EPA SKIP WASTE CHARACTERISATION STUDY

Final Report

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REPORT

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- Central Statistics Office (CSO).
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GLOSSARY OF TERMS

The terms used in this report have the following meanings:

- **Biodegradable Municipal Waste (BMW)** comprises those elements of municipal waste streams that will rot or degrade biologically.
- **Civic Amenity Site (CAS)** are designated centres that accept household and some commercial items such as bulky items, hazardous wastes and WEEE that should not be placed in kerbside bins.
- **Commercial waste** is the non-household fraction of municipal waste, which is produced by commercial premises such as shops, offices, and restaurants, as well as municipal premises such as schools, hospitals etc. It also includes non-process industrial waste arising from factory canteens, offices etc. Commercial waste is broadly similar in composition to household waste, consisting of a mixture of paper and cardboard, plastics, organics, metal, and glass.
- **Deposit Return Scheme (DRS)** is a circular economy initiative to promote the return of certain types of containers by offering a refundable deposit at the time of purchase. Initially only beverage PET bottles, aluminium, and steel cans from 150ml to 3,000ml are included in the scheme.
- **Fines (<20mm)** refers to material that passes through a 20mm screen.
- **Household waste** is defined as waste produced within the curtilage of a building/residence or self-contained part of a building/premises used for the purposes of living accommodation. Household waste includes dry recyclables (e.g., glass, plastic, metals, paper, and cardboard); organic waste (food and garden organics); residual (black bin) waste and other wastes generated in the household such as bulky waste, portable batteries, waste electrical and electronic equipment, and household hazardous wastes.
- **List of Wastes (LoW)** is a list of all waste types generated in the EU. The different types of waste are fully defined by a six-digit code, with two digits each for chapter, sub-chapter, and waste type. The catalogue is available for download from the EPA website at: www.epa.ie/publications/monitoring--assessment/waste/national-waste-statistics/2019--FULL-template.pdf
- **Mean** is the mathematical average of all the items in a sample.
- **N/A** means not applicable.
- **Non-recyclable material** is material that is not widely recycled. The range of materials that are recycled will change over time as technology improves and market conditions alter.
- **NWCPO** means the National Waste Collection Permit Office, the regulatory agency responsible for managing waste collection permits and registrations. The NWCPO is operated by Offaly County Council.
- **Organic waste (OW)** in this report means biodegradable food and liquids (packaged and not packaged), garden and landscaping waste. This is a stream that is sub-divided in the report into:
    - **'Organics (Garden)'** which includes biodegradable waste from gardens and parks such as grass and bush cuttings, twigs, soil, flowers, leaves, tree branches, weeds.
    - **'Organics (Food)'** which includes Food waste, such as Unused or partially used packaged food that cannot easily be separated from packaging. e.g., Jar of honey, a tub of soft cheese, packet of ham, cheese in packaging; Vegetables, fruit, cheese, or sausages removed from packaging. Fruit & vegetables, block of cheese, sausages, bread; Inedible food wastes. Fruit & vegetables peelings, tea bags, meat carcasses (termed 'food waste' in this report). Liquids contained in drink or milk containers. e.g., milk, soft drinks, juices Vegetable oils.
- **Packaging** is defined in Directive 94/62/EC initially as: 'packaging' shall mean all products made of any materials of any nature to be used for the containment, protection, handling, delivery, and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer. 'Non-returnable' items used for the same purposes shall also be considered to constitute packaging.
- **Representative** means a sample resulting from a sampling plan that can be expected to reflect adequately the properties of interest in the parent population.

- **Representative sample** means a sample in which the characteristic(s) of interest is (are) present with a reliability appropriate for the purposes of the testing programme.
- **Sample** means portion of material selected from a larger quantity of material.
- **Single Use Plastic (SUP)** products are made wholly or partly from plastic and are typically intended to be used just once or for a brief period before they are discarded.
- **Spatial variability** is a general term for the variability between locations in the material to be sampled.
- **Stratification** consists of dividing the population into subsets (called strata) within each of which an independent sample is selected. The process of stratification may be undertaken on a geographical basis, e.g., by dividing up the sampled area into sub-areas on a map; or by reference to some other quality of the population, e.g., by dividing the persons in a town into strata according to gender or into three strata according to whether they belong to upper, middle- or lower-income groups. The term stratum is sometimes used to denote any division of the population for which a separate estimate is desired, i.e., in the sense of a domain of study. It is also used sometimes to denote any division of the population for which neither separate estimates nor actual separate sample selection is made.
- **Stratified sampling** in a population which can be divided into mutually exclusive and exhaustive strata (i.e., sub-populations), is sampling that is carried out in such a way that specified proportions of the sample are drawn from the different strata and each stratum is sampled with at least one sampling unit.
- **A stratum (plural strata)** refers to a subset (part) of the population (complete collection of items under consideration) which is being sampled. Stratification thus consists of dividing the population into strata within each of which an independent sample can be chosen. Stratum/strata are mutually exclusive and exhaustive parts of a population. They are identified either because they are believed to be different from each other or for the purposes of sampling. In this project strata were selected that describe the Irish waste management system, including urban/rural divisions and type of waste stream (i.e. household, non-household, and bulky skip waste).
- **Temporal variability** is a general term for the variability through time.
- **Vapes** are handheld electronic devices designed for inhaling vaporised substances. Vapes can be include single use or have rechargeable batteries.
- **Urban strata** include Dublin City (the four LAs), Cork City, Galway City, Limerick City and Waterford City.
- **Waste** is defined as any substance or object which the holder discards or intends or is required to discard, under the Waste Framework Directive (2008/98/EC).
- **Waste Categories** refers to classification of waste materials for the purposes of both reporting and on-site survey work. There are three types of waste categories used:
    - **Primary Category** is a high-level waste category e.g., plastics, organics, metals etc.
    - **Primary Sub-Category** is a more specific sub-category within a Primary Category, e.g., Polyethylene (PET) packaging bottles, food waste, ferrous metal etc.
    - **Secondary Sub-Category** includes specific wastes including Single Use Plastics (SUP), compostable wastes and ‘special interest items’ that could be targeted for alternative collections, and/or has a potential reuse alternative.
- **Waste electrical and electronic equipment (WEEE)** refers to electrical and electronic equipment which is waste within the meaning of Article 3(a) of the Waste Directive 2008/98/EC, including all components, subassemblies and consumables which are part of the product at the time of discarding.
- **Waste management** means the collection, transport, recovery, and disposal of waste, including the supervision of such operations and the aftercare of disposal sites, and including actions taken as a dealer or broker.

