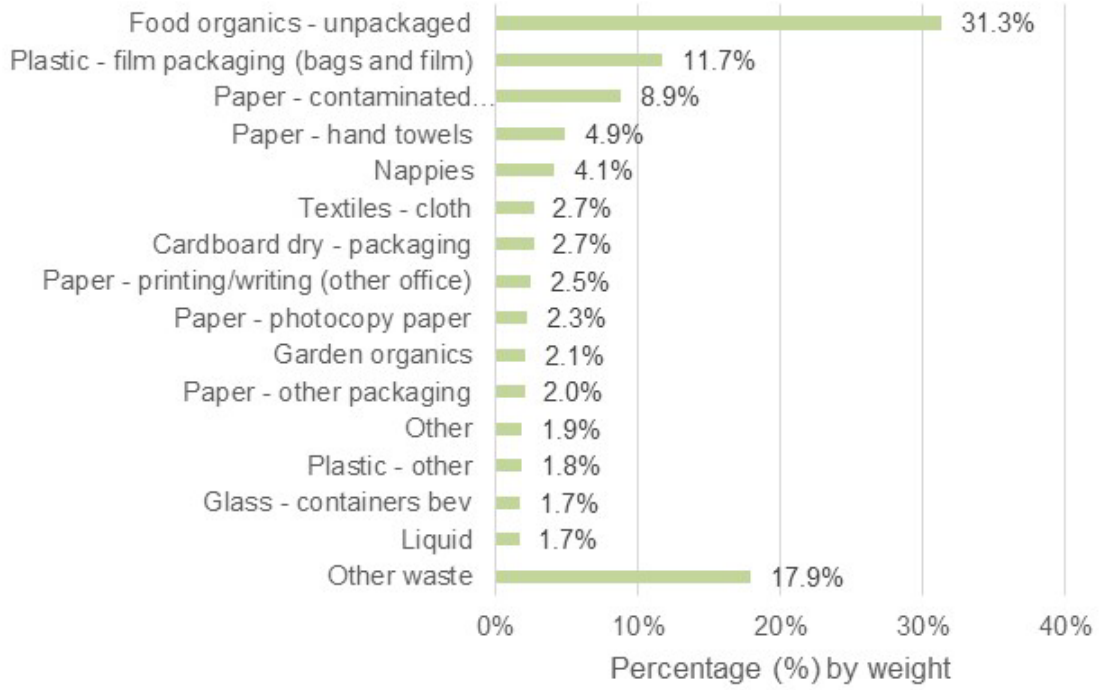
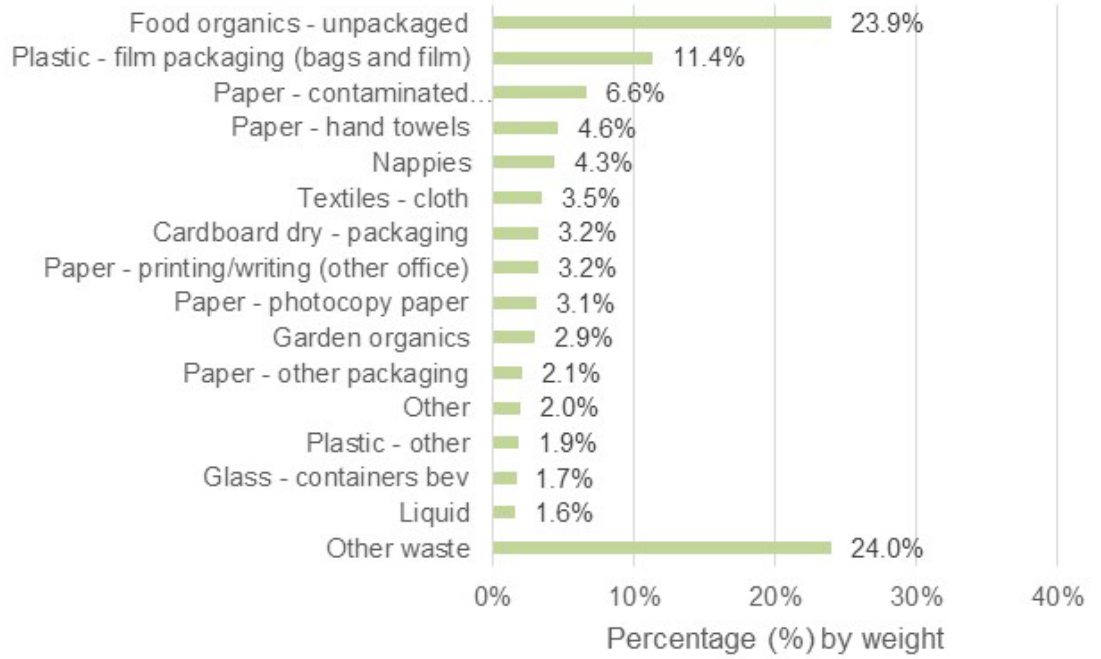


Figure 10: Top 15 materials – overall



4.3 Composition using visual audit categories

4.3.1 Consolidated composition

Table 7 shows the composition of garbage bags by consolidated material categories used in the visual audit of C&I loads.

Table 7: Consolidated composition – visual audit categories – by region

Category (consolidated visual audit)	Percentage by weight			
	SMA	ERA	RRA	Overall
Cardboard	6.07	4.5	4.14	5.52
Electrical	0.6	0.4	0.12	0.51
Food	22.46	35.88	32.63	26.46
Garden organics	3.02	4.71	0.27	3.09
Glass	2.33	3.26	4.5	2.77
Masonry	0.83	0.27	0.64	0.69
Metals	3.45	2.34	2.68	3.13
Paper	25.62	21.79	22.12	24.41
Plastic	21.17	17.57	21.41	20.42
Rubber	0.65	1.1	0.53	0.73
Textiles	5.54	2.04	3.74	4.59
Wood	0.66	0.46	0.03	0.55
Other – nappies	4.1	4.76	4.86	4.33
Other – other	3.5	0.9	2.33	2.81
Total	**100**	**100**	**100**	**100**

The results show:

- Food is a quarter of garbage bag contents overall, but a higher percentage in the ERA and RRA than in the SMA.
- Paper is approximately one quarter of garbage bag contents overall and in the SMA, but a lower percentage in the ERA and RRA.
- Plastic is approximately one-fifth of garbage bag contents overall, but a lower percentage in the ERA.
- Cardboard is approximately 5.5 per cent of garbage bag contents overall, but a higher percentage in the SMA than in the ERA and RRA. These figures include liquid paperboard.
- Garden organics is approximately three per cent of garbage bag contents overall, but a higher percentage in the ERA than in the SMA with a much lower level in the RRA.
- Nappies are consistently four per cent to five per cent of the garbage bag contents.
- Metals are consistently two per cent to 3.5 per cent of the garbage bag contents.

4.3.2 Detailed composition

Table 8 provides the detailed composition of each material category by percentage using the 42 material categories used in the visual audit. Three decimal places are used based on the large number of categories and small percentages for some materials. The total percentage is calculated based on the sum of the tonnes for each of SMA, ERA and RRA.

Table 8: Detailed composition – visual audit categories – by region

Category (detailed visual audit)		Percentage by weight			
		SMA	ERA	RRA	Overall
V-1	Cardboard dry – loose	4.023	2.805	3.047	3.654
V-2	Cardboard dry – compacted	0	0	0	0
V-3	Cardboard – wet strength/waxed – loose	2.044	1.695	1.094	1.865
V-4	Cardboard – wet strength/waxed – compacted	0	0	0	0
V-5	Electrical – computers and peripherals	0.012	0	0.075	0.016
V-6	Electrical – other	0.536	0.404	0.041	0.454
V-7	Electrical – TVs	0.053	0	0	0.036
V-8	Electrical – whitegoods	0	0	0.005	0.001
V-9	Food organics – packaged (incl. liquids)	2.441	3.503	1.309	2.547
V-10	Food organics – unpackaged	20.016	32.382	31.32	23.917
V-11	Garbage bags	-	-	-	-
V-12	Garden organics	3.025	4.705	0.272	3.087
V-13	Glass – non-packaging	0.074	0.018	0.061	0.061
V-14	Glass – packaging	2.255	3.242	4.443	2.707
V-15	Masonry materials – concrete/bricks	0.01	0	0	0.006
V-16	Masonry materials – other	0.817	0.268	0.635	0.679
V-17	Metal (ferrous) – packaging	1.257	1.125	1.899	1.299
V-18	Metal (ferrous) – non-packaging (low density)	1.008	0.196	0.22	0.747
V-19	Metal (ferrous) – non-packaging (high density)	0	0	0	0
V-20	Metal (non-ferrous) – packaging	0.805	0.683	0.373	0.732
V-21	Metal (non-ferrous) – non-packaging (low density)	0.381	0.339	0.192	0.351
V-22	Metal (non-ferrous) – non-packaging (high density)	0	0	0	0
V-23	Paper – office	7.176	4.245	3.405	6.132
V-24	Paper – other	14.904	15.773	16.845	15.303
V-25	Paper – packaging	3.536	1.777	1.869	2.975
V-26	Plastic – EPS foam	0.155	0.125	0.197	0.153
V-27	Plastic – film packaging	11.581	10.571	11.682	11.374
V-28	Plastic – other	4.598	2.315	3.117	3.944
V-29	Plastic – rigid packaging	4.84	4.562	6.412	4.952
V-30	Rubber	0.647	1.098	0.534	0.732
V-31	Textiles and leather	5.244	2.043	3.026	4.312
V-32	Textiles – carpet and underlay	0.296	0	0.710	0.278
V-33	Textiles – mattresses	0	0	0	0
V-34	Textiles – covered furniture	0	0	0	0
V-35	Wood – treated/painted	0.465	0.461	0.001	0.414
V-36	Wood – treated/painted – pallets	0.007	0	0	0.005
V-37	Wood – untreated	0.191	0.001	0.027	0.132

V-38	Wood – untreated – pallets	0	0	0	0
V-39	Other – batteries	0.028	0.014	0.038	0.026
V-40	Other – gas bottles	0.004	0	0	0.002
V-41	Other – nappies	4.103	4.759	4.862	4.327
V-42	Other (including fines <10 mm)	3.467	0.89	2.288	2.782
	Total	**100**	**100**	**100**	**100**

4.4 Recyclability of materials in garbage bags

Table 9 provides the consolidated composition for the recyclability of materials in garbage bags by region. Figure 11 provides a chart of the results. The data shows that:

- Approximately 79 per cent of garbage bag contents are recyclable now based on the category analysis shown in Table 3. This ranges from 76.5 per cent in the SMA to 83.4 per cent in the ERA (with RRA being similar at 82.7 per cent).
- Approximately 19 per cent of garbage bag contents may be recyclable in the future based on the category analysis shown in Table 3. This ranges from 15 per cent in the RRA (with ERA being similar at 15.7 per cent) to 20 per cent in the SMA.
- There is a very low amount of material that cannot be recycled.

Table 9: Recyclability consolidated composition – by region

Recyclability	**Percentage by weight**			
	SMA	ERA	RRA	Overall
Recyclable now	76.5	83.4	82.7	78.7
Recyclable in future	20.0	15.7	15.0	18.5
Not recyclable	3.5	0.9	2.3	2.8
Total	**100**	**100**	**100**	**100**

Figure 11: Recyclability consolidated composition – by region

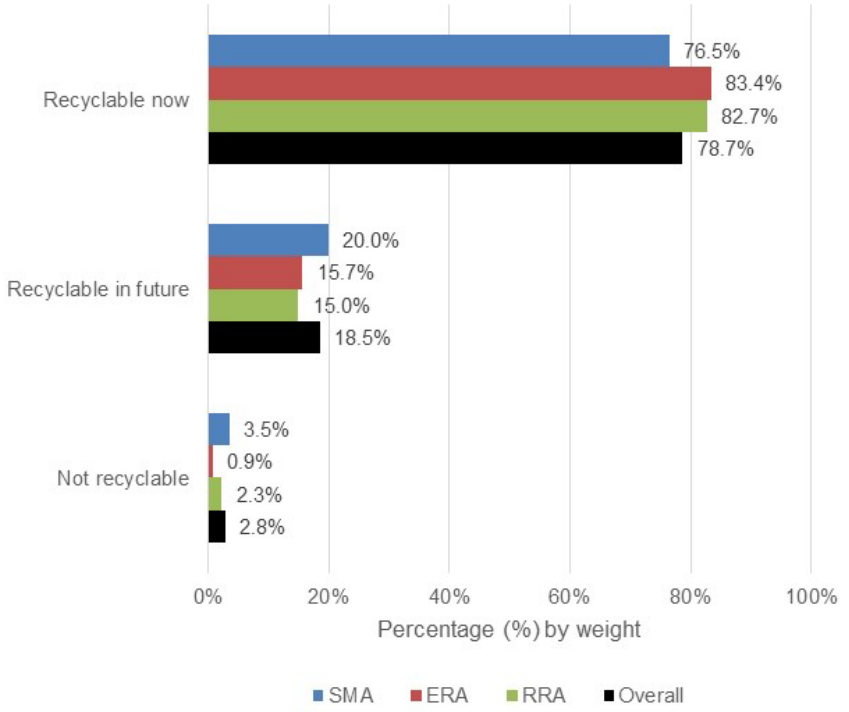


Table 10 provides the detailed composition for the recyclability of materials in garbage bags by region. Figures 12 to 15 provide charts of the results for each of SMA, ERA, RRA and overall respectively.

Table 10: Recyclability detailed composition – by region

Recyclability category consolidated	Recyclability category detail	Percentage by weight			
		SMA	ERA	RRA	Overall
Recyclable now	Organic compostable food	20.02	32.38	31.32	23.92
Recyclable now	Organic compostable wood	3.22	4.71	0.3	3.22
Recyclable now	Organic compostable paper	11.02	11.05	12.94	11.24
Recyclable now	Cardboard commingled	4.02	2.81	3.05	3.65
Recyclable now	Paper commingled	15.85	11.63	9.63	14.26
Recyclable now	Plastic commingled	4.84	4.56	6.41	4.95
Recyclable now	Plastic film	11.58	10.57	11.68	11.37
Recyclable now	Plastic other	0.15	0.13	0.20	0.15
Recyclable now	Glass commingled	2.25	3.24	4.44	2.71
Recyclable now	Metal commingled	2.06	1.81	2.27	2.03
Recyclable now	Metal other	1.39	0.53	0.41	1.1
Recyclable now	Textiles (mattresses)	0	0	0	0
Recyclable now	Electrical	0.07	0	0.08	0.05
Recyclable now	Masonry	0.01	0	0	0.01
Recyclable now	**Sub-total**	**76.49**	**83.42**	**82.73**	**78.67**
Recyclable in future	Organic other	2.91	3.96	1.31	2.96
Recyclable in future	Cardboard other	0.78	0.81	0.65	0.77
Recyclable in future	Plastic other	4.6	2.31	3.12	3.94
Recyclable in future	Glass other	0.07	0.02	0.06	0.06

Recyclable in future	Textiles other	5.54	2.04	3.74	4.59
Recyclable in future	Rubber	0.65	1.1	0.53	0.73
Recyclable in future	Electrical	0.54	0.4	0.04	0.45
Recyclable in future	Masonry	0.82	0.27	0.64	0.68
Recyclable in future	Nappies	4.10	4.76	4.86	4.33
Recyclable in future	**Sub-total**	**20.01**	**15.68**	**14.95**	**18.52**
Not recyclable	Other	3.5	0.9	2.33	2.81
Not recyclable	**Sub-total**	**3.5**	**0.9**	**2.33**	**2.81**
Total		**100**	**100**	**100**	**100**

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

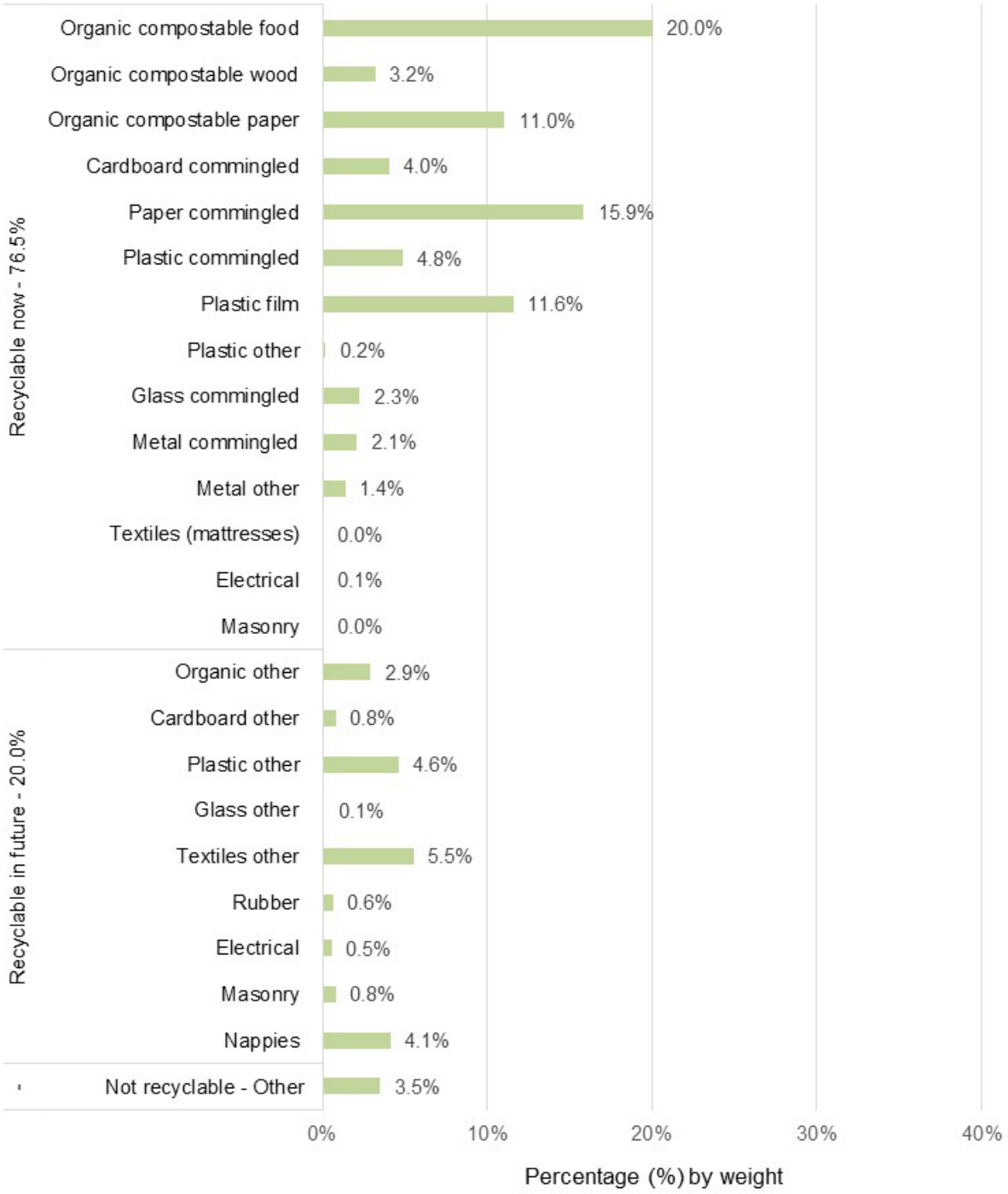
The data shows that:

- Most recyclable now material overall is organic compostable food, paper commingled, plastic film, organic compostable paper, plastic commingled and cardboard commingled respectively.
- Most recyclable in future material overall is textiles other, nappies, plastic other and organic other respectively

The trends vary by region in the following ways in the SMA:

- More paper commingled and metal other in the recyclable now category, with less organic compostable food,
- More textiles other and plastic other in the recyclable in future category.

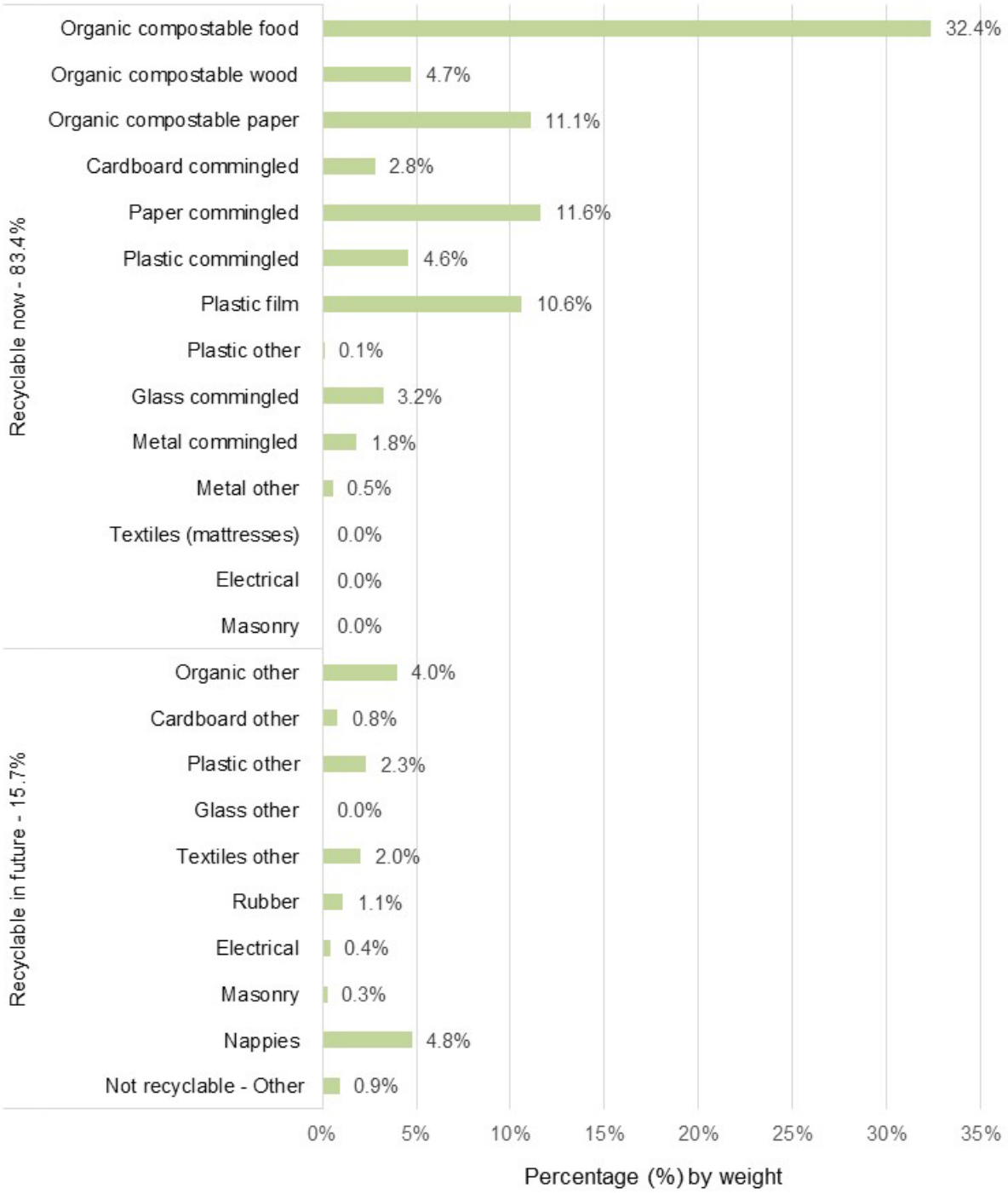
Figure 12: Recyclability detailed composition – SMA



The trends vary by region in the following ways in the ERA:

- More organic compostable wood in the recyclable now category with less metal commingled and plastic film.
- More organic other in the recyclable in future category and less textiles other.

Figure 13: Recyclability detailed composition – ERA



The trends vary by region in the following ways in the RRA:

- More plastic commingled and glass commingled in the recyclable now category.
- Less organic other and electrical in the recyclable in future category.

Figure 14: Recyclability detailed composition – RRA

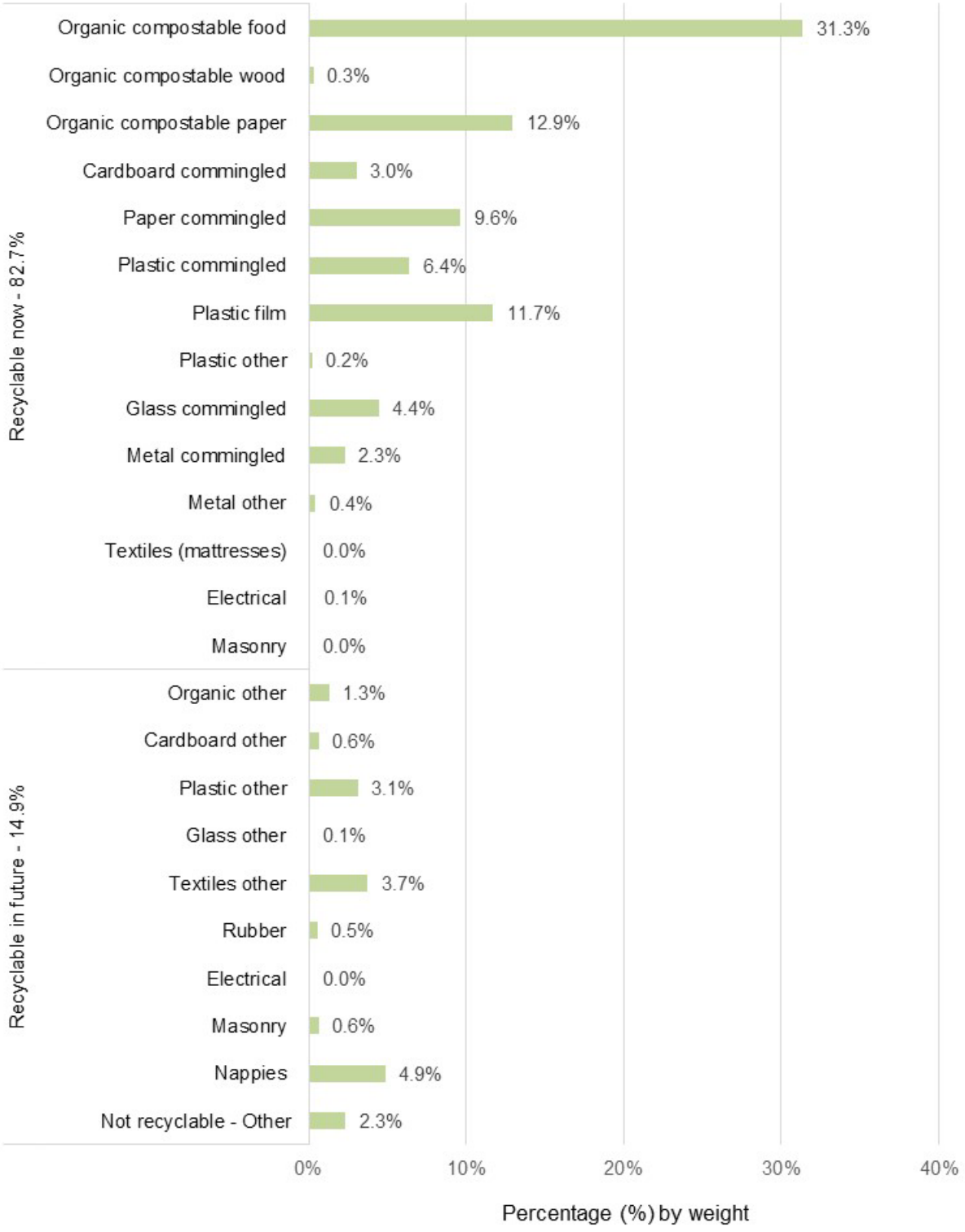
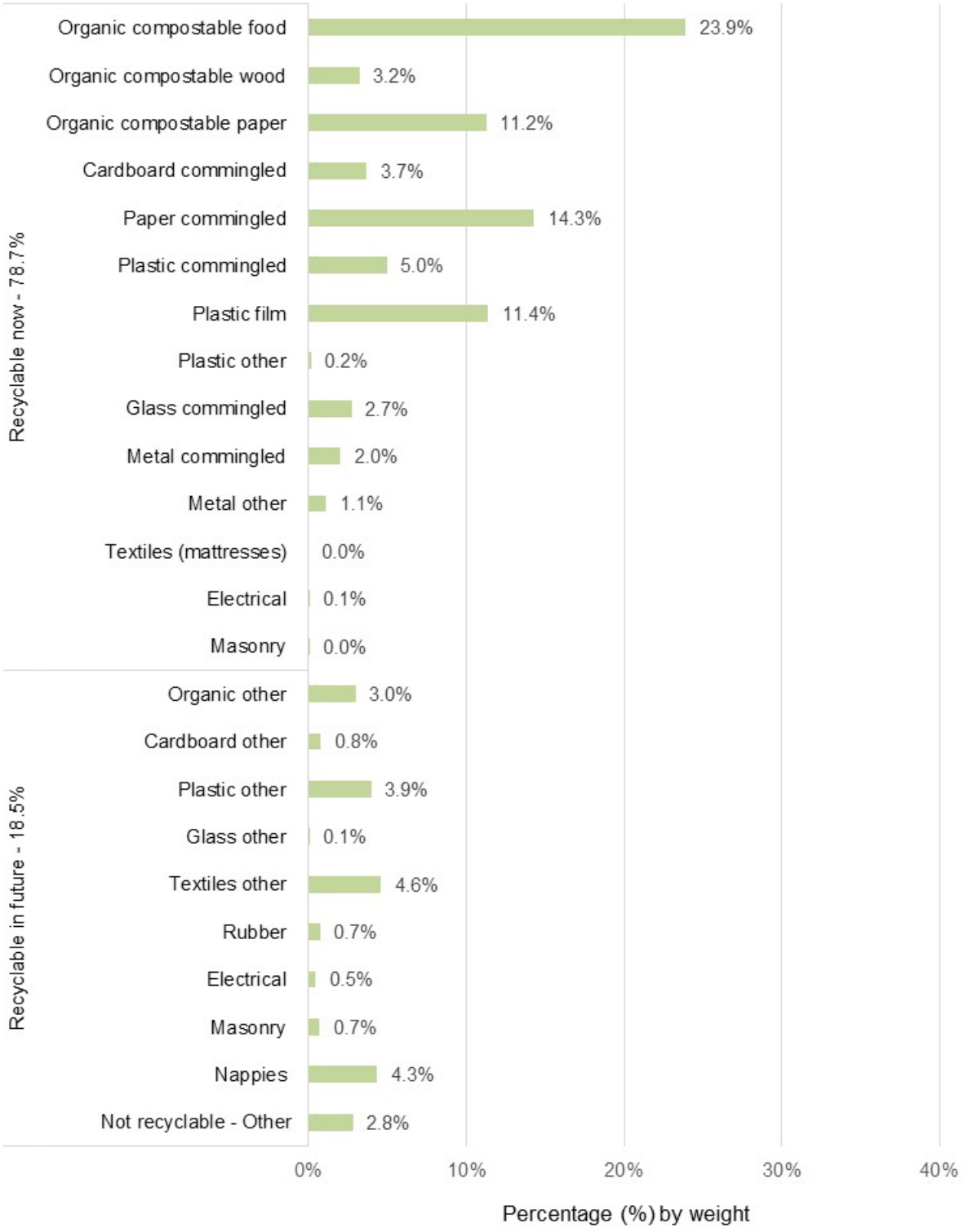


Figure 15: Recyclability detailed composition – overall



4.5 Focus material categories

4.5.1 Degradable organic material

Table 11 provides the Degradable organic material (DOM) content by region. DOM content comprises food, paper, cardboard, wood and textiles based on the categories shown in Table 3. Figure 16 provides a chart of the results.

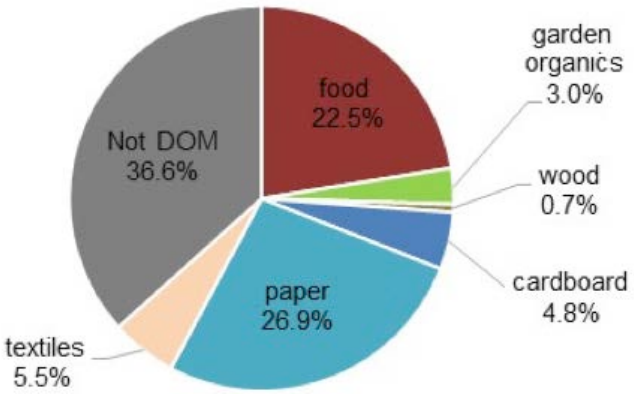
The data shows that approximately 65 per cent of garbage bag contents is DOM. This ranges from 62.9 per cent in the RRA (with the SMA being similar at 63.4 per cent) to 69.4 per cent in the ERA.

Table 11: Focus material – DOM component – by region

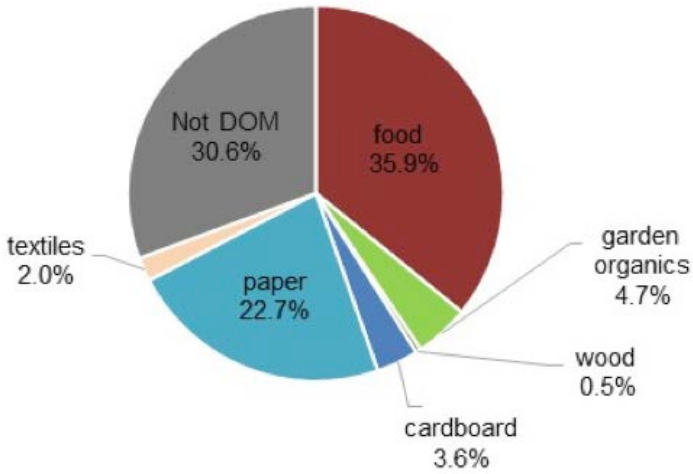
DOM type	Percentage by weight			
	SMA	ERA	RRA	Overall
Food	22.5	35.9	32.6	26.5
garden organics	3	4.7	0.3	3.1
Wood	0.7	0.5	0	0.5
cardboard	4.8	3.6	3.7	4.4
paper	26.9	22.7	22.6	25.5
textiles	5.5	2	3.7	4.6
Sub-total – DOM component	**63.4**	**69.4**	**62.9**	**64.6**
Other waste	36.6	30.6	37.1	35.4
Total	**100**	**100**	**100**	**100**

Figure 16: Focus material – DOM component – by region

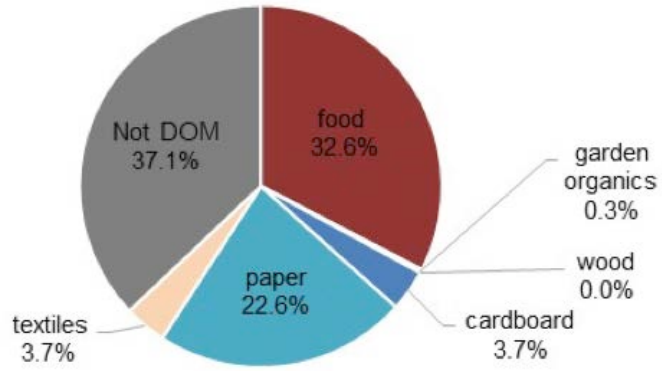
SMA – Total DOM – 63.4 per cent



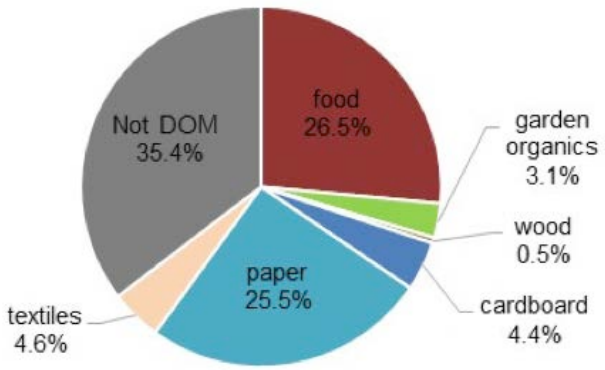
ERA – Total DOM – 69.4 per cent



RRA – Total DOM – 62.9 per cent



Overall – Total DOM – 64.6 per cent



4.5.2 Packaging material

Table 12 provides the packaging material content by region. Packaging material content comprises the categories shown in Table 3 as packaging material. Figure 17 provides a chart of the results.

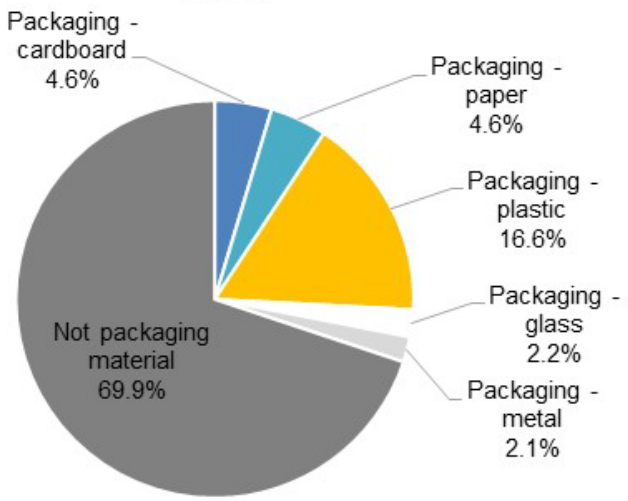
The data shows that approximately 29 per cent of garbage bag contents is packaging material. This ranges from 26.4 per cent in the ERA to 30.3 per cent in the RRA (with the SMA being similar at 30.1 per cent).