- **Waste Region** – There are three waste regions
    - **Southern Region (SR)** is the waste region covering the local authorities Clare, Kerry, Limerick, Tipperary, Kilkenny, Carlow, Wexford, Waterford, Cork City, and Cork County.
    - **Connacht-Ulster Region (CUR)** is the waste region covering the local authorities Donegal, Leitrim, Sligo, Mayo, Galway County, Galway City, Roscommon, Cavan, and Monaghan.
    - **Eastern-Midlands Region (EMR)** is the waste region covering the local authorities Louth, Meath, Westmeath, Longford, Fingal, South-Dublin, Dún Laoghaire, Dublin City, Kildare, Offaly, Laois, and Wicklow.

EXECUTIVE SUMMARY

This report presents the composition of the national skip waste in Ireland in 2023/2024. The profile was generated from a series of physical analysis of skip waste streams. The report profiles the following waste streams:

- **Municipal Household Skip Waste (20 03 07 A)**.
- **Municipal Non-Household Skip Waste (20 03 07 B)**.
- **Bulky Waste at Civic Amenity Sites (CAS) (20 03 07 CA)**.

The aim of the project is to provide accurate up-to-date national information on the composition of waste derived from the three skip streams, mentioned above to enable accurate waste statistics reporting and to inform national waste and circular economy policy, infrastructure planning and regulatory and enforcement activities.

The results from the study are summarised in **Table ES.1**.

Table ES.1: Waste distribution between skip streams

Primary Waste Categories	Municipal Household	Municipal non-household	Bulky Skip CA
Organics (all)	3.5%	4.3%	1.6%
Papers	2.6%	3.1%	0.8%
Cardboards	2.4%	2.8%	5.2%
Composites	5.5%	4.4%	1.8%
Textiles excl. Nappies	7.5%	10.5%	15.8%
Nappies	0.4%	0.5%	0.1%
Plastics	5.2%	6.3%	6.0%
Glass	0.9%	0.6%	0.0%
Metals	7.4%	3.4%	1.6%
Wood	11.7%	13.6%	15.6%
Hazardous Municipal Waste	4.1%	3.8%	5.9%
Non-Hazardous Municipal Waste	25.5%	40.2%	37.6%
Unclassified Combustibles	0.9%	0.4%	0.8%
Unclassified Incombustibles	0.6%	2.0%	0.9%
Fines (<20mm)	2.2%	1.4%	1.2%
Non-municipal waste	17.9%	1.0%	2.9%
Contamination	1.8%	1.6%	2.2%
Total	100%	100%	100%

The project experienced significant challenges in gathering samples of municipal household, and particularly non-household bulky waste skips (EWC 20 03 07 B) due to heavy contamination with construction and demolition waste (CDW) (which should be designated EWC 17 series). Elevated levels of CDW (>50% by subjective assessment) were encountered during the preliminary screening phase which led to the rejection of a high proportion of skips. At one waste facility 20 skips were initially identified as suitable by the weighbridge operator. However, of the 20 skips only 3 passed the pre-survey inspection. At another waste facility only 2 of the 6 identified skips were deemed appropriate for characterisation. Discussions with waste management operators and with IWMA indicated that skips containing CDW being designated as 'bulky skips' is a widespread issue. Consequently, the number of skips sampled was reduced from the initial target of 30 to 16. Of the skips that were deemed suitable, CDW comprised only 8% of the overall stream, with household skips containing the highest levels (18%), primarily concentrated in three of the six samples.

Non-hazardous municipal waste was introduced as a new primary waste category for the 2023/2024 survey. In the 2021 study, items now placed in these subcategories were distributed among different primary waste subcategories. This new primary waste category emerged as the largest primary waste category in household (26%), non-household (40%) and CA (38%) skips. With the introduction of this new primary waste category, comparisons between 2021 and 2023/2024 data are affected as comparisons are not like-with-like.

Furniture was the largest primary waste subcategory in household (21%), non-household (35%) and CA (27%), representing 28% of the overall skip waste.

Waste management: Despite well-established collection systems for each of the following streams, textiles, mixed municipal black bag waste, hazardous waste and other streams including recyclables and organic waste were present in each of the skip streams. Textiles was the most apparent of these waste streams, accounting for 11% of skip waste overall.

This is the first skip study to investigate and quantify **reusable items**. The description, condition, weight, and photograph of products within these product categories were recorded. Overall, household skip waste contained 16% reusable items, non-household 10% and CAS 14%. The textile (14%) and other product (13%) categories contained the highest levels of reusable items.

The findings from the report emphasise the need for actions to improve segregation practices of bulky municipal waste and develop a robust system for capturing reusable items. These actions may include:

- Targeted awareness and education campaigns focused on improving waste segregation practices and collection systems in skip streams.
- Enforcement measures to lower the proportion of non-target items in skip streams.
- The continued promotion and support of surveys, customer profiling and training to understand the issues associated with the misclassification of skips.

These measures could reduce the proportions of non-target waste placed in skip waste. These actions can help enhance resource efficiency and support circular economy principles by ensuring resources are managed effectively.

1 INTRODUCTION

1.1 Background

This municipal (household and non-household) skip and bulky waste characterisation project was undertaken on behalf of the Environmental Protection Agency (EPA).

The EPA's Circular Economy and Waste Statistics Team (CEWS) is responsible for compiling and publishing national waste statistics. These publications are informed by waste characterisation surveys and present the most up to date national information on waste generation and management in Ireland. This data is used to inform national waste and circular economy policy, infrastructure planning, regulatory and enforcement activities, and progress legislative targets.

To provide accurate and up to date information on the composition of waste for effective waste management planning, implementation, and monitoring, it is essential to routinely conduct waste characterisation surveys.

The EPA's Circular Economy and Waste Statistics Team (CEWS) have identified gaps in the waste characterisation information such as detailed information on the compositions of waste collected from:

- **Municipal Household Skip Waste. (LoW code 20 03 07 A).**
- **Municipal Non-Household Skip Waste. (LoW code 20 03 07 B).**
- **Bulky Waste at CAS. (LoW code 20 03 07 CA).**

The most recent skip waste characterisation study, conducted in 2021, provided valuable information on the composition of the waste from CDW skips and a sub-selection of municipal bulky skip waste. It is now necessary to complete a full sampling of waste collected from the skip waste streams.

1.2 Aim

The aim of the project is to complete a waste characterisation on skip waste streams that have not been sorted in any way after collection.

This work was done according to agreed project plan and methodology, which had regard to the EPA's methodology for the characterisation of skip waste and other relevant methods used in Ireland and other relevant/comparable EU states.

1.3 Project Delivery

The sampling methodology was based on the method developed in 2019[1] ('the 2019 methodology') and updated sampling plans issued to the EPA in January 2023. The sampling methodology also draws learnings from sampling plans developed for other recent, similar waste characterisation projects delivered for the EPA.

The sampling fieldwork was completed between October 2023 and June 2024. The fieldwork consisted of a physical waste compositional analysis of the three skip waste streams.

[1] RPS, 2020. Development of a method to characterisation municipal skip waste (household and non-household).

2 SAMPLING METHODOLOGY

2.1 Sampling Approach

The **sampling methodology** was developed using the most recently available (2021) data from the National Waste Collection Permit Office (NWCPO) and EPA.

The sampling methodology considers how best to conduct characterisation surveys on statistically valid regional and national samples.

The background information provided by the EPA was used to:

- Allocate the sampling effort per skip waste stream.
- Allocate sampling effort for each stratum.
- Identify suitable Authorised Waste Collectors (AWCs) and discuss the skip wastes required for the study.

2.1.1 Stratification of samples

Selecting samples requires a systematic means of classify them in terms of key factors that influence waste composition. This approach is called stratification and involves dividing the population into different strata (nonoverlapping groups) that reflects the main variables that influence kerbside waste composition. Strata are mutually exclusive and exhaustive parts of a population.

The following strata were chosen for this study:

- Type of waste stream (i.e. household, non-household, and bulky skip waste).

Area type ("Urban (Cities (and their suburbs))" and Rural and mixed rural/ city areas").

Table 2-1 shows allocations for 30 samples, estimated based on data provided to RPS by the EPA.

The distribution of the 30 samples between the 3 skip waste types was determined based on tonnage and other data.

Available data on tonnages for bulky waste at CAS is limited as shown in **Table 2 1.** Tonnage data alone generated a sample distribution of 10:19:1, as shown. This distribution does not generate the required depth of data for all three skip types. For this reason, a manual distribution of 5 samples were allocated to bulky waste at CAS to avoid the small sample size of 1, and the remaining samples split evenly as shown[2].

Table 2-1: Initial number of samples per event

Waste Stream	Household	Non-Household	CAS
Tonnage	214,898	404,858	12,067
Uncorrected distribution of 30 samples based on tonnage	10	19	1
Sample distribution proposed (after manual adjustment)	12	13	5

This allocation of samples is then distributed between the Eastern-Midlands Region (EMR) and the Southern Region (SR) according to population (Census 2022) ratios. The Connacht-Ulster Region (CUR) was excluded as being too small at 18% of population (this would require a third sampling base) and its samples were redistributed between the two other regions.

[2] Adjusted numbers agreed at progress meeting 15th November 2023 - Household (9 become 12) and non-household (15 become 13).

Within the waste regions, samples are distributed Rural or City according to the relevant population (Census 2022) ratios in the relevant Region.

The total distributed number of samples to be analysed for each skip type is shown in **Table 2-2**.

Table 2-2: Initial allocation of samples between area type and region

Regional base for sampling	EMR		SWR		Total
	Urban	Rural	Urban	Rural	
Household Skips	3	4	2	3	12
Non-Household Skips	3	5	3	2	13
CAS	1	2	1	1	5
Total	7	11	6	6	30

2.2 Identification and selection of a suitable waste producers

RPS profiled waste producers to understand the patterns of skip waste collection. A listing with weight, waste type, event type was required from these waste producers to develop the sampling plans.

The analysis identified:

- Proportion of waste collected by type.
- Variability in skip waste.
- Information on the composition of waste.
- Seasonal variation patterns.

In parallel the survey team were present on-site to:

- Confirm how each waste delivery was recorded.
- Compare records with the waste contents of each delivery once tipped.

2.3 Sampling Strategy

The sampling plan is a key step of the monitoring programme and was prepared in accordance with *EN 14899 Characterization of waste - Sampling of waste materials - Framework for the preparation and application of a Sampling Plan*.

A sampling plan was prepared following background research and using waste management data available at project initiation. The plan describes the practical activities required to undertake the characterisation survey and meet the objectives of the programme (selecting and reducing samples, conducting waste sorting, and recording results).

A meeting was held with each facility prior to conducting the survey and the Project Team developed a site-specific sampling plan and conducted a risk assessment for each waste facility.

2.4 Logistics Planning

Adequate time was allowed for planning the surveys to prepare for and resolve the practical issues involved, such as:

- The treatment facility making available a covered and safe area for mixing and reducing the sample.
- Identifying a supervisor and sorting staff.
- Preparing equipment to conduct the physical sorting of the waste including sorting table with a network of holes that are 20mm diameter in size, buckets, weighing scales, shovels.
- The measures required meeting the H&S requirements specific to the site in question issues such as vaccinations, gloves, masks, protective clothing, disinfectant wipes etc.

- Briefing and training of sorting staff in advance of each sorting event.
- Sampling was aligned to waste delivery start and finish times.
- Welfare (lunch) breaks were timed so as not to constrain sampling.

2.5 Challenges

Sourcing suitable skip types, particularly non-household skips (20 03 07 B), proved challenging throughout the project. Some waste companies utilise a centralised, off-site weighbridge to schedule the collection and delivery of skips to individual waste facilities. This made it difficult for some facilities to provide an accurate schedule of days when they expected to receive certain streams.

Furthermore, skip LoW codes were sometimes assigned in ways that did not always reflect actual content. Non-household skips containing a high proportion of CDW waste were highly prevalent throughout the project. Visual and weight inspections proved to be an effective pre-screening method for identifying suitable and excluding unsuitable skips. However, some skips initially identified as suitable by visual inspection were subsequently deemed unsuitable once tipped or after sorting had begun – usually due to heavy CDW content at the bottom of skips.

To address these issues and to minimise anticipated challenges such as the misclassification of skips, several strategies were implemented.

- Clear instructions were provided to waste facilities regarding the content of suitable skips.
- Communication was maintained with facilities to coordinate collection and safe storage of samples.
- Pre-survey visual inspections of skips were conducted by the AWC and by RPS prior to sorting to ascertain the primary content of the skips and confirm the LoW code assigned. Skips were accepted for survey only if they contained >50% municipal bulky waste. A high rejection rate occurred during the visual inspection phase, with a ratio of skips rejected to accepted exceeding 5:1.
- The weights on weighbridge dockets provided by the waste facilities were reviewed prior to sorting. Heavier household and non-household municipal skips were found to contain higher proportions of CDW, as CDW tends to be dense. Heavier skips were then scrutinised closer with a view to exclusion.