Table 12: Focus material – packaging material content – by region

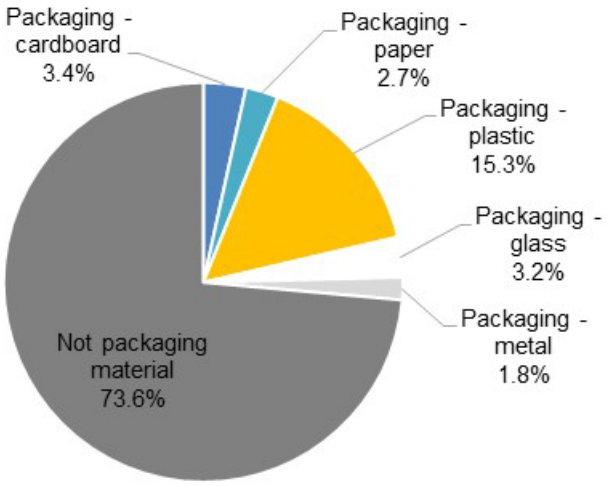
Packaging type	Percentage by weight			
	SMA	ERA	RRA	Overall
Packaging – cardboard	4.6	3.4	3.3	4.2
Packaging – paper	4.6	2.7	1.9	3.9
Packaging – plastic	16.6	15.3	18.3	16.5
Packaging – glass	2.3	3.2	4.4	2.7
Packaging – metal	2.1	1.8	2.3	2
Sub-total – packaging material	**30.1**	**26.4**	**30.3**	**29.4**
Other waste	69.9	73.6	69.7	70.6
Total	**100**	**100**	**100**	**100**

Figure 17: Focus material – packaing material conent – by region

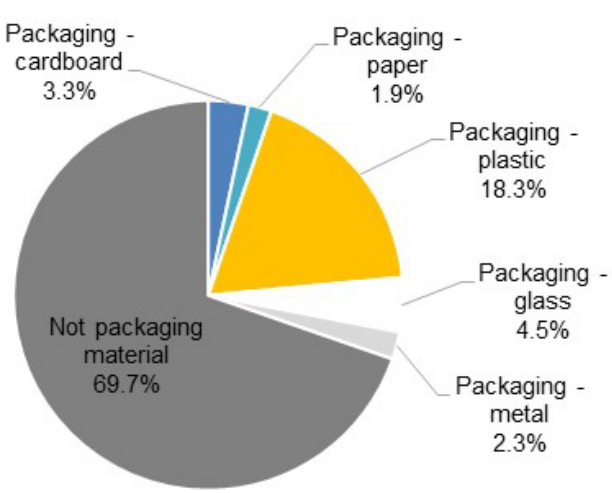
SMA – Total packaging – 30.1 per cent



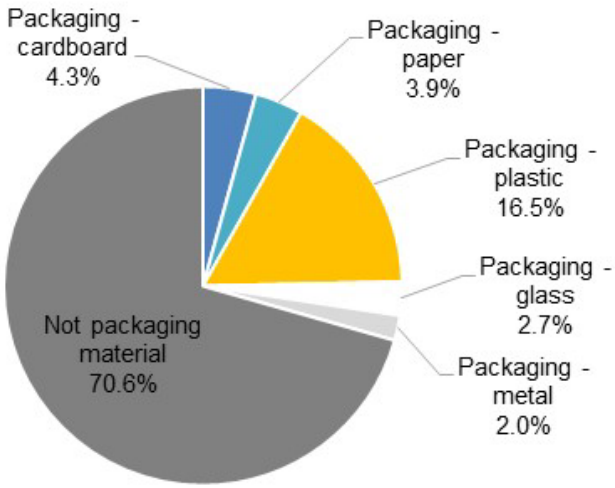
ERA – Total packaging – 26.4 per cent



RRA – Total packaging – 30.3 per cent



Overall – Total packaging – 29.4 per cent



4.5.3 Food waste

Table 13 provides the food waste content by region. Food waste comprises the categories shown in Table 3 of food organics (unpackaged), food organics (packaged) and food organics (liquid), which is also classed as packaged food. Figure 18 provides a chart of the results.

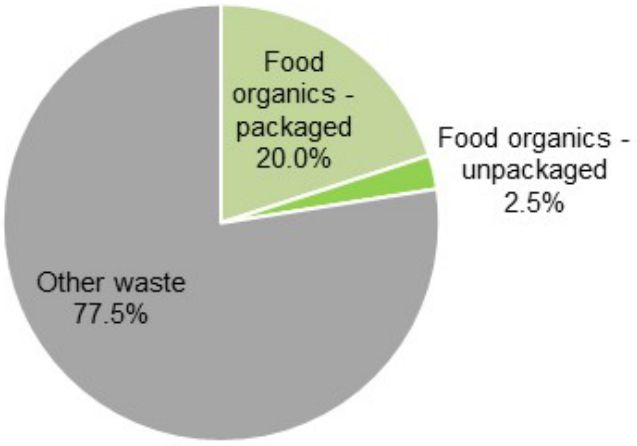
The data shows that approximately 29 per cent of garbage bag contents is packaging material. This ranges from 26.4 per cent in the ERA to 30.3 per cent in the RRA (with the SMA being similar at 30.1 per cent).

Table 13: Focus material – food waste – by region

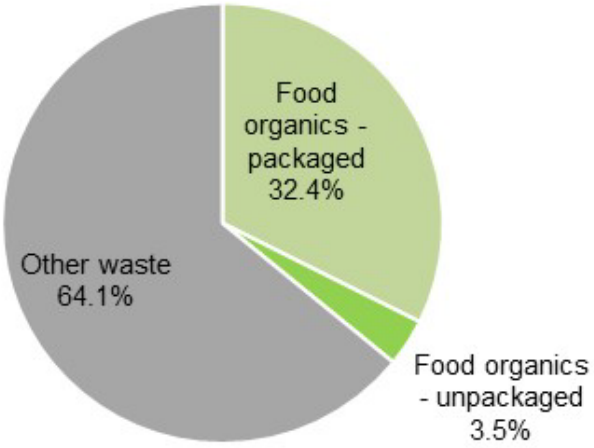
Food type	**Percentage by weight**			
	SMA	ERA	RRA	Overall
Food organics - unpackaged	20	32.4	31.3	23.9
Food - organics packaged (inc. liquid)	2.5	3.5	1.3	2.6
Sub-total – food	**22.5**	**35.9**	**32.6**	**26.5**
Other waste	77.5	64.1	67.4	73.5
Total	**100**	**100**	**100**	**100**

Figure 18: Focus material – food waste – by region

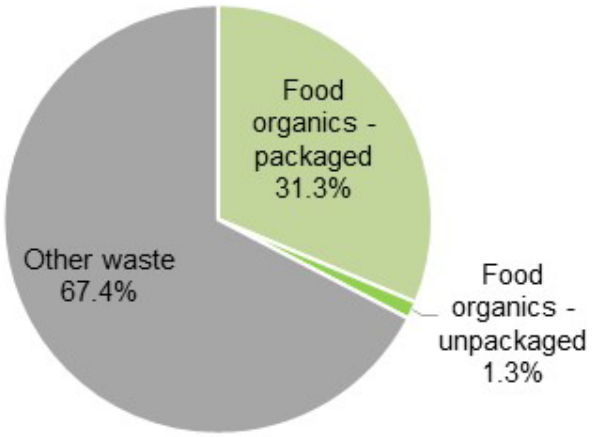
SMA – Total food – 22.5 per cent



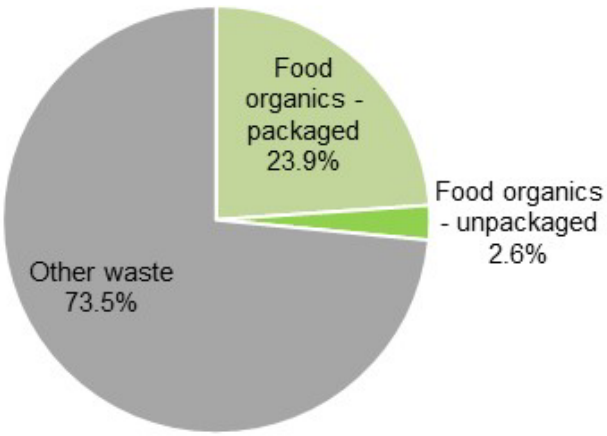
ERA – Total food – 35.9 per cent



RRA – Total food – 32.6 per cent



Overall – Total food – 26.4 per cent



4.6 Industry sector composition

4.6.1 Sectors audited by region

Table 14 provides the number and percentage of bags sampled from the selected industry sectors. Figures 19 to 22 provide charts of the results for each of SMA, ERA, RRA and overall respectively. The data show:

- A much higher percentage of the garbage bags are sourced from manufacturing and offices in the SMA than in ERA and RRA.
- A much higher percentage of the garbage bags are sourced from retail and healthcare and social assistance (particularly aged care) in the RRA and ERA than in SMA.
- Shopping centres and mixed small business made up a higher percentage of the sampled bags in the ERA than in SMA and RRA.

Table 14: Industry sectors audited (number and percentage by number) – by region

Industry sector	SMA		ERA		RRA		Overall	
	Number	%	Number	%	Number	%	Number	%
Manufacturing	48	24.4	2	3.2	1	2.4	51	16.9
Retail trade	23	11.7	12	19.4	12	28.6	47	15.6
Accommodation, cafes and restaurants	11	5.6	3	4.8	9	21.4	23	7.6
Healthcare and social assistance (charity)	21	10.7	11	17.7	8	19.0	40	13.3
Offices	20	10.2	4	6.5	1	2.4	25	8.3
Shopping centres	10	5.1	7	11.3	2	4.8	19	6.3
Education and training	16	8.1	5	8.1	2	4.8	23	7.6
Mixed small business	32	16.2	13	21	6	14.3	51	16.9
Other (businesses)	16	8.1	5	8.1	1	2.4	22	7.3
Total	**197**	**100**	**62**	**100**	**42**	**100**	**301**	**100**

Table 15 provides the consolidated composition for the recyclable material categories by sector in each region. The data for ERA and RRA should be treated with caution due to the low number of samples audited for each sector in these regions. Figures 23 to 26 provide charts of the results for each of SMA, ERA, RRA and overall respectively. The data shows that:

SMA

The amount of garbage bag contents that are recyclable now is lowest in healthcare and social assistance (charity) at 55.6 per cent and recyclable in future is highest at 40.3 per cent.

Excluding healthcare and social assistance (charity) the percentage of:

Garbage bag contents that are recyclable now, ranges from 71.3 per cent in manufacturing to 89 per cent in offices.

Garbage bag contents that are recyclable in future, ranges from 10.2 per cent in offices to 24.2 per cent in other.

ERA

The amount of garbage bag contents that are recyclable now is lowest in healthcare and social assistance (charity) at 64 per cent and recyclable in future is highest at 35.1 per cent.

Excluding healthcare and social assistance (charity) the percentage of:

Garbage bag contents that are recyclable now, ranges from 79.9 per cent in mixed small business to 93.9 per cent in education and training.

Garbage bag contents that are recyclable in future, ranges from six per cent in education and training to 19.6 per cent in mixed small business.

RRA

The amount of garbage bag contents that are recyclable now is lowest in healthcare and social assistance (charity) at 54.2 per cent and recyclable in future is highest at 41.2 per cent.

Excluding healthcare and social assistance (charity) the percentage of:

Garbage bag contents that are recyclable now, ranges from 70.9 per cent in offices to 96.4 per cent in other.

Garbage bag contents that are recyclable in future, ranges from 2.5 per cent in shopping centres to 15 per cent in retail trade.

Overall

- The amount of material not recyclable in all sectors is very low.
- The amount of garbage bag contents that are recyclable now is lowest in healthcare and social assistance (charity) at 57.9 per cent. This is because of:
    - The large amount of nappies in the aged care sector, which increase the recyclable in future material to the largest of all sectors at 38.9 per cent.
    - A small amount of clinical waste in the healthcare sector.
    - Discarded household goods from the charity sector.
- Excluding healthcare and social assistance (charity), the percentage of garbage bag contents that are recyclable now, ranges from 72.6 per cent in manufacturing to 88.1 per cent in offices.
- Excluding healthcare and social assistance (charity), the percentage of garbage bag contents that are recyclable in future, ranges from 10 per cent in offices to 22 per cent in manufacturing.

Table 15: Recyclability consolidated composition – by sector

Region	Recyclability	Percentage by weight								
		Manufacturing	Retail trade	Accomm., cafes and restaurants	Healthcare and social assistance (charity)	Offices	Shopping Centres	Education and training	Mixed small business	Other (businesses)
		M	R	H	C	O	S	E	X	Z
SMA	Recyclable now	71.3	81.9	83	55.6	89.1	83	82.0	81.8	73.2
	Recyclable in future	22.9	14.0	12.6	40.4	10.2	13.9	14.9	16.7	24.2
	Not recyclable	5.8	4.1	4.4	4	0.7	3.1	3.1	1.5	2.6
	Total	100	100	100	100	100	100	100	100	100
ERA	Recyclable now	89.4	88.7	90.9	64.0	86.2	93.2	93.9	79.9	85.7
	Recyclable in future	10.6	9.6	9.1	35.0	9.6	6.7	6	19.6	13.5
	Not recyclable	0	1.7	0	1.0	4.2	0.1	0.1	0.5	0.8
	Total	100	100	100	100	100	100	100	100	100
RRA	Recyclable now	84.7	83.3	90.9	54.2	70.9	96.1	86.7	93.8	96.4
	Recyclable in future	13.8	15	7.6	41.2	4.2	2.5	13.2	5.3	3.6
	Not recyclable	1.5	1.7	1.5	4.6	24.9	1.4	0.1	0.9	0
	Total	100	100	100	100	100	100	100	100	100
Overall	Recyclable now	72.6	84	86.6	57.9	88.0	88	85.6	82.3	76
	Recyclable in future	22	13.1	10.6	38.9	10.0	10.2	12.3	16.5	21.8
	Not recyclable	5.4	2.9	2.8	3.2	2	1.8	2.1	1.2	2.2
	Total	**100**	**100**	**100**	**100**	100	**100**	**100**	**100**	**100**

Figure 19: Recyclability consolidated composition – by sector – SMA

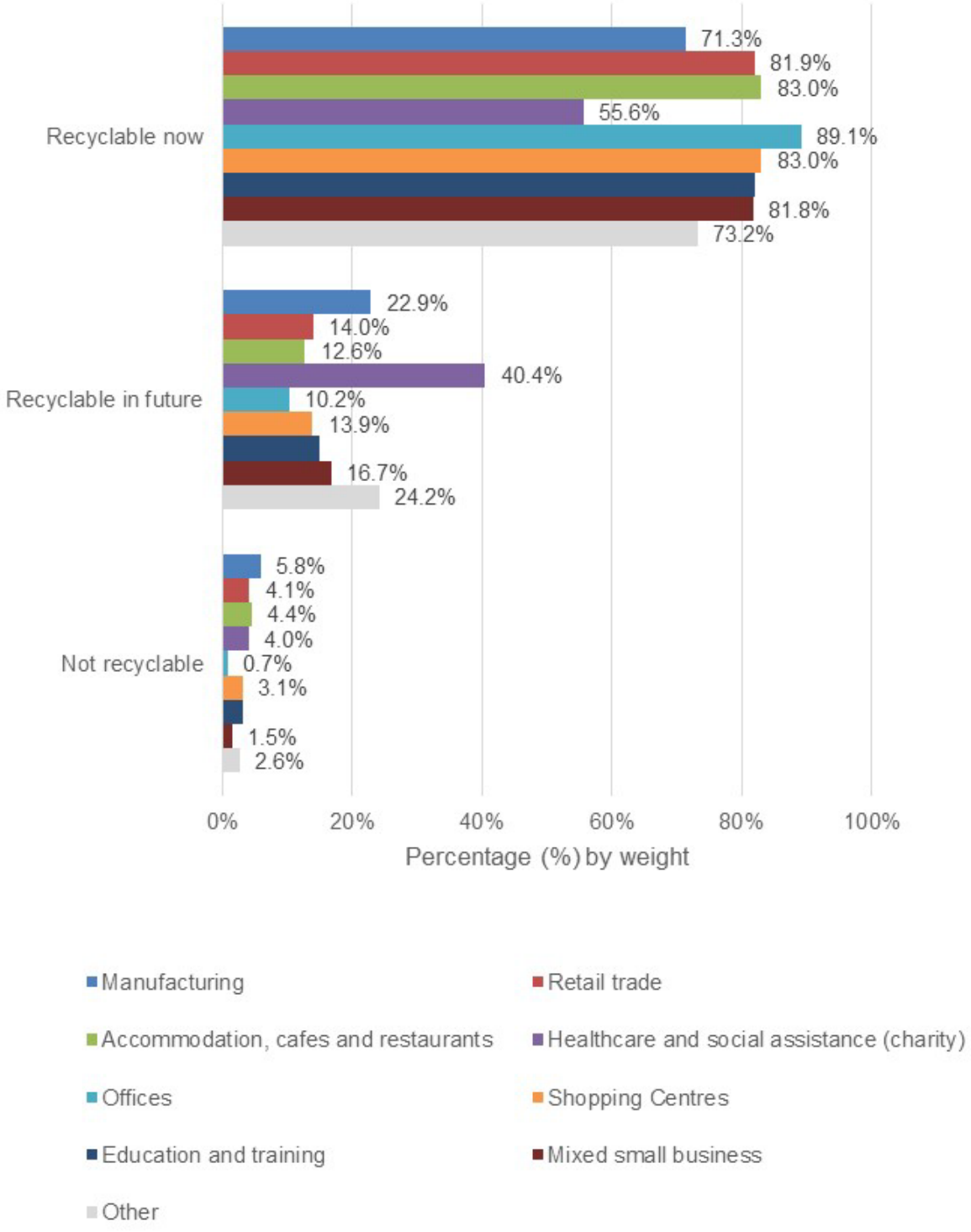


Figure 20: Recyclability consolidated composition – by sector – ERA

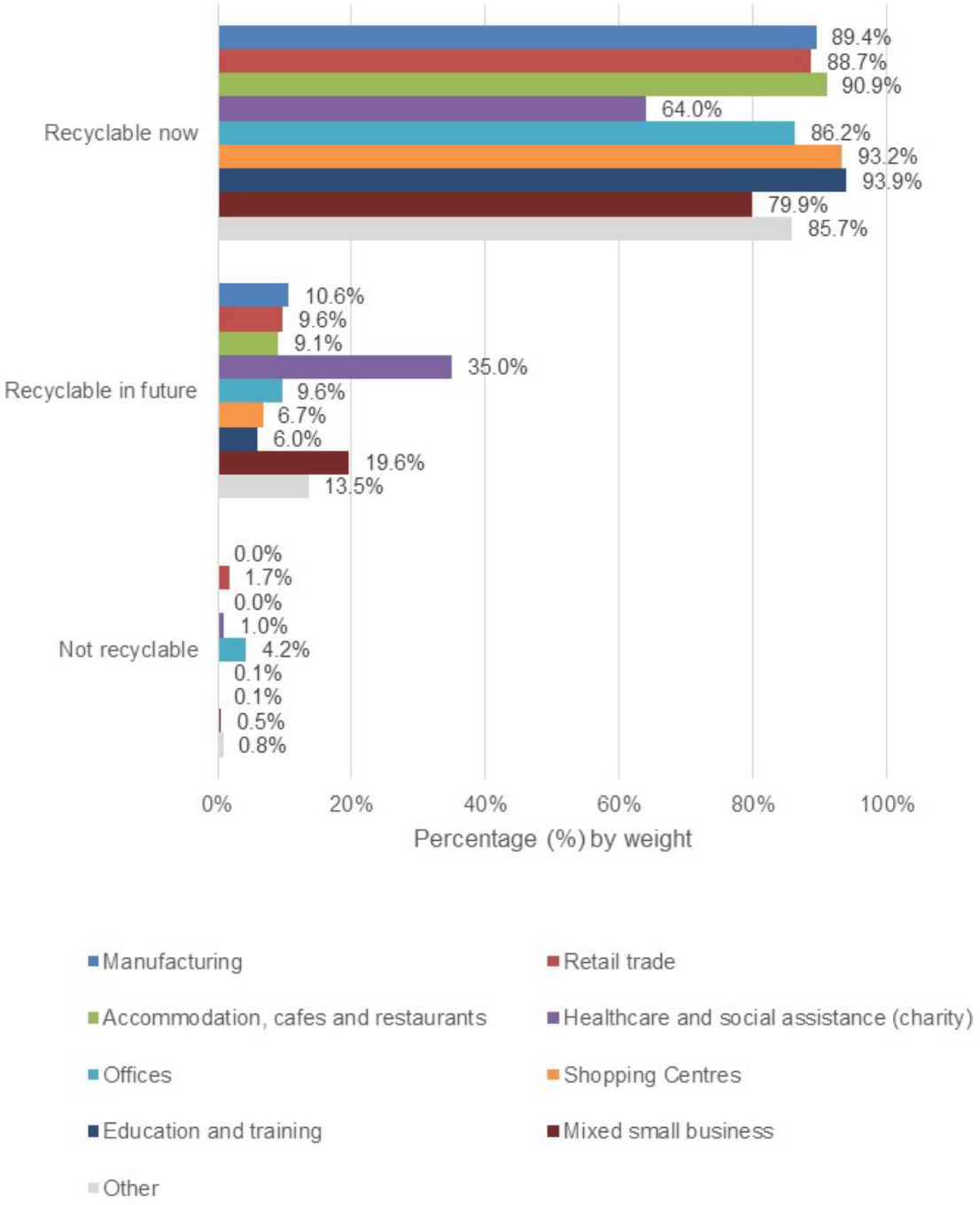


Figure 21: Recyclability consolidated composition – by sector – RRA

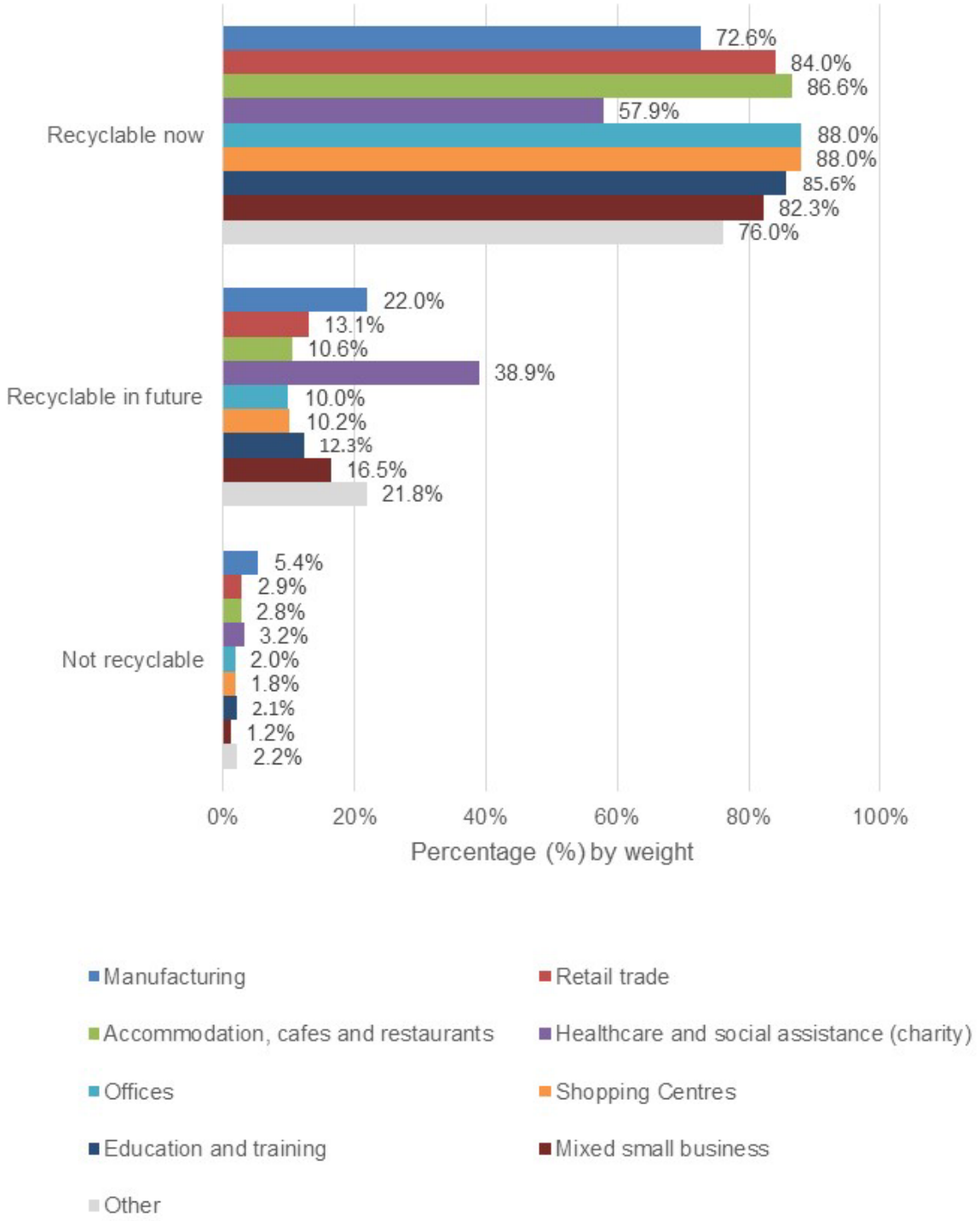
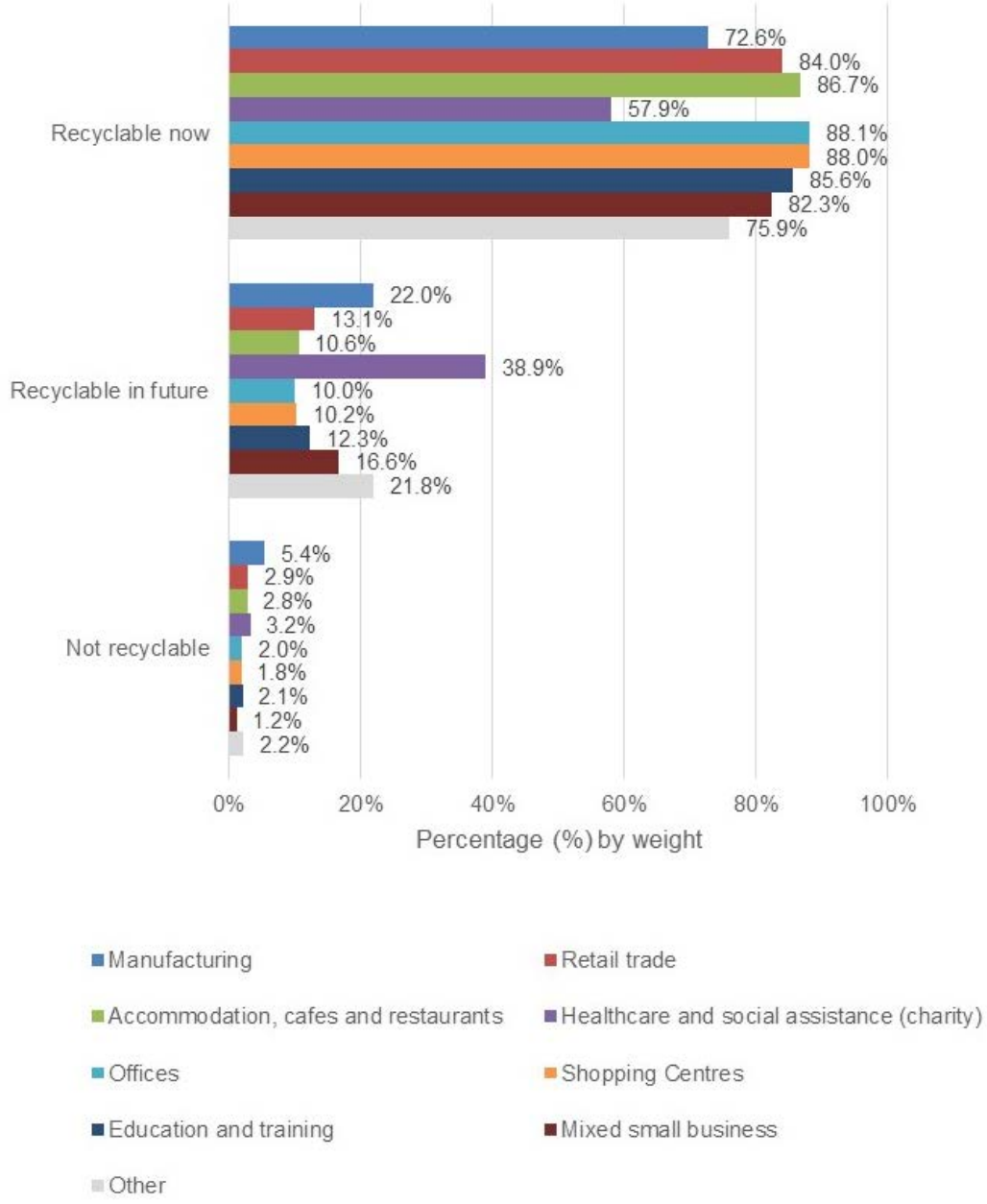


Figure 22: Recyclability consolidated composition – by sector – overall



Tables 16 to 19 provide the detailed recyclability percentages for each sector for each of SMA, ERA, RRA and overall respectively. Charts of the individual sector results are provided later in the report in Section 5.6 – Comparison of industry sectors. Tables 16 to 19 are supplied to provide the sector results side by side, but charts of each table are not supplied due to the amount of data.

The results show that overall there is a lot less organic compostable food in the sectors of other and manufacturing, a lot more wood in the other sector, more paper commingled in offices, more nappies and textiles in healthcare and social assistance and more plastic film and plastic other in manufacturing.

Table 16: Recyclability detailed composition – by sector -- SMA

Recyclability category consolidated	Recyclability category detail	Percentage by weight								
		Manufacturing	Retail trade	Accomm., cafes and restaurants	Healthcare and social assistance (charity)	Offices	Shopping Centres	Education and training	Mixed small business	Other (businesses)
		M	R	H	C	O	S	E	X	Z
Recyclable now	Organic compostable food	15.17	21.34	31.03	12.4	22.48	31.91	28.42	23.41	11.29
Recyclable now	Organic compostable wood	0.08	0.08	1.37	1.4	1.99	2.44	0.93	0.28	25.2
Recyclable now	Organic compostable paper	9.94	13.04	11.97	14.52	15.26	8.05	12.79	9.84	5.28
Recyclable now	Cardboard commingled	4.19	5.18	3.38	2.14	4.54	5.41	3.11	3.98	4.28
Recyclable now	Paper commingled	17.18	16.83	11.23	10.31	20.72	11.31	19.78	20.01	8.64
Recyclable now	Plastic commingled	4.68	5.47	5.18	2.73	4.76	4.8	5.47	6.11	4.12
Recyclable now	Plastic film	14.45	9.64	12.45	7.66	12.77	13.67	8.24	13.3	7.92
Recyclable now	Plastic other	0.17	0.13	0.03	0.1	0.2	0.34	0.24	0.14	0.1
Recyclable now	Glass commingled	1.4	5.63	2.18	1.75	2.2	2.59	0.55	1.59	3.27
Recyclable now	Metal commingled	1.49	2.25	3.93	1.59	3.28	2.13	1.62	2.29	1.27
Recyclable now	Metal other	2.48	2.2	0.14	1.01	0.78	0.38	0.74	0.7	1.81
Recyclable now	Textiles (mattresses)	0	0	0	0	0	0	0	0	0
Recyclable now	Electrical	0.11	0.13	0.05	0	0.05	0	0.11	0.05	0
Recyclable now	Masonry	0	0	0	0	0	0	0	0.06	0
Recyclable now	Sub-total *	**71.34**	**81.92**	**82.95**	**55.63**	**89.04**	**83.02**	**82.00**	**81.76**	**73.19**
Recyclable in future	Organic other	3.72	3.31	1.82	2.52	2.35	0.94	3.33	3.42	2.10
Recyclable in future	Cardboard other	0.57	0.36	3.79	0.24	0.42	1.90	0.87	0.47	0.66
Recyclable in future	Plastic other	9.12	3.86	1.93	3.34	3.80	3.72	2.79	2.75	3.34

Recyclable in future	Glass other	0.01	0	0	0.20	0.01	0.26	0.05	0.11	0.13
Recyclable in future	Textiles other	5.51	4.42	0.63	19.52	2.34	0.78	2.55	2.05	8.24
Recyclable in future	Rubber	0.41	0.51	0.54	1.26	0.36	1.10	0.66	0.97	0.24
Recyclable in future	Electrical	0.87	0.32	0.16	1.23	0.11	0	0.55	0.15	0.8
Recyclable in future	Masonry	0.44	0.25	0.66	0.24	0.12	0.06	1.51	0.18	4.69
Recyclable in future	Nappies	2.19	0.89	3.11	11.78	0.72	5.10	2.54	6.66	3.99
Recyclable in future	Sub-total *	**22.85**	**13.94**	**12.64**	**40.35**	**10.23**	**13.87**	**14.85**	**16.75**	**24.19**
Not recyclable	Other	5.81	4.14	4.41	4.03	0.73	3.11	3.15	1.49	2.62
Not recyclable	Sub-total	**5.81**	**4.14**	**4.41**	**4.03**	**0.73**	**3.11**	**3.15**	**1.49**	**2.62**
Total		**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

Table 17: Recyclability detailed composition – by sector -- ERA

Recyclability category consolidated	Recyclability category detail	Percentage by weight								
		Manufacturing	Retail trade	Accomm., cafes and restaurants	Healthcare and social assistance (charity)	Offices	Shopping centres	Education and training	Mixed small business	Other (businesses)
		M	R	H	C	O	S	E	X	Z
Recyclable now	Organic compostable food	17.17	35.07	39.63	25.32	27.42	44.64	43.48	34.8	9.3
Recyclable now	Organic compostable wood	0	3.25	0	0.15	0	2.31	0.04	0	51.24
Recyclable now	Organic compostable paper	12.87	10.32	16.54	12.49	16.52	9.98	9.71	10.84	3.25
Recyclable now	Cardboard commingled	4.22	3.55	2.28	2.81	2.45	3.48	2.87	2.32	1.27
Recyclable now	Paper commingled	0.35	11.96	12.44	11.35	24.24	9.35	18.79	7.80	11.64
Recyclable now	Plastic commingled	7.50	5.25	4.02	3.68	4.19	5.25	4.88	4.95	1.66
Recyclable now	Plastic film	46.56	13.94	8.56	6.19	7.59	8.10	10.76	9.57	3.65
Recyclable now	Plastic other	0	0.17	0.29	0.01	0.01	0.04	0.03	0.26	0.16
Recyclable now	Glass commingled	0	2.31	4.56	0.42	1.75	7.74	1.27	6.02	1.99
Recyclable now	Metal commingled	0.5	1.72	2.56	1.17	1.61	1.99	0.95	2.99	1.22
Recyclable now	Metal other	0.2	1.13	0.04	0.37	0.36	0.33	1.07	0.37	0.29
Recyclable now	Textiles (mattresses)	0	0	0	0	0	0	0	0	0
Recyclable now	Electrical	0	0	0	0	0	0	0	0	0
Recyclable now	Masonry	0	0	0	0	0	0	0	0	0
Recyclable now	Sub-total *	**89.38**	**88.67**	**90.92**	**63.97**	**86.14**	**93.23**	**93.85**	**79.91**	**85.69**
Recyclable in future	Organic other	2.35	1.86	3.93	6.41	3.24	1.85	2.91	5.82	4.22
Recyclable in future	Cardboard other	0	0.39	3.54	0.30	1.55	1.26	0.49	0.85	0

Recyclable in future	Plastic other	4.15	1.88	1.12	2.99	2.24	1.46	1.91	2.47	3.29
Recyclable in future	Glass other	0	0.07	0	0	0	0	0	0.03	0
Recyclable in future	Textiles other	1.55	1.64	0.47	3.57	0.59	1.42	0.13	3.26	2.27
Recyclable in future	Rubber	1.56	0.50	0.03	2.29	0.90	0.19	0.18	1.08	3.22
Recyclable in future	Electrical	0.06	1.38	0	0.59	0.42	0.09	0.01	0.07	0
Recyclable in future	Masonry	0.92	0.37	0	0.19	0.70	0.03	0.32	0.26	0.05
Recyclable in future	Nappies	0	1.54	0	18.71	0	0.43	0.06	5.77	0.50
Recyclable in future	Sub-total *	**10.60**	**9.63**	**9.08**	**35.05**	**9.63**	**6.72**	**6.02**	**19.59**	**13.54**
Not recyclable	Other	0.02	1.69	0	0.98	4.24	0.05	0.13	0.50	0.77
Not recyclable	Sub-total	**0.02**	**1.69**	**0**	**0.98**	**4.24**	**0.05**	**0.13**	**0.50**	**0.77**
Total		**1000**	**1000**	**1000**	**1000**	**1000**	**1000**	**1000**	**1000**	**1000**