Due to these logistical challenges presented by carrying out visual inspections at facilities in the SWR, and challenges identifying suitable waste facilities, it proved to be more time effective to carry out surveys at facilities within the EMR, and by agreement, the SWR stratum was excluded.

Further, the challenges presented in identifying suitable samples and the impact in terms of delays in the sorting and to the project led to a reduction in the number of allocated skip samples. **Table 2-3** shows the updated allocation of samples.

Table 2-3: Updated Allocation of sampling effort between area type

Regional base for sampling	EMR		Total
	Urban	Rural	
Household Skips	3	3	6
Non-household Skips	2	4	6
CAS	2	2	4
Total	7	9	16

2.6 Survey Execution

2.6.1 Waste categories

The waste categories used in this survey were agreed with the EPA. This listing and their compositions are derived and informed by the 2021 skip waste characterisation survey and recent EPA surveys including the 2022 EPA Household Municipal Waste Characterisation[3] project.

2.6.2 Sample sorting

The survey supervisor conducted a visual inspection of the skips to identify the main items, variation in contents and to confirm the LoW code. A copy of the delivery dockets and the weighbridge records were retained to confirm the nature of the skips. This step ensured that the correct skip types were surveyed and identified the variation between skips.

Sample sorting followed the updated methodology for characterising skip waste and was informed by the 2022 HHMWC project.

The survey comprised:

- Conducting waste sorting and recording results.
- Producing an excel survey report.

The sorting team comprised an experienced supervisor and sorting staff trained to recognise the different waste categories.

An initial pre-sort was undertaken to remove bulky items. These items were categorised (using pre-agreed categories) and weighed.

Black bin waste was set aside and weighed. The bags were subsequently opened and categorised as household or non-household based on a visual inspection of the contents.

The supervisor ensured that the quality control of the sorted material, by checking the material placed in each container.

Items identified with the potential for reuse were weighed and qualitative information on the condition was recorded.

Remaining material, if any, passing through the 20mm network of holes on the sorting table was classified as ‘Fines < 20mm’.

As results were gathered, they were reviewed, examined, and incorporated into the modelling system.

Any deviation required from the process was agreed with EPA and recorded, with the reasoning for doing so.

It was important to find out if the composition was consistent or variable. This insight was gained from the profiling and visual observation. Where composition was variable, the cause of this variability was ascertained and noted.

2.7 Model

The data collected during the surveys was used to produce a model with a tab for each skip type. Each calculates a set of aggregated national factors to be applied to scale up nationally aggregated skip waste data that is collated by the EPA for reporting requirements. The model includes:

- Calculated factors with clear and transparent links to the survey data spreadsheets.
- A single, simple spreadsheet that includes all weights and calculations.

[3] https://www.epa.ie/publications/monitoring--assessment/waste/national-waste-statistics/2022-household-municipal-waste-characterisation-report.phpv

The model generated takes account of the published[4] contamination 'factors' for packaging[5] waste developed as part of the 2022 Household Municipal Waste Characterisation Study. These contamination factors were used to adjust the waste characterisation data be removing contamination data from packaging data (i.e., corrected for contamination) and to account for contamination as a separate line item. This allowed production of more accurate estimates of packaging percentages within skip waste.

The model also accounts for the appropriate household and non-household black bag waste factors published in the EPA's 2022 Household Municipal Waste Characterisation[4] and 2022 Commercial Waste Characterisation studies[6]. These factors were used to adjust the waste characterisation data and account for the waste types within household and non-household black bin bags. This means that there is no separate line for black bag wastes in the final model, this stream being distributed into its sub-category parts – e.g. garden waste in a black bag is allocated to the organic garden and park sub-category etc.

[4] www.epa.ie/publications/monitoring--assessment/waste/national-waste-statistics/2022-household-municipal-waste-characterisation-report.php

[5] Paper Packaging, Cardboard (Packaging), Composite SUP drinking bottles (incl. caps and lids), Other composites, Textiles Packaging, PET SUP packaging drinking bottes (incl. caps and lids), Other than PET SUP packaging drinking bottles (incl. their caps and lids), Hard plastic packaging other than SUP packaging drinks bottles, Soft plastic packaging (bags and films), Styrofoam, polystyrene (PS) and expanded polystyrene (EPS), Glass packaging, Ferrous metal packaging, Aluminium cans, Other metal packaging, Other non-ferrous metal packaging, Wood packaging, Aerosols, Unclassified combustibles packaging, Unclassified incombustibles packaging,

[6] https://www.epa.ie/publications/monitoring--assessment/waste/national-waste-statistics/2022-commercial-municipal-waste-characterisation-report.php

3 SURVEY RESULTS

The results for the municipal household, non-household skips waste and CAS skip streams are appended in whole to this document in **Appendices B, C** and **D**.

The results present data at primary category and primary sub-category and secondary sub-categories.

- **Primary Category** is a high-level waste category e.g., plastics, organics, metals etc.
- **Primary Sub-Category** is a more specific sub-category within a Primary Category, e.g., polyethylene (PET) packaging bottles, food waste, ferrous metal etc.
- **Secondary Sub-Category** includes wastes of specific interest such as Single Use Plastics (SUP).

The data presented in this section is broken into 17 primary categories and 55 subcategories.

3.1 Municipal Household Skip Waste (20 03 07 A)

Table 3-1: presents the (corrected for contamination and black bag waste as noted in Section 2.6) composition for the 6 household skip samples analysed. Detailed results are presented in **Appendix B**.

Table 3-1: Composition of Household Skips

Primary Waste Categories	Mean	Min	Max	Lower Limit	Upper Limit
Non-Hazardous Municipal Waste	25.5%	11%	44%	18%	33%
Non-municipal waste	17.9%	2%	48%	8%	28%
Wood	11.7%	7%	19%	9%	15%
Textiles excl. Nappies	7.5%	3%	17%	4%	11%
Metals	7.4%	1%	17%	4%	11%
Composites	5.5%	1%	12%	3%	8%
Plastics	5.2%	2%	11%	3%	7%
Hazardous Municipal Waste	4.1%	1%	11%	2%	6%
Organics (all)	3.5%	1%	5%	2%	5%
Papers	2.6%	1%	8%	1%	4%
Cardboards	2.4%	0%	8%	1%	4%
Fines (<20mm)	2.2%	0%	9%	0%	4%
Contamination	1.8%	1%	3%	1%	2%
Unclassified Combustibles	0.9%	0%	5%	0%	2%
Glass	0.9%	0%	2%	1%	1%
Unclassified Incombustibles	0.6%	0%	2%	0%	1%
Nappies	0.4%	0%	1%	0%	1%
Total	100%	N/A	N/A	N/A	N/A

The composition of waste in household skips is illustrated in **Figure 3-1**.