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

Table 18: Recyclability detailed composition – by sector -- RRA

Recyclability category consolidated	Recyclability category detail	Percentage by weight								
		Manufacturing	Retail trade	Accomm., cafes and restaurants	Healthcare and social assistance (charity)	Offices	Shopping centres	Education and training	Mixed small business	Other (businesses)
		M	R	H	C	O	S	E	X	Z
Recyclable now	Organic compostable food	21.41	30.63	35.67	18.91	20.13	33.92	42.06	39.73	41.66
Recyclable now	Organic compostable wood	0.16	0.49	0.46	0.04	0	0	0.18	0.14	0
Recyclable now	Organic compostable paper	9.94	12.62	15.58	11.24	3.82	16.1	7.3	14.61	11.68
Recyclable now	Cardboard commingled	5.98	3.62	3.1	2.03	6.56	2.73	1.62	1.65	4.14
Recyclable now	Paper commingled	11.92	10.13	10.2	7.52	17.6	7.23	8.59	7.68	25.71
Recyclable now	Plastic commingled	9.09	5.02	7.6	3.65	2.8	9.07	10.16	8.69	4.03
Recyclable now	Plastic film	12.61	14.14	10.36	7.2	18.59	13.77	10.35	11.44	6.03
Recyclable now	Plastic other	0.2	0.39	0.03	0.06	0	0.47	0	0.13	0
Recyclable now	Glass commingled	8.04	3.73	6.24	1.81	0	6.38	0	7.03	0
Recyclable now	Metal commingled	3.6	2.19	1.35	1.18	0.81	5.14	5.61	2.56	2.38
Recyclable now	Metal other	0.32	0.39	0.25	0.46	0.63	1.3	0.81	0.12	0.73
Recyclable now	Textiles (mattresses)	0	0	0	0	0	0	0	0	0
Recyclable now	Electrical	1.43	0.02	0	0.08	0	0	0	0	0
Recyclable now	Masonry	0	0	0	0	0	0	0	0	0
Recyclable now	Sub-total *	**84.70**	**83.37**	**90.84**	**54.18**	**70.94**	**96.11**	**86.69**	**93.77**	**96.35**
Recyclable in future	Organic other	0	2.36	0.64	0.1	0	0.25	1.06	2.32	1.23
Recyclable in future	Cardboard other	4.48	0.68	0.15	0.25	2.91	0	0	0.66	1.29

Recyclable in future	Plastic other	1.57	4.79	2.38	4.73	0.74	1.11	0.55	1.02	0.86
Recyclable in future	Glass other	0	0.18	0	0	0	0	0	0	0
Recyclable in future	Textiles other	0.30	4.29	1.57	12.39	0	0.27	0.02	0.67	0.26
Recyclable in future	Rubber	0.34	0.38	0.09	2.16	0.51	0.29	0.46	0.02	0
Recyclable in future	Electrical	0	0.03	0.15	0	0	0	0	0	0
Recyclable in future	Masonry	0	1.41	0.73	0	0	0.27	0	0	0
Recyclable in future	Nappies	7.11	0.86	1.93	21.58	0	0.3	11.12	0.66	0
Recyclable in future	Sub-total *	**13.81**	**14.98**	**7.63**	**41.20**	**4.15**	**2.49**	**13.21**	**5.35**	**3.65**
Not recyclable	Other	1.5	1.66	1.53	4.62	24.91	1.4	0.11	0.88	0
Not recyclable	Sub-total	**1.5**	**1.66**	**1.53**	**4.62**	**24.91**	**1.4**	**0.11**	**0.88**	**0**
Total		**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

Table 19: Recyclability detailed composition – by sector -- overall

Recyclability category consolidated	Recyclability category detail	Percentage by weight								
		Manufacturing	Retail trade	Accomm., cafes and restaurants	Healthcare and social assistance (charity)	Offices	Shopping centres	Education and training	Mixed small business	Other (businesses)
		M	R	H	C	O	S	E	X	Z
Recyclable now	Organic compostable food	15.44	27.16	33.91	17.03	23.22	36.69	33.58	27.7	11.41
Recyclable now	Organic compostable wood	0.07	1.01	0.86	0.86	1.62	2.16	0.63	0.19	29.72
Recyclable now	Organic compostable paper	10.09	12.23	13.83	13.5	15.15	9.52	11.55	10.49	5
Recyclable now	Cardboard commingled	4.24	4.38	3.1	2.32	4.26	4.45	2.94	3.36	3.71
Recyclable now	Paper commingled	16.21	13.95	11.15	10.25	21.2	10.21	18.73	15.83	9.48
Recyclable now	Plastic commingled	4.94	5.31	5.67	3.13	4.61	5.37	5.63	6.02	3.66
Recyclable now	Plastic film	15.98	11.85	11.15	7.17	12.09	11.67	9.1	12.18	7.08
Recyclable now	Plastic other	0.16	0.2	0.08	0.07	0.16	0.25	0.17	0.17	0.11
Recyclable now	Glass commingled	1.52	4.31	3.77	1.37	2.07	4.81	0.72	3.19	2.98
Recyclable now	Metal commingled	1.5	2.1	2.94	1.42	2.95	2.37	1.7	2.49	1.28
Recyclable now	Metal other	2.31	1.48	0.15	0.75	0.71	0.45	0.84	0.57	1.5
Recyclable now	Textiles (mattresses)	0	0	0	0	0	0	0	0	0
Recyclable now	Electrical	0.14	0.07	0.02	0.01	0.04	0	0.07	0.03	0
Recyclable now	Masonry	0	0	0	0	0	0	0	0.04	0
Recyclable now	Sub-total *	**72.60**	**84.03**	**86.65**	**57.88**	**88.07**	**87.96**	**85.65**	**82.27**	**75.94**
Recyclable in future	Organic other	3.55	2.71	1.86	3.34	2.43	1.2	3.06	3.95	2.49
Recyclable in future	Cardboard other	0.65	0.45	2.7	0.26	0.67	1.49	0.71	0.58	0.54

Recyclable in future	Plastic other	8.67	3.57	1.91	3.42	3.46	2.65	2.39	2.54	3.29
Recyclable in future	Glass other	0.01	0.06	0	0.12	0.01	0.14	0.03	0.08	0.11
Recyclable in future	Textiles other	5.17	3.66	0.87	13.93	2	0.96	1.7	2.25	6.98
Recyclable in future	Rubber	0.47	0.47	0.32	1.67	0.45	0.7	0.51	0.92	0.8
Recyclable in future	Electrical	0.8	0.53	0.13	0.88	0.16	0.03	0.36	0.12	0.63
Recyclable in future	Masonry	0.45	0.56	0.56	0.2	0.21	0.07	1.07	0.18	3.73
Recyclable in future	Nappies	2.22	1.06	2.21	15.08	0.58	2.96	2.44	5.93	3.26
Recyclable in future	**Sub-total ***	**21.99**	**13.07**	**10.56**	**38.91**	**9.97**	**10.19**	**12.26**	**16.55**	**21.83**
Not recyclable	Other	5.41	2.9	2.79	3.21	1.96	1.84	2.09	1.18	2.23
Not recyclable	**Sub-total**	**5.41**	**2.9**	**2.79**	**3.21**	**1.96**	**1.84**	**2.09**	**1.18**	**2.23**
Total		**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

5. Results comparison for 2008 and 2014 audits

5.1 Overview

This section compares only the results for the SMA from the 2014 Garbage bag audit because the 2008 C&I waste audit was limited to the SMA.

5.2 Detailed composition using all sorted categories

Table 20 provides the comparison of each material category based on the 57 audit sorting categories audited in 2008. The difference in the results of the audit for each category is also shown. Three decimal places are provided because a large number of categories were used with many present in small percentages.

Table 20:Detailed composition – 57 categories from 2008 – by year

Category from 2008		Percentage by weight		
		SMA 2008	SMA 2014	Difference
2008-1	Food organics – unpackaged	26.781	20.016	-6.765
2008-2	Food organics – packaged *	0.956	0.83	-0.126
2008-3	Liquid	0.633	1.612	0.978
2008-4	Garden organics	1.567	3.025	1.457
2008-5	Wood/untreated – board/pole, untreated	0.119	0.189	0.07
2008-6	Wood/untreated – pallets/furniture	0.039	0	-0.039
2008-7	Wood/untreated – chipboard / MDF	0.022	0.002	-0.02
2008-8	Wood/treated/painted	0.102	0.472	0.37
2008-9	Cardboard dry – packaging (incl. liquid paperboard)	2.662	3.954	1.292
2008-10	Cardboard dry – production spoils	0.069	0.069	0
2008-11	Cardboard – waxed	0.329	0.241	-0.089
2008-12	Cardboard – wet	1.022	0.542	-0.48
2008-13	Paper – photocopy paper	0.266	3.574	3.309
2008-14	Paper – magazines / catalogues	1.399	1.050	-0.349
2008-15	Paper – brochures and leaflets	0.617	0.566	-0.052
2008-16	Paper – books	0.575	0.911	0.336
2008-17	Paper – printing/writing (other office)	7.749	3.601	-4.148
2008-18	Paper – newsprint	3.478	1.353	-2.124
2008-19	Paper – brown Kraft paper	0.804	4.618 ^	3.813
2008-20	Paper – rolls of low grade	1.83	0.181	-1.65
2008-21	Paper – hand towels	6.577	4.933	-1.644
2008-22	Paper – contaminated (inc. tissue/excl. hand towels)	5.856	6.091	0.235
2008-23	Plastic – containers recyclable	4.794	4.84	0.047
2008-24	Plastic – other	2.079	4.598	2.519
2008-25	Plastic – film packaging (bags and film)	7.765	11.581	3.816
2008-26	Plastic – polystyrene foam (EPS)	0.474	0.155	-0.319

2008-27	Glass – containers	3.651	2.255	-1.397
2008-28	Glass – plate / non-pack. (other glass)	0.175	0.074	-0.101
2008-29	Metal (ferrous) – packaging	0.803	1.257	0.454
2008-30	Metal (ferrous) – non-packaging *	0.462	1.008	0.547
2008-31	Metal (non-ferrous) – packaging	0.738	0.805	0.067
2008-32	Metal (non-ferrous) – non-packaging *	0.354	0.381	0.027
2008-33	Textiles – carpet and underlay	0.05	0.296	0.246
2008-34	Textiles – cloth	4.19	4.092	-0.098
2008-35	Textiles – covered furniture	0.122	0	-0.122
2008-36	Textiles – mattresses *	0	0	0
2008-37	Textiles – other	0.103	1.152	1.049
2008-38	Rubber – tyres, tubes	0.03	0.018	-0.012
2008-39	Rubber – other	0.706	0.629	-0.077
2008-40	Electrical and electronic – TVs *	0.044	0.053	0.01
2008-41	Electrical - computers and peripherals	0.063	0.012	-0.051
2008-42	Electrical - toner cartridges	0.068	0.088	0.02
2008-43	Electrical and electronic – whitegoods *	0.001	0	-0.001
2008-44	Electrical - WEEE (other)	0.475	0.448	-0.026
2008-45	C&D – concrete	0.009	0	-0.009
2008-46	C&D – bricks	0.032	0.01	-0.022
2008-47	C&D – tiles	0.043	0.085	0.041
2008-48	C&D – rock/dirt/soil	1.405	0.307	-1.098
2008-49	C&D – asphalt	0.001	0	-0.001
2008-50	C&D – plasterboard	0.002	0.426	0.424
2008-51	Hazardous / special – chemicals, clinical and processing residuals	1.269	0.97	-0.299
2008-52	Hazardous / special – batteries	0.124	0.028	-0.096
2008-53	Hazardous / special – gas bottles *	0	0.004	0.004
2008-54	Hazardous / special – fluorescent tubes	0.014	0.013	-0.001
2008-55	Fines (<10mm)	3.283	0.257	-3.026
2008-56	Nappies *	2.098	4.103	2.005
2008-57	Other	1.12	2.226	1.107
Total		**100**	**100**	**-**

* Disaggregated from 2008 audit notes and using 2014 data to enable comparison with 2014 visual audit categories.

^ Includes 1.048 per cent of brown Kraft paper in the 2014 audit, plus 2.308 per cent of paper other packaging and 1.262 per cent of liquid paperboard which do not have an equivalent 2008 category. The material was placed into brown Kraft paper, given that these are all packaging types.

The data in Table 20 show that the main differences between the years are:

- Less in 2014
  - Food organics – unpackaged by almost seven percentage points.
  - Fines (<10mm) by approximately three percentage points.
  - Paper – newsprint by approximately two percentage points. A reduction in newsprint is to be expected with the changes to digital media away from printed materials. It may also be due to an increase in recycling.
  - Paper – rolls of low grade by approximately 1.7 percentage points
  - Paper – hand towels by approximately 1.6 percentage points
  - Glass – containers by approximately 1.4 percentage points. A reduction in glass containers is to be expected with the changes to the packaging materials for many food and drink items, with a trend towards plastics. Plastic containers increased slightly, but plastics have a lower bulk density than glass so a consistent increase would not be expected.
- More in 2014
  - Plastic film packaging (bags and film) increased by approximately 3.8 percentage points.
  - Paper – photocopy paper by approximately 3.3 percentage points. This is paper from office printers.
  - Plastic – other by approximately 2.5 percentage points.
  - Cardboard dry – packaging (incl. liquid paperboard) by approximately 1.3 percentage points.
  - Nappies by approximately two percentage points.

The results are subsequently analysed in more detail within this report based on recyclability and the visual auditing categories.

5.3 Consolidated composition using visual audit categories

Table 21 provides the comparison of consolidated material categories audited in 2008 and 2014. Figure 23 provides a chart of the results.

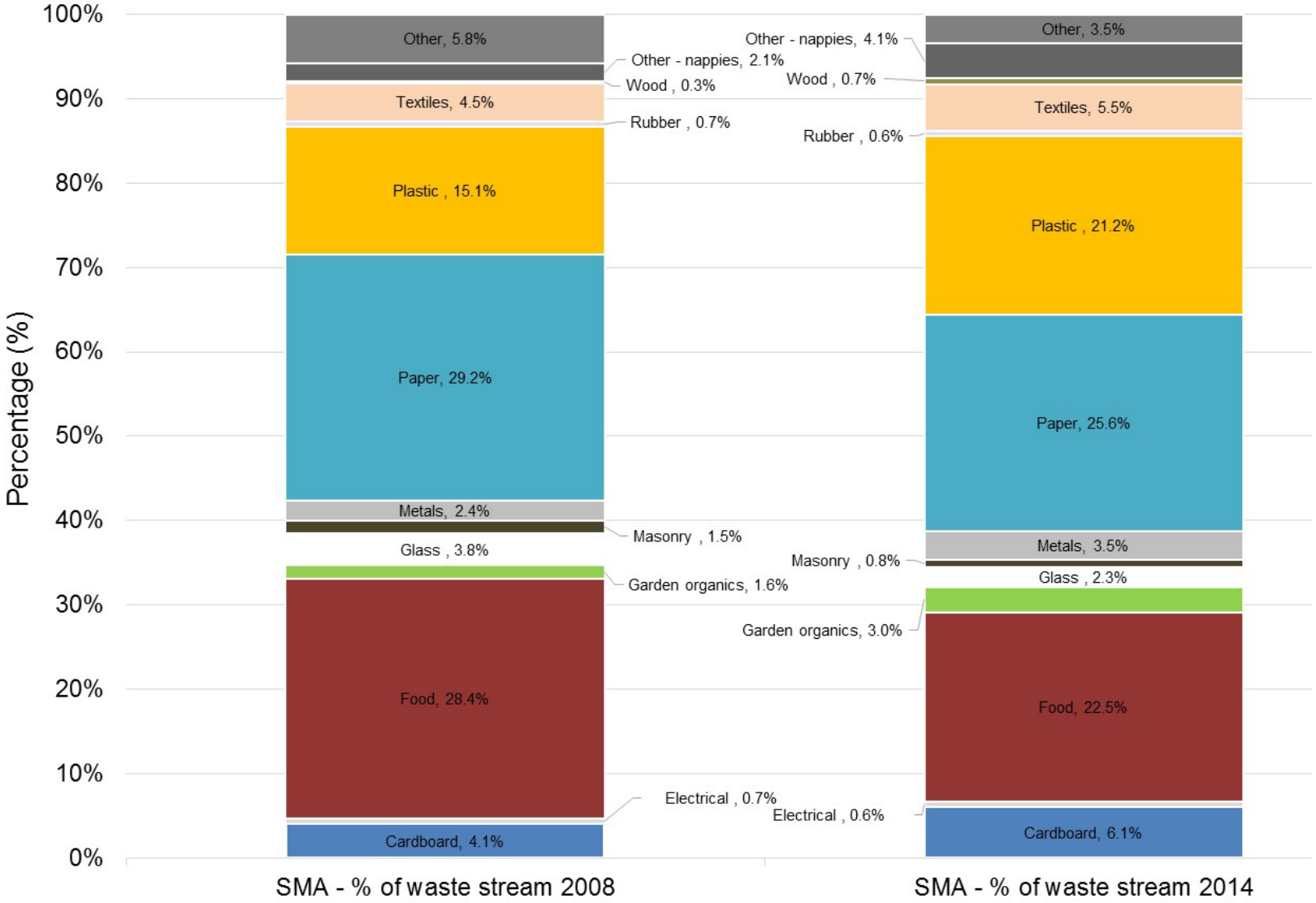
The data shows:

- A lower percentage of paper in 2014 (26.9 per cent) compared to 2008 (29.2 per cent).
- A lower percentage of food in 2014 (22.5 per cent) compared to 2008 (28.4 per cent).
- A higher percentage of plastic in 2014 (21.2 per cent) compared to 2008 (15.1 per cent).
- A higher percentage of cardboard in 2014 (4.8 per cent) compared to 2008 (4.1 per cent).
- A higher percentage of nappies in 2014 (4.1 per cent) compared to 2008 (2.1 per cent).

Table 21: Consolidated composition – visual audit categories – by year

Category (consolidated visual audit)	Percentage by weight		
	SMA 2008	SMA 2014	Difference
Cardboard	4.1	4.8	0.7
Electrical	0.7	0.6	0
Food	28.4	22.5	-5.9
Garden organics	1.6	3	1.5
Glass	3.8	2.3	-1.5
Masonry	1.5	0.8	-0.7
Metals	2.4	3.5	1.1
Paper	29.2	26.9	-2.3
Plastic	15.1	21.2	6.1
Rubber	0.7	0.6	-0.1
Textiles	4.5	5.5	1.1
Wood	0.3	0.7	0.4
Other – nappies	2.1	4.1	2
Other – other	5.8	3.5	-2.3
Total	**100**	**100**	**-**

Figure 23: Consolidated composition – visual audit categories – by year



5.4 Detailed composition using visual audit categories

Table 22 provides the comparison of 42 material categories audited in the 2014 visual audit with the corresponding results from the 2008 audit. Three decimal places are provided because a large number of categories were used with many present in small percentages.

The data shows:

- Less in 2014
  - Food organics – unpackaged by almost seven percentage points, with a 6.8 percentage point reduction.
  - Other including fines (<10mm) by approximately 2.2 percentage points which is largely due to having more sorting categories in 2014. In the detailed category analysis, fines decreased by approximately three percentage points, although other waste increased by approximately one percentage point, leading to the approximate two percentage point change in the consolidated visual audit category of other including fines (<10mm).
  - Paper – other by approximately 3.6 percentage points. This may also be linked to a reduction in the use of general note paper such as diaries and fewer envelopes for postage, or it may also be due to an increase in recycling. It is noted that photocopy paper increased by approximately 3.3 percentage points, but other office paper decreased.
  - Glass – packaging by approximately 1.4 percentage points. A reduction in glass containers is to be expected with the changes to the packaging materials for many food and drink items, with a trend towards plastics. As mentioned in the previous section, plastic containers (rigid packaging) increased slightly, but plastics have a lower bulk density than glass so a consistent increase would not be expected.
- More in 2014
  - Plastic film packaging (bags and film) by approximately 3.8 percentage points.
  - Paper – packaging increased by approximately 0.9 percentage points.
  - Plastic – other by almost 2.5 percentage points. This category includes all types of rigid plastics that are not packaging (containers) or EPS. It may include composites and household items.
  - Nappies by approximately two percentage points.

Table 22: Detailed composition – visual audit categories – by year

Category (detailed visual audit)		Percentage by weight		
		SMA 2008	SMA 2014	Difference
V-1	Cardboard dry – loose	2.731	4.023	1.292
V-2	Cardboard dry – compacted	0	0	0
V-3	Cardboard – wet strength/waxed – loose	1.351	2.044	0.693
V-4	Cardboard – wet strength/waxed – compacted	0	0	0
V-5	Electrical – computers and peripherals	0.063	0.012	-0.051
V-6	Electrical – other	0.543	0.536	-0.007
V-7	Electrical – TVs	0.044	0.053	0.01
V-8	Electrical – whitegoods	0.001	0	-0.001
V-9	Food organics – packaged (incl. liquids)	1.589	2.441	0.852
V-10	Food organics – unpackaged	26.781	20.016	-6.765
V-11	Garbage bags	-	-	-
V-12	Garden organics	1.567	3.025	1.457
V-13	Glass – non-packaging	0.175	0.074	-0.101
V-14	Glass – packaging	3.651	2.255	-1.397
V-15	Masonry materials – concrete/bricks	0.041	0.01	-0.032
V-16	Masonry materials – other	1.451	0.817	-0.634
V-17	Metal (ferrous) – packaging	0.803	1.257	0.454
V-18	Metal (ferrous) – non-packaging (low density)	0.462	1.008	0.547
V-19	Metal (ferrous) – non-packaging (high density)	0	0	0
V-20	Metal (non-ferrous) – packaging	0.738	0.805	0.067
V-21	Metal (non-ferrous) – non-packaging (low density)	0.354	0.381	0.027
V-22	Metal (non-ferrous) – non-packaging (high density)	0	0	0
V-23	Paper – office	8.015	7.176	-0.839
V-24	Paper – other	18.502	14.904	-3.598
V-25	Paper – packaging	2.635	3.536	0.902
V-26	Plastic – EPS foam	0.474	0.155	-0.319
V-27	Plastic – film packaging	7.765	11.581	3.816
V-28	Plastic – other	2.079	4.598	2.519
V-29	Plastic – rigid packaging	4.794	4.84	0.047
V-30	Rubber	0.736	0.647	-0.089
V-31	Textiles and leather	4.293	5.244	0.951
V-32	Textiles – carpet and underlay	0.05	0.296	0.246
V-33	Textiles – mattresses	0	0	0
V-34	Textiles – covered furniture	0.122	0	-0.122
V-35	Wood – treated/painted	0.132	0.465	0.333
V-36	Wood – treated/painted – pallets	0	0.007	0.007

V-37	Wood – untreated	0.141	0.191	0.049
V-38	Wood – untreated – pallets	0.009	0	-0.009
V-39	Other – batteries	0.124	0.028	-0.096
V-40	Other – gas bottles	0	0.004	0.004
V-41	Other – nappies	2.098	4.103	2.005
V-42	Other (including fines <10 mm)	5.686	3.467	-2.219
	Total	100	100	-

5.5 Recyclability composition

Table 23 provides the comparison of the consolidated recyclability of material categories in the garbage bags by year. Figure 30 provides a chart of the results. The data shows that:

- Recyclable now material has decreased by 2.4 percentage points.
- Recyclable in the future material has increased by 4.9 percentage points.
- There is a very low amount of material is not recyclable in both audits, but is lower in 2014.

Table 23: Recyclability consolidated composition – by year

Recyclability	**Percentage by weight**		
	SMA 2008	SMA 2014	Difference
Recyclable now	79.6	76.5	-3.1
Recyclable in future	14.6	20.0	5.4
Not recyclable	5.8	3.5	-2.3
Total	100	100	-

Figure 24: Recyclability consolidated composition – by year

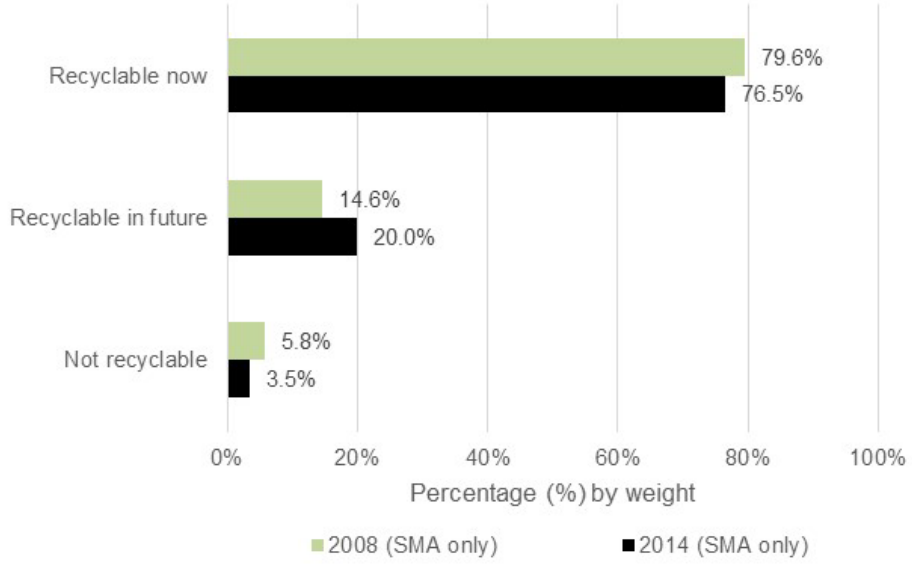


Table 24 provides the comparison of the detailed recyclability of material categories in the garbage bags by year. Figure 31 provides a chart of the results, presented without data labels due to the number of bars within the chart.

The data shows:

- Less in 2014
  - Compostable recyclable now material that can be composted at an AWT and other systems, which may reflect an increase in the use of food waste composting in 2014 compared to 2008.
  - Organic compostable food is 6.8 percentage points lower.
  - Organic compostable paper is 1.4 percentage points lower.
  - Paper commingled recyclable now material by 2.1 percentage points.
  - Glass commingled recyclable now material by 1.4 percentage points.
  - Masonry recyclable in future material by one percentage points.

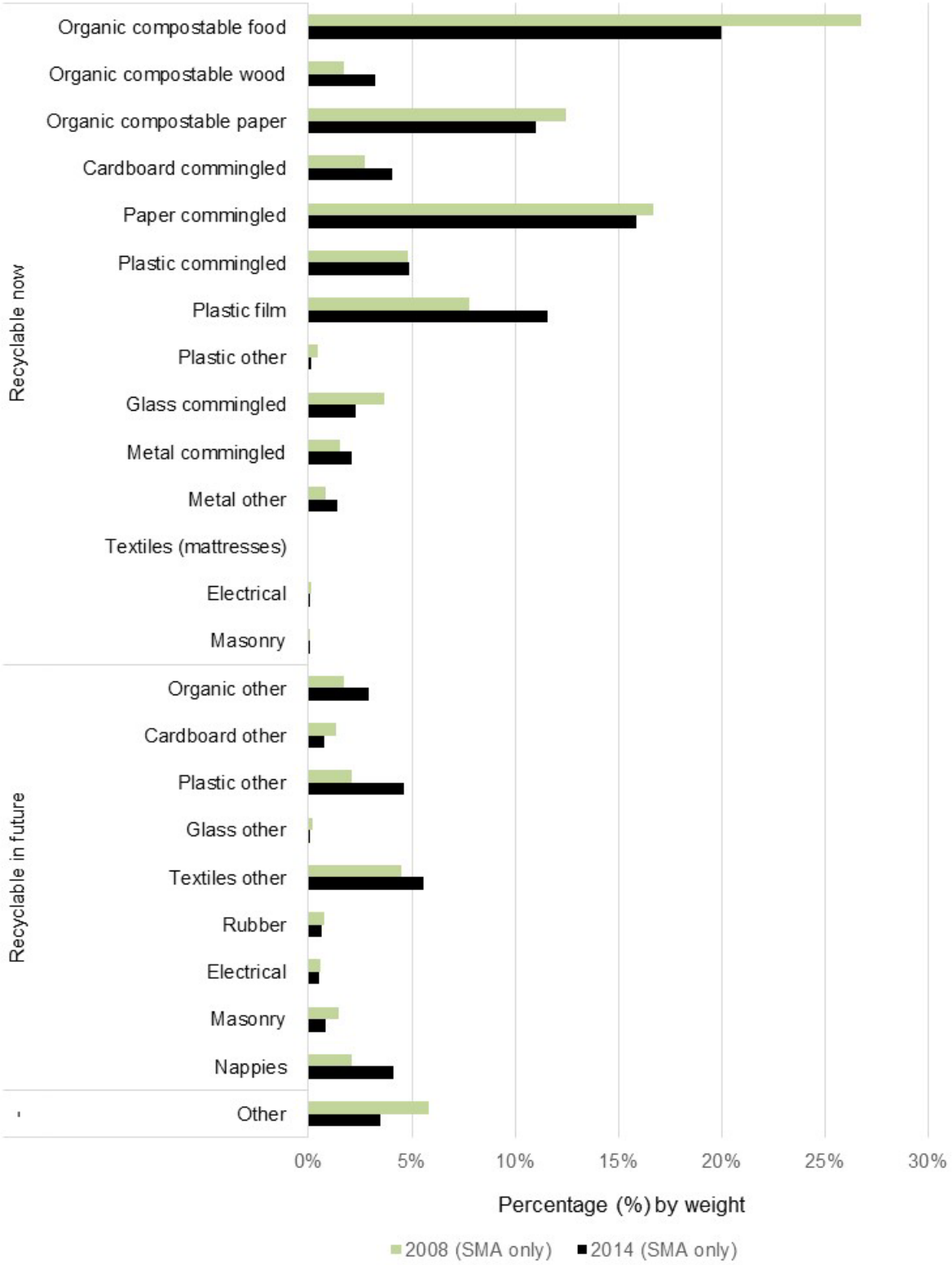
- More in 2014
  - Plastic film recyclable now material by 3.8 percentage points.
  - Cardboard commingled recyclable now material by 2.6 percentage points.
  - Plastic other recyclable in future material by 2.5 percentage points.
  - Nappies recyclable in future material by 1.8 percentage points.
  - Organic compostable wood recyclable now material by 1.5 percentage points.

Table 24: Recyclability detailed composition – by year

Recyclability category consolidated	Recyclability category detail	Percentage by weight		
		SMA 2008	SMA 2014	Difference
Recyclable now	Organic compostable food	26.78	20.02	-6.77
Recyclable now	Organic compostable wood	1.72	3.22	1.50
Recyclable now	Organic compostable paper	12.43	11.02	-1.41
Recyclable now	Cardboard commingled	2.73	4.02	1.29
Recyclable now	Paper commingled	16.72	15.85	-0.87
Recyclable now	Plastic commingled	4.79	4.84	0.05
Recyclable now	Plastic film	7.77	11.58	3.82
Recyclable now	Plastic other	0.47	0.15	-0.32
Recyclable now	Glass commingled	3.65	2.25	-1.4
Recyclable now	Metal commingled	1.54	2.06	0.52
Recyclable now	Metal other	0.82	1.39	0.57
Recyclable now	Textiles (mattresses)	0	0	0
Recyclable now	Electrical	0.11	0.07	-0.04
Recyclable now	Masonry	0.04	0.01	-0.03
Recyclable now	Sub-total *	**79.53**	**76.48**	**-3.05**
Recyclable in future	Organic other	1.72	2.91	1.19
Recyclable in future	Cardboard other	1.35	0.78	-0.57
Recyclable in future	Plastic other	2.08	4.6	2.52
Recyclable in future	Glass other	0.17	0.07	-0.1
Recyclable in future	Textiles other	4.46	5.54	1.08
Recyclable in future	Rubber	0.74	0.65	-0.09
Recyclable in future	Electrical	0.54	0.54	-0.01
Recyclable in future	Masonry	1.45	0.82	-0.63
Recyclable in future	Nappies	2.1	4.1	2
Recyclable in future	**Sub-total ***	**14.62**	**20.01**	**5.39**
Not recyclable	Other	5.81	3.5	-2.31
Not recyclable	**Sub-total**	**5.81**	**3.5**	**-2.31**
Total		**100**	**100**	**-**

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

Figure 25: Recyclability detailed composition – by year



5.6 Industry sectors

This section compares the industry sector composition of both consolidated and detailed material categories audited in 2008 and 2014. The comparison of detailed material categories is limited to the 42 categories audited in 2014 in the visual audit. In this section, all sectors are used from all regions from 2014, rather than only using the SMA sectors. This is because this section compares the sectors and not the regions.

5.6.1 Manufacturing

Visual audit categories

Tables 25 (consolidated categories) and 26 (detailed categories) provide the comparison by percentage of each material type used in the visual audit. In Table 26, three decimal places are provided because a large number of categories were used with many present in small percentages.

Table 25: Consolidated material categories – by year – manufacturing

Category (consolidated visual audit)	Percentage by weight		
	2008	2014	Difference
Cardboard	3.6	7.7	4
Electrical	1.2	0.9	-0.3
Food	21.7	18.3	-3.4
Garden organics	1.2	0	-1.1
Glass	2.4	1.5	-0.8
Masonry	0.4	0.5	0.1
Metals	1.6	3.8	2.2
Paper	30.2	23.5	-6.6
Plastic	13.7	29.7	16
Rubber	0.5	0.5	-0.1
Textiles	7	5.2	-1.9
Wood	0.4	0.7	0.4
Other – nappies	0.1	2.2	2.1
Other – other	16	5.4	-10.6
Total	**100**	**100**	**-**

The data shows that in 2014 compared to 2008 there is:

- Less in 2014
  - Other including fines (<10mm)
  - Food organics – unpackaged
  - Paper – packaging
  - Textiles and leather

- More in 2014
  - Plastic – film packaging
  - Plastic – other
  - Other – nappies

- Food organics packaged

Table 26: Detailed material categories – by year – manufacturing

Category (detailed visual audit)		Percentage by weight		
		2008	2014	Difference
V-1	Cardboard dry – loose	2.893	4.242	1.349
V-2	Cardboard dry – compacted	0	0	0
V-3	Cardboard – wet strength/waxed – loose	0.735	3.427	2.691
V-4	Cardboard – wet strength/waxed – compacted	0	0	0
V-5	Electrical – computers and peripherals	0.086	0.048	-0.038
V-6	Electrical – other	1.050	0.804	-0.246
V-7	Electrical – TVs	0.089	0.097	0.008
V-8	Electrical – whitegoods	0.002	0	-0.002
V-9	Food organics – packaged (incl. liquids)	1.087	2.873	1.786
V-10	Food organics – unpackaged	20.612	15.442	-5.171
V-11	Garbage bags	0	0	0
V-12	Garden organics	1.150	0.029	-1.122
V-13	Glass – non-packaging	0.124	0.011	-0.113
V-14	Glass – packaging	2.232	1.519	-0.713
V-15	Masonry materials – concrete/bricks	0	0	0
V-16	Masonry materials – other	0.369	0.452	0.083
V-17	Metal (ferrous) – packaging	0.503	0.722	0.219
V-18	Metal (ferrous) – non-packaging (low density)	0.289	1.434	1.144
V-19	Metal (ferrous) – non-packaging (high density)	0	0	0
V-20	Metal (non-ferrous) – packaging	0.561	0.778	0.217
V-21	Metal (non-ferrous) – non-packaging (low	0.269	0.875	0.605
V-22	Metal (non-ferrous) – non-packaging (high	0	0	0
V-23	Paper – office	8.891	7.024	-1.867
V-24	Paper – other	16.313	12.724	-3.589
V-25	Paper – packaging	4.964	3.772	-1.192
V-26	Plastic – EPS foam	0.590	0.164	-0.426
V-27	Plastic – film packaging	7.437	15.976	8.539
V-28	Plastic – other	2.123	8.667	6.544
V-29	Plastic – rigid packaging	3.583	4.942	1.359
V-30	Rubber	0.521	0.467	-0.055
V-31	Textiles and leather	7.027	5.014	-2.013
V-32	Textiles – carpet and underlay	0	0.154	0.154
V-33	Textiles – mattresses	0	0	0
V-34	Textiles – covered furniture	0.008	0	-0.008

V-35	Wood – treated/painted	0.223	0.677	0.454
V-36	Wood – treated/painted – pallets	0	0	0
V-37	Wood – untreated	0.112	0.045	-0.067
V-38	Wood – untreated – pallets	0.015	0	-0.015
V-39	Other – batteries	0.205	0.028	-0.177
V-40	Other – gas bottles	0	0	0
V-41	Other – nappies	0.125	2.216	2.091
V-42	Other (including fines <10 mm)	15.811	5.379	-10.432
Total		**100**	**100**	**-**

Recyclability categories

Table 27 provides the composition for the consolidated recyclability categories. Figure 26 provides a chart of the results. The data shows that:

- Approximately 73 per cent of garbage bag contents are recyclable now in 2014 based on the category analysis shown in Table 3, which is slightly more than in 2008.
- Approximately 22 per cent of garbage bag contents may be recyclable in the future in 2014 based on the category analysis shown in Table 3, which is substantially more than in 2008.
- There is a very low amount of material is not recyclable in 2014, which is substantially lower than in 2008.