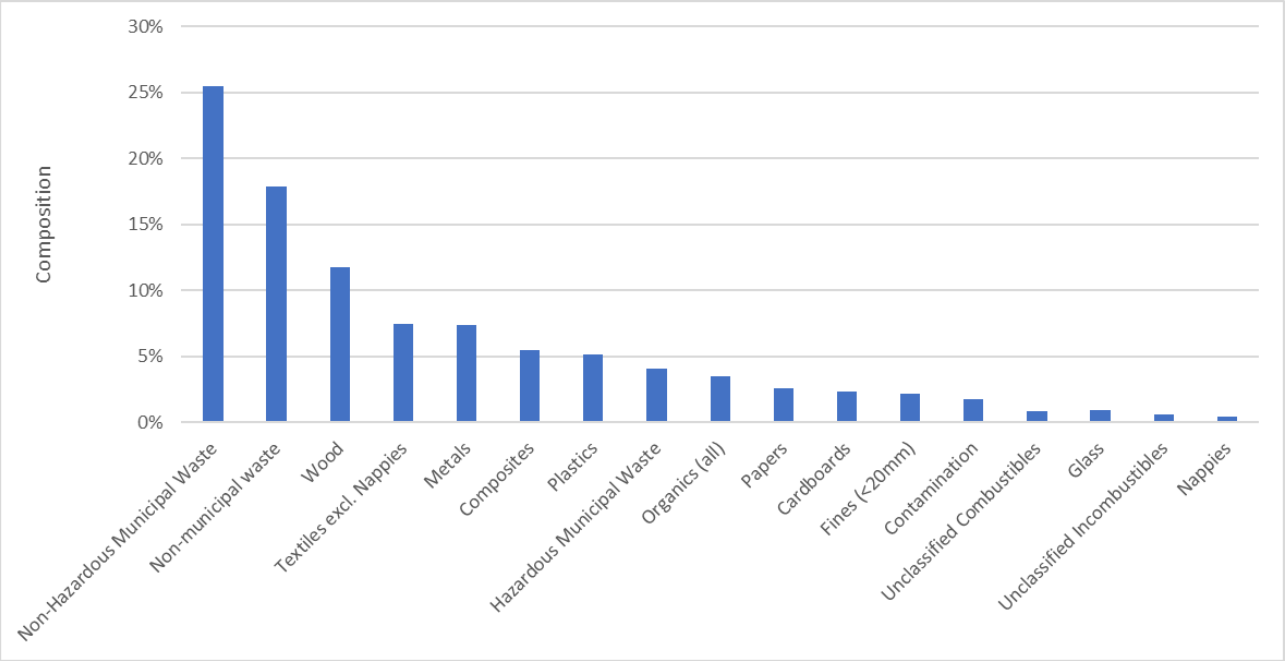

Figure 3-1: Composition of Municipal Household Skips

The largest primary category was the new primary waste category non-hazardous municipal waste. This category includes the sub-categories furniture (21%), toys (3%), bicycles, scooters, prams, and other wheeled leisure/transport items (2%), municipal irregular/special waste (non-hazardous) (0.2%) and mattresses (0.1%).

The second largest primary category was non-municipal waste. This category consisted of CDW (18%), and non-municipal and non-CDW (0.02%).

Wood constituted the third largest primary waste category. This category included treated/composite wood (non-packaging) (10%), untreated wood (non-packaging) (2%), and wood packaging (0.01%).

The remaining categories included textiles excl. nappies (8%), metals (7%), composites (6%) plastics (5%) and hazardous municipal waste (4%). All other categories each comprised less than 4% and are detailed in **Appendix B**.

3.2 Non-Household Skip Waste (20 03 07 B)

A total of 6 non-household skip samples were analysed. **Table-3.2** presents the (corrected for contamination and black bag waste) composition. Detailed results for non-household skips are presented in **Appendix C**.

Table 3-2: Composition of Non-Household Skips

Waste Categories	Mean	Min	Max	Lower Limit	Upper Limit
Non-Hazardous Municipal Waste	40.2%	13%	68%	28%	53%
Wood	13.6%	2%	49%	3%	24%
Textiles excl. Nappies	10.5%	1%	25%	5%	16%
Plastics	6.3%	1%	12%	4%	9%
Composites	4.4%	0%	18%	0%	9%
Organics (all)	4.3%	0%	8%	3%	6%
Hazardous Municipal Waste	3.8%	0%	8%	2%	6%
Metals	3.4%	0%	10%	1%	6%
Papers	3.1%	0%	11%	1%	6%
Cardboards	2.8%	0%	8%	1%	5%
Unclassified Incombustibles	2.0%	0%	6%	1%	3%
Contamination	1.6%	0%	4%	1%	2%
Fines (<20mm)	1.4%	1%	3%	1%	2%
Non-municipal waste	1.0%	0%	3%	0%	2%
Glass	0.6%	0%	2%	0%	1%
Nappies	0.5%	0%	1%	0%	1%
Unclassified Combustibles	0.4%	0%	1%	0%	1%
Total	100%	N/A	N/A	N/A	N/A

The composition of waste in non-household skips is illustrated in **Figure 3-2**.