Table 27: Recyclability consolidated composition – by year – manufacturing

Recyclability	**Percentage by weight**		
	2008	2014	Difference
Recyclable now	70.6	72.6	2.0
Recyclable in future	13.4	22.0	8.6
Not recyclable	16.0	5.4	-10.6
Total	**100**	**100**	**-**

Figure 26: Recyclability consolidated composition by year – manufacturing

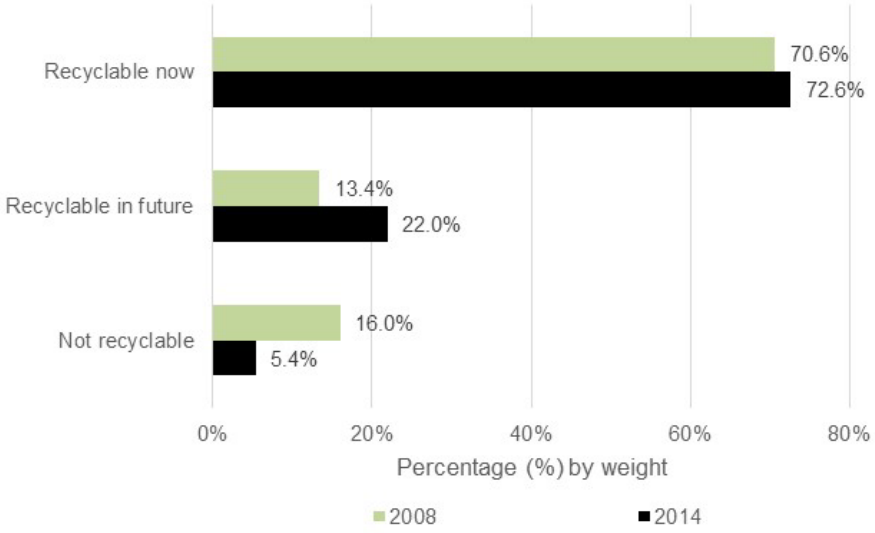

Recyclable now
70.6%
72.6%
Recyclable in future
13.4%
22.0%
Not recyclable
16.0%
5.4%
0%
20%
40%
60%
80%
Percentage (%) by weight
2008
2014

Table 28 provides the detailed composition for the detailed recyclability categories. Figure 27 provides a chart of the results, presented without data labels due to the number of bars within the chart. The data shows that:

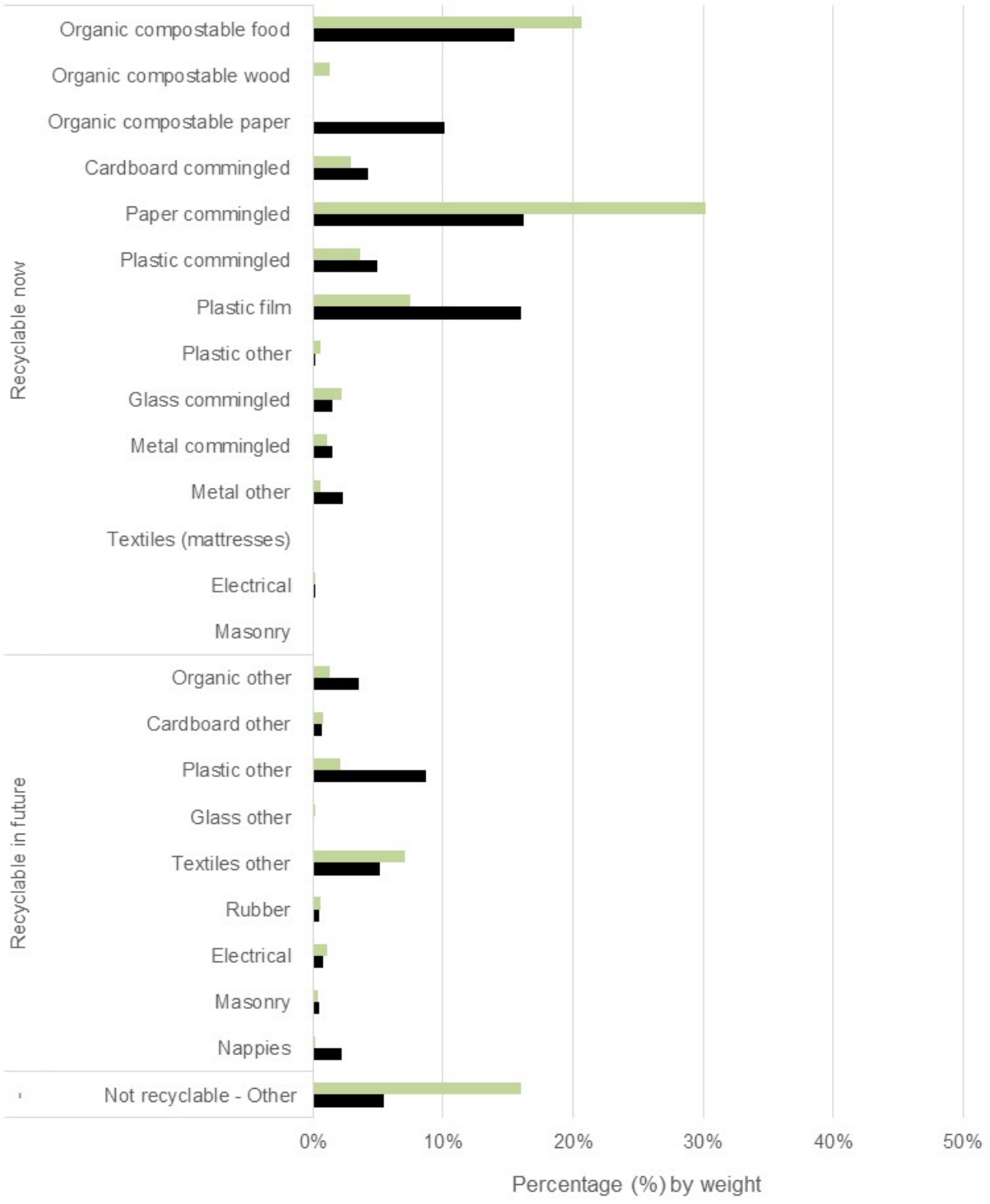
- Most recyclable now material overall in 2014 is paper commingled, plastic film, organic compostable food, organic compostable paper, plastic commingled and cardboard commingled respectively. There is substantially less paper commingled and organic compostable food in 2014 than in 2008, but more organic compostable paper and plastic film.
- Most recyclable in future material overall in 2014 is plastic other, textiles other, organic other and nappies respectively. There is less textiles other in 2014 than in 2008, but substantially more plastic other and more organic other and nappies.

Table 28: Recyclability detailed composition – by year – manufacturing

Recyclability category consolidated	Recyclability category detail	Percentage by weight		
		2008	2014	Difference
Recyclable now	Organic compostable food	20.61	15.44	-5.17
Recyclable now	Organic compostable wood	1.28	0.07	-1.2
Recyclable now	Organic compostable paper	0	10.09	10.09
Recyclable now	Cardboard commingled	2.89	4.24	1.35
Recyclable now	Paper commingled	30.17	16.21	-13.96
Recyclable now	Plastic commingled	3.58	4.94	1.36
Recyclable now	Plastic film	7.44	15.98	8.54
Recyclable now	Plastic other	0.59	0.16	-0.43
Recyclable now	Glass commingled	2.23	1.52	-0.71
Recyclable now	Metal commingled	1.06	1.5	0.44
Recyclable now	Metal other	0.56	2.31	1.75
Recyclable now	Textiles (mattresses)	0	0	0
Recyclable now	Electrical	0.18	0.14	-0.03
Recyclable now	Masonry	0	0	0
Recyclable now	Sub-total *	**70.59**	**72.60**	**2.01**
Recyclable in future	Organic other	1.31	3.55	2.24
Recyclable in future	Cardboard other	0.74	0.65	-0.08
Recyclable in future	Plastic other	2.12	8.67	6.54
Recyclable in future	Glass other	0.12	0.01	-0.11
Recyclable in future	Textiles other	7.03	5.17	-1.87
Recyclable in future	Rubber	0.52	0.47	-0.05
Recyclable in future	Electrical	1.05	0.8	-0.25
Recyclable in future	Masonry	0.37	0.45	0.08
Recyclable in future	Nappies	0.12	2.22	2.09
Recyclable in future	Sub-total *	**13.39**	**21.99**	**8.6**
Not recyclable	Other	16.02	5.41	-10.61
Not recyclable	Sub-total	**16.02**	**5.41**	**-10.61**
Total		100	100	100

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

Figure 27: Recyclability detailed composition by year – manufacturing



5.6.2 Retail trade

Visual audit categories

Tables 29 (consolidated categories) and 30 (detailed categories) provide the comparison by percentage of each material type used in the visual audit. In Table 30, three decimal places are provided because a large number of categories were used with many present in small percentages.

Table 29: Consolidated material categories – by year – retail trade

Category (consolidated visual audit)	Percentage by weight		
	2008	2014	Difference
Cardboard	3.7	5.3	1.6
Electrical	1	0.6	-0.4
Food	36.4	29.5	-6.9
Garden organics	1.5	1	-0.5
Glass	4.9	4.4	-0.5
Masonry	0.4	0.6	0.2
Metals	1.8	3.6	1.8
Paper	23.9	25.7	1.8
Plastic	15.1	20.9	5.9
Rubber	0.5	0.5	0
Textiles	8.9	3.7	-5.3
Wood	0.2	0.4	0.2
Other – nappies	0.3	1.1	0.8
Other – other	1.5	2.9	1.4
Total	**100**	**100**	**-**

The data shows that in 2014 compared to 2008 there is:

- Less in 2014
  - Food organics unpackaged
  - Textiles and leather
  - Paper – packaging
  - Electrical – other

- More in 2014
  - Plastic – film packaging
  - Paper – office
  - Other including fines
  - Cardboard dry – loose

Table 30: Detailed material categories – by year – retail trade

Category (detailed visual audit)		Percentage by weight		
		2008	2014	Difference
V-1	Cardboard dry – loose	2.862	4.378	1.516
V-2	Cardboard dry – compacted	0	0	0
V-3	Cardboard – wet strength/waxed – loose	0.844	0.942	0.098
V-4	Cardboard – wet strength/waxed – compacted	0	0	0
V-5	Electrical – computers and peripherals	0	0.001	0.001
V-6	Electrical – other	0.931	0.527	-0.404
V-7	Electrical – TVs	0.086	0.065	-0.02
V-8	Electrical – whitegoods	0.001	0.004	0.003
V-9	Food organics – packaged (incl. liquids)	2.403	2.307	-0.096
V-10	Food organics – unpackaged	33.968	27.165	-6.804
V-11	Garbage bags	0	0	0
V-12	Garden organics	1.481	1.003	-0.478
V-13	Glass – non-packaging	0.156	0.061	-0.095
V-14	Glass – packaging	4.729	4.305	-0.423
V-15	Masonry materials – concrete/bricks	0.21	0	-0.21
V-16	Masonry materials – other	0.16	0.562	0.402
V-17	Metal (ferrous) – packaging	0.561	1.144	0.583
V-18	Metal (ferrous) – non-packaging (low density)	0.323	1.083	0.761
V-19	Metal (ferrous) – non-packaging (high density)	0	0	0
V-20	Metal (non-ferrous) – packaging	0.617	0.954	0.337
V-21	Metal (non-ferrous) – non-packaging (low density)	0.296	0.4	0.104
V-22	Metal (non-ferrous) – non-packaging (high density)	0	0	0
V-23	Paper – office	7.352	5.833	-1.519
V-24	Paper – other	14.026	17.295	3.269
V-25	Paper – packaging	2.488	2.547	0.059
V-26	Plastic – EPS foam	0.405	0.203	-0.203
V-27	Plastic – film packaging	8.394	11.846	3.452
V-28	Plastic – other	2.062	3.569	1.507
V-29	Plastic – rigid packaging	4.194	5.305	1.112
V-30	Rubber	0.521	0.474	-0.047
V-31	Textiles and leather	8.918	3.665	-5.253
V-32	Textiles – carpet and underlay	0.017	0	-0.017
V-33	Textiles – mattresses	0	0	0
V-34	Textiles – covered furniture	0	0	0

V-35	Wood – treated/painted	0.081	0.399	0.318
V-36	Wood – treated/painted – pallets	0	0	0
V-37	Wood – untreated	0.088	0.006	-0.082
V-38	Wood – untreated – pallets	0.025	0	-0.025
V-39	Other – batteries	0.299	0.006	-0.293
V-40	Other – gas bottles	0	0	0
V-41	Other – nappies	0.298	1.056	0.758
V-42	Other (including fines <10 mm)	1.201	2.895	1.694
Total		**100**	**100**	**-**

Recyclability categories

Table 31 provides the composition for the consolidated recyclability categories. Figure 28 provides a chart of the results. The data shows that:

- Approximately 84 per cent of garbage bag contents are recyclable now in 2014 based on the category analysis shown in Table 3, which is slightly more than in 2008.
- Approximately 13 per cent of garbage bag contents may be recyclable in the future in 2014 based on the category analysis shown in Table 3, which is slightly less than in 2008.There is a very low amount of material is not recyclable in 2014, which is slightly higher than in 2008.

Table 31: Recyclability consolidated composition – by year – retail trade

Recyclability	**Percentage by weight**		
	2008	2014	Difference
Recyclable now	82.1	84.0	1.9
Recyclable in future	16.4	13.1	-3.3
Not recyclable	1.5	2.9	1.4
Total	**100**	**100**	**-**

Figure 28: Recyclability consolidated composition – by year – retail trade

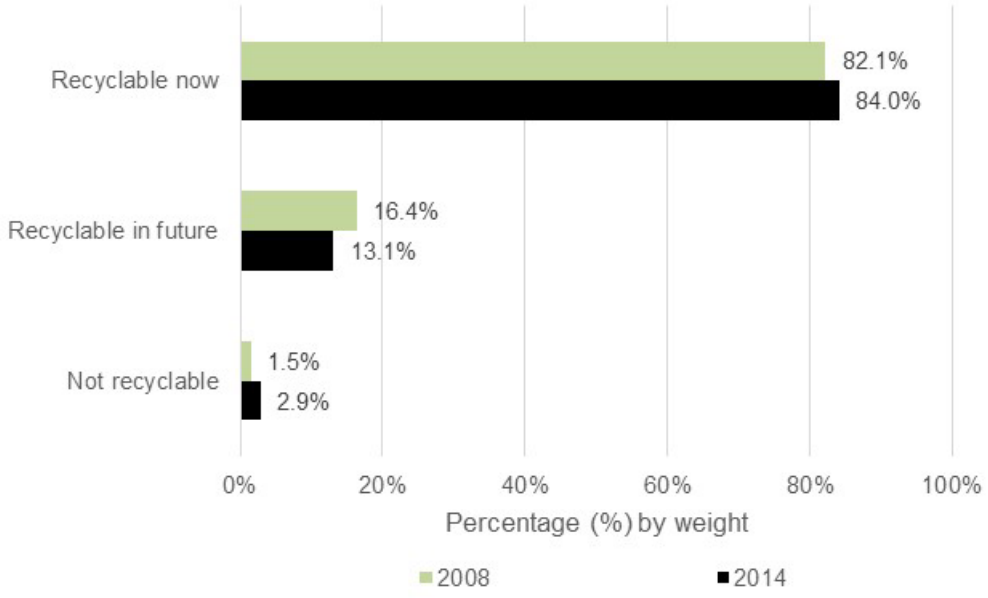

Recyclable now
82.1%
84.0%
Recyclable in future
16.4%
13.1%
Not recyclable
1.5%
2.9%
0%
20%
40%
60%
80%
100%
Percentage (%) by weight
2008
2014

Table 32 provides the detailed composition for the detailed recyclability categories. Figure 29 provides a chart of the results, presented without data labels due to the number of bars within the chart. The data shows that:

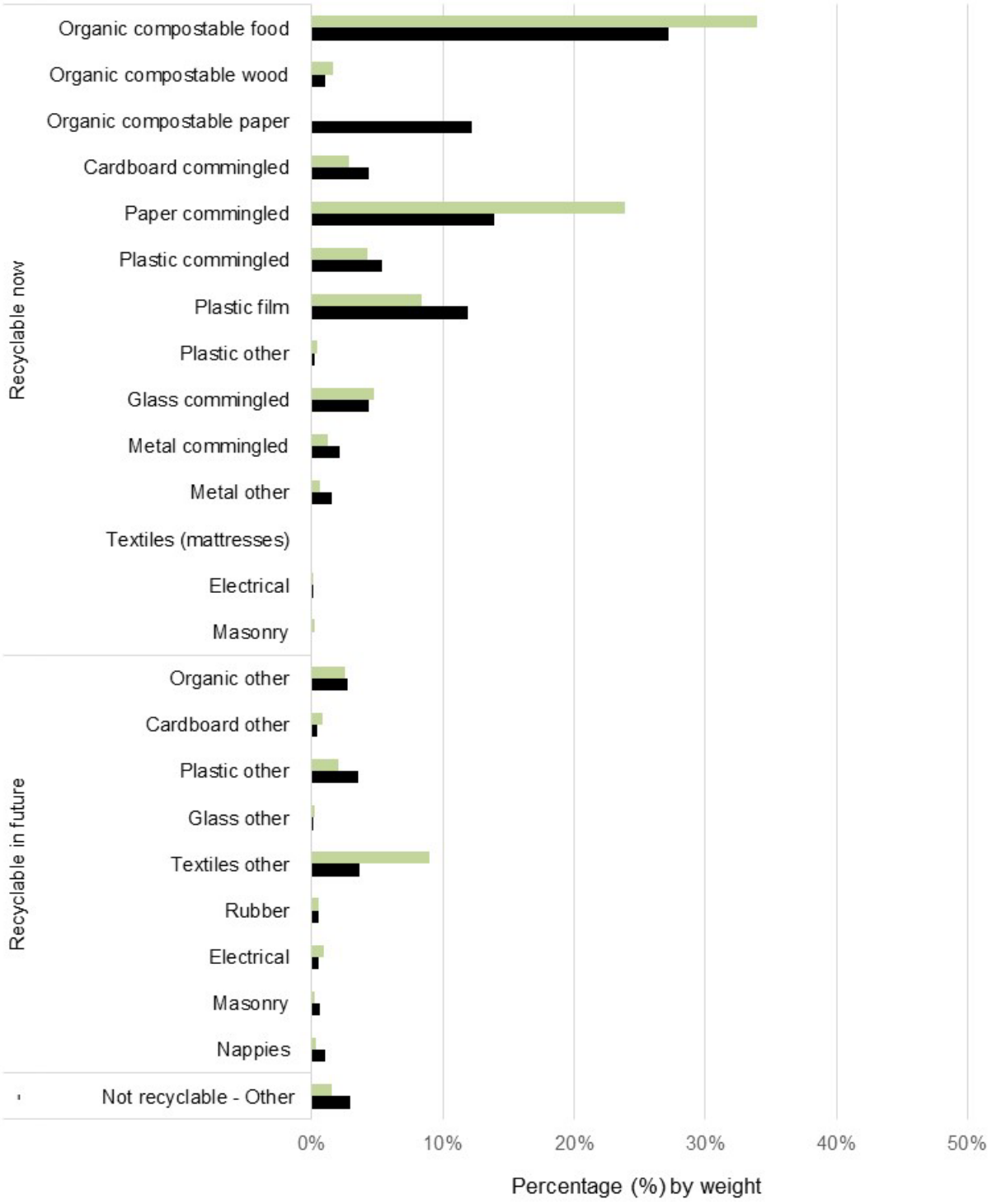
- Most recyclable now material overall in 2014 is organic compostable food, paper commingled, organic compostable paper, plastic film, plastic commingled and cardboard commingled respectively. There is substantially less paper commingled and organic compostable food in 2014 than in 2008, but substantially more organic compostable paper and more plastic film.
- Most recyclable in future material overall in 2014 is textiles other, plastic other, organic other and nappies respectively. There is substantially less textiles other in 2014 than in 2008, but more plastic other.

Table 32: Recyclability detailed composition – by year – retail trade

Recyclability category consolidated	Recyclability category detail	Percentage by weight		
		2008	2014	Difference
Recyclable now	Organic compostable food	33.97	27.16	-6.8
Recyclable now	Organic compostable wood	1.59	1.01	-0.59
Recyclable now	Organic compostable paper	0	12.23	12.23
Recyclable now	Cardboard commingled	2.86	4.38	1.52
Recyclable now	Paper commingled	23.87	13.95	-9.92
Recyclable now	Plastic commingled	4.19	5.31	1.11
Recyclable now	Plastic film	8.39	11.85	3.45
Recyclable now	Plastic other	0.41	0.2	-0.2
Recyclable now	Glass commingled	4.73	4.31	-0.42
Recyclable now	Metal commingled	1.18	2.10	0.92
Recyclable now	Metal other	0.62	1.48	0.86
Recyclable now	Textiles (mattresses)	0	0	0
Recyclable now	Electrical	0.09	0.07	-0.02
Recyclable now	Masonry	0.21	0	-0.21
Recyclable now	**Sub-total ***	**82.11**	**84.03**	**1.93**
Recyclable in future	Organic other	2.48	2.71	0.22
Recyclable in future	Cardboard other	0.84	0.45	-0.4
Recyclable in future	Plastic other	2.06	3.57	1.51
Recyclable in future	Glass other	0.16	0.06	-0.09
Recyclable in future	Textiles other	8.94	3.66	-5.27
Recyclable in future	Rubber	0.52	0.47	-0.05
Recyclable in future	Electrical	0.93	0.53	-0.4
Recyclable in future	Masonry	0.16	0.56	0.4
Recyclable in future	Nappies	0.3	1.06	0.76
Recyclable in future	**Sub-total ***	**16.39**	**13.07**	**-3.33**
Not recyclable	Other	1.5	2.9	1.4
Not recyclable	**Sub-total**	**1.5**	**2.9**	**1.4**
Total		**100**	**100**	**100**

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

Figure 29: Recyclability detailed composition by year – retail trade



5.6.3 Accommodation, cafes and restaurants

Visual audit categories

Tables 33 (consolidated categories) and 34 (detailed categories) provide the comparison by percentage of each material type used in the visual audit. In Table 34, three decimal places are provided because a large number of categories were used with many present in small percentages.

Table 33: Consolidated material categories – by year – accommodation, cafes and restaurants

Category (consolidated visual audit)	Percentage by weight		
	2008	2014	Difference
Cardboard	4.6	7.1	2.5
Electrical	0.4	0.2	-0.2
Food	29.1	35.7	6.7
Garden organics	0	0.9	0.9
Glass	6.1	3.8	-2.3
Masonry	0.8	0.6	-0.2
Metals	2	3.1	1.1
Paper	27.1	23.7	-3.4
Plastic	18.5	18.8	0.3
Rubber	0.3	0.3	0
Textiles	1.2	0.9	-0.3
Wood	0.7	0	-0.7
Other – nappies	0.5	2.2	1.7
Other – other	8.8	2.8	-6
Total	**100**	**100**	**-**

The data shows that in 2014 compared to 2008 there is:

- Less in 2014
  - Other including fines (<10mm)
  - Paper – packaging
  - Paper – office
  - Glass packaging

- More in 2014
  - Food organics unpackaged
  - Paper – other
  - Other – nappies
  - Metal (ferrous) – packaging

Table 34: Detailed material categories – by year – accommodation, cafes and restaurants

Category (detailed visual audit)		Percentage by weight		
		2008	2014	Difference
V-1	Cardboard dry – loose	2.313	3.100	0.787
V-2	Cardboard dry – compacted	0	0	0
V-3	Cardboard – wet strength/waxed – loose	2.276	4.007	1.732
V-4	Cardboard – wet strength/waxed – compacted	0	0	0
V-5	Electrical – computers and peripherals	0	0	0
V-6	Electrical – other	0.346	0.128	-0.218
V-7	Electrical – TVs	0.032	0.024	-0.008
V-8	Electrical – whitegoods	0.001	0	-0.001
V-9	Food organics – packaged (incl. liquids)	1.325	1.836	0.511
V-10	Food organics – unpackaged	27.773	33.914	6.14
V-11	Garbage bags	0	0	0
V-12	Garden organics	0.001	0.862	0.861
V-13	Glass – non-packaging	0.028	0	-0.028
V-14	Glass – packaging	6.043	3.775	-2.268
V-15	Masonry materials – concrete/bricks	0	0	0
V-16	Masonry materials – other	0.774	0.559	-0.215
V-17	Metal (ferrous) – packaging	0.746	2.189	1.443
V-18	Metal (ferrous) – non-packaging (low density)	0.429	0.046	-0.383
V-19	Metal (ferrous) – non-packaging (high density)	0	0	0
V-20	Metal (non-ferrous) – packaging	0.58	0.754	0.174
V-21	Metal (non-ferrous) – non-packaging (low density)	0.279	0.108	-0.171
V-22	Metal (non-ferrous) – non-packaging (high density)	0	0	0
V-23	Paper – office	5.097	1.960	-3.137
V-24	Paper – other	16.948	16.387	-0.562
V-25	Paper – packaging	5.033	5.327	0.294
V-26	Plastic – EPS foam	0.21	0.079	-0.131
V-27	Plastic – film packaging	11.685	11.15	-0.534
V-28	Plastic – other	1.479	1.915	0.436
V-29	Plastic – rigid packaging	5.131	5.667	0.536
V-30	Rubber	0.3	0.320	0.02
V-31	Textiles and leather	1.101	0.795	-0.306
V-32	Textiles – carpet and underlay	0	0.072	0.072
V-33	Textiles – mattresses	0	0	0
V-34	Textiles – covered furniture	0.054	0	-0.054
V-35	Wood – treated/painted	0.393	0.023	-0.37
V-36	Wood – treated/painted – pallets	0	0	0

V-37	Wood – untreated	0.29	0.003	-0.287
V-38	Wood – untreated – pallets	0.005	0	-0.005
V-39	Other – batteries	0.08	0.052	-0.027
V-40	Other – gas bottles	0	0	0
V-41	Other – nappies	0.497	2.212	1.715
V-42	Other (including fines <10 mm)	8.751	2.736	-6.015
Total		**100**	**100**	**-**

Recyclability categories

Table 35 provides the composition for the consolidated recyclability categories. Figure 30 provides a chart of the results. The data shows that:

- Approximately 87 per cent of garbage bag contents are recyclable now in 2014 based on the category analysis shown in Table 3, which is slightly more than in 2008.
- Approximately 11 per cent of garbage bag contents may be recyclable in the future in 2014 based on the category analysis shown in Table 3, which is slightly more than in 2008.
- There is a very low amount of material is not recyclable in 2014, which is substantially less than in 2008.

Table 35: Recyclability consolidated composition – by year – accommodation, cafes and restaurants

Recyclability	**Percentage by weight**		
	2008	2014	Difference
Recyclable now	82.6	86.6	4
Recyclable in future	8.6	10.6	2
Not recyclable	8.8	2.8	-6
Total	**100**	**100**	**-**

* Rounding results in a small variation from a zero total.

Figure 30: Recyclability consolidated composition – by year – accommodation, cafes and restaurants

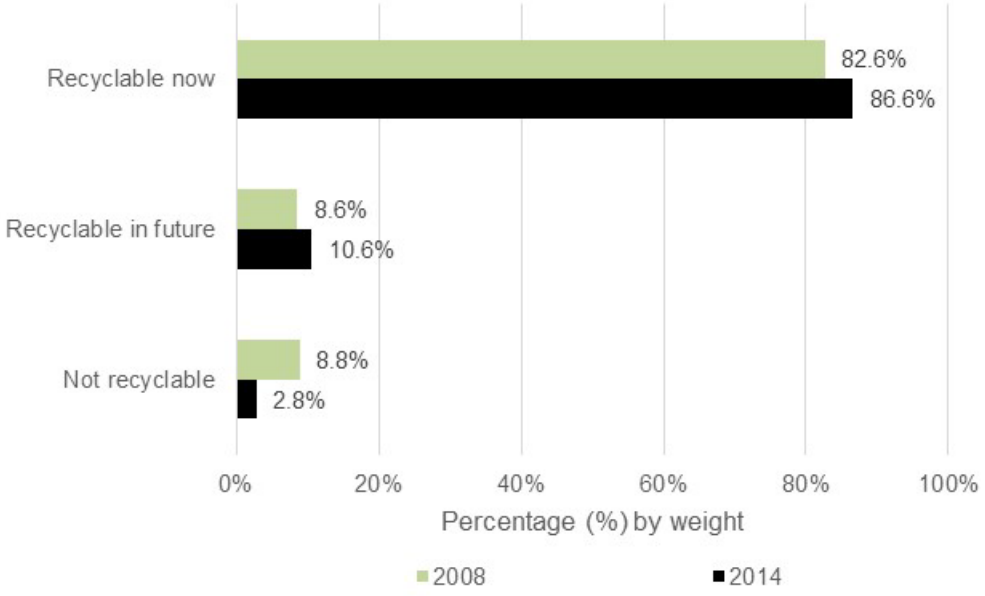

Recyclable now
82.6%
86.6%
Recyclable in future
8.6%
10.6%
Not recyclable
8.8%
2.8%
0%
20%
40%
60%
80%
100%
Percentage (%) by weight
2008
2014

Table 36 provides the detailed composition for the detailed recyclability categories. Figure 35 provides a chart of the results, presented without data labels due to the number of bars within the chart. The data shows that:

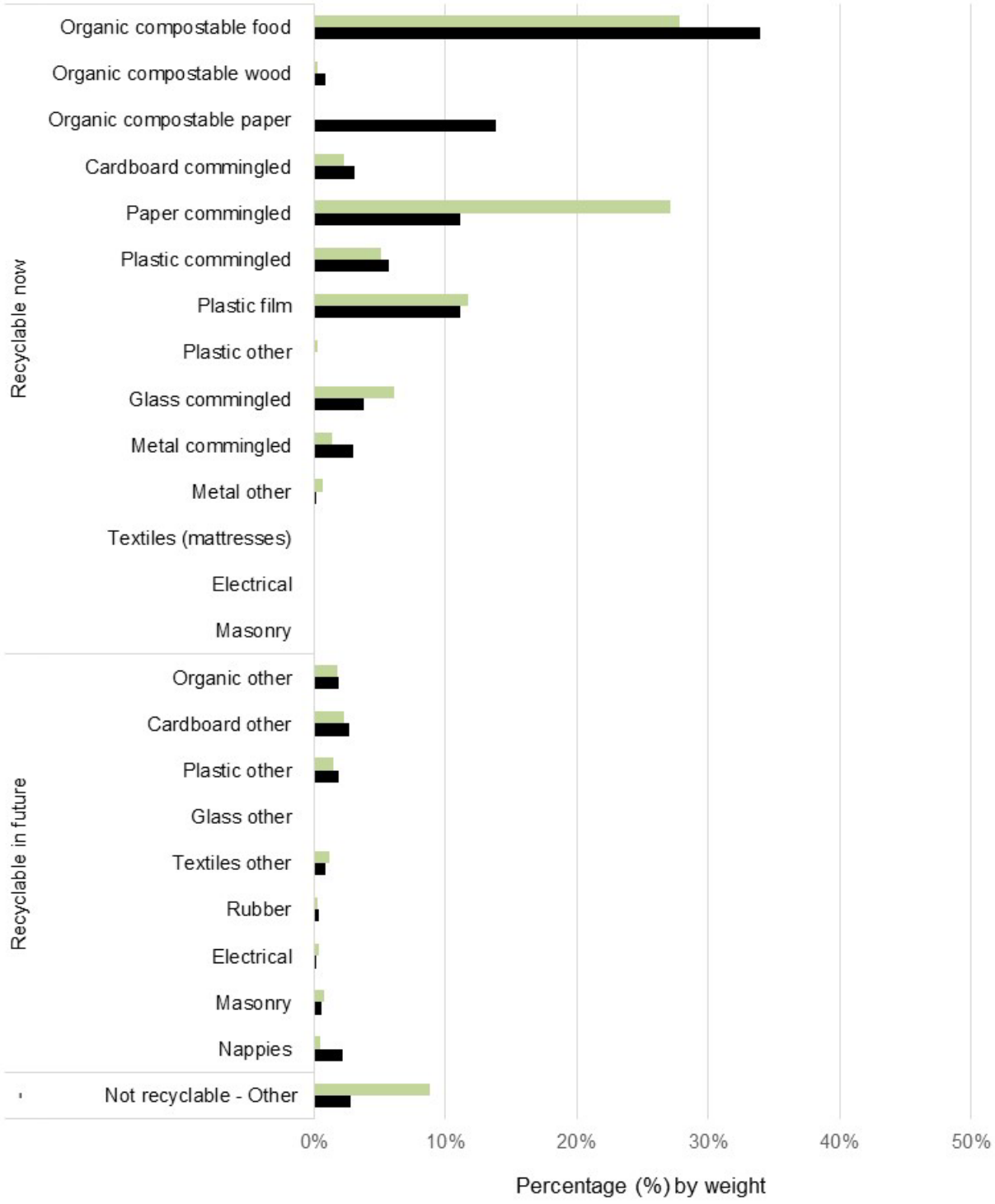
- Most 'recyclable now' material in 2014 is organic compostable food, organic compostable paper, plastic film, paper commingled, plastic commingled and glass commingled, respectively. There is substantially less paper commingled than in 2008, but substantially more organic compostable paper and organic compostable food.
- Most 'recyclable in future' material overall in 2014 is cardboard other, nappies, plastic other and organic other respectively. Most materials are generally stable in 2014 than in 2008, except there is more nappies.

Table 36: Recyclability detailed composition – by year – accommodation, cafes and restaurants

Recyclability category consolidated	Recyclability category detail	Percentage by weight		
		2008	2014	Difference
Recyclable now	Organic compostable food	27.77	33.91	6.14
Recyclable now	Organic compostable wood	0.3	0.86	0.57
Recyclable now	Organic compostable paper	0	13.83	13.83
Recyclable now	Cardboard commingled	2.31	3.1	0.79
Recyclable now	Paper commingled	27.08	11.15	-15.93
Recyclable now	Plastic commingled	5.13	5.67	0.54
Recyclable now	Plastic film	11.68	11.15	-0.53
Recyclable now	Plastic other	0.21	0.08	-0.13
Recyclable now	Glass commingled	6.04	3.77	-2.27
Recyclable now	Metal commingled	1.33	2.94	1.62
Recyclable now	Metal other	0.71	0.15	-0.55
Recyclable now	Textiles (mattresses)	0	0	0
Recyclable now	Electrical	0.03	0.02	-0.01
Recyclable now	Masonry	0	0	0
Recyclable now	**Sub-total ***	**82.60**	**86.65**	**4.05**
Recyclable in future	Organic other	1.72	1.86	0.14
Recyclable in future	Cardboard other	2.28	2.70	0.42
Recyclable in future	Plastic other	1.48	1.91	0.44
Recyclable in future	Glass other	0.03	0	-0.03
Recyclable in future	Textiles other	1.15	0.87	-0.29
Recyclable in future	Rubber	0.3	0.32	0.02
Recyclable in future	Electrical	0.35	0.13	-0.22
Recyclable in future	Masonry	0.77	0.56	-0.21
Recyclable in future	Nappies	0.5	2.21	1.72
Recyclable in future	**Sub-total ***	**8.57**	**10.56**	**1.99**
Not recyclable	Other	8.83	2.79	-6.04
Not recyclable	**Sub-total**	**8.83**	**2.79**	**-6.04**
	Total	100	100	100

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

Figure 31: Recyclability detailed composition by year – accommodation, cafes and restaurants



5.6.4 Healthcare and social assistance (charity)

Visual audit categories

Tables 37 (consolidated categories) and 38 (detailed categories) provide the comparison by percentage of each material type used in the visual audit. In Table 38, three decimal places are provided because a large number of categories were used with many present in small percentages.

Table 37: Consolidated material categories – by year – healthcare and social assistance

Category (consolidated visual audit)	Percentage by weight		
	2008	2014	Difference
Cardboard	4.4	3.1	-1.3
Electrical	0.3	0.9	0.6
Food	26.7	19.6	-7.1
Garden organics	4.7	0.9	-3.9
Glass	2.0	1.5	-0.5
Masonry	0.1	0.2	0.1
Metals	2.6	2.2	-0.4
Paper	24.3	23.2	-1.1
Plastic	13.2	13.8	0.6
Rubber	1.5	1.7	0.2
Textiles	4.8	13.9	9.1
Wood	0.2	0.7	0.5
Other – nappies	12.8	15.1	2.2
Other – other	2.4	3.2	0.9
Total	**100**	**100**	**-**

The data shows that in 2014 compared to 2008 there is:

- Less in 2014
  - Food organics – unpackaged
  - Garden organics
  - Cardboard – wet strength/waxed – loose
  - Plastic – rigid packaging

- More in 2014
  - Textiles and leather
  - Other – nappies
  - Plastic – other
  - Food organics – packaged

Table 38: Detailed material categories – by year – healthcare and social assistance

Category (detailed visual audit)		Percentage by weight		
		2008	2014	Difference
V-1	Cardboard dry – loose	2.253	2.32	0.067
V-2	Cardboard dry – compacted	0	0	0
V-3	Cardboard – wet strength/waxed – loose	2.159	0.815	-1.344
V-4	Cardboard – wet strength/waxed – compacted	0	0	0
V-5	Electrical – computers and peripherals	0.118	0.01	-0.108
V-6	Electrical – other	0.188	0.884	0.696
V-7	Electrical – TVs	0.006	0	-0.006
V-8	Electrical – whitegoods	0	0	0
V-9	Food organics – packaged (incl. liquids)	1.275	2.623	1.348
V-10	Food organics – unpackaged	25.428	17.026	-8.402
V-11	Garbage bags	0	0	0
V-12	Garden organics	4.74	0.854	-3.886
V-13	Glass – non-packaging	0.246	0.116	-0.13
V-14	Glass – packaging	1.718	1.368	-0.35
V-15	Masonry materials – concrete/bricks	0.013	0	-0.013
V-16	Masonry materials – other	0.081	0.197	0.116
V-17	Metal (ferrous) – packaging	1.005	0.842	-0.162
V-18	Metal (ferrous) – non-packaging (low density)	0.578	0.624	0.046
V-19	Metal (ferrous) – non-packaging (high density)	0	0	0
V-20	Metal (non-ferrous) – packaging	0.672	0.574	-0.097
V-21	Metal (non-ferrous) – non-packaging (low density)	0.322	0.13	-0.192
V-22	Metal (non-ferrous) – non-packaging (high density)	0	0	0
V-23	Paper – office	6.611	3.370	-3.241
V-24	Paper – other	16.445	18.758	2.313
V-25	Paper – packaging	1.233	1.07	-0.162
V-26	Plastic – EPS foam	0.509	0.068	-0.441
V-27	Plastic – film packaging	6.44	7.172	0.732
V-28	Plastic – other	1.855	3.422	1.568
V-29	Plastic – rigid packaging	4.365	3.129	-1.236
V-30	Rubber	1.49	1.674	0.184
V-31	Textiles and leather	4.835	12.45	7.615
V-32	Textiles – carpet and underlay	0	1.481	1.481
V-33	Textiles – mattresses	0	0	0
V-34	Textiles – covered furniture	0.009	0	-0.009
V-35	Wood – treated/painted	0.014	0.72	0.706
V-36	Wood – treated/painted – pallets	0	0	0

V-37	Wood – untreated	0.195	0.005	-0.19
V-38	Wood – untreated – pallets	0	0	0
V-39	Other – batteries	0.026	0.017	-0.009
V-40	Other – gas bottles	0	0.018	0.018
V-41	Other – nappies	12.839	15.084	2.245
V-42	Other (including fines <10 mm)	2.333	3.179	0.845
Total		**100**	**100**	**-**

Recyclability categories

Table 39 provides the composition for the consolidated recyclability categories. Figure 36 provides a chart of the results. The data shows that:

- Approximately 58 per cent of garbage bag contents are recyclable now in 2014 based on the category analysis shown in Table 3, which is substantially less than in 2008.
- Approximately 39 per cent of garbage bag contents may be recyclable in the future in 2014 based on the category analysis shown in Table 3, which is substantially more than in 2008.
- There is a very low amount of material is not recyclable in 2014, which is slightly more than in 2008.

Table 39: Recyclability consolidated composition – by year – healthcare and social assistance

Recyclability	**Percentage by weight**		
	2008	2014	Difference
Recyclable now	72.6	57.9	-14.7
Recyclable in future	25.0	38.9	13.9
Not recyclable	2.4	3.2	0.8
Total	**100**	**100**	**-**

Figure 32: Recyclability consolidated composition – by year – healthcare and social assistance

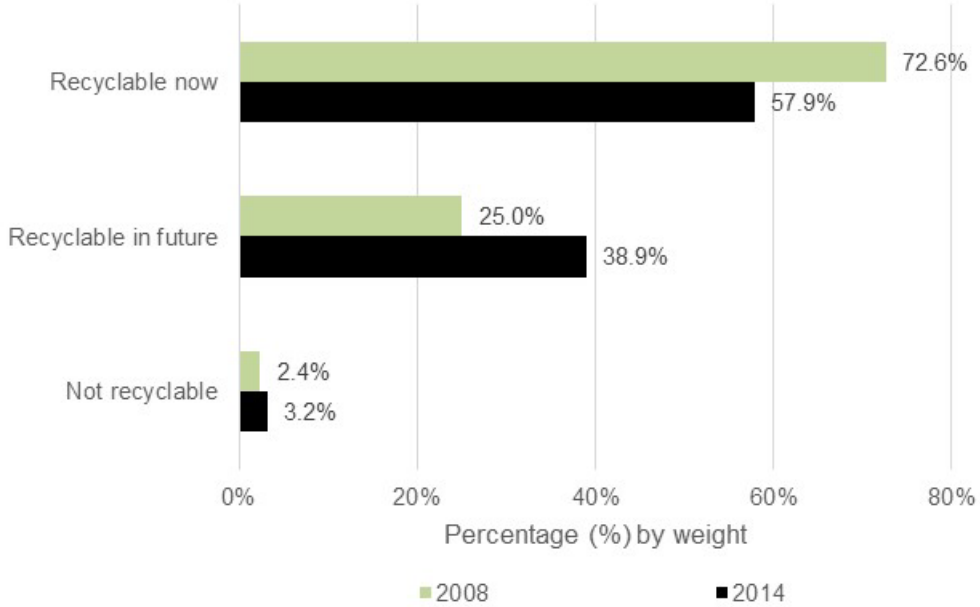


Table 40 provides the detailed composition for the detailed recyclability categories. Figure 37 provides a chart of the results, presented without data labels due to the number of bars within the chart. The data shows that:

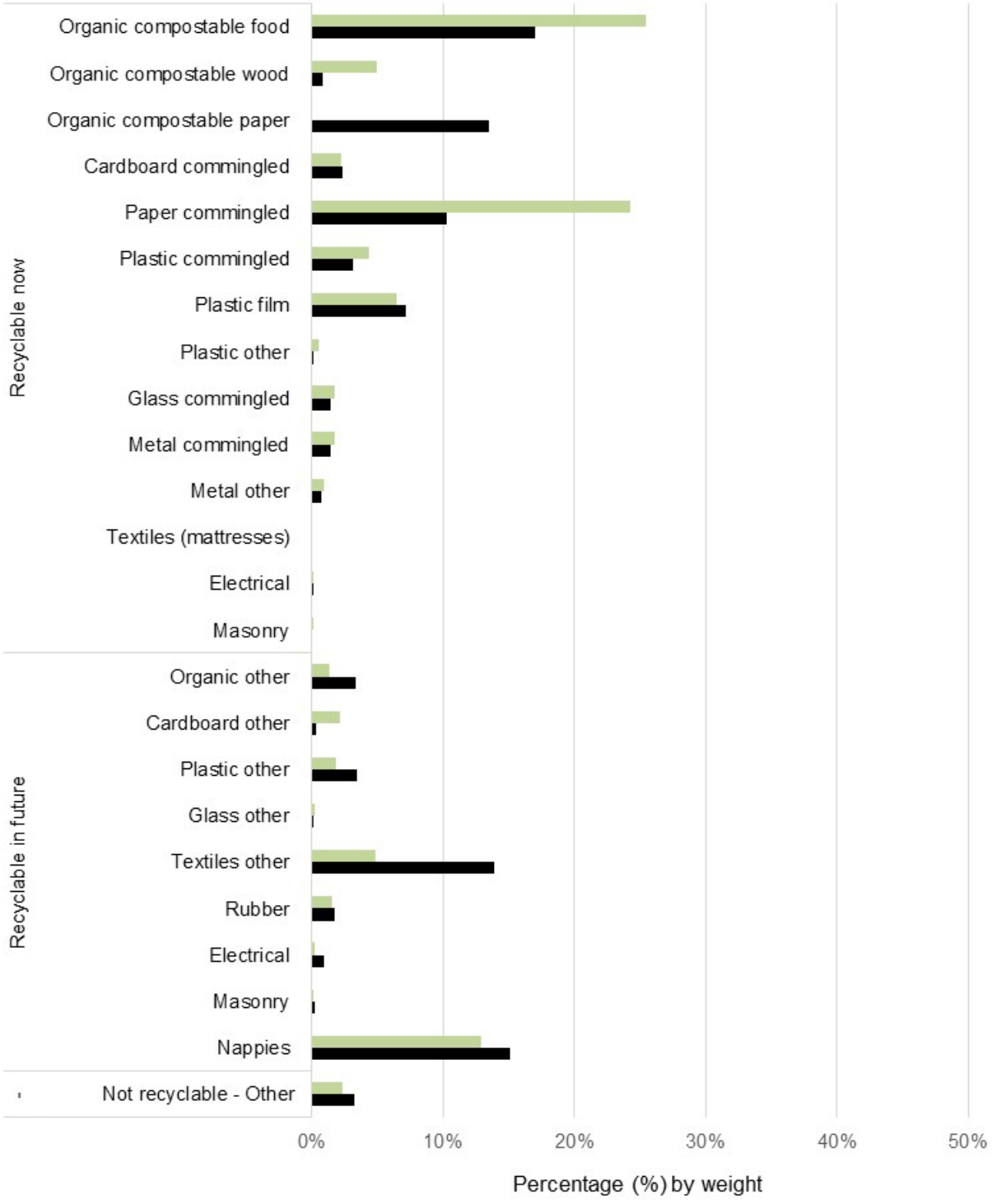
- Most recyclable now material overall in 2014 is organic compostable food, organic compostable paper, paper commingled, plastic film and plastic commingled respectively. There is substantially less paper commingled and organic compostable food in 2014 than in 2008, but more organic compostable paper.
- Most recyclable in future material overall in 2014 is nappies, textiles other, and organic other respectively. There is substantially less cardboard other in 2014 than in 2008, but substantially more textiles other and more nappies.

Table 40: Recyclability detailed composition – by year – healthcare and social assistance

Recyclability category consolidated	Recyclability category detail	Percentage by weight		
		2008	2014	Difference
Recyclable now	Organic compostable food	25.43	17.03	-8.4
Recyclable now	Organic compostable wood	4.94	0.86	-4.08
Recyclable now	Organic compostable paper	0	13.5	13.5
Recyclable now	Cardboard commingled	2.25	2.32	0.07
Recyclable now	Paper commingled	24.29	10.25	-14.04
Recyclable now	Plastic commingled	4.37	3.13	-1.24
Recyclable now	Plastic film	6.44	7.17	0.73
Recyclable now	Plastic other	0.51	0.07	-0.44
Recyclable now	Glass commingled	1.72	1.37	-0.35
Recyclable now	Metal commingled	1.68	1.42	-0.26
Recyclable now	Metal other	0.9	0.75	-0.15
Recyclable now	Textiles (mattresses)	0	0	0
Recyclable now	Electrical	0.12	0.01	-0.11
Recyclable now	Masonry	0.01	0	-0.01
Recyclable now	**Sub-total ***	**72.65**	**57.88**	**-14.77**
Recyclable in future	Organic other	1.29	3.34	2.05
Recyclable in future	Cardboard other	2.16	0.26	-1.9
Recyclable in future	Plastic other	1.85	3.42	1.57
Recyclable in future	Glass other	0.25	0.12	-0.13
Recyclable in future	Textiles other	4.84	13.93	9.09
Recyclable in future	Rubber	1.49	1.67	0.18
Recyclable in future	Electrical	0.19	0.88	0.7
Recyclable in future	Masonry	0.08	0.20	0.12
Recyclable in future	Nappies	12.84	15.08	2.24
Recyclable in future	**Sub-total ***	**24.99**	**38.91**	**13.92**
Not recyclable	Other	2.36	3.21	0.85
Not recyclable	**Sub-total**	**2.36**	**3.21**	**0.85**
Total		**100**	**100**	**100**

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

Figure 33: Recyclability detailed composition by year – healthcare and social assistance



5.6.5 Offices

Visual audit categories

Tables 41 (consolidated categories) and 42 (detailed categories) provide the comparison by percentage of each material type used in the visual audit. In Table 42, three decimal places are provided because a large number of categories were used with many present in small percentages.

Table 41: Consolidated material categories – by year – offices

Category (consolidated visual audit)	Percentage by weight		
	2008	2014	Difference
Cardboard	3.5	5.8	2.3
Electrical	0	0.2	0.2
Food	40.3	25.2	-15.1
Garden organics	2.7	1.6	-1.1
Glass	2.8	2.1	-0.8
Masonry	0.3	0.2	-0.1
Metals	1.9	3.7	1.7
Paper	23.7	35.5	11.8
Plastic	20	20.3	0.3
Rubber	0.9	0.4	-0.5
Textiles	0.9	2	1.1
Wood	0.1	0.5	0.4
Other – nappies	0.3	0.6	0.3
Other – other	2.5	2	-0.5
Total	**100**	**100**	**-**

The data shows that in 2014 compared to 2008 there is:

- Less in 2014
  - Food organics
  - Glass packaging
  - Other including fines (<10mm)

- More in 2014
  - Paper – office
  - Cardboard dry – loose
  - Plastic – film packaging
  - Metal (ferrous) – packaging

Table 42: Detailed material categories – by year – offices

Category (detailed visual audit)		Percentage by weight		
		2008	2014	Difference
V-1	Cardboard dry – loose	2.334	4.257	1.923
V-2	Cardboard dry – compacted	0	0	0
V-3	Cardboard – wet strength/waxed – loose	1.149	1.518	0.369
V-4	Cardboard – wet strength/waxed – compacted	0	0	0
V-5	Electrical – computers and peripherals	0	0.016	0.016
V-6	Electrical – other	0.043	0.158	0.114
V-7	Electrical – TVs	0.004	0.027	0.024
V-8	Electrical – whitegoods	0	0	0
V-9	Food organics – packaged (incl. liquids)	2.325	1.96	-0.365
V-10	Food organics – unpackaged	37.95	23.217	-14.733
V-11	Garbage bags	0	0	0
V-12	Garden organics	2.722	1.6	-1.122
V-13	Glass – non-packaging	0.172	0.01	-0.161
V-14	Glass – packaging	2.671	2.067	-0.604
V-15	Masonry materials – concrete/bricks	0	0	0
V-16	Masonry materials – other	0.317	0.214	-0.103
V-17	Metal (ferrous) – packaging	0.459	2.086	1.627
V-18	Metal (ferrous) – non-packaging (low density)	0.264	0.554	0.289
V-19	Metal (ferrous) – non-packaging (high density)	0	0	0
V-20	Metal (non-ferrous) – packaging	0.827	0.86	0.033
V-21	Metal (non-ferrous) – non-packaging (low density)	0.397	0.155	-0.243
V-22	Metal (non-ferrous) – non-packaging (high density)	0	0	0
V-23	Paper – office	3.159	10.993	7.834
V-24	Paper – other	18.711	20.605	1.894
V-25	Paper – packaging	1.818	3.907	2.089
V-26	Plastic – EPS foam	0.456	0.165	-0.292
V-27	Plastic – film packaging	10.224	12.092	1.868
V-28	Plastic – other	3.171	3.459	0.288
V-29	Plastic – rigid packaging	6.147	4.610	-1.537
V-30	Rubber	0.933	0.449	-0.483
V-31	Textiles and leather	0.768	1.443	0.675
V-32	Textiles – carpet and underlay	0	0.553	0.553
V-33	Textiles – mattresses	0	0	0
V-34	Textiles – covered furniture	0.123	0	-0.123

V-35	Wood – treated/painted	0.046	0.413	0.367
V-36	Wood – treated/painted – pallets	0	0.056	0.056
V-37	Wood – untreated	0.087	0.017	-0.07
V-38	Wood – untreated – pallets	0	0	0
V-39	Other – batteries	0.016	0.032	0.016
V-40	Other – gas bottles	0	0	0
V-41	Other – nappies	0.258	0.580	0.322
V-42	Other (including fines <10 mm)	2.451	1.931	-0.52
Total		**100**	**100**	**-**

Recyclability categories

Table 43 provides the composition for the consolidated recyclability categories. Figure 38 provides a chart of the results. The data shows that:

- Approximately 88 per cent of garbage bag contents are recyclable now in 2014 based on the category analysis shown in Table 3, which is similar to 2008.
- Approximately 10 per cent of garbage bag contents may be recyclable in the future in 2014 based on the category analysis shown in Table 3, which is similar to 2008.
- There is a very low amount of material is not recyclable in 2014, which is similar to 2008.

Table 43: Recyclability consolidated composition – by year – offices

Recyclability	**Percentage by weight**		
	2008	2014	Difference
Recyclable now	88.2	88.0	-0.2
Recyclable in future	9.3	10.0	0.7
Not recyclable	2.5	2.0	-0.5
Total	**100**	**100**	**-**

Figure 34: Recyclability consolidated composition – by year – offices

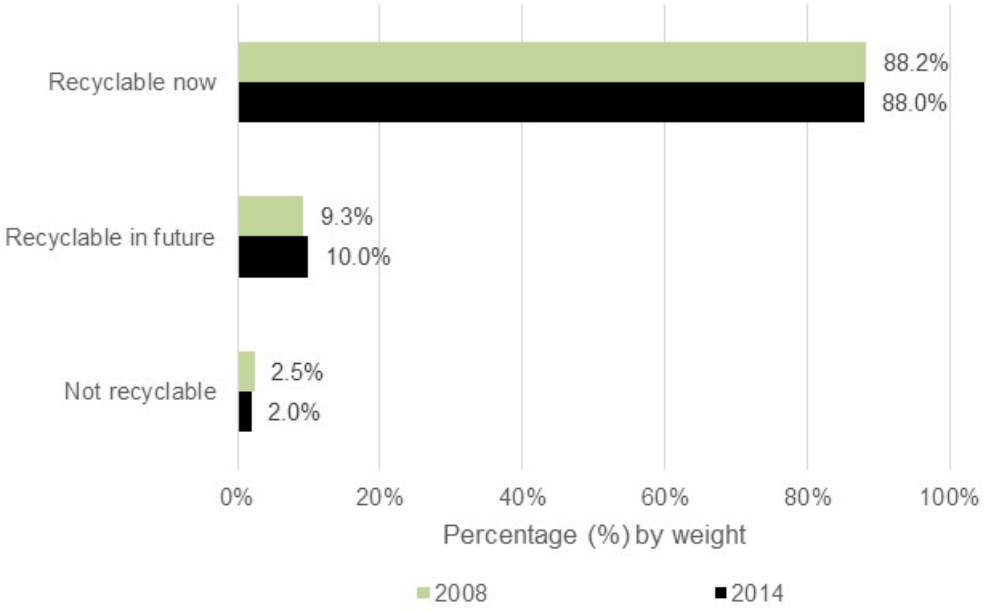

Recyclable now
88.2%
88.0%
Recyclable in future
9.3%
10.0%
Not recyclable
2.5%
2.0%
0%
20%
40%
60%
80%
100%
Percentage (%) by weight
2008
2014

Table 44 provides the detailed composition for the detailed recyclability categories. Figure 39 provides a chart of the results, presented without data labels due to the number of bars within the chart. The data shows that:

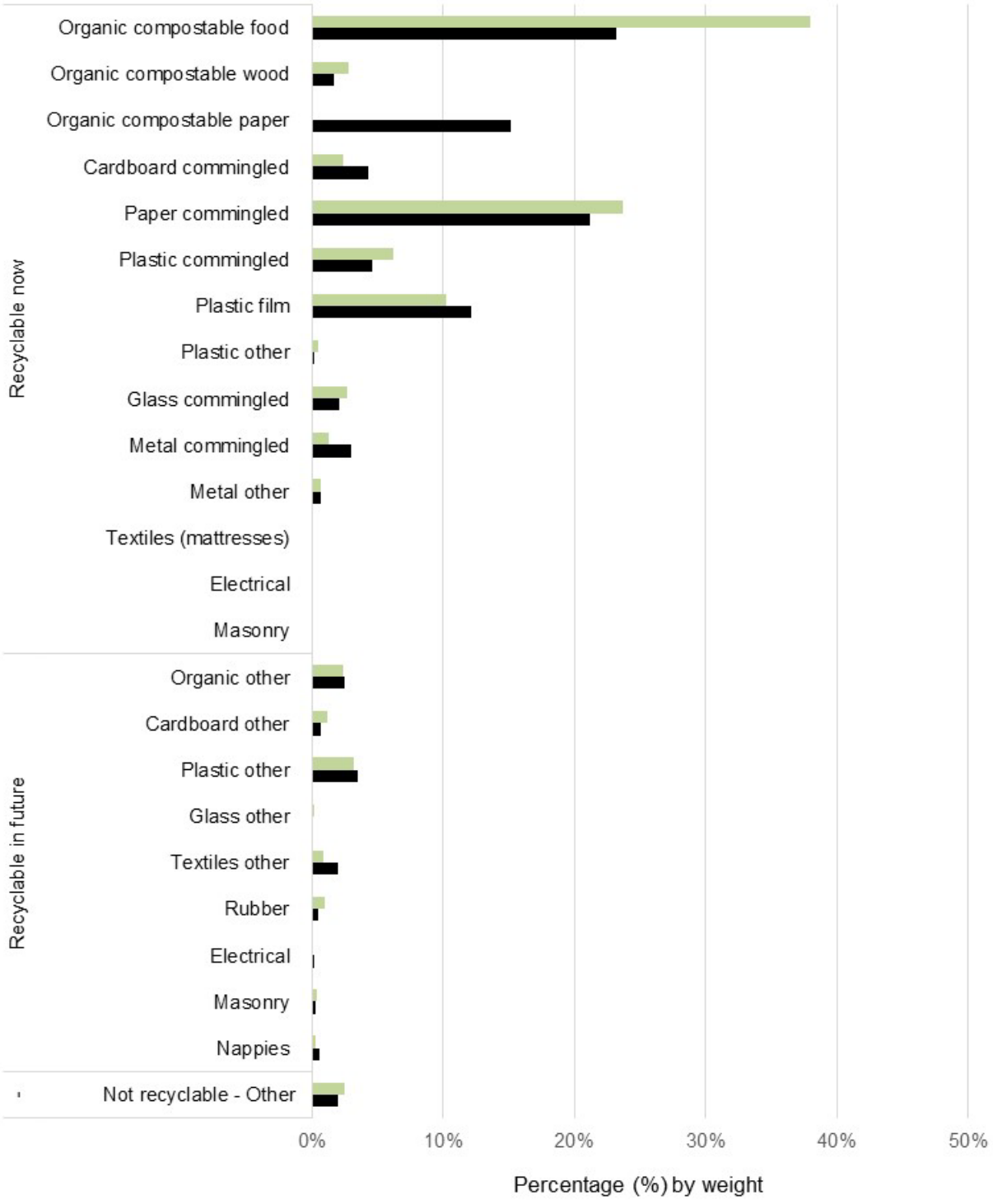
- Most recyclable now material overall in 2014 is organic compostable food, paper commingled, organic compostable paper, plastic film, cardboard commingled and metal commingled respectively. There is substantially less organic compostable food and paper commingled in 2014 than in 2008, but more organic compostable paper and cardboard commingled.
- Most recyclable in future material overall in 2014 is plastic other, organic other and textiles other respectively. The composition of recyclable in future material in 2014 is quite similar to 2008.

Table 44: Recyclability detailed composition – by year – offices

Recyclability category consolidated	Recyclability category detail	Percentage by weight		
		2008	2014	Difference
Recyclable now	Organic compostable food	37.95	23.22	-14.73
Recyclable now	Organic compostable wood	2.81	1.62	-1.19
Recyclable now	Organic compostable paper	0	15.15	15.15
Recyclable now	Cardboard commingled	2.33	4.26	1.92
Recyclable now	Paper commingled	23.69	21.2	-2.48
Recyclable now	Plastic commingled	6.15	4.61	-1.54
Recyclable now	Plastic film	10.22	12.09	1.87
Recyclable now	Plastic other	0.46	0.16	-0.29
Recyclable now	Glass commingled	2.67	2.07	-0.6
Recyclable now	Metal commingled	1.29	2.95	1.66
Recyclable now	Metal other	0.66	0.71	0.05
Recyclable now	Textiles (mattresses)	0	0	0
Recyclable now	Electrical	0	0.04	0.04
Recyclable now	Masonry	0	0	0
Recyclable now	**Sub-total ***	**88.23**	**88.07**	**-0.16**
Recyclable in future	Organic other	2.37	2.43	0.06
Recyclable in future	Cardboard other	1.15	0.67	-0.47
Recyclable in future	Plastic other	3.17	3.46	0.29
Recyclable in future	Glass other	0.17	0.01	-0.16
Recyclable in future	Textiles other	0.89	2	1.1
Recyclable in future	Rubber	0.93	0.45	-0.48
Recyclable in future	Electrical	0.04	0.16	0.11
Recyclable in future	Masonry	0.32	0.21	-0.1
Recyclable in future	Nappies	0.26	0.58	0.32
Recyclable in future	**Sub-total ***	**9.3**	**9.97**	**0.66**
Not recyclable	Other	2.47	1.96	-0.5
Not recyclable	**Sub-total**	**2.47**	**1.96**	**-0.5**
Total		**100**	**100**	**100**

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

Figure 35: Recyclability detailed composition by year – offices



5.6.6 Shopping centres

Visual audit categories

Tables 45 (consolidated categories) and 46 (detailed categories) provide the comparison by percentage of each material type used in the visual audit. In Table 46, three decimal places are provided because a large number of categories were used with many present in small percentages.

Table 45: Consolidated material categories – by year – shopping centres

Category (consolidated visual audit)	Percentage by weight		
	2008	2014	Difference
Cardboard	4.5	6.5	2.0
Electrical	1	0	-1
Food	24.6	37.8	13.3
Garden organics	0.2	2.1	2
Glass	3	5	2
Masonry	0.3	0.1	-0.2
Metals	2.3	2.8	0.5
Paper	43.6	19.1	-24.5
Plastic	15.1	19.9	4.9
Rubber	0.5	0.7	0.2
Textiles	1.8	1	-0.8
Wood	0.3	0.1	-0.3
Other – nappies	0.4	3	2.5
Other – other	2.3	1.8	-0.5
Total	**100**	**100**	**-**

The data shows that in 2014 compared to 2008 there is:

- Less in 2014
  - Paper – other
  - Paper – office
  - Electrical – other
  - Plastic – other

- More in 2014
  - Food organics – unpackaged
  - Plastic – film packaging
  - Other – nappies
  - Glass – packaging

Table 46: Detailed material categories – by year – shopping centres

Category (detailed visual audit)		Percentage by weight		
		2008	2014	Difference
V-1	Cardboard dry – loose	3.154	4.455	1.301
V-2	Cardboard dry – compacted	0	0	0
V-3	Cardboard – wet strength/waxed – loose	1.372	2.095	0.723
V-4	Cardboard – wet strength/waxed – compacted	0	0	0
V-5	Electrical – computers and peripherals	0.187	0	-0.187
V-6	Electrical – other	0.748	0.031	-0.717
V-7	Electrical – TVs	0.058	0	-0.058
V-8	Electrical – whitegoods	0.001	0	-0.001
V-9	Food organics – packaged (incl. liquids)	1.301	1.15	-0.15
V-10	Food organics – unpackaged	23.276	36.689	13.413
V-11	Garbage bags	0	0	0
V-12	Garden organics	0.166	2.143	1.977
V-13	Glass – non-packaging	0.187	0.142	-0.046
V-14	Glass – packaging	2.774	4.813	2.039
V-15	Masonry materials – concrete/bricks	0	0	0
V-16	Masonry materials – other	0.293	0.069	-0.224
V-17	Metal (ferrous) – packaging	0.737	1.619	0.882
V-18	Metal (ferrous) – non-packaging (low density)	0.424	0.2	-0.164
V-19	Metal (ferrous) – non-packaging (high density)	0	0	0
V-20	Metal (non-ferrous) – packaging	0.802	0.752	-0.05
V-21	Metal (non-ferrous) – non-packaging (low density)	0.385	0.192	-0.193
V-22	Metal (non-ferrous) – non-packaging (high density)	0	0	0
V-23	Paper – office	10.979	1.726	-9.254
V-24	Paper – other	31.1	13.284	-17.816
V-25	Paper – packaging	1.56	4.115	2.555
V-26	Plastic – EPS foam	0.687	0.247	-0.44
V-27	Plastic – film packaging	6.685	11.670	4.985
V-28	Plastic – other	3.221	2.653	-0.568
V-29	Plastic – rigid packaging	4.482	5.373	0.892
V-30	Rubber	0.534	0.695	0.162
V-31	Textiles and leather	1.363	0.852	-0.512
V-32	Textiles – carpet and underlay	0.392	0.109	-0.283
V-33	Textiles – mattresses	0	0	0
V-34	Textiles – covered furniture	0.009	0	-0.009
V-35	Wood – treated/painted	0.184	0.049	-0.135
V-36	Wood – treated/painted – pallets	0	0	0

V-37	Wood – untreated	0.136	0.017	-0.119
V-38	Wood – untreated – pallets	0.021	0	-0.021
V-39	Other – batteries	0.129	0.011	-0.118
V-40	Other – gas bottles	0	0	0
V-41	Other – nappies	0.44	2.956	2.516
V-42	Other (including fines <10 mm)	2.212	1.832	-0.379
Total		**100**	**100**	**-**

Recyclability categories

Table 47 provides the composition for the consolidated recyclability categories. Figure 40 provides a chart of the results. The data shows that:

- Approximately 88 per cent of garbage bag contents are recyclable now in 2014 based on the category analysis shown in Table 3, which is similar to 2008.
- Approximately 10 per cent of garbage bag contents may be recyclable in the future in 2014 based on the category analysis shown in Table 3, which is similar to 2008.
- There is a very low amount of material is not recyclable in 2014, which is similar to 2008.

Table 47: Recyclability consolidated composition – by year – shopping centres

Recyclability	Percentage by weight		
	2008	2014	Difference
Recyclable now	87.6	88.0	0.4
Recyclable in future	10.0	10.2	0.2
Not recyclable	2.4	1.8	-0.6
Total	**100**	**100**	**-**

Figure 36: Recyclability consolidated composition – by year – shopping centres

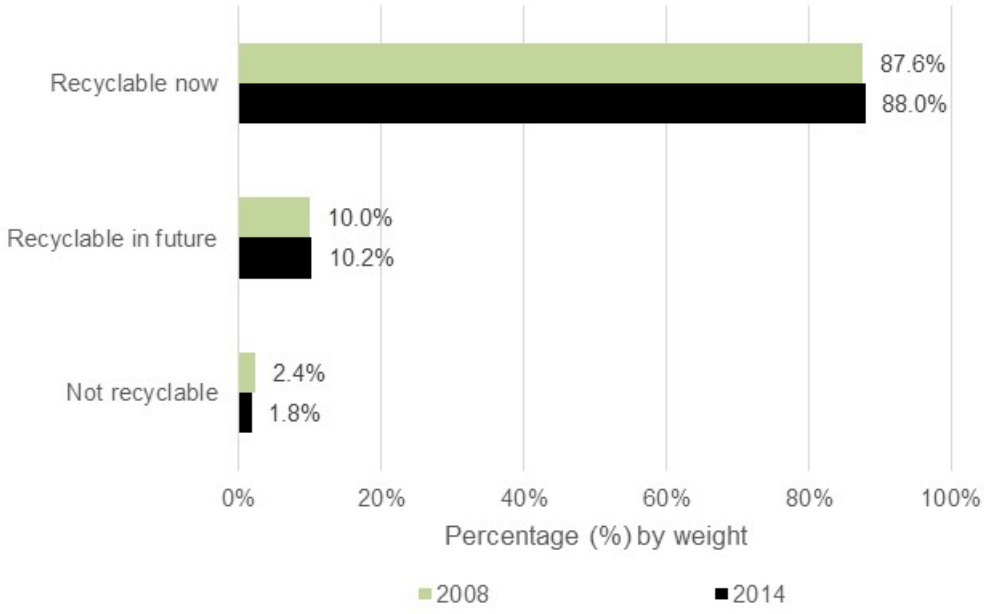


Table 48 provides the detailed composition for the detailed recyclability categories. Figure 41 provides a chart of the results, presented without data labels due to the number of bars within the chart. The data shows that:

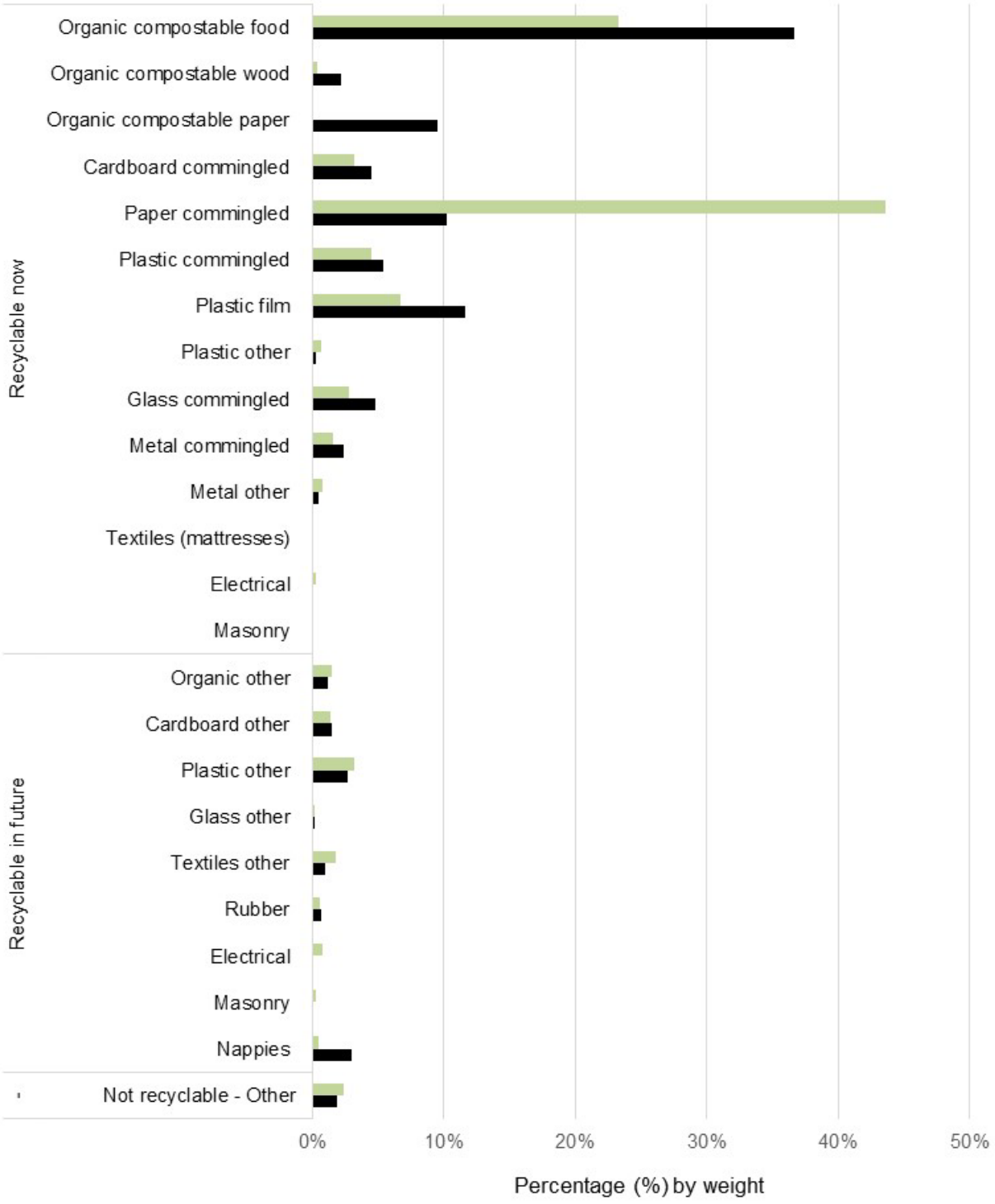
- Most recyclable now material overall in 2014 is organic compostable food, plastic film, paper commingled, organic compostable paper, plastic commingled and glass commingled respectively. There is substantially less paper commingled in 2014 than in 2008, but more organic compostable food and organic compostable paper.
- Most recyclable in future material overall in 2014 is nappies, plastic other and cardboard other respectively. There is substantially less electrical in 2014 than in 2008, but more nappies.