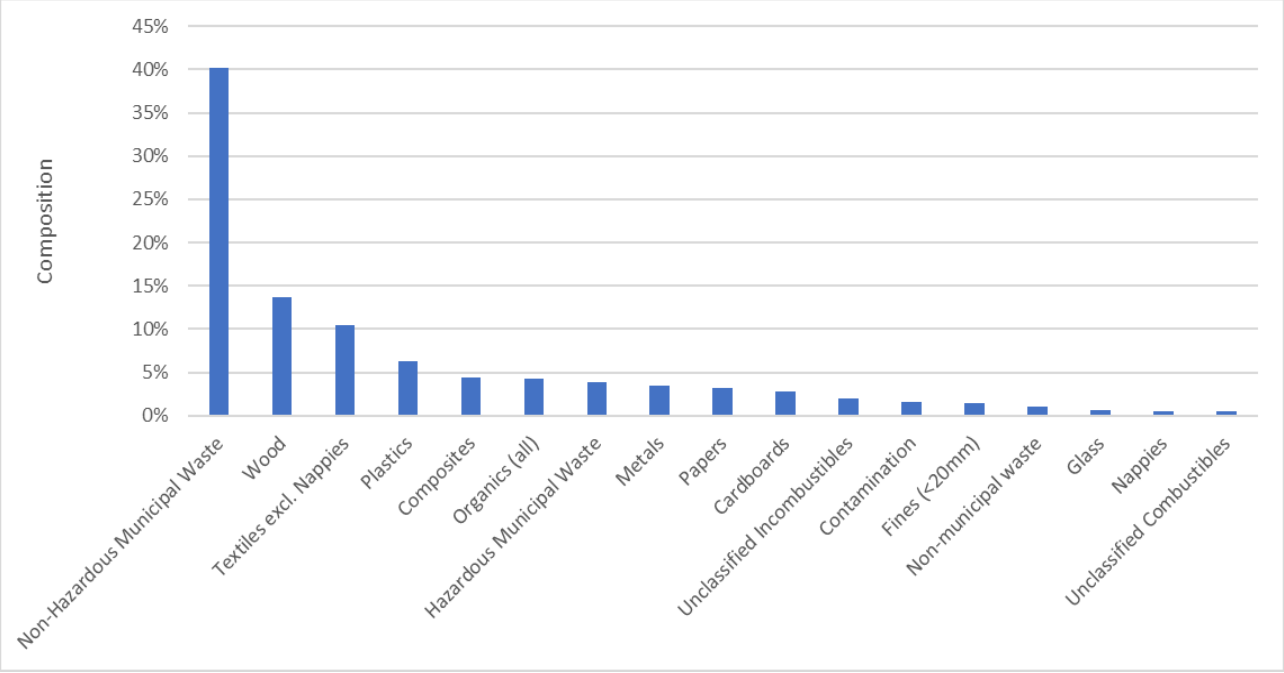

Figure 3-2: Composition of Non-household Skips

The three largest primary waste categories in non-household skips were non-hazardous municipal waste (40%), wood (14%) and textiles excl. nappies (11%). These three primary waste categories comprised almost two thirds (64%) of waste in non-household skips.

The largest primary waste category, the new primary waste category non-hazardous municipal waste comprised furniture (35%), toys (2%), mattresses (2%), municipal irregular/special waste (1%) and bicycles, scooters, prams, and other wheeled leisure/transport items (0.3%)

Wood the second largest primary waste category was comprised of treated/composite wood (non-packaging) (11%), untreated wood (non-packaging) (3%) and wood packaging (0.01%)

The third largest category was textiles excl. nappies. This primary waste category was made up of textiles (non-packaging) other than clothes (7%), textiles (non-packaging) clothes (4%) and textiles packaging (0.01%)

The remaining waste categories each comprised less than 7% and are detailed in **Appendix C**.

3.3 Bulky Waste at Civic Amenity Sites (CAS) (20 03 07 CA)

A total of 3 bulky waste samples from civic amenity sites (CAS) were analysed. **Table 3-3** shows the (corrected for contamination and black bag waste) composition. Detailed results are presented in **Appendix D**.

Table 3-3: Composition of Bulky Waste Skips at CAS

Waste Categories	Mean	Min	Max	Lower Limit	Upper Limit
Non-Hazardous Municipal Waste	37.6%	17%	62%	24%	52%
Textiles excl. Nappies	15.8%	0%	33%	5%	27%
Wood	15.6%	1%	31%	4%	28%
Plastics	6.0%	0%	12%	3%	10%
Hazardous Municipal Waste	5.9%	0%	14%	1%	10%
Cardboards	5.2%	0%	16%	0%	11%
Non-municipal waste	2.9%	0%	9%	0%	6%
Contamination	2.2%	0%	6%	0%	4%
Composites	1.8%	0%	5%	0%	3%
Metals	1.6%	0%	3%	0%	3%
Organics (all)	1.6%	0%	3%	0%	3%
Fines (<20mm)	1.2%	0%	3%	0%	2%
Unclassified Incombustibles	0.9%	0%	4%	0%	2%
Unclassified Combustibles	0.8%	0%	3%	0%	2%
Papers	0.8%	0%	3%	0%	2%
Nappies	0.1%	0%	0%	0%	0%
Glass	0.0%	0%	0%	0%	0%
Total	100%	N/A	N/A	N/A	N/A

The composition of waste in bulky skips at CAS is illustrated in **Figure 3-3**.

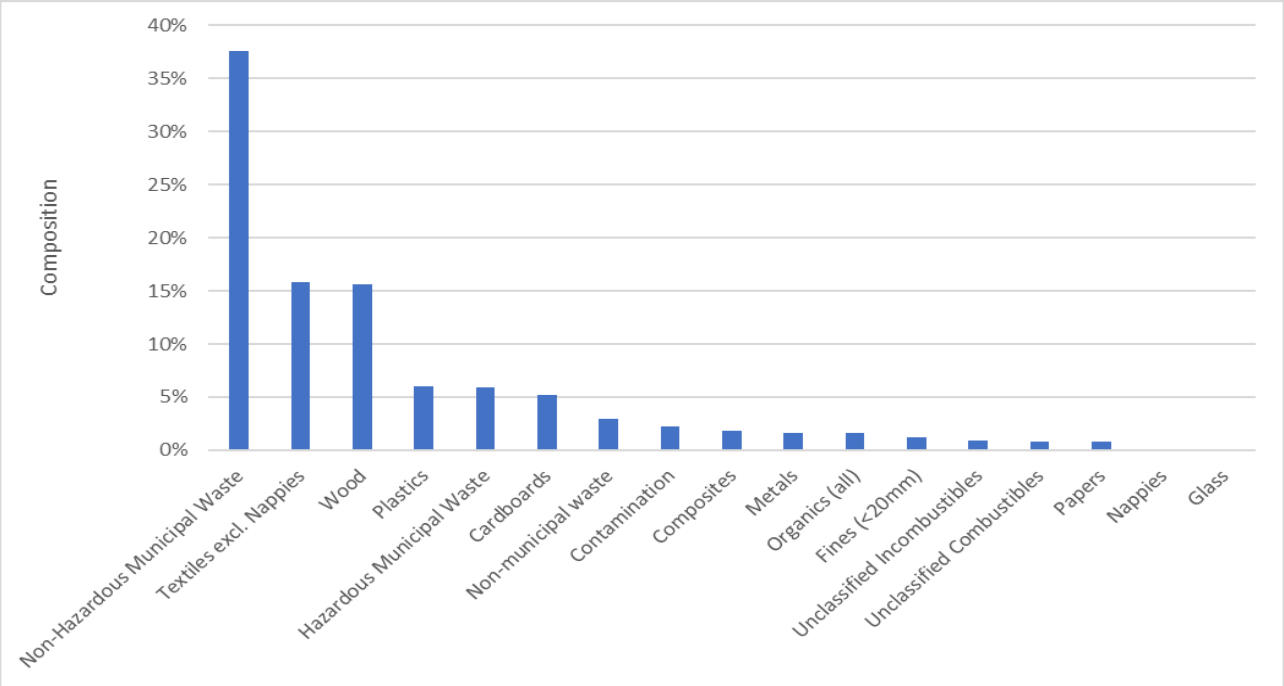

Figure 3-3: Composition of bulky skips at CAS

The most prominent primary waste categories in bulky skips from CAS were non-hazardous municipal waste (38%), textiles excl. nappies (16%) and wood (16%).

The largest primary category was the new primary waste category non-hazardous municipal waste. This category consisted of furniture (27%), toys (5%), mattresses (5%), and bicycles, scooters, prams, and other wheeled leisure/transport items (1%).

The second largest primary waste category was textiles excl. nappies which comprised textiles (non-packaging) other than clothes (12%) and textiles (non-packaging) clothes (4%).

Wood waste which comprised 16% of the bulky skip waste at CAS consisted of treated/composite wood (non-packaging) (13%), untreated wood (non-packaging) (2%), and wood packaging (0.4%).

The remaining primary categories each comprised less than 6% of the total composition of waste in bulky skips at CAS. Detailed results are available in **Appendix D**.

4 ANALYSIS AND DISCUSSION

This chapter presents a discussion of the survey results including the weight and percentages of the materials surveyed, a set of national waste characterisation factors (in MS Excel format) and a comparison to previous studies on this topic.

4.1 Reusable Items

The product categories specified in the Implementing Decision (EU) 2021/194 methodology as suitable for measuring reuse are:

- Textiles.
- Electrical and Electronic Equipment (EEE).
- Furniture.
- Construction Material and Products.
- Other Products for which measures were adopted.

The weight of products within these categories were recorded during the study. In addition to quantitative data, qualitative information on the condition of products was also recorded.

Table 4-1 and **Figure 4-1** present the composition of reusable materials in each of the three skip waste streams as determined by survey.

Table 4-1: Composition of reusable Items in each skip stream

Product Categories	Household	Non-Household	CAS
Textiles	3.4%	5.1%	5.4%
Electrical and Electronic Equipment (EEE)	0.7%	0.0%	0.0%
Furniture	2.0%	2.5%	1.4%
Construction Materials and Products	3.7%	0.0%	1.8%
Other	6.0%	1.9%	5.2%

Thus, 15.8% of the household stream was reusable, 9.5% of non-household and 13.8% of CAS was reusable.

The composition of reusable waste in each of the three skip streams is illustrated in **Figure 4-1**.

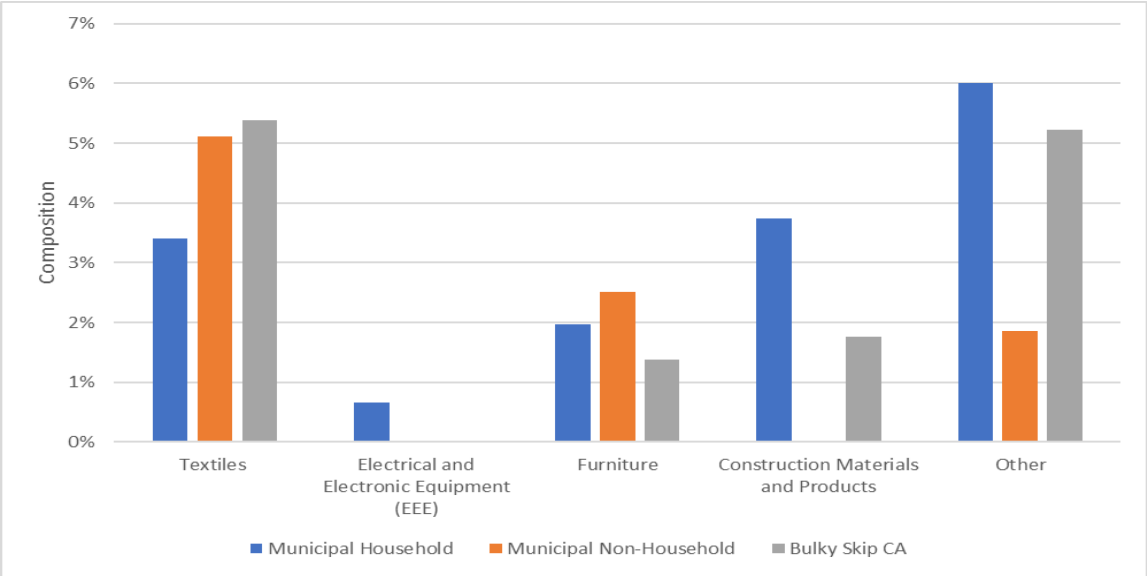

Figure 4-1: Composition of reusable items in the three skip streams

4.1.1 Textiles

Textiles (excl. nappies) comprised 8% of **household skips**. Of this stream, 3% were found to be in a reusable condition. Items suitable for reuse included clean undamaged clothing, rugs, and chair cushions. The remaining 5% were either unsuitable for reuse such as dirty duvets or were unrepairable clothing that may be recyclable into use as rags in the rag trade.

Textiles (excl. nappies) constituted the third largest primary waste category (11%) in **non-household skips**. Of this less than half (5%) were deemed suitable for reuse. Most reusable textiles encountered were items of clothing, with additional reusable items including rugs and cushions.

Bulky skips at CAS contained the highest levels (16%) of textiles (excl. nappies) of the three skip streams, of which 5% was found to be reusable. Clothing was detected at low levels (4%) in bulky skips at CAS. However, all the clothing present in bulky CAS skips was found to be in good condition and suitable for reuse. Non-packaging textiles (other than clothing) suitable for reuse in bulky CAS skips included chair cushions and rugs. Textiles unsuitable for reuse included towels and duvets.