Table 48: Recyclability detailed composition – by year – shopping centres

Recyclability category consolidated	Recyclability category detail	Percentage by weight		
		2008	2014	Difference
Recyclable now	Organic compostable food	23.28	36.69	13.41
Recyclable now	Organic compostable wood	0.32	2.16	1.84
Recyclable now	Organic compostable paper	0	9.52	9.52
Recyclable now	Cardboard commingled	3.15	4.45	1.3
Recyclable now	Paper commingled	43.64	10.21	-33.43
Recyclable now	Plastic commingled	4.48	5.37	0.89
Recyclable now	Plastic film	6.69	11.67	4.99
Recyclable now	Plastic other	0.69	0.25	-0.44
Recyclable now	Glass commingled	2.77	4.81	2.04
Recyclable now	Metal commingled	1.54	2.37	0.83
Recyclable now	Metal other	0.81	0.45	-0.36
Recyclable now	Textiles (mattresses)	0	0	0
Recyclable now	Electrical	0.25	0	-0.25
Recyclable now	Masonry	0	0	0
Recyclable now	**Sub-total ***	**87.61**	**87.96**	**0.35**
Recyclable in future	Organic other	1.48	1.2	-0.29
Recyclable in future	Cardboard other	1.37	1.49	0.11
Recyclable in future	Plastic other	3.22	2.65	-0.57
Recyclable in future	Glass other	0.19	0.14	-0.05
Recyclable in future	Textiles other	1.76	0.96	-0.8
Recyclable in future	Rubber	0.53	0.7	0.16
Recyclable in future	Electrical	0.75	0.03	-0.72
Recyclable in future	Masonry	0.29	0.07	-0.22
Recyclable in future	Nappies	0.44	2.96	2.52
Recyclable in future	**Sub-total ***	**10.04**	**10.19**	**0.15**
Not recyclable	Other	2.34	1.84	-0.5
Not recyclable	**Sub-total**	**2.34**	**1.84**	**-0.5**
Total		**100**	**100**	**100**

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

Figure 37: Recyclability detailed composition by year – shopping centres



5.6.7 Education and training

Visual audit categories

Tables 49 (consolidated categories) and 50 (detailed categories) provide the comparison by percentage of each material type used in the visual audit. In Table 50, three decimal places are provided because a large number of categories were used with many present in small percentages.

Table 49: Consolidated material categories – by year – education and training

Category (consolidated visual audit)	Percentage by weight		
	2008	2014	Difference
Cardboard	2.7	5.4	2.7
Electrical	0.3	0.4	0.1
Food	43.0	36.0	-7.1
Garden organics	0.0	0.6	0.6
Glass	3.0	0.8	-2.2
Masonry	0.5	1.1	0.6
Metals	2.2	2.5	0.3
Paper	26.4	28.5	2.1
Plastic	15.2	17.3	2.1
Rubber	0.8	0.5	-0.3
Textiles	1.1	1.7	0.6
Wood	0.3	0.7	0.4
Other – nappies	2.5	2.4	-0.1
Other – other	1.9	2.1	0.2
Total	**100**	**100**	**-**

The data shows that in 2014 compared to 2008 there is:

- Less in 2014
  - Food organics – unpackaged
  - Glass packaging
  - Food organics – packaged
  - Paper – packaging
- More in 2014
  - Paper – office
  - Plastic – film packaging
  - Masonry materials – concrete/bricks
  - Cardboard dry – loose

Table 50: Detailed material categories – by year – education and training

Category (detailed visual audit)		Percentage by weight		
		2008	2014	Difference
V-1	Cardboard dry – loose	2.194	2.941	0.747
V-2	Cardboard dry – compacted	0	0	0
V-3	Cardboard – wet strength/waxed – loose	0.533	2.5	1.966
V-4	Cardboard – wet strength/waxed – compacted	0	0	0
V-5	Electrical – computers and peripherals	0	0.071	0.071
V-6	Electrical – other	0.302	0.36	0.058
V-7	Electrical – TVs	0.016	0	-0.016
V-8	Electrical – whitegoods	0	0	0
V-9	Food organics – packaged (incl. liquids)	3.446	2.38	-1.067
V-10	Food organics – unpackaged	39.602	33.581	-6.021
V-11	Garbage bags	0	0	0
V-12	Garden organics	0.02	0.603	0.583
V-13	Glass – non-packaging	0.707	0.034	-0.673
V-14	Glass – packaging	2.271	0.718	-1.554
V-15	Masonry materials – concrete/bricks	0.249	0	-0.249
V-16	Masonry materials – other	0.207	1.07	0.863
V-17	Metal (ferrous) – packaging	0.957	1.311	0.354
V-18	Metal (ferrous) – non-packaging (low density)	0.551	0.275	-0.276
V-19	Metal (ferrous) – non-packaging (high density)	0	0	0
V-20	Metal (non-ferrous) – packaging	0.465	0.394	-0.072
V-21	Metal (non-ferrous) – non-packaging (low density)	0.223	0.561	0.337
V-22	Metal (non-ferrous) – non-packaging (high density)	0	0	0
V-23	Paper – office	8.924	9.8	0.876
V-24	Paper – other	15.592	16.755	1.163
V-25	Paper – packaging	1.883	1.929	0.046
V-26	Plastic – EPS foam	0.293	0.167	-0.126
V-27	Plastic – film packaging	6.986	9.096	2.11
V-28	Plastic – other	2.141	2.388	0.247
V-29	Plastic – rigid packaging	5.807	5.626	-0.18
V-30	Rubber	0.786	0.51	-0.276
V-31	Textiles and leather	1.142	1.699	0.557
V-32	Textiles – carpet and underlay	0	0	0
V-33	Textiles – mattresses	0	0	0
V-34	Textiles – covered furniture	0	0	0
V-35	Wood – treated/painted	0.139	0.677	0.538
V-36	Wood – treated/painted – pallets	0	0	0

V-37	Wood – untreated	0.133	0.027	-0.106
V-38	Wood – untreated – pallets	0	0	0
V-39	Other – batteries	0.029	0.023	-0.006
V-40	Other – gas bottles	0	0.002	0.002
V-41	Other – nappies	2.501	2.439	-0.063
V-42	Other (including fines <10 mm)	1.899	2.065	0.165
Total		**100**	**100**	-

Recyclability categories

Table 51 provides the composition for the consolidated recyclability categories. Figure 42 provides a chart of the results. The data shows that:

- Approximately 86 per cent of garbage bag contents are recyclable now in 2014 based on the category analysis shown in Table 3, which is similar to 2008.
- Approximately 12 per cent of garbage bag contents may be recyclable in the future in 2014 based on the category analysis shown in Table 3, which is similar to 2008.
- There is a very low amount of material is not recyclable in 2014, which is similar to 2008.

Table 42: Recyclability consolidated composition – by year – education and training

Recyclability	**Percentage by weight**		
	2008	2014	Difference
Recyclable now	86.2	85.6	-0.6
Recyclable in future	11.9	12.3	0.4
Not recyclable	1.9	2.1	0.2
Total	**100**	**100**	**-**

Figure 38: Recyclability consolidated composition – by year – education and training

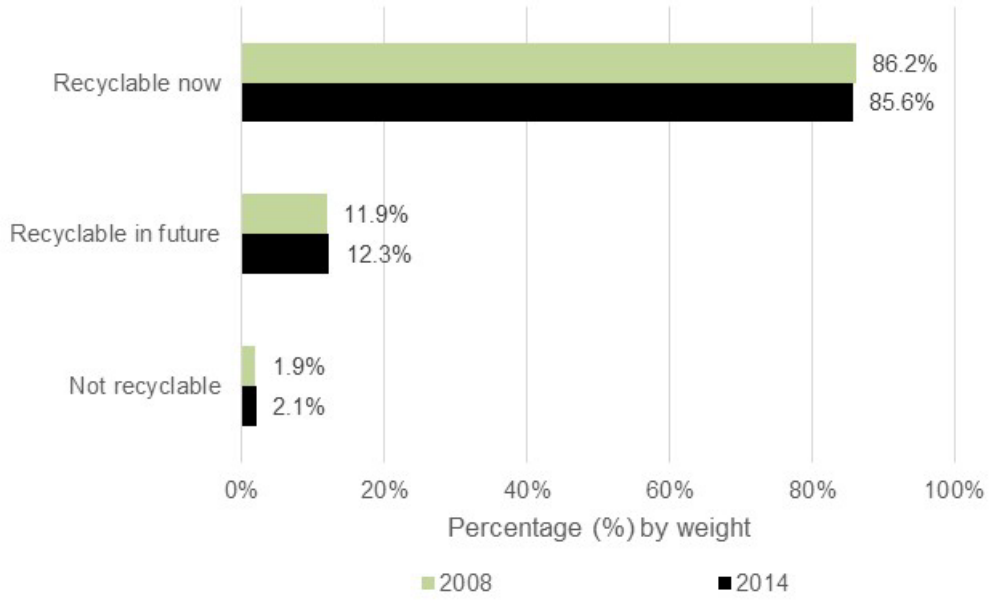


Table 52 provides the detailed composition for the detailed recyclability categories. Figure 43 provides a chart of the results, presented without data labels due to the number of bars within the chart. The data shows that:

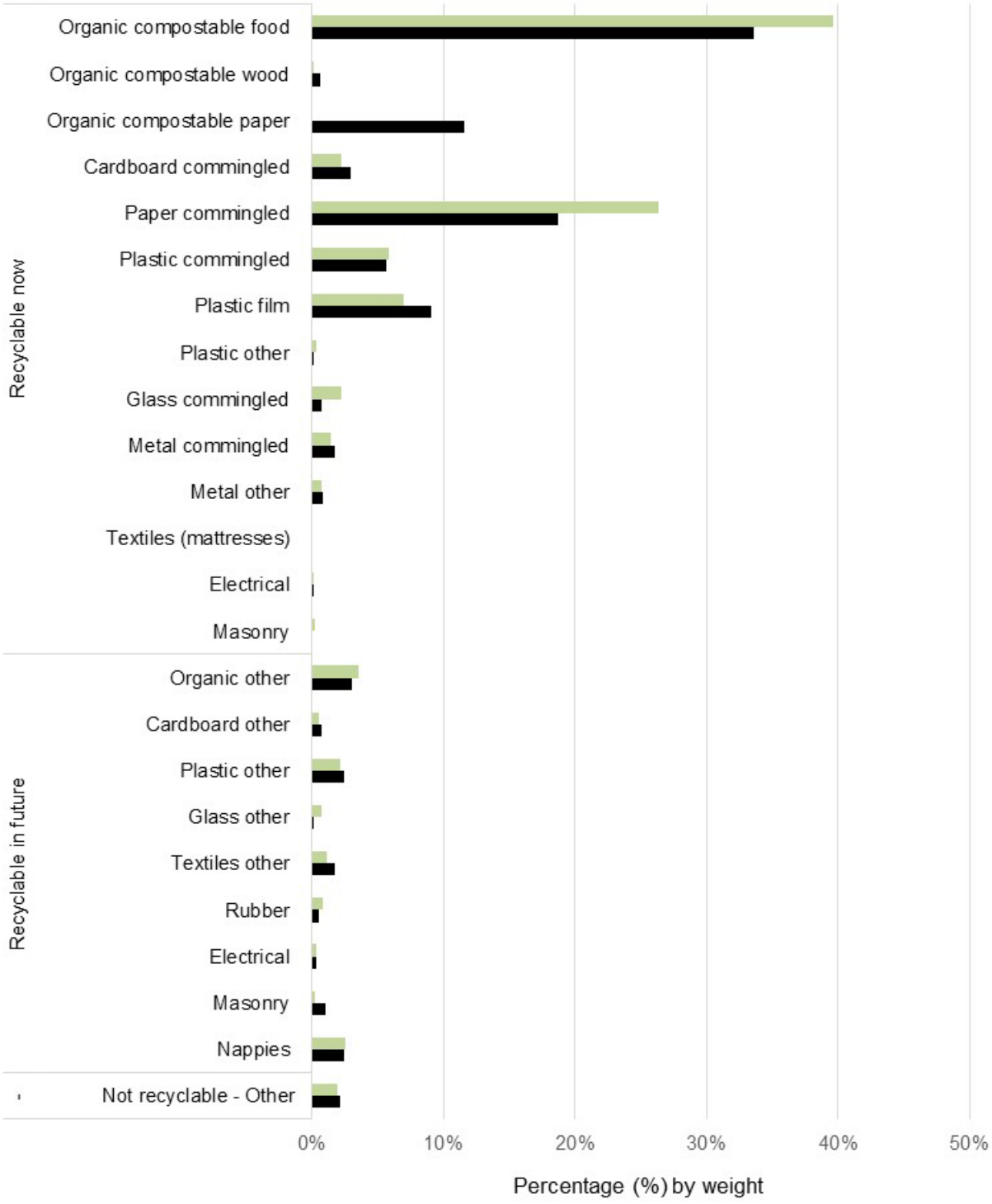
- Most recyclable now material overall in 2014 is organic compostable food, paper commingled, organic compostable paper, plastic film, plastic commingled and cardboard commingled respectively. There is substantially less paper commingled and organic compostable food in 2014 than in 2008, but substantially more organic compostable paper and slightly more plastic film.
- Most recyclable in future material overall in 2014 is organic other, nappies and plastic other respectively. The composition of recyclable in future material in 2014 is quite similar to 2008.

Table 52: Recyclability detailed composition – by year – education and training

Recyclability category consolidatedRecyclability category detail		**Percentage by weight**		
		2008	2014	Difference
Recyclable now	Organic compostable food	39.6	33.58	-6.02
Recyclable now	Organic compostable wood	0.15	0.63	0.48
Recyclable now	Organic compostable paper	0	11.55	11.55
Recyclable now	Cardboard commingled	2.19	2.94	0.75
Recyclable now	Paper commingled	26.4	18.73	-7.67
Recyclable now	Plastic commingled	5.81	5.63	-0.18
Recyclable now	Plastic film	6.99	9.1	2.11
Recyclable now	Plastic other	0.29	0.17	-0.13
Recyclable now	Glass commingled	2.27	0.72	-1.55
Recyclable now	Metal commingled	1.42	1.7	0.28
Recyclable now	Metal other	0.77	0.84	0.06
Recyclable now	Textiles (mattresses)	0	0	0
Recyclable now	Electrical	0.02	0.07	0.05
Recyclable now	Masonry	0.25	0	-0.25
Recyclable now	**Sub-total ***	**86.17**	**85.65**	**-0.52**
Recyclable in future	Organic other	3.59	3.06	-0.53
Recyclable in future	Cardboard other	0.53	0.71	0.17
Recyclable in future	Plastic other	2.14	2.39	0.25
Recyclable in future	Glass other	0.71	0.03	-0.67
Recyclable in future	Textiles other	1.14	1.7	0.56
Recyclable in future	Rubber	0.79	0.51	-0.28
Recyclable in future	Electrical	0.3	0.36	0.06
Recyclable in future	Masonry	0.21	1.07	0.86
Recyclable in future	Nappies	2.5	2.44	-0.06
Recyclable in future	**Sub-total ***	**11.9**	**12.26**	**0.36**
Not recyclable	Other	1.93	2.09	0.16
Not recyclable	**Sub-total**	**1.93**	**2.09**	**0.16**
Total		**100**	**100**	**100**

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

Figure 39: Recyclability detailed composition by year – education and training



5.6.8 Mixed small business

Visual audit categories

Tables 53 (consolidated categories) and 54 (detailed categories) provide the comparison by percentage of each material type used in the visual audit. In Table 54, three decimal places are provided because a large number of categories were used with many present in small percentages.

Table 53: Consolidated material categories – by year – mixed small business

Category (consolidated visual audit)	Percentage by weight		
	2008	2014	Difference
Cardboard	5.5	4.5	-1
Electrical	0.4	0.1	-0.2
Food	29.9	31.4	1.6
Garden organics	1.5	0.2	-1.3
Glass	7.3	3.3	-4.1
Masonry	2.4	0.2	-2.2
Metals	4.1	3.1	-1
Paper	25.7	25.8	0.1
Plastic	16	20.9	4.9
Rubber	0.7	0.9	0.2
Textiles	2.7	2.2	-0.4
Wood	0.2	0.3	0
Other – nappies	0.8	5.9	5.2
Other – other	2.9	1.2	-1.7
Total	**100**	**100**	**-**

The data shows that in 2014 compared to 2008 there is:

- Less in 2014
  - Glass packaging
  - Paper – other
  - Masonry materials – other
  - Cardboard – wet strength/waxed – loose
- More in 2014
  - Other – nappies
  - Plastic – film packaging
  - Paper – office
  - Food organics – packaged

Table 54: Comparison of detailed material categories by year – mixed small business

Category (detailed visual audit)		Percentage by weight		
		2008	2014	Difference
V-1	Cardboard dry – loose	3.011	3.359	0.347
V-2	Cardboard dry – compacted	0	0	0
V-3	Cardboard – wet strength/waxed – loose	2.499	1.143	-1.356
V-4	Cardboard – wet strength/waxed – compacted	0	0	0
V-5	Electrical – computers and peripherals	0.09	0	-0.09
V-6	Electrical – other	0.277	0.116	-0.161
V-7	Electrical – TVs	0.013	0.032	0.019
V-8	Electrical – whitegoods	0	0	0
V-9	Food organics – packaged (incl. liquids)	1.824	3.71	1.885
V-10	Food organics – unpackaged	28.027	27.703	-0.324
V-11	Garbage bags	0	0	0
V-12	Garden organics	1.52	0.179	-1.341
V-13	Glass – non-packaging	0.241	0.079	-0.162
V-14	Glass – packaging	7.081	3.185	-3.895
V-15	Masonry materials – concrete/bricks	0	0.038	0.038
V-16	Masonry materials – other	2.389	0.183	-2.206
V-17	Metal (ferrous) – packaging	1.484	1.683	0.199
V-18	Metal (ferrous) – non-packaging (low density)	0.854	0.354	-0.5
V-19	Metal (ferrous) – non-packaging (high density)	0	0	0
V-20	Metal (non-ferrous) – packaging	1.183	0.811	-0.372
V-21	Metal (non-ferrous) – non-packaging (low density)	0.568	0.213	-0.354
V-22	Metal (non-ferrous) – non-packaging (high density)	0	0	0
V-23	Paper – office	7.664	8.516	0.852
V-24	Paper – other	16.603	13.926	-2.677
V-25	Paper – packaging	1.423	3.324	1.9
V-26	Plastic – EPS foam	0.483	0.17	-0.313
V-27	Plastic – film packaging	7.658	12.18	4.522
V-28	Plastic – other	1.751	2.536	0.785
V-29	Plastic – rigid packaging	6.123	6.021	-0.102
V-30	Rubber	0.728	0.923	0.195
V-31	Textiles and leather	1.843	2.201	0.358
V-32	Textiles – carpet and underlay	0.047	0.047	0
V-33	Textiles – mattresses	0	0	0
V-34	Textiles – covered furniture	0.763	0	-0.763
V-35	Wood – treated/painted	0.109	0.237	0.128
V-36	Wood – treated/painted – pallets	0	0.002	0.002

V-37	Wood – untreated	0.112	0.014	-0.098
V-38	Wood – untreated – pallets	0	0	0
V-39	Other – batteries	0.098	0.044	-0.053
V-40	Other – gas bottles	0	0	0
V-41	Other – nappies	0.768	5.935	5.166
V-42	Other (including fines <10 mm)	2.765	1.137	-1.628
Total		**100**	**100**	**-**

Recyclability categories

Table 55 provides the composition for the consolidated recyclability categories. Figure 44 provides a chart of the results. The data shows that:

- Approximately 82 per cent of garbage bag contents are recyclable now in 2014 based on the category analysis shown in Table 3, which is slightly less than in 2008.
- Approximately 17 per cent of garbage bag contents may be recyclable in the future in 2014 based on the category analysis shown in Table 3, which is slightly more than in 2008.
- There is a very low amount of material is not recyclable in 2014, which is slightly less than in 2008.

Table 55: Recyclability consolidated composition – by year – mixed small business

Recyclability	Percentage by weight		
	2008	2014	Difference
Recyclable now	83.9	82.3	-1.6
Recyclable in future	13.2	16.5	3.3
Not recyclable	2.9	1.2	-1.7
Total	**100**	**100**	**-**

Figure 40: Recyclability consolidated composition – by year – mixed small business

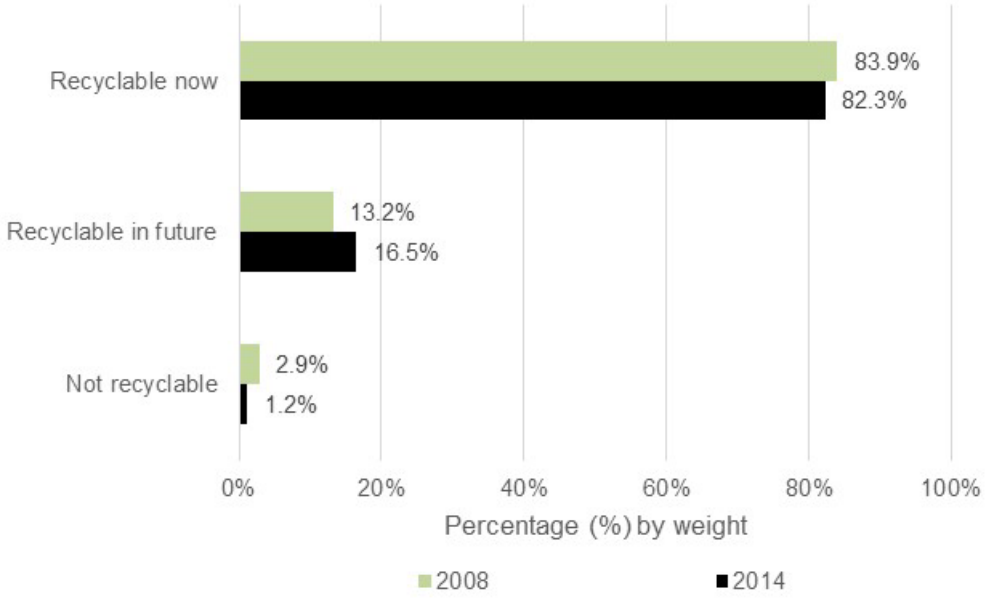


Table 56 provides the detailed composition for the detailed recyclability categories. Figure 45 provides a chart of the results, presented without data labels due to the number of bars within the chart. The data shows that:

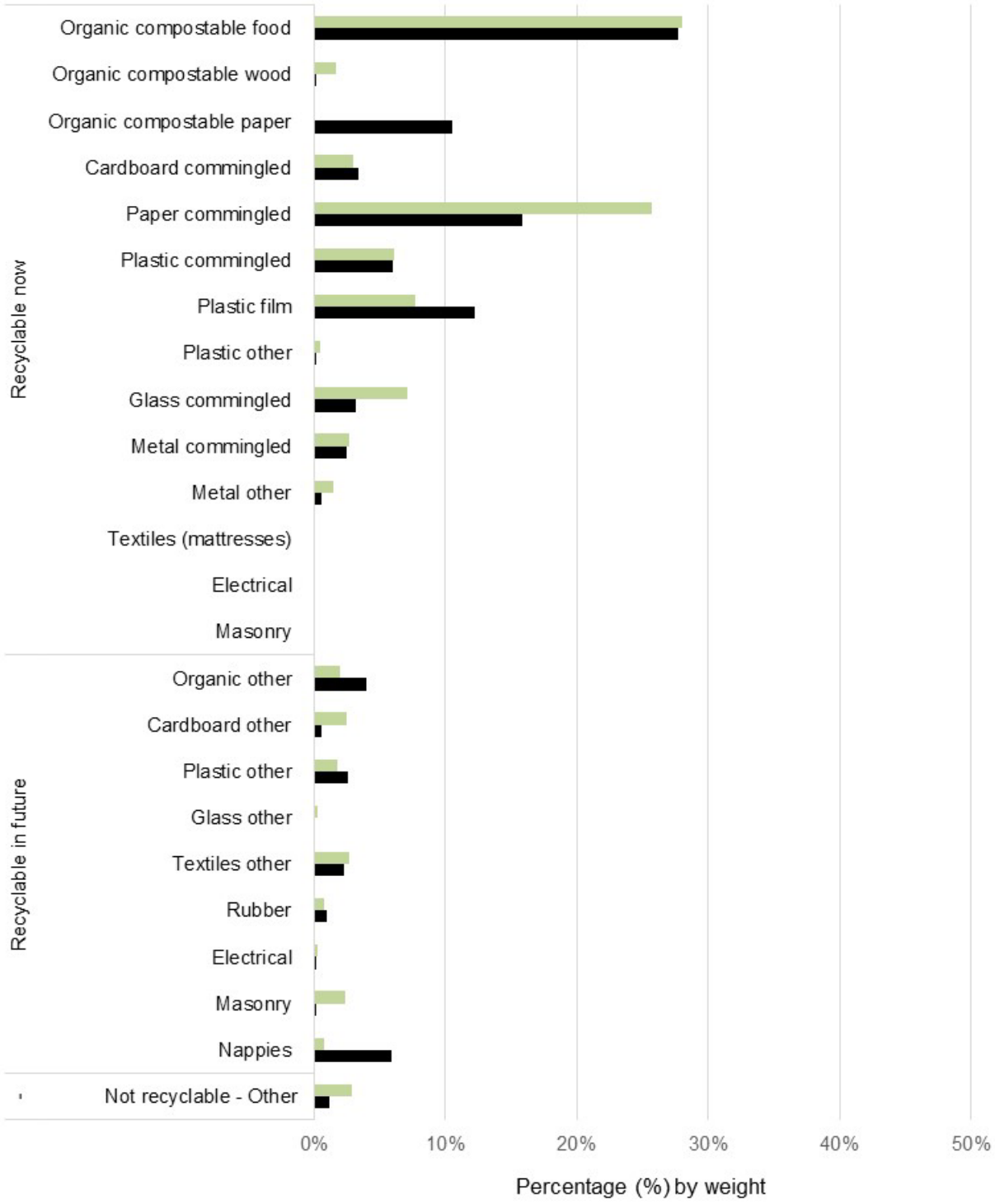
- Most recyclable now material overall in 2014 is organic compostable food, paper commingled, plastic film, organic compostable paper and plastic commingled respectively. There is substantially less paper commingled in 2014 than in 2008, but more organic compostable paper and plastic film.
- Most recyclable in future material overall in 2014 is nappies, organic other and plastic other respectively. There is substantially less masonry and cardboard other in 2014 than in 2008, but substantially more nappies.

Table 56: Recyclability detailed composition – by year – mixed small business

Recyclability category consolidated	Recyclability category detail	Percentage by weight		
		2008	2014	Difference
Recyclable now	Organic compostable food	28.03	27.7	-0.32
Recyclable now	Organic compostable wood	1.63	0.19	-1.44
Recyclable now	Organic compostable paper	0	10.49	10.49
Recyclable now	Cardboard commingled	3.01	3.36	0.35
Recyclable now	Paper commingled	25.69	15.83	-9.86
Recyclable now	Plastic commingled	6.12	6.02	-0.1
Recyclable now	Plastic film	7.66	12.18	4.52
Recyclable now	Plastic other	0.48	0.17	-0.31
Recyclable now	Glass commingled	7.08	3.19	-3.90
Recyclable now	Metal commingled	2.67	2.49	-0.17
Recyclable now	Metal other	1.42	0.57	-0.85
Recyclable now	Textiles (mattresses)	0	0	0
Recyclable now	Electrical	0.10	0.03	-0.07
Recyclable now	Masonry	0	0.04	0.04
Recyclable now	**Sub-total ***	**83.9**	**82.27**	**-1.63**
Recyclable in future	Organic other	1.93	3.95	2.02
Recyclable in future	Cardboard other	2.5	0.58	-1.92
Recyclable in future	Plastic other	1.75	2.54	0.78
Recyclable in future	Glass other	0.24	0.08	-0.16
Recyclable in future	Textiles other	2.65	2.25	-0.41
Recyclable in future	Rubber	0.73	0.92	0.2
Recyclable in future	Electrical	0.28	0.12	-0.16
Recyclable in future	Masonry	2.39	0.18	-2.21
Recyclable in future	Nappies	0.77	5.93	5.17
Recyclable in future	**Sub-total ***	**13.24**	**16.55**	**3.31**
Not recyclable	Other	2.86	1.18	-1.68
Not recyclable	**Sub-total**	**2.86**	**1.18**	**-1.68**
Total		**100**	**100**	**100**

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

Figure 41: Recyclability detailed composition by year – mixed small business



5.6.9 Other businesses

Visual audit categories

Tables 57 (consolidated categories) and 58 (detailed categories) provide the comparison by percentage of each material type used in the visual audit. In Table 58, three decimal places are provided because a large number of categories were used with many present in small percentages.

Table 57: Consolidated material categories – by year – other businesses

Category (consolidated visual audit)	Percentage by weight		
	2008	2014	Difference
Cardboard	3.4	4.7	1.2
Electrical	0.4	0.6	0.2
Food	19.4	13.7	-5.8
Garden organics	1.5	28.4	26.9
Glass	2.8	3.1	0.3
Masonry	7.2	3.7	-3.5
Metals	2.5	2.8	0.2
Paper	35.3	14.1	-21.3
Plastic	12.6	14.1	1.6
Rubber	0.9	0.8	-0.1
Textiles	5.4	7	1.6
Wood	0.2	1.6	1.4
Other – nappies	1.8	3.3	1.5
Other – other	6.6	2.2	-4.3
Total	**100**	**100**	**-**

The data shows that in 2014 compared to 2008 there is:

- Less in 2014
  - Paper – other
  - Food organics – unpackaged
  - Paper – office
  - Masonry materials – other
- More in 2014
  - Garden organics, because many of these businesses in 2014 were property services companies, such as grounds maintenance for strata organisations.
  - Plastic – other
  - Plastic – film packaging
  - Food organics – packaged

Table 58: Comparison of detailed material categories by year – other businesses

Category (detailed visual audit)		Percentage by weight		
		2008	2014	Difference
V-1	Cardboard dry – loose	2.886	3.712	0.826
V-2	Cardboard dry – compacted	0	0	0
V-3	Cardboard – wet strength/waxed – loose	0.549	0.958	0.409
V-4	Cardboard – wet strength/waxed – compacted	0	0	0
V-5	Electrical – computers and peripherals	0.024	0	-0.024
V-6	Electrical – other	0.367	0.633	0.267
V-7	Electrical – TVs	0.031	0	-0.031
V-8	Electrical – whitegoods	0	0	0
V-9	Food organics – packaged (incl. liquids)	0.81	2.258	1.448
V-10	Food organics – unpackaged	18.63	11.414	-7.216
V-11	Garbage bags	0	0	0
V-12	Garden organics	1.477	28.365	26.888
V-13	Glass – non-packaging	0.053	0.105	0.052
V-14	Glass – packaging	2.733	2.977	0.244
V-15	Masonry materials – concrete/bricks	0	0	0
V-16	Masonry materials – other	7.2	3.731	-3.469
V-17	Metal (ferrous) – packaging	0.848	0.83	-0.017
V-18	Metal (ferrous) – non-packaging (low density)	0.488	1.339	0.851
V-19	Metal (ferrous) – non-packaging (high density)	0	0	0
V-20	Metal (non-ferrous) – packaging	0.819	0.448	-0.371
V-21	Metal (non-ferrous) – non-packaging (low density)	0.393	0.165	-0.228
V-22	Metal (non-ferrous) – non-packaging (high density)	0	0	0
V-23	Paper – office	11.454	3.814	-7.64
V-24	Paper – other	21.906	9.062	-12.844
V-25	Paper – packaging	1.989	1.198	-0.791
V-26	Plastic – EPS foam	0.434	0.11	-0.324
V-27	Plastic – film packaging	5.704	7.08	1.376
V-28	Plastic – other	1.403	3.291	1.888
V-29	Plastic – rigid packaging	5.029	3.656	-1.373
V-30	Rubber	0.928	0.802	-0.125
V-31	Textiles and leather	5.308	6.978	1.67
V-32	Textiles – carpet and underlay	0.006	0	-0.006
V-33	Textiles – mattresses	0	0	0
V-34	Textiles – covered furniture	0.039	0	-0.039
V-35	Wood – treated/painted	0.011	0.228	0.217
V-36	Wood – treated/painted – pallets	0	0	0

V-37	Wood – untreated	0.152	1.355	1.203
V-38	Wood – untreated – pallets	0	0	0
V-39	Other – batteries	0.059	0.021	-0.038
V-40	Other – gas bottles	0	0	0
V-41	Other – nappies	1.77	3.264	1.495
V-42	Other (including fines <10 mm)	6.501	2.207	-4.294
Total		**100**	**100**	**-**

Recyclability categories

Table 59 provides the composition for the consolidated recyclability categories. Figure 46 provides a chart of the results. The data shows that:

- Approximately 76 per cent of garbage bag contents are recyclable now in 2014 based on the category analysis shown in Table 3, which is slightly more than in 2008.
- Approximately 22 per cent of garbage bag contents may be recyclable in the future in 2014 based on the category analysis shown in Table 3, which is slightly more than in 2008.
- There is a very low amount of material is not recyclable in 2014, which is substantially less than in 2008.

Table 59: Recyclability consolidated composition – by year – other businesses

Recyclability	Percentage by weight		
	2008	2014	Difference
Recyclable now	75	76	1
Recyclable in future	18.4	21.8	3.4
Not recyclable	6.6	2.2	-4.4
Total	**100**	**100**	**-**

Figure 42: Recyclability consolidated composition – by year – other businesses

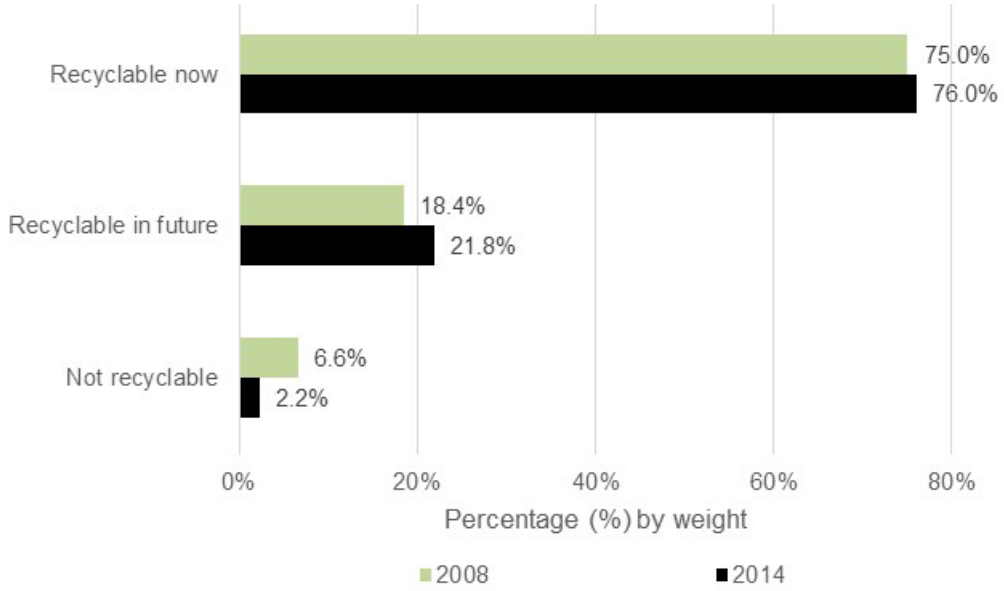


Table 60 provides the detailed composition for the detailed recyclability categories. Figure 47 provides a chart of the results, presented without data labels due to the number of bars within the chart. The data shows that:

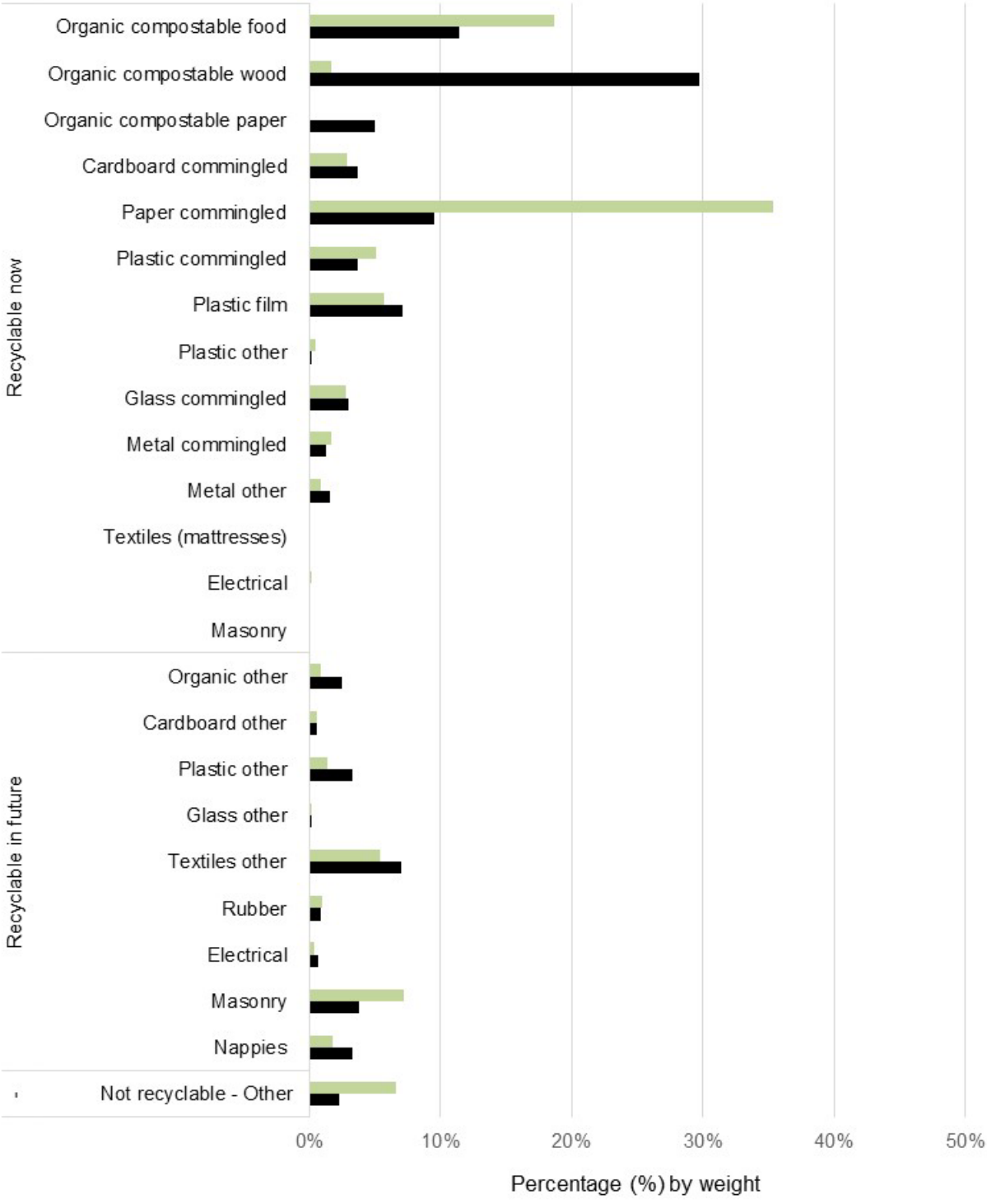
- Most recyclable now material overall in 2014 is organic compostable wood, organic compostable food, paper commingled, plastic film and organic compostable paper respectively. There is substantially less paper commingled and organic compostable food in 2014 than in 2008, but substantially more organic compostable wood and slightly more organic compostable paper.
- Most recyclable in future material overall in 2014 is textiles other, masonry and nappies respectively. There is substantially less masonry in 2014 than in 2008, but more plastic other, nappies and textiles other.

Table 60: Recyclability detailed composition – by year – other businesses

Recyclability category consolidated	Recyclability category detail	Percentage by weight		
		2008	2014	Difference
Recyclable now	Organic compostable food	18.63	11.41	-7.22
Recyclable now	Organic compostable wood	1.63	29.72	28.09
Recyclable now	Organic compostable paper	0	5.	5.
Recyclable now	Cardboard commingled	2.89	3.71	0.83
Recyclable now	Paper commingled	35.35	9.48	-25.86
Recyclable now	Plastic commingled	5.03	3.66	-1.37
Recyclable now	Plastic film	5.7	7.08	1.38
Recyclable now	Plastic other	0.43	0.11	-0.32
Recyclable now	Glass commingled	2.73	2.98	0.24
Recyclable now	Metal commingled	1.67	1.28	-0.39
Recyclable now	Metal other	0.88	1.5	0.62
Recyclable now	Textiles (mattresses)	0	0	0
Recyclable now	Electrical	0.05	0	-0.05
Recyclable now	Masonry	0	0	0
Recyclable now	**Sub-total ***	**75**	**75.94**	**0.94**
Recyclable in future	Organic other	0.82	2.49	1.67
Recyclable in future	Cardboard other	0.55	0.54	-0.01
Recyclable in future	Plastic other	1.4	3.29	1.89
Recyclable in future	Glass other	0.05	0.11	0.05
Recyclable in future	Textiles other	5.35	6.98	1.62
Recyclable in future	Rubber	0.93	0.8	-0.13
Recyclable in future	Electrical	0.37	0.63	0.27
Recyclable in future	Masonry	7.2	3.73	-3.47
Recyclable in future	Nappies	1.77	3.26	1.49
Recyclable in future	**Sub-total ***	**18.44**	**21.83**	**3.39**
Not recyclable	Other	6.56	2.23	-4.33
Not recyclable	**Sub-total**	**6.56**	**2.23**	**-4.33**
Total		**100**	**100**	**100**

* Data rounding may result in a small discrepancy between the sum of materials compared to the sub-total. Two decimal places are provided to minimise any rounding discrepancy.

Figure 43: Recyclability detailed composition by year – other businesses



6. Discussion

This garbage bag audit provides an insight into materials in bags still disposed to landfills and the scope for recovery. The composition of garbage bags is a direct reflection of business practices and availability of storage/collection systems available onsite.

This garbage bag compositional data is critical in the determination of the overall material composition of the C&I waste disposed at landfills, given that over a quarter (28 per cent) of C&I waste disposed is garbage bags. This was over half a million tonnes (503,310 tonnes) of garbage bags disposed in 2013-14.

These audit results inform the WLRM initiative and the various business recycling programs developed and implemented by the government. The results will also help the waste and recycling industry, local councils and businesses to increase recovery.

The audits undertaken in 2008 and 2014 also help to understand the trends in generation of waste and recycling of typical contents in garbage bags.

There have been some changes since 2008 including:

- Less in 2014
    - Compostable recyclable now material that can be composted at an AWT and other systems, which may reflect an increase in the use of food waste composting in 2014 compared to 2008.
        - Organic compostable food.
        - Organic compostable paper.
    - Paper commingled recyclable now material.
    - Glass commingled recyclable now material.
    - Masonry recyclable in future material.

- More in 2014
    - Plastic film recyclable now material.
    - Cardboard commingled recyclable now material.
    - Plastic other recyclable in future material.
    - Nappies recyclable in future material.
    - Organic compostable wood recyclable now material.

Current programs should continue to prioritise the main materials in garbage bags of organic compostables and commingled paper and cardboard and recyclable containers.

7. Conclusions

The garbage bag audit results lead to the following conclusions.

Resource recovery

- Innovative recovery options should be investigated and programs developed and implemented to reduce recyclable materials still present in the garbage bags. This includes waste avoidance, separation of material at source, storage provisions onsite, cost effective collections, innovative processing technologies and markets for recycled products. The target materials for recovery from what is currently disposed in garbage bags are organic compostable food, organic compostable paper and paper commingled, plastics and nappies.

The priority materials for the regulated areas of NSW are:

  - SMA:
    - Plastic film
    - Textiles other
    - Plastic commingled
    - Plastic other
    - Nappies as well as cardboard commingled
  - ERA:
    - Plastic film
    - Nappies
    - Organic compostable wood (including garden organics)
    - Plastic commingled
    - Organic other
  - RRA:
    - Plastic film
    - Plastic commingled
    - Nappies
    - Glass commingled
    - Textiles other as well as cardboard commingled

- Programs should be developed and implemented to reduce recyclable materials in garbage bags at all industry sectors. The key material categories to be targeted across all sectors are, organic compostable food, organic compostable paper and paper commingled. Three top priority material categories to be targeted at the key industry sectors are:

  - Manufacturing
    - Plastic film
    - Plastic commingled
    - Cardboard commingled
  - Retail trade
    - Plastic film
    - Glass commingled
    - Cardboard commingled
  - Accommodation, cafes and restaurants (Hospitality)
    - Plastic film
    - Glass commingled
    - Cardboard commingled

- Health and social assistance (charity)
  - Nappies
  - Textiles other
  - Plastic film
- Offices
  - Plastic film
  - Plastic commingled
  - Cardboard commingled
- Shopping centres
  - Plastic film
  - Glass commingled
  - Cardboard commingled, as well as nappies.
- Education (and training)
  - Plastic film
  - Plastic commingled
  - Cardboard commingled
- Mixed small business (SME)
  - Plastic film
  - Plastic commingled
  - Nappies
- Other businesses
  - Garden organics
  - Plastic film
  - Paper office and other

Link to other programs

- Utilise the mixed small to medium size business compositional results to inform the BinTrim program. This information will be also useful for small to medium size businesses in the following industry sectors:
  - retail trade
  - offices
  - accommodation, cafes and restaurants.
- Use the results to inform the infrastructure grants programs under the NSW Government's WLRM initiative.

Project methodology

- Review the garbage bag audit methodology and incorporate particularly the sampling from business sources, sampling by sectors and additional sorting categories.
- Develop a C&I audit guidelines similar to that is available for the residential kerbside bins audit.

Seasons

- Conduct smaller audits at different times of the year to obtain seasonal data and re-audit the same business/industry sector/region after additional education strategies and or new infrastructure have been implemented, to determine any variations in the results.

7.1 Abbreviations

APC	Australian Packaging Covenant
AHW	Absorbent Hygiene Waste
AWD	Australian Waste Database
AWT	Alternative Waste Treatment (or technology)
AS	Australian Standard
CFL	Compact Fluorescent Light (globes)
DOM	Degradable Organic Material
EPS	Expanded Polystyrene
ERA	Extended Regulated Area
HDPE	High Density Polyethylene
KG	Kilogram
LDPE or LLDPE	Low Density Polyethylene
LGA	Local Government Authority
MGB	Mobile Garbage Bin
MRF	Materials Recovery Facility
MSW	Municipal Solid Waste
OH&S	Occupational Health and Safety
OHSMS	Occupational Health and Safety Management System
PET	Polyethylene Terephthalate
PP	Polypropylene
PPE	Personal Protective Equipment
PS	Polystyrene
PVC	Polyvinyl Chloride
QMS	Quality Management System
RRA	Regional Regulated Area
SMA	Sydney Metropolitan Area
SWMS	Safe Work method Statement
WEEE	Waste Electronic and Electrical Equipment
WLRM	Waste Less Recycle More

Appendix A – Definition of regions

Figure 48 provides a definition of the NSW regulated area, including the Sydney Metropolitan Area (SMA), the Extended Regulated Area (ERA) and the Regional Regulated Area (RRA).

As well as results for the overall NSW regulated area, this report contains results and analysis specific to these three areas. The report does not provide results for the Councils shown in Figure 48, the Councils are supplied to assist with the definition of the regions.

Figure 44: Definition of regions – list of LGAs in NSW EPA regulated waste areas

Sydney Metropolitan Area (SMA)

Ashfield, Auburn, Bankstown, Baulkham Hills, Blacktown, Botany Bay, Burwood, Camden, Campbelltown, Canada Bay, Canterbury, Fairfield, Holroyd, Hornsby, Hunters Hill, Hurstville, Kogarah, Ku-ring-gai, Lane Cove, Leichhardt, Liverpool, Manly, Marrickville, Mosman, North Sydney, Parramatta, Penrith, Pittwater, Randwick, Rockdale, Ryde, Strathfield, Sutherland, Sydney, Warringah, Waverley , Willoughby, Woollahra

Extended Regulated Area (ERA)

Cessnock, Gosford, Hawkesbury, Kiama, Lake Macquarie, Maitland, Newcastle, Port Stephens, Shellharbour, Shoalhaven, Wingecarribee, Wollongong, Wyong

Regional Regulated Area (RRA)

Ballina, Bellingen, Blue Mountains, Byron, Clarence Valley, Coffs Harbour, Dungog, Gloucester, Great Lakes, Greater Taree, Kempsey, Kyogle, Lismore, Muswellbrook, Nambucca, Port Macquarie–Hastings, Richmond Valley, Singleton, Tweed, Upper Hunter, Wollondilly

Appendix B – Work Health and Safety

General

In accordance with the WHS requirements, a Work Health and Safety (WHS) plan was developed by the contractor for the work including a WHS policy, Hazard Assessment Check (HAC) form, Safe Work Method Statements (SWMS) and other Occupational Health and Safety Management System (OHSMS) documents in consultation with and acceptance of the audit site management..

The SWMS addressed all generic hazards with control measures as required in the specification. The site specific HAC was also completed for each sampling site and the sorting site during the site inductions and maintained during the course of site work.

Training

All audit staff attended a specific project training day, implemented by a third party consultant. The training day included items such as:

- WHS responsibility and training;
- Safety promotion;
- Manual handling;
- Traffic awareness and flow;
- Accident / incident reporting;
- Workplace inspections.
- Project risk assessment;
- Managing hazardous materials;
- Drug and alcohol testing;
- Personal Protective Equipment (PPE);
- Emergency response and first aid; and
- Specific work tasks.

All waste auditors were staff of the contractor to allow for pre-requisite quality assurance and WHS training including:

- Waste auditing certificates from a third party training provider.
- Manual handling training from a third party training provider.
- WHS cards.
- Vaccinations – hepatitis A and B and tetanus.
- Current police checks.
- Confidentiality agreements.

A selection of staff also have:

- Asbestos awareness certificates (at least one per team).
- Senior first aid (at least two per team).

General safety equipment

All audit staff were supplied with PPE on the work SWMS and HAC form for each site. Staff were also supplied with manual handling tools where appropriate such as tailgate lifters on trucks, trolleys, mobile garbage bins (MGBs) with wheels and shovels.

Appendix C – Quality management compliance

In accordance with quality management requirements, a quality plan was developed by the contractor for the work as a Quality Management System (QMS). The QMS included the following items:

- **Risk management plan** – a risk management plan including project risks such as staffing, timeframes and emergencies was developed.
- **Sector sampling** – the sampling process maintained the sector based stratification system used in 2008 for representative bag selection and comparison of data, but had more flexible target numbers to allow flexibility based on the samples that are delivered based on the background population of businesses.
- **Trained staff** – only staff with the required compliance training were used on the contract.
- **Scale servicing** - each scale was serviced prior to the audit and calibrated for accuracy to within 0.5 of an interval within three months of use (externally) and immediately prior to use; and each time the scale is moved (internally).
- **Scale calibration** – The sorting staff used calibration weights to ensure weighing device accuracy and recorded the results on a scale calibrations record sheet.
- **Purity audits** – A team leader conducted a purity audit of selected sorted material to ensure quality control standards were met.
- **Bag / sample start weights** – all samples were weighed before sorting at the sorting site and at the sampling site for data reconciliation to demonstrate guaranteed quality control (e.g. each bag). This provides a reconciliation of start weights with sorted weights.
- **Weighing** – Gross and tare weights were recorded for all sorting bins on each weight. This meant that for every material recorded in every sample, the auditor recorded the gross and tare of the sorting bin to provide maximum accuracy.
- **Data form back-up** – All data forms were created in duplicate in the field using electronic back-up. The original and back-up then resided in two separate secure locations until entry.
- **Photos** – Photos were taken of materials to verify quality control including the types of materials identified and the quality of the sorting.
- **Audit monitoring** – A management staff member was assigned the role of monitoring the audit, responsible for the following:
- **Monitoring WHS** compliance and facilitating inductions and procedure management
    - Overseeing the correct collection of samples
    - Observing the correct sorting of materials
    - Witnessing the correct logging of weights
    - Conducting equipment tests to ensure accuracy and safety
    - Answering stakeholder questions at collection and sorting sites
    - Verifying correct data entry.

Appendix D – Data forms

The data forms are supplied in Figure 49 (garbage bag sampling and collection form) and Figure 50 (garbage bag sorting form).

Figure 45: Garbage bag sampling and collection data recording sheet

Load Number	Waste Facility Name	Day (xxx)	Date (dd/mm)	Load Arrival Time (24hr, hr.min)	Waste Source (Company)	Waste Source (Address/ Suburb)	Waste Source (Sector & Sub-Sector)	Vehicle Type	Vehicle Rego	No. Bags Sampled	No. Bags Sent for Sorting	Bag Types Sourced (e.g. 1 bulka bag, 9 cleaner bags)	Volume of Total Bags Sent (litres)	Weight of Total Bags Sent (kg) (2 d.p.)	Other Notes (e.g.sharps, heavy)
17															
18															
19															
20															
21															
22															
23															
24															
25															
26															
27															
28															
29															
30															
31															
32															

Figure 46: Garbage bag sorting data recording sheet

NSW EPA Commercial and Industrial Waste Survery
2014 Garbage Bag Survey

FORM003-Sorting Data Recording Form
Composition Data

Day .....
Audit Date .....
Audit Start Time .....
Audit Finish Time .....

Industry Sector: .....
Industry Sub-sector: .....
Company Source: .....
No. of Bags Received: .....

Waste Facility Source .....
Rego .....
Vehicle Type .....

Date Load Sampled: .....
Load Number (e.g. x of 30): .....of.....
No. of Bags Sorted: .....
Time Bags Sampled: .....

Bag Number	1	2	3	4	5	6	7	8	9	10
Bag Type (e.g. Bulka bag, black cleaner bag, white cleaner bag)										
Weight of Bag (kg) (2 d.p.)										
Volume of Bag (Litres)										

	Category	Weight in Kilograms (kg) / Volume (L)									
		Container 1			Container 2			Container 3			Notes
		GROSS	TARE	VOLUME	GROSS	TARE	VOLUME	GROSS	TARE	VOLUME	
1	Food organics - unpackaged										
2	Food organics - packaged										
3	Food organics - liquid										
4	Garden organics										
5	Wood/untreated - board/pole, untreated										
6	Wood/untreated - pallets/furniture										
7	Wood/untreated - chipboard / MDF										
8	Wood/treated/painted - board/pole, treated										
9	Wood/treated/painted - pallets/furniture										
10	Wood/treated/painted - chipboard / MDF										
11	Cardboard dry - packaging										
12	Cardboard dry - production spoils										
13	Cardboard dry - waxed										
14	Cardboard wet - packaging										
15	Cardboard wet - production spoils										
16	Cardboard wet - waxed										
17	Paper - photocopy paper										
18	Paper - magazines / catalogues										
19	Paper - brochures and leaflets										
20	Paper - books										
21	Paper - printing/writing (other office)										
22	Paper - other packaging										
23	Paper - newsprint										
24	Paper - brown kraft paper										
25	Paper - rolls of low grade										
26	Paper - hand towels										
27	Paper - contaminated (in.tissue/ex.hand towels)										
28	Plastic - PET bev. cont. (P1)										
29	Plastic - PET pack. (excl bev cont.) (P1)										
30	Plastic - PET other non-bev/non-pack. (P1)										
31	Plastic - HDPE bev. cont. (P2)										
32	Plastic - HDPE pack. (excl bev cont.) (P2)										
33	Plastic - HDPE other non-bev/non-pack. (P2)										
34	Plastic - PVC bev. cont. (P3)										
35	Plastic - PVC pack. (excl bev cont.) (P3)										
36	Plastic - PVC other non-bev/non-pack. (P3)										
37	Plastic - LDPE pack. (P4)										
38	Plastic - LDPE non-pack (P4)										

6:57 PM 2/11/2014 Page 1 of 2 Form:____ of **380** Print Run: **1** Lead Auditor's Initials (Sign-off):_____

Tel: 02 9922 3456

NSW EPA Commercial and Industrial Waste Survery
2014 Garbage Bag Survey

FORM003-Sorting Data Recording Form
Composition Data

Day ..... Industry Sector: ..... Waste Facility Source ..... Date Load Sampled: .....
Audit Date ..... Industry Sub-sector: ..... Rego ..... Load Number (e.g. x of 30): .....of.....
Audit Start Time ..... Company Source: ..... No. of Bags Sorted: .....
Audit Finish Time ..... No. of Bags Received: ..... Vehicle Type ..... Time Bags Sampled: .....

39	Plastic - PP pack. (P5)											
40	Plastic - PP non-pack. (P5)											
41	Plastic - PS pack. (P6)											
42	Plastic - EPS pack cont. (P6)											
43	Plastic - PS & EPS non-pack. (P6)											
44	Plastic - Other plastic cont. (P7)											
45	Plastic - film packaging (bags and film)											
46	Plastic - polystyrene foam (EPS)											
47	Plastic - other											
48	Glass - containers bev											
49	Glass - containers non-bev											
50	Glass - containers (fines)											
51	Glass - plate / non-pack. (other glass)											
52	Metal (ferrous) - packaging bev											
53	Metal (ferrous) - packaging non-bev											
54	Metal (ferrous) - non-packaging											
55	Metal (non-ferrous) - packaging bev											
56	Metal (non-ferrous) - packaging non-bev											
57	Metal (non-ferrous) - non-packaging											
58	Textiles - carpet and underlay											
59	Textiles - cloth											
60	Textiles - covered furniture											
61	Textiles - mattresses											
62	Textiles - other											
63	Rubber - tyres, tubes											
64	Rubber - other											
65	Electrical and electronic - TVs											
66	Electrical - computers and peripherals											
67	Electrical - toner cartridges											
68	Electrical and electronic - whitegoods											
69	Electrical - WEEE (other)											
70	C&D - concrete											
71	C&D - bricks											
72	C&D - tiles											
73	C&D - rock/dirt/soil											
74	C&D - asphalt											
75	C&D - plasterboard											
76	Contaminated soils and processing residuals											
77	Hazardous / special - batteries											
78	Hazardous / special - gas bottles											
79	Hazardous / special - fluorescent tubes											
80	Hazardous / special - chemicals											
81	Hazardous / special - clinical											
82	Fines (<10mm) not able to be categorised											
83	Liquid paperboard (cardboard)											
84	Nappies											
85	Other (specify in notes)											

Other Notes

Appendix E – Audit photos

Figures 47 to 60 provide photos for the streams sorted.

Figure 47: Photos of organic compostable food recyclable now (unpackaged)






Figure 48: Photos of organic other recyclable in future

Wood poles

Wood pieces

Wood sticks

Packaged food

Figure 53: Photos of cardboard commingled recyclable now

Pizza boxes

Cardboard packaging boxes

Figure 49: Photos of cardboard other recyclable in future

Cardboard with plastic bubble wrapper

Waxed cardboard

Wet cardboard

Wet cardboard

Figure 50: Photos of paper commingled recyclable now

Newspaper

Printing paper

Brochures

Liquid paperboard cartons

Figure 51: Photos of organic compostable paper recyclable now

Paper hand towels

Contaminated paper

Contaminated paper

Contaminated paper

Figure 52: Photos of plastic commingled and film recyclable now

Soft drink and water bottles

Soft drink and water bottles

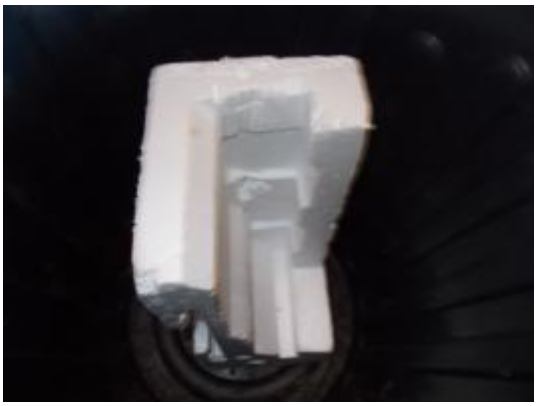
Soft drink and water bottles

Milk bottles

Figure 53: Photos of plastic other recyclable in future

Plastic hangers

Plastic straps



Expanded polystyrene foam

Unexpanded polystyrene plastic plates

Figure 54: Photos of glass commingled recyclable now -- recyclable glass bottles

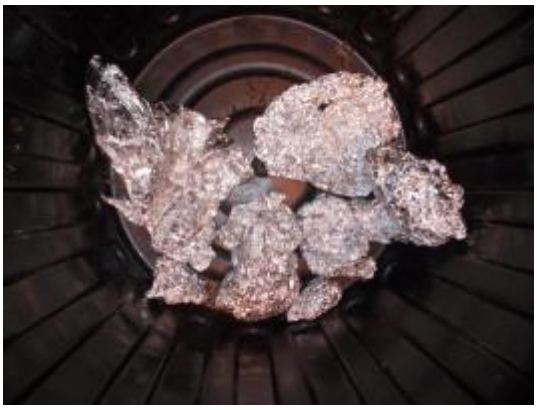



Figure 55: Photos of glass other recyclable in future – wine glasses

Figure 56: Photos of metal commingled and other metal recyclable now

Steel cans and buckets

Aluminium cans



Aluminium foil

An aluminium tray

Figure 57: Photos of textiles recyclable in future

Towel

Towel

Towel

Towel

Clothes

Clothes

Figure 58: Photos of rubber recyclable in future

Gloves

A tyre filling

Figure 59: Photos of electrical recyclable now

A kettle

A lamp

A mobile

A mouse

A computer monitor

A toner cartridge

Figure 60: Photos of other materials

Binoculars

Nappies (for children)

Broken concrete pieces

A weighing scale

A ceramic pot

Shoes (example of leather with composite materials)

Appendix F – Raw data by region

Weights sorted (detailed 85 sorting categories) by region

Table 61 provides the sorted weights for each region and overall based on the 85 sorting categories.

Weights aggregated to recyclability categories by region

Table 62 provides the sorted weights for each region and overall based on aggregation for recyclability into 24 categories.

Weights aggregated to visual audit categories by region

Table 63 provides the sorted weights for each year based on aggregation to the 14 consolidated visual audit categories. Table 64 provides the sorted weights for each year based on aggregation to the 42 detailed visual audit categories.

Table 61: Detailed composition (weight sorted) – 85 sorting categories – by region

Category sorted		Weight sorted (kg)			
		SMA	ERA	RRA	Overall
S-1	Food organics – unpackaged	1032.899	533.628	261.333	1827.86
S-2	Food organics – packaged	42.823	22.856	4.029	69.708
S-3	Food organics – liquid	83.163	34.866	6.893	124.922
S-4	Garden organics	156.09	77.538	2.272	235.9
S-5	Wood/untreated – board/pole, untreated	9.743	0.019	0.222	9.984
S-6	Wood/untreated – pallets/furniture	0	0	0	0
S-7	Wood/untreated – chipboard / MDF	0.101	0	0	0.101
S-8	Wood/treated/painted – board/pole, treated	19.772	7.599	0.011	27.382
S-9	Wood/treated/painted – pallets/furniture	0.358	0	0	0.358
S-10	Wood/treated/painted – chipboard / MDF	4.23	0	0	4.23
S-11	Cardboard dry – packaging	204.047	43.305	22.307	269.659
S-12	Cardboard dry – production spoils	3.555	2.923	3.115	9.593
S-13	Cardboard dry – waxed	7.925	0.386	0.518	8.829
S-14	Cardboard wet – packaging	22.639	8.634	4.653	35.926
S-15	Cardboard wet – production spoils	5.325	0	0.067	5.392
S-16	Cardboard wet – waxed	4.493	4.27	0.179	8.942
S-17	Paper – photocopy paper	184.446	25.32	14.583	224.349
S-18	Paper – magazines / catalogues	54.194	17.623	5.791	77.608
S-19	Paper – brochures and leaflets	29.191	14.561	6.624	50.376
S-20	Paper – books	47.006	16.037	3.072	66.115
S-21	Paper – printing/writing (other office)	185.847	44.635	13.827	244.309
S-22	Paper – other packaging	119.087	16.809	7.743	143.639
S-23	Paper – newsprint	69.841	29.526	17.11	116.477
S-24	Paper – brown Kraft paper	54.09	12.427	4.718	71.235
S-25	Paper – rolls of low grade	9.316	0.042	3.134	12.492

S-26	Paper – hand towels	254.583	64.029	34.100	352.712
S-27	Paper – contaminated (inc. tissue/excl. hand towels)	314.304	118.145	73.856	506.305
S-28	Plastic – PET bev. cont. (P1)	61.923	14.415	6.638	82.976
S-29	Plastic – PET pack. (excl. bev cont.) (P1)	19.919	12.277	5.38	37.576
S-30	Plastic – PET other non-bev/non-pack. (P1)	4.958	0.138	0.416	5.512
S-31	Plastic – HDPE bev. cont. (P2)	59.314	18.567	15.136	93.017
S-32	Plastic – HDPE pack. (excl. bev cont.) (P2)	23.149	5.81	3.953	32.912
S-33	Plastic – HDPE other non-bev/non-pack. (P2)	7.055	0.021	0	7.076
S-34	Plastic – PVC bev. cont. (P3)	0	0.060	0.156	0.216
S-35	Plastic – PVC pack. (excl. bev cont.) (P3)	1.333	0.461	0.871	2.665
S-36	Plastic – PVC other non-bev/non-pack. (P3)	2.712	0.297	0.037	3.046
S-37	Plastic – LDPE pack. (P4)	0.672	0.146	0.132	0.95
S-38	Plastic – LDPE non-pack (P4)	5.755	0	0	5.755
S-39	Plastic – PP pack. (P5)	62.553	20.115	18.924	101.592
S-40	Plastic – PP non-pack. (P5)	46.064	4.137	1.593	51.794
S-41	Plastic – PS pack. (P6)	9.146	3.229	1.171	13.546
S-42	Plastic – EPS pack cont. (P6) not pack foam	6.980	2.062	1.233	10.275
S-43	Plastic – PS & EPS non-pack. (P6)	64.436	9.703	2.907	77.046
S-44	Plastic – Other plastic cont. (P7)	11.77	0.096	1.138	13.004
S-45	Plastic – film packaging (bags and film)	597.622	174.206	97.473	869.301
S-46	Plastic – polystyrene foam (EPS)	1.001	0	0.414	1.415
S-47	Plastic – other	106.299	23.849	21.053	151.201
S-48	Glass – containers bev	93.864	40.481	22.338	156.683
S-49	Glass – containers non-bev	15.713	9.836	10.788	36.337
S-50	Glass – containers (fines)	6.773	3.108	3.95	13.831
S-51	Glass – plate / non-pack. (other glass)	3.826	0.295	0.508	4.629
S-52	Metal (ferrous) – packaging bev	11.186	0.931	0.198	12.315
S-53	Metal (ferrous) – packaging non-bev	53.681	17.611	15.644	86.936
S-54	Metal (ferrous) – non-packaging	52.042	3.223	1.836	57.101
S-55	Metal (non-ferrous) – packaging bev	32.641	9.657	2.597	44.895
S-56	Metal (non-ferrous) – packaging non-bev	8.898	1.605	0.518	11.021
S-57	Metal (non-ferrous) – non-packaging	19.663	5.586	1.598	26.847
S-58	Textiles – carpet and underlay	15.298	0	5.92	21.218
S-59	Textiles – cloth	211.183	16.002	16.965	244.15
S-60	Textiles – covered furniture	0	0	0	0
S-61	Textiles – mattresses	0	0	0	0
S-62	Textiles – other	59.449	17.665	8.287	85.401
S-63	Rubber – tyres, tubes	0.909	3.939	0	4.848

S-64	Rubber – other	32.471	14.163	4.456	51.09
S-65	Electrical and electronic – TVs	2.755	0	0	2.755
S-66	Electrical – computers and peripherals	0.609	0	0.627	1.236
S-67	Electrical – toner cartridges	4.532	0.212	0	4.744
S-68	Electrical and electronic – whitegoods	0	0	0.045	0.045
S-69	Electrical – WEEE (other)	23.14	6.44	0.343	29.923
S-70	C&D – concrete	0	0	0	0
S-71	C&D – bricks	0.494	0	0	0.494
S-72	C&D – tiles	4.373	1.624	1.183	7.18
S-73	C&D – rock/dirt/soil	15.821	2.798	3.899	22.518
S-74	C&D – asphalt	0	0	0	0
S-75	C&D – plasterboard	21.974	0	0.218	22.192
S-76	Contaminated soils and processing residuals	12.019	0.648	0.221	12.888
S-77	Hazardous / special – batteries	1.442	0.238	0.318	1.998
S-78	Hazardous / special – gas bottles	0.186	0	0	0.186
S-79	Hazardous / special – fluorescent tubes	0.66	0	0	0.66
S-80	Hazardous / special – chemicals	12.417	2.233	3.756	18.406
S-81	Hazardous / special – clinical	25.634	6.058	7.585	39.277
S-82	Fines (<10mm) not able to be categorised	13.262	0.851	0	14.113
S-83	Liquid paperboard	65.108	14.65	3.710	83.468
S-84	Nappies	211.705	78.426	40.572	330.703
S-85	Other	114.892	4.876	7.526	127.294
Total		**5160.349**	**1647.923**	**834.388**	**7642.66**

Table 62: Recyclability detailed composition (weight sorted) – by region

Recyclability category consolidated	Recyclability category detail	Weight sorted aggregated (kg)			
		SMA	ERA	RRA	Overall
Recyclable now	Organic compostable food	1032.899	533.628	261.333	1827.86
Recyclable now	Organic compostable wood	165.934	77.557	2.494	245.985
Recyclable now	Organic compostable paper	568.887	182.174	107.956	859.017
Recyclable now	Cardboard commingled	207.602	46.228	25.422	279.252
Recyclable now	Paper commingled	818.126	191.63	80.312	1090.068
Recyclable now	Plastic commingled	249.779	75.176	53.499	378.454
Recyclable now	Plastic film	597.622	174.206	97.473	869.301
Recyclable now	Plastic other	7.981	2.062	1.647	11.69
Recyclable now	Glass commingled	116.35	53.425	37.076	206.851
Recyclable now	Metal commingled	106.406	29.804	18.957	155.167
Recyclable now	Metal other	71.705	8.809	3.434	83.948
Recyclable now	Textiles (mattresses)	0	0	0	0
Recyclable now	Electrical	3.364	0	0.672	4.036
Recyclable now	Masonry	0.494	0	0	0.494
Recyclable now	**Sub-total**	**3947.149**	**1374.699**	**690.275**	**6012.123**
Recyclable in future	Organic other	150.346	65.321	10.933	226.6
Recyclable in future	Cardboard other	40.382	13.29	5.417	59.089
Recyclable in future	Plastic other	237.279	38.145	26.006	301.43
Recyclable in future	Glass other	3.826	0.295	0.508	4.629
Recyclable in future	Textiles other	285.93	33.667	31.172	350.769
Recyclable in future	Rubber	33.38	18.102	4.456	55.938
Recyclable in future	Electrical	27.672	6.652	0.343	34.667
Recyclable in future	Masonry	42.168	4.422	5.3	51.89
Recyclable in future	Nappies	211.705	78.426	40.572	330.703
Recyclable in future	**Sub-total**	**1032.688**	**258.320**	**124.707**	**1415.715**
Not recyclable	Other	180.512	14.904	19.406	214.822
Not recyclable	**Sub-total**	**180.512**	**14.904**	**19.406**	**214.822**
Total		**5160.349**	**1647.923**	**834.388**	**7642.66**

Table 63: Consolidated composition (weight sorted) – visual categories – by region

Category (consolidated visual audit)	Weight sorted aggregated (kg)			
	SMA	ERA	RRA	Overall
Cardboard	313.09	74.17	34.55	421.81
Electrical	31.04	6.65	1.02	38.7
Food	1158.89	591.35	272.26	2022.49
Garden organics	156.09	77.54	2.27	235.9
Glass	120.18	53.72	37.58	211.48
Masonry	42.66	4.42	5.3	52.38
Metals	178.11	38.61	22.39	239.12
Paper	1321.91	359.15	184.56	1865.62
Plastic	1092.66	289.59	178.63	1560.88
Rubber	33.38	18.1	4.46	55.94
Textiles	285.93	33.67	31.17	350.77
Wood	34.2	7.62	0.23	42.06
Other – nappies	211.71	78.43	40.57	330.7
Other – other	180.51	14.9	19.41	214.82
Total	**5160.349**	**1647.923**	**834.388**	**7642.66**

Table 64: Detailed composition (weight sorted) – visual categories – by region

Category (detailed visual audit)		Weight sorted aggregated (kg)			
		SMA	ERA	RRA	Overall
V-1	Cardboard dry – loose	105.490	27.94	9.127	142.557
V-2	Cardboard dry – compacted	0	0	0	0
V-3	Cardboard – wet strength/waxed – loose	0.609	0	0.627	1.236
V-4	Cardboard – wet strength/waxed – compacted	27.672	6.652	0.343	34.667
V-5	Electrical – computers and peripherals	2.755	0	0	2.755
V-6	Electrical – other	0	0	0.045	0.045
V-7	Electrical – TVs	125.986	57.722	10.922	194.63
V-8	Electrical – whitegoods	1032.899	533.628	261.333	1827.86
V-9	Food organics – packaged	0	0	0	0
V-10	Food organics – unpackaged	156.090	77.538	2.272	235.9
V-11	Garbage bags	3.826	0.295	0.508	4.629
V-12	Garden organics	116.35	53.425	37.076	206.851
V-13	Glass – non-packaging	0.494	0	0	0.494
V-14	Glass – packaging	42.168	4.422	5.300	51.89
V-15	Masonry materials – concrete/bricks	64.867	18.542	15.842	99.251
V-16	Masonry materials – other	52.042	3.223	1.836	57.101
V-17	Metal (ferrous) – packaging	0	0	0	0
V-18	Metal (ferrous) – non-packaging (low density)	41.539	11.262	3.115	55.916
V-19	Metal (ferrous) – non-packaging (high density)	19.663	5.586	1.598	26.847
V-20	Metal (non-ferrous) – packaging	0	0	0	0
V-21	Metal (non-ferrous) – non-packaging (low density)	370.293	69.955	28.41	468.658
V-22	Metal (non-ferrous) – non-packaging (high density)	769.119	259.921	140.553	1169.593
V-23	Paper – office	182.493	29.278	15.595	227.366
V-24	Paper – other	7.981	2.062	1.647	11.69
V-25	Paper – packaging	597.622	174.206	97.473	869.301
V-26	Plastic – EPS foam	237.279	38.145	26.006	301.43
V-27	Plastic – film packaging	249.779	75.176	53.499	378.454
V-28	Plastic – other	33.38	18.102	4.456	55.938
V-29	Plastic – rigid packaging	270.632	33.667	25.252	329.551
V-30	Rubber	15.298	0	5.92	21.218
V-31	Textiles and leather	0	0	0	0
V-32	Textiles – carpet and underlay	0	0	0	0
V-33	Textiles – mattresses	24.002	7.599	0.011	31.612
V-34	Textiles – covered furniture	0.358	0	0	0.358
V-35	Wood – treated/painted	9.844	0.019	0.222	10.085
V-36	Wood – treated/painted – pallets	0	0	0	0

V-37	Wood – untreated	1.442	0.238	0.318	1.998
V-38	Wood – untreated – pallets	0.186	0	0	0.186
V-39	Other – batteries	211.705	78.426	40.572	330.703
V-40	Other – gas bottles	178.884	14.666	19.088	212.638
V-41	Other – nappies	105.490	27.940	9.127	142.557
V-42	Other (including fines <10 mm)	0	0	0	0
Total		**5160.349**	**1647.923**	**834.388**	**7642.66**

Appendix G – Raw data by industry sector

Weights sorted (detailed 85 sorting categories) by industry sector

Table 65 provides the sorted weights for each sector based on the 85 sorting categories.

Weights aggregated to recyclability categories by industry sector

Table 66 provides the sorted weights for each sector based on aggregation for recyclability into 24 categories.

Weights aggregated to visual audit categories by industry sector

Table 67 provides the sorted weights for each year based on aggregation to the 14 consolidated visual audit categories. Table 68 provides the sorted weights for each year based on aggregation to the 42 detailed visual audit categories.

Table 65: Detailed composition (weight sorted) – 85 sorting categories – by sector

Category sorted		Weight sorted (kg)								
		Manufacturing	Retail trade	Accomm., cafes and restaurants	Healthcare and social assistance (charity)	Offices	Shopping Centres	Education and training	Mixed small business	Other – businesses
		M	R	H	C	O	S	E	X	Z
S-1	Food organics – unpackaged	203.355	312.376	206.486	164.221	139.432	180.603	184.019	363.048	74.32
S-2	Food organics – packaged	19.42	11.128	3.087	5.192	2.293	2.68	5.397	12.476	8.035
S-3	Food organics – liquid	18.416	15.401	8.093	20.103	9.476	2.983	7.644	36.137	6.669
S-4	Garden organics	0.376	11.538	5.246	8.234	9.61	10.55	3.305	2.350	184.691
S-5	Wood/untreated – board/pole, untreated	0.598	0.041	0.018	0.05	0.101	0.085	0.150	0.188	8.753
S-6	Wood/untreated – pallets/furniture	0	0	0	0	0	0	0	0	0
S-7	Wood/untreated – chipboard / MDF	0	0.03	0	0	0	0	0	0	0.071
S-8	Wood/treated/painted - board/pole, treated	4.857	4.588	0.142	6.945	2.478	0.24	3.712	2.937	1.483
S-9	Wood/treated/painted – pallets/furniture	0	0	0	0	0.334	0	0	0.024	0
S-10	Wood/treated/painted – chipboard / MDF	4.058	0	0	0	0	0	0	0.172	0
S-11	Cardboard dry – packaging	51.579	46.741	17.22	22.376	25.524	21.923	16.115	44.013	24.168
S-12	Cardboard dry – production spoils	4.285	3.603	1.657	0	0.042	0.006	0	0	0
S-13	Cardboard dry – waxed	2.523	1.82	0.581	0.184	1.107	1.313	0.718	0.505	0.078
S-14	Cardboard wet – packaging	4.762	3.034	7.617	1.638	1.438	4.710	3.149	6.123	3.455
S-15	Cardboard wet – production spoils	0	0.067	4.031	0	0	1.294	0	0	0
S-16	Cardboard wet – waxed	1.327	0.2	4.211	0.686	1.503	0	0	1.015	0
S-17	Paper – photocopy paper	50.332	43.8	4.049	16.855	28.014	3.883	41.085	28.864	7.467

S-18	Paper – magazines / catalogues	9.539	16.855	2.85	12.496	9.454	2.664	8.265	12.694	2.791
S-19	Paper – brochures and leaflets	2.918	13.787	1.931	2.141	3.082	4.062	13.217	6.069	3.169
S-20	Paper – books	6.926	10.051	0.353	22.146	5.116	1.670	1.485	8.592	9.776
S-21	Paper – printing/writing (other office)	42.17	23.272	7.884	15.647	38.005	4.613	12.615	82.736	17.367
S-22	Paper – other packaging	28.573	19.173	9.916	7.36	17.534	12.31	6.046	36.704	6.023
S-23	Paper – newsprint	15.368	17.594	10.423	13.929	15.133	10.133	5.575	17.636	10.686
S-24	Paper – brown Kraft paper	14.609	8.125	21.048	2.417	5.22	7.490	4.444	6.475	1.407
S-25	Paper – rolls of low grade	6.487	1.992	1.472	0.547	0.713	0.454	0.081	0.377	0.369
S-26	Paper – hand towels	65.033	60.464	24.518	62.58	42.489	10.387	30.131	46.015	11.095
S-27	Paper – contaminated (inc. tissue/excl. hand towels)	67.781	80.129	59.696	67.634	48.474	36.473	33.141	91.489	21.488
S-28	Plastic – PET bev. cont. (P1)	10.152	14.031	4.867	8.549	6.179	7.418	7.817	17.965	5.998
S-29	Plastic – PET pack. (excl. bev cont.) (P1)	8.581	7.266	2.894	3.103	2.87	2.255	3.100	6.031	1.476
S-30	Plastic – PET other non-bev/non-pack. (P1)	0.889	0.472	0.851	0.278	0.258	1.309	0.051	1.243	0.161
S-31	Plastic – HDPE bev. cont. (P2)	21.234	16.741	11.339	6.222	6.75	5.482	6.729	15.094	3.426
S-32	Plastic – HDPE pack. (excl. bev cont.) (P2)	1.965	3.804	1.074	2.228	1.262	3.817	2.728	12.764	3.27
S-33	Plastic – HDPE other non-bev/non-pack. (P2)	6.445	0.135	0	0	0.323	0	0	0.173	0
S-34	Plastic – PVC bev. cont. (P3)	0.08	0	0	0.076	0	0	0	0	0.06
S-35	Plastic – PVC pack. (excl. bev cont.) (P3)	0.764	0.392	0.335	0.076	0.072	0.078	0.38	0.477	0.091
S-36	Plastic – PVC other non-bev/non-pack. (P3)	2.624	0.417	0	0	0	0	0	0.005	0
S-37	Plastic – LDPE pack. (P4)	0.271	0.278	0	0.04	0.073	0	0.035	0.141	0.112
S-38	Plastic – LDPE non-pack (P4)	5.624	0	0	0.1	0.011	0	0	0.02	0

S-39	Plastic – PP pack. (P5)	16.368	16.998	13.06	7.503	9.634	5.987	7.902	19.865	4.275
S-40	Plastic – PP non-pack. (P5)	27.614	4.835	1.024	3.462	2.460	0.204	1.078	2.706	8.411
S-41	Plastic – PS pack. (P6)	2.05	1.196	0.896	1.686	0.470	0.655	1.254	4.813	0.526
S-42	Plastic – EPS pack cont. (P6) not pack foam	2.053	1.916	0.481	0.628	0.159	1.217	0.915	2.227	0.679
S-43	Plastic – PS & EPS non-pack. (P6)	30.233	8.511	4.211	4.982	5.629	4.923	4.463	11.577	2.517
S-44	Plastic – Other plastic cont. (P7)	3.619	0.302	0.038	0.7	0.376	0.759	0.887	1.754	4.569
S-45	Plastic – film packaging (bags and film)	210.39	136.225	67.89	69.171	72.618	57.448	49.843	159.616	46.1
S-46	Plastic – polystyrene foam (EPS)	0.113	0.414	0	0.024	0.829	0	0	0	0.035
S-47	Plastic – other	40.708	26.672	5.573	24.187	12.095	6.624	7.495	17.509	10.338
S-48	Glass – containers bev	12.960	35.651	19.857	7.696	7.716	21.248	1.393	32.095	18.067
S-49	Glass – containers non-bev	4.535	10.824	0.765	4.779	3.101	2.05	2.102	6.861	1.32
S-50	Glass – containers (fines)	2.508	3.031	2.362	0.72	1.594	0.394	0.437	2.785	0
S-51	Glass – plate / non-pack. (other glass)	0.144	0.707	0	1.115	0.061	0.698	0.189	1.030	0.685
S-52	Metal (ferrous) – packaging bev	0.232	1.4	5.918	0.094	2.288	0.854	0.260	1.219	0.05
S-53	Metal (ferrous) – packaging non-bev	9.272	11.752	7.408	8.03	10.238	7.115	6.923	20.842	5.356
S-54	Metal (ferrous) – non-packaging	18.88	12.458	0.279	6.021	3.325	1.281	1.506	4.633	8.718
S-55	Metal (non-ferrous) – packaging bev	9.316	9.714	3.409	2.809	4.248	3.064	1.747	8.742	1.846
S-56	Metal (non-ferrous) – packaging non-bev	0.925	1.256	1.184	2.73	0.918	0.64	0.411	1.886	1.071
S-57	Metal (non-ferrous) – non-packaging	11.521	4.599	0.655	1.256	0.929	0.945	3.073	2.795	1.074
S-58	Textiles – carpet and underlay	2.029	0	0.44	14.283	3.319	0.535	0	0.612	0
S-59	Textiles – cloth	37.774	39.278	4.38	98.343	5.708	3.103	4.798	12.975	37.791
S-60	Textiles – covered furniture	0	0	0	0	0	0	0	0	0
S-61	Textiles – mattresses	0	0	0	0	0	0	0	0	0

S-62	Textiles – other	28.262	2.867	0.459	21.736	2.96	1.09	4.511	15.872	7.644
S-63	Rubber – tyres, tubes	0	0.848	0	0	0.061	0	0	0	3.939
S-64	Rubber – other	6.146	4.607	1.949	16.149	2.636	3.422	2.793	12.102	1.286
S-65	Electrical and electronic – TVs	1.271	0.751	0.146	0	0.163	0	0	0.424	0
S-66	Electrical – computers and peripherals	0.634	0.017	0	0.098	0.098	0	0.389	0	0
S-67	Electrical – toner cartridges	1.386	1.209	0	0.116	0.207	0	0.023	0.006	1.797
S-68	Electrical and electronic – whitegoods	0	0.045	0	0	0	0	0	0	0
S-69	Electrical – WEEE (other)	9.203	4.846	0.780	8.411	0.739	0.153	1.948	1.516	2.327
S-70	C&D – concrete	0	0	0	0	0	0	0	0	0
S-71	C&D – bricks	0	0	0	0	0	0	0	0.494	0
S-72	C&D – tiles	1.665	1.705	0.692	0	1.275	0.127	0.551	0.581	0.584
S-73	C&D – rock/dirt/soil	4.285	4.426	2.712	1.896	0.010	0.215	5.315	1.818	1.841
S-74	C&D – asphalt	0	0	0	0	0	0	0	0	0
S-75	C&D – plasterboard	0	0.326	0	0	0	0	0	0	21.866
S-76	Contaminated soils and processing residuals	0.384	0.38	0	0.097	0.266	1.686	1.958	7.723	0.394
S-77	Hazardous / special – batteries	0.363	0.068	0.318	0.164	0.190	0.052	0.127	0.582	0.134
S-78	Hazardous / special – gas bottles	0	0	0	0.175	0	0	0.011	0	0
S-79	Hazardous / special – fluorescent tubes	0	0.371	0	0.163	0	0	0	0	0.126
S-80	Hazardous / special – chemicals	0.978	4.133	3.492	0.7	0.941	0.024	0.128	2.228	5.782
S-81	Hazardous / special – clinical	6.577	1.303	0	24.815	4.021	0.862	0.112	0.036	1.551
S-82	Fines (<10mm) not able to be categorised	0	0.095	0	1.43	2.438	6.448	0.222	1.473	2.007
S-83	Liquid paperboard	36.516	5.711	7.958	5.356	5.068	2.994	9.83	7.331	2.704

S-84	Nappies	29.181	12.142	13.467	145.488	3.482	14.55	13.363	77.775	21.255
S-85	Other	62.902	27.003	13.166	3.454	3.93	0	8.895	3.436	4.508
Total		**1316.918**	**1149.937**	**608.858**	**964.52**	**600.57**	**492.252**	**547.986**	**1310.491**	**651.128**

Table 66: Recyclability detailed composition (weight sorted) – by sector

Recyclability category consolidated	Recyclability category detail	Weight sorted (kg)								
		Manufacturing	Retail trade	Accomm., cafes and restaurants	Healthcare and social assistance (charity)	Offices	Shopping Centres	Education and training	Mixed small business	Other – businesses
		M	**R**	**H**	**E**	**C**	**X**	**S**	**O**	**Z**
Recyclable now	Organic compostable food	203.36	312.38	206.49	164.22	139.43	180.6	184.02	363.05	74.32
Recyclable now	Organic compostable wood	0.97	11.61	5.26	8.28	9.71	10.64	3.46	2.54	193.52
Recyclable now	Organic compostable paper	132.81	140.59	84.21	130.21	90.96	46.86	63.27	137.5	32.58
Recyclable now	Cardboard commingled	55.86	50.34	18.88	22.38	25.57	21.93	16.12	44.01	24.17
Recyclable now	Paper commingled	213.44	160.36	67.88	98.89	127.34	50.27	102.64	207.48	61.76
Recyclable now	Plastic commingled	65.08	61.01	34.50	30.18	27.69	26.45	30.83	78.9	23.8
Recyclable now	Plastic film	210.39	136.23	67.89	69.17	72.62	57.45	49.84	159.62	46.1
Recyclable now	Plastic other	2.17	2.33	0.48	0.65	0.99	1.22	0.92	2.23	0.71
Recyclable now	Glass commingled	20	49.51	22.98	13.2	12.41	23.69	3.93	41.74	19.39
Recyclable now	Metal commingled	19.75	24.12	17.92	13.66	17.69	11.67	9.34	32.69	8.32
Recyclable now	Metal other	30.4	17.06	0.93	7.28	4.25	2.23	4.58	7.43	9.79
Recyclable now	Textiles (mattresses)	0	0	0	0	0	0	0	0	0
Recyclable now	Electrical	1.91	0.81	0.15	0.1	0.26	0	0.39	0.42	0
Recyclable now	Masonry	0	0	0	0	0	0	0	0.49	0
Recyclable now	**Sub-total**	**956.14**	**966.34**	**527.58**	**558.23**	**528.92**	**433.01**	**469.34**	**1078.1**	**494.46**
Recyclable in future	Organic other	46.75	31.12	11.32	32.24	14.58	5.9	16.75	51.75	16.19
Recyclable in future	Cardboard other	8.61	5.12	16.44	2.51	4.05	7.32	3.87	7.64	3.53
Recyclable in future	Plastic other	114.14	41.04	11.66	33.01	20.78	13.06	13.09	33.23	21.43

Recyclable in future	Glass other	0.14	0.71	0	1.12	0.06	0.7	0.19	1.03	0.69
Recyclable in future	Textiles other	68.07	42.15	5.28	134.36	11.99	4.73	9.31	29.46	45.44
Recyclable in future	Rubber	6.15	5.46	1.95	16.15	2.7	3.42	2.79	12.1	5.23
Recyclable in future	Electrical	10.59	6.06	0.78	8.53	0.95	0.15	1.97	1.52	4.12
Recyclable in future	Masonry	5.95	6.46	3.4	1.9	1.29	0.34	5.87	2.40	24.29
Recyclable in future	Nappies	29.18	12.14	13.47	145.49	3.48	14.55	13.36	77.78	21.26
Recyclable in future	**Sub-total**	**289.58**	**150.24**	**64.3**	**375.29**	**59.86**	**50.17**	**67.2**	**216.91**	**142.16**
Not recyclable	Other	71.2	33.35	16.98	31	11.79	9.07	11.45	15.48	14.5
Not recyclable	**Sub-total**	**71.2**	**33.35**	**16.98**	**31**	**11.79**	**9.07**	**11.45**	**15.48**	**14.5**
	Total	**1316.92**	**1149.94**	**608.86**	**964.52**	**600.57**	**492.25**	**547.99**	**1310.49**	**651.13**

Table 67: Consolidated composition (weight sorted) – visual categories – by sector

Category (consolidated visual audit)	Weight sorted (kg)								
	Manufacturing	Retail trade	Accomm., cafes and restaurants	Healthcare and social assistance (charity)	Offices	Shopping Centres	Education and training	Mixed small business	Other (businesses)
	M	**R**	**H**	**E**	**C**	**X**	**S**	**O**	**Z**
Cardboard	100.992	61.176	43.275	30.24	34.682	32.24	29.812	58.987	30.405
Electrical	12.494	6.868	0.926	8.625	1.207	0.153	2.360	1.946	4.124
Food	241.191	338.905	217.666	189.516	151.201	186.266	197.06	411.661	89.024
Garden organics	0.376	11.538	5.246	8.234	9.61	10.55	3.305	2.35	184.691
Glass	20.147	50.213	22.984	14.31	12.472	24.39	4.121	42.771	20.072
Masonry	5.950	6.457	3.404	1.896	1.285	0.342	5.866	2.893	24.291
Metals	50.146	41.179	18.853	20.94	21.946	13.899	13.92	40.117	18.115
Paper	309.736	295.242	144.14	223.752	213.234	94.139	156.085	337.651	91.638
Plastic	391.777	240.605	114.533	133.015	122.068	98.176	94.677	273.98	92.044
Rubber	6.146	5.455	1.949	16.149	2.697	3.422	2.793	12.102	5.225
Textiles	68.065	42.145	5.279	134.362	11.987	4.728	9.309	29.459	45.435
Wood	9.513	4.659	0.16	6.995	2.913	0.325	3.862	3.321	10.307
Other – nappies	29.181	12.142	13.467	145.488	3.482	14.55	13.363	77.775	21.255
Other – other	71.204	33.353	16.976	30.998	11.786	9.072	11.453	15.478	14.502
Total	**1316.918**	**1149.937**	**608.858**	**964.52**	**600.57**	**492.252**	**547.986**	**1310.491**	**651.128**

Table 68: Detailed composition (weight sorted) – visual categories – by sector

Category (detailed visual audit)		Weight sorted (kg)								
		Manufacturing	Retail trade	Accomm., cafes and restaurants	Healthcare and social assistance (charity)	Offices	Shopping Centres	Education and training	Mixed small business	Other – businesses
		M	**R**	**H**	**E**	**C**	**X**	**S**	**O**	**Z**
V-1	Cardboard dry – loose	55.864	50.344	18.877	22.376	25.566	21.929	16.115	44.013	24.168
V-2	Cardboard dry – compacted	0	0	0	0	0	0	0	0	0
V-3	Cardboard – wet strength/waxed – loose	45.128	10.832	24.398	7.864	9.116	10.311	13.697	14.974	6.237
V-4	Cardboard – wet strength/waxed – compacted	0	0	0	0	0	0	0	0	0
V-5	Electrical – computers and peripherals	0.634	0.017	0	0.098	0.098	0	0.389	0	0
V-6	Electrical – other	10.589	6.055	0.780	8.527	0.946	0.153	1.971	1.522	4.124
V-7	Electrical – TVs	1.271	0.751	0.146	0	0.163	0	0	0.424	0
V-8	Electrical – whitegoods	0	0.045	0	0	0	0	0	0	0
V-9	Food organics – packaged (inc. liquids)	37.836	26.529	11.18	25.295	11.769	5.663	13.041	48.613	14.704
V-10	Food organics – unpackaged	203.355	312.376	206.486	164.221	139.432	180.603	184.019	363.048	74.32
V-11	Garbage bags	0	0	0	0	0	0	0	0	0
V-12	Garden organics	0.376	11.538	5.246	8.234	9.61	10.550	3.305	2.35	184.691
V-13	Glass – non-packaging	0.144	0.707	0	1.115	0.061	0.698	0.189	1.03	0.685
V-14	Glass – packaging	20.003	49.506	22.984	13.195	12.411	23.692	3.932	41.741	19.387
V-15	Masonry materials – concrete/bricks	0	0	0	0	0	0	0	0.494	0
V-16	Masonry materials – other	5.95	6.457	3.404	1.896	1.285	0.342	5.866	2.399	24.291
V-17	Metal (ferrous) – packaging	9.504	13.152	13.326	8.124	12.526	7.969	7.183	22.061	5.406

V-18	Metal (ferrous) – non-packaging (low density)	18.88	12.458	0.279	6.021	3.325	1.281	1.506	4.633	8.718
V-19	Metal (ferrous) – non-packaging (high density)	0	0	0	0	0	0	0	0	0
V-20	Metal (non-ferrous) – packaging	10.241	10.970	4.593	5.539	5.166	3.704	2.158	10.628	2.917
V-21	Metal (non-ferrous) – non-packaging (low density)	11.521	4.599	0.655	1.256	0.929	0.945	3.073	2.795	1.074
V-22	Metal (non-ferrous) – non-packaging (high density)	0	0	0	0	0	0	0	0	0
V-23	Paper – office	92.502	67.072	11.933	32.502	66.019	8.496	53.700	111.6	24.834
V-24	Paper – other	167.565	198.88	99.771	180.926	123.748	65.389	91.814	182.495	59.005
V-25	Paper – packaging	49.669	29.29	32.436	10.324	23.467	20.254	10.571	43.556	7.799
V-26	Plastic – EPS foam	2.166	2.33	0.481	0.652	0.988	1.217	0.915	2.227	0.714
V-27	Plastic – film packaging	210.39	136.225	67.89	69.171	72.618	57.448	49.843	159.616	46.100
V-28	Plastic – other	114.137	41.042	11.659	33.009	20.776	13.06	13.087	33.233	21.427
V-29	Plastic – rigid packaging	65.084	61.008	34.503	30.183	27.686	26.451	30.832	78.904	23.803
V-30	Rubber	6.146	5.455	1.949	16.149	2.697	3.422	2.793	12.102	5.225
V-31	Textiles and leather	66.036	42.145	4.839	120.079	8.668	4.193	9.309	28.847	45.435
V-32	Textiles – carpet and underlay	2.029	0	0.44	14.283	3.319	0.535	0	0.612	0
V-33	Textiles – mattresses	0	0	0	0	0	0	0	0	0
V-34	Textiles – covered furniture	0	0	0	0	0	0	0	0	0
V-35	Wood – treated/painted	8.915	4.588	0.142	6.945	2.478	0.24	3.712	3.109	1.483
V-36	Wood – treated/painted – pallets	0	0	0	0	0.334	0	0	0.024	0
V-37	Wood – untreated	0.598	0.071	0.018	0.050	0.101	0.085	0.15	0.188	8.824
V-38	Wood – untreated – pallets	0	0	0	0	0	0	0	0	0
V-39	Other – batteries	0.363	0.068	0.318	0.164	0.19	0.052	0.127	0.582	0.134
V-40	Other – gas bottles	0	0	0	0.175	0	0	0.011	0	0
V-41	Other – nappies	29.181	12.142	13.467	145.488	3.482	14.55	13.363	77.775	21.255

V-42	Other (including fines <10 mm)	70.841	33.285	16.658	30.659	11.596	9.02	11.315	14.896	14.368
Total		1316.918	1149.937	608.858	964.52	600.57	492.252	547.986	1310.491	651.128

Appendix H – Raw data by year

This section is only based on the SMA results, because garbage bags were only audited in the SMA in 2008. In addition, only 57 categories are available from 2008, rather than the 85 used in the 2014.

Weights sorted (detailed 57 sorting categories from 2008) by year

Table 69 provides the sorted weights for each year based on the 85 sorting categories.

Weights aggregated to recyclability categories by year

Table 70 provides the sorted weights for each year based on aggregation for recyclability into 24 categories.

Weights aggregated to visual audit categories by year

Table 71 provides the sorted weights for each year based on aggregation to the 14 consolidated visual audit categories. Table 72 provides the sorted weights for each year based on aggregation to the 42 detailed visual audit categories.

Table 69: Detailed composition (weight sorted) – 57 categories from 2008 – by year

Category from 2008		Weight sorted (kg)	
		SMA 2008	SMA 2014
2008-1	Food organics – unpackaged	2192.763	1032.899
2008-2	Food organics – packaged	78.274	42.823
2008-3	Liquid	51.835	83.163
2008-4	Garden organics	128.333	156.09
2008-5	Wood/untreated – board/pole, untreated	9.751	9.743
2008-6	Wood/untreated – pallets/furniture	3.167	0
2008-7	Wood/untreated – chipboard / MDF	1.821	0.101
2008-8	Wood/treated/painted	8.364	24.36
2008-9	Cardboard dry – packaging (incl. liquid paperboard)	217.949	204.047
2008-10	Cardboard dry – production spoils	5.671	3.555
2008-11	Cardboard – waxed	26.967	12.418
2008-12	Cardboard – wet	83.681	27.964
2008-13	Paper – photocopy paper	21.756	184.446
2008-14	Paper – magazines / catalogues	114.567	54.194
2008-15	Paper – brochures and leaflets	50.533	29.191
2008-16	Paper – books	47.1	47.006
2008-17	Paper - printing/writing (other office)	634.493	185.847
2008-18	Paper – newsprint	284.747	69.841
2008-19	Paper – brown Kraft paper	65.859	238.285 ^
2008-20	Paper – rolls of low grade	149.863	9.316
2008-21	Paper – hand towels	538.529	254.583
2008-22	Paper – contaminated (inc. tissue/excl. hand towels)	479.432	314.304
2008-23	Plastic – containers recyclable	392.503	249.779

2008-24	Plastic – other	170.225	237.279
2008-25	Plastic – film packaging (bags and film)	635.811	597.622
2008-26	Plastic – polystyrene foam (EPS)	38.813	7.981
2008-27	Glass – containers	298.965	116.350
2008-28	Glass – plate / non-pack. (other glass)	14.317	3.826
2008-29	Metal (ferrous) - packaging	65.726	64.867
2008-30	Metal (ferrous) - non-packaging	37.814	52.042
2008-31	Metal (non-ferrous) - packaging	60.426	41.539
2008-32	Metal (non-ferrous) - non-packaging	29.012	19.663
2008-33	Textiles – carpet and underlay	4.094	15.298
2008-34	Textiles – cloth	343.06	211.183
2008-35	Textiles – covered furniture	9.956	0
2008-36	Textiles – mattresses	0	0
2008-37	Textiles – other	8.44	59.449
2008-38	Rubber – tyres, tubes	2.447	0.909
2008-39	Rubber – other	57.785	32.471
2008-40	Electrical and electronic – TVs	3.578	2.755
2008-41	Electrical – computers and peripherals	5.15	0.609
2008-42	Electrical – toner cartridges	5.581	4.532
2008-43	Electrical and electronic – whitegoods	0.059	0
2008-44	Electrical – WEEE (other)	38.864	23.14
2008-45	C&D – concrete	0.777	0
2008-46	C&D – bricks	2.595	0.494
2008-47	C&D – tiles	3.557	4.373
2008-48	C&D – rock/dirt/soil	115.019	15.821
2008-49	C&D – asphalt	0.072	0
2008-50	C&D – plasterboard	0.158	21.974
2008-51	Hazardous / special – chemicals, clinical and processing residuals	103.923	50.07
2008-52	Hazardous / special – batteries	10.125	1.442
2008-53	Hazardous / special – gas bottles	0	0.186
2008-54	Hazardous / special – fluorescent tubes	1.127	0.66
2008-55	Fines (<10mm)	268.827	13.262
2008-56	Nappies	171.78	211.705
2008-57	Other	91.669	114.892
Total		**8187.71**	**5160.349**

^ Includes 54.090kg of brown Kraft paper in the 2014 audit, plus 119.087kg of paper other packaging and 65.108kg of liquid paperboard which do not have an equivalent 2008 category. The material was placed into brown Kraft paper, given that these are all packaging types.

Table 70: Recyclability detailed composition (weight sorted) – by year

Recyclability category consolidated	Recyclability category detail	Weight sorted aggregated (kg)	
		SMA 2008	SMA 2014
Recyclable now	Organic compostable food	2192.763	1032.899
Recyclable now	Organic compostable wood	140.621	165.934
Recyclable now	Organic compostable paper	1017.961	568.887
Recyclable now	Cardboard commingled	223.62	207.602
Recyclable now	Paper commingled	1368.918	818.126
Recyclable now	Plastic commingled	392.503	249.779
Recyclable now	Plastic film	635.811	597.622
Recyclable now	Plastic other	38.813	7.981
Recyclable now	Glass commingled	298.965	116.35
Recyclable now	Metal commingled	126.152	106.406
Recyclable now	Metal other	66.826	71.705
Recyclable now	Textiles (mattresses)	0	0
Recyclable now	Electrical	8.787	3.364
Recyclable now	Masonry	3.372	0.494
Recyclable now	**Sub-total**	**6511.74**	**3946.655**
Recyclable in future	Organic other	140.924	150.346
Recyclable in future	Cardboard other	110.648	40.382
Recyclable in future	Plastic other	170.225	237.279
Recyclable in future	Glass other	14.317	3.826
Recyclable in future	Textiles other	365.55	285.93
Recyclable in future	Rubber	60.232	33.38
Recyclable in future	Electrical	44.445	27.672
Recyclable in future	Masonry	118.806	42.168
Recyclable in future	Nappies	171.78	211.705
Recyclable in future	**Sub-total**	**1196.927**	**1032.688**
Not recyclable	Other	475.671	180.512
Not recyclable	**Sub-total**	**475.671**	**180.512**
Total		**8187.71**	**5160.349**

Table 71: Consolidated composition (weight sorted) – visual categories – by year

Category (consolidated visual audit)	Weight sorted aggregated (kg)	
	SMA 2008	SMA 2014
Cardboard	334.27	313.09
Electrical	53.23	31.04
Food	2322.87	1158.89
Garden organics	128.33	156.09
Glass	313.28	120.18
Masonry	122.18	42.66
Metals	192.98	178.11
Paper	2386.88	1321.91
Plastic	1237.35	1092.66
Rubber	60.23	33.38
Textiles	365.55	285.93
Wood	23.1	34.2
Other – nappies	171.78	211.71
Other – other	475.67	180.51
Total	**8187.71**	**5160.349**

Table 72: Detailed composition (weight sorted) – visual categories – by year

Category (detailed visual audit)		Weight sorted aggregated (kg)	
		SMA 2008	SMA 2014
V-1	Cardboard dry – loose	223.62	207.602
V-2	Cardboard dry – compacted	0	0
V-3	Cardboard – wet strength/waxed – loose	110.648	105.49
V-4	Cardboard – wet strength/waxed – compacted	0	0
V-5	Electrical – computers and peripherals	5.15	0.609
V-6	Electrical – other	44.445	27.672
V-7	Electrical – TVs	3.578	2.755
V-8	Electrical – whitegoods	0.059	0
V-9	Food organics – packaged (incl. liquids)	130.109	125.986
V-10	Food organics – unpackaged	2192.763	1032.899
V-11	Garbage bags	0	0
V-12	Garden organics	128.333	156.09
V-13	Glass – non-packaging	14.317	3.826
V-14	Glass – packaging	298.965	116.35
V-15	Masonry materials – concrete/bricks	3.372	0.494
V-16	Masonry materials – other	118.806	42.168
V-17	Metal (ferrous) – packaging	65.726	64.867
V-18	Metal (ferrous) – non-packaging (low density)	37.814	52.042
V-19	Metal (ferrous) – non-packaging (high density)	0	0
V-20	Metal (non-ferrous) – packaging	60.426	41.539
V-21	Metal (non-ferrous) – non-packaging (low density)	29.012	19.663
V-22	Metal (non-ferrous) – non-packaging (high density)	0	0
V-23	Paper – office	656.249	370.293
V-24	Paper – other	1514.908	769.119
V-25	Paper – packaging	215.722	182.493
V-26	Plastic – EPS foam	38.813	7.981
V-27	Plastic – film packaging	635.811	597.622
V-28	Plastic – other	170.225	237.279
V-29	Plastic – rigid packaging	392.503	249.779
V-30	Rubber	60.232	33.38
V-31	Textiles and leather	351.5	270.632
V-32	Textiles – carpet and underlay	4.094	15.298
V-33	Textiles – mattresses	0	0
V-34	Textiles – covered furniture	9.956	0
V-35	Wood – treated/painted	10.815	24.002
V-36	Wood – treated/painted – pallets	0	0.358

V-37	Wood – untreated	11.572	9.844
V-38	Wood – untreated – pallets	0.716	0
V-39	Other – batteries	10.125	1.442
V-40	Other – gas bottles	0	0.186
V-41	Other – nappies	171.78	211.705
V-42	Other (including fines <10 mm)	465.546	178.884
	Total	**8187.71**	**5160.349**

Appendix I – Confidence intervals

Tables 73 and 74 provide the confidence intervals for each of the consolidated visual auditing categories and detailed visual auditing categories respectively.

Table 73: At 90 per cent confidence level the error margins – consolidated visual audit material categories

Category (consolidated visual audit)	Mean overall	Minimum	Maximum	Interval
Cardboard	5.5%	3.3%	7.7%	+/- 2.2%
Electrical	0.5%	0%	1.2%	+/- 0.7%
Food	26.5%	22.4%	30.6%	+/- 4.1%
Garden organics	3.1%	1.8%	4.4%	+/- 1.3%
Glass	2.8%	1.2%	4.4%	+/- 1.6%
Masonry	0.7%	0%	1.4%	+/- 0.7%
Metals	3.1%	1.4%	4.8%	+/- 1.7%
Paper	24.4%	20.2%	28.6%	+/- 4.2%
Plastic	20.4%	16.5%	24.3%	+/- 3.9%
Rubber	0.7%	0%	1.6%	+/- 0.9%
Textiles	4.6%	2.7%	6.5%	+/- 1.9%
Wood	0.6%	0%	1.2%	+/- 0.6%
Other – nappies	4.3%	2.4%	6.2%	+/- 1.9%
Other – other	2.8%	1.3%	4.3%	+/- 1.5%

Table 74: At 90 per cent confidence level the error margins – detailed visual audit material categories

Category (detailed visual audit)		Mean overall	Minimum	Maximum	Interval
V-1	Cardboard dry – loose	3.7%	1.9%	5.5%	1.8%
V-2	Cardboard dry – compacted	None recorded			
V-3	Cardboard – wet strength/waxed – loose	1.9%	0.7%	3.1%	1.2%
V-4	Cardboard – wet strength/waxed – compacted	None recorded			
V-5	Electrical – computers and peripherals	0%	0%	0.1%	0.1%
V-6	Electrical – other	0.5%	0%	1.1%	0.6%
V-7	Electrical – TVs	0%	0%	0.2%	0.2%
V-8	Electrical – whitegoods	None recorded			
V-9	Food organics – packaged	2.5%	1%	4%	1.5%
V-10	Food organics – unpackaged	23.9%	19.9%	27.9%	4%
V-11	Garbage bags	-	-	-	-
V-12	Garden organics	3.1%	1.8%	4.4%	1.3%
V-13	Glass – non-packaging	0.1%	0%	0.3%	0.2%
V-14	Glass – packaging	2.7%	1.1%	4.3%	1.6%
V-15	Masonry materials – concrete/bricks	0%	0%	0.1%	0.1%
V-16	Masonry materials – other	0.7%	0%	1.4%	0.7%
V-17	Metal (ferrous) – packaging	1.3%	0.2%	2.4%	1.1%
V-18	Metal (ferrous) – non-packaging (low density)	0.7%	0%	1.5%	0.8%
V-19	Metal (ferrous) – non-packaging (high density)	None recorded			
V-20	Metal (non-ferrous) – packaging	0.7%	0%	1.6%	0.9%
V-21	Metal (non-ferrous) – non-packaging (low density)	0.4%	0%	0.9%	0.5%
V-22	Metal (non-ferrous) – non-packaging (high density)	None recorded			
V-23	Paper – office	6.1%	3.7%	8.5%	2.4%
V-24	Paper – other	15.3%	11.8%	18.8%	3.5%
V-25	Paper – packaging	3%	1.4%	4.6%	1.6%
V-26	Plastic – EPS foam	0.2%	0%	0.6%	0.4%
V-27	Plastic – film packaging	11.4%	8.4%	14.4%	3%
V-28	Plastic – other	3.9%	2%	5.8%	1.9%
V-29	Plastic – rigid packaging	5%	2.9%	7.1%	2.1%
V-30	Rubber	0.7%	0%	1.6%	0.9%
V-31	Textiles and leather	4.3%	2.5%	6.1%	1.8%
V-32	Textiles – carpet and underlay	0.3%	0%	0.8%	0.5%
V-33	Textiles – mattresses	None recorded			

V-34	Textiles – covered furniture	None recorded			
V-35	Wood – treated/painted	0.4%	0%	1.0%	0.6%
V-36	Wood – treated/painted – pallets	0%	0%	0.1%	0.1%
V-37	Wood – untreated	0.1%	0%	0.3%	0.2%
V-38	Wood – untreated – pallets	None recorded			
V-39	Other – batteries	0%	0%	0.2%	0.2%
V-40	Other – gas bottles	0%	0%	0.1%	0.1%
V-41	Other – nappies	4.3%	2.4%	6.2%	1.9%
V-42	Other (including fines <10 mm)	2.8%	1.3%	4.3%	1.5%