Figure 4-2: Reusable, clean, undamaged clothing

4.1.2 Electrical and Electronic Equipment (EEE)

EEE accounted for 3% of waste in **household skips**, of which 1% appeared (subjectively, without objective testing or powering on) to be suitable for reuse without repair. The remaining 2% either required repair for reuse or was only suitable only for recycling. The presence of EEE varied significantly across the household samples, ranging from 0% to 10%.

Non-household skips contained low levels of EEE (3%), of which none were reusable.

The EEE content in **bulky skips at CAS** was 5%. All the WEEE encountered were damaged beyond repair. The presence of EEE varied significantly across the bulky CAS skip samples, with large volumes in some (14%) and others containing none. There should be a low presence in bulky CA skips as EEE is usually managed separately at CAS.

4.1.3 Furniture

Furniture constituted a significant portion of waste in **household skips** (21%). Only 2% of the furniture encountered in household skips was considered reusable or repairable with the remaining 19% found to be damaged beyond repair. It appeared that some furniture was broken prior to placement in household skips to save space and make it easier to handle, and some may otherwise have been reusable.

Figure 4-3: Reusable furniture and other items from household skip

Non-household skips contained much furniture, accounting for 35% of waste. Only 3% of the furniture present in non-household skips was suitable for reuse, while the majority (32%) was damaged beyond repair. The most common reusable furniture items were chairs, with cabinets and tables also being encountered.

Furniture accounted for 30% of waste in **bulky CAS skips**. None of the furniture encountered was reusable with items such as couches and armchairs broken. These bulky items may have been broken prior to placement in skips to make them easier to handle, and some may otherwise have been reusable.

4.1.4 Construction Materials

CDW accounted for a significant (18%) portion of waste found in **household skips**. Of this less than a quarter (4%) of the construction materials encountered was suitable for reuse. The remaining 14% had been damaged and was no longer suitable to be reused as a construction material in its original form.

Non-household skips contained low levels of CDW (1%), none of which was found to be reusable.

In **bulky skips at CAS**, CDW was detected at low levels (3%). Some (2%) of the materials encountered, primarily floor tiles and insulation in these samples, were suitable for reuse. The most common reusable CDW items encountered were salvaged floor tiles.

Figure 4-4: CDW items with apparent reuse potential, copper wire, wood, and floor tiles

4.1.5 Other Products

The 'Others' products category includes a wide variety of items encountered during the study that had the potential to be reused. These items varied from water butts for rainwater harvesting, bicycles, books, toys to suitcases. Many of these items are of a type that is often donated to charity or vintage shops or are sold privately through online platforms.

Other products with potential for reuse was found to be highest in **household skips** (6%). The quantity of reusable items varied across the household skip samples from 1% to 19%. The composition also differed, with some samples composed primarily of toys, while others included of household items such as rakes, brushes, and a horse saddle.

Non-household skips contained lowest levels of reusable other products (2%), including items such as plastic flowers, suitcases, clipboards, and toys.

Reusable other products comprised a small portion (5%) of waste in **bulky skips at CAS**. The items with potential for use varied greatly, including snowboards, prams, Christmas decorations, and crockery such as plates and bowls.

4.2 Household and non-household waste in bags

Household and non-household waste were present in bags, 'black bag waste', encountered in skips were opened to classify them as being household or non-household municipal waste. The bags were then weighed, and the appropriate municipal waste characterisation factors were applied. The resulting quantities were then added to the total for the sampled skip. The national profile of kerbside household waste from the EPA's 2022 Household Kerbside Municipal Waste Characterisation study was used for waste identified as household. The appropriate factors from the EPA's 2022 Commercial Waste Characterisation Study were applied to waste identified as non-household.

Figure 4-5: Examples of household and non-household waste found in skips

Household (5%) and non-household (0.2%) waste in black bags were both present in **household skips**. Municipal household waste in black bags were present in all samples except in one, while non-household samples were only present in one.

Non-household skips contained the highest proportion of household and non-household waste bag waste. Most waste was household (7%) with the remaining being non-municipal (0.2%).

Household and non-household waste in black bags was detected in **bulky skips at CAS** were detected at similar levels to household skips (6%). Most black bag waste encountered was non-municipal black bag waste (5%). This waste appeared to be from a workshop. The remaining waste was household (1%).

4.3 Waste Composition Trend Analysis

In this section, comparisons are made with the 2021 surveys to identify trends.

The data presented to this point in the report has been 'corrected for contamination' meaning that food material adhering to certain packaging categories is not included in the data presented. This contamination fraction is accounted for in a separate standalone category. The data presented in the previously published 2021 report was not corrected for contamination. To allow for a like-for-like comparison to be made with the 2021 data, the comparisons in this section are made with 2023/2024 data that has not been corrected by removal of contamination into a separate category.

In a similar fashion, the 2023/2024 data presented to this point in the report has had municipal black bag waste distributed, whereas the 2021 data did not. To allow a like-for-like comparison to be made with the 2021 data, the comparisons in this section are made with 2023/2024 data that has not been corrected by removal of municipal black bag waste into a separate category.

The 2023/2024 survey created new primary subcategories[7] for streams of interest in skip waste. In the 2021 study, these categories were distributed among different primary categories; for example, mattresses were classified as 'unclassified combustibles and plastic toys in 'other plastic (non-packaging)' categories. These sub-categories are now grouped together under a new primary category "Non-Hazardous Municipal Waste". As this primary waste category was not used in 2021 a direct like-for-like comparison with 2023/2024 cannot be made. Comparisons are made using selected parts of the data to reduce the effect of this new primary category.

4.3.1 Non-household Skip Waste (20 03 07 B)

A comparison of non-household skip composition for the years 2021 and 2023/2024 is shown in **Table 4-2** and **Figure 4-6**.

Table 4-2: Non-household composition (2021 and 2023/2024)

Waste Categories - Municipal Non-Household	2021	2023/2024
Non-Hazardous Municipal Waste	No data	40.1%
Wood	26.9%	13.6%
Textiles (incl. Nappies)	0.7%	10.1%
Mixed municipal waste in black bags	7.9%	6.9%
Plastics	11.2%	5.7%
Composites	0.3%	4.3%
Hazardous Municipal Waste	10.0%	3.7%
Cardboards	11.1%	3.0%
Metals	7.6%	3.1%
Papers	0.7%	2.5%
Organics (all)	14.1%	2.2%
Unclassified Incombustibles	8.6%	1.9%
Fines (<20mm)	0.1%	1.0%
Non-municipal waste	0.0%	1.0%
Glass	0.8%	0.5%
Unclassified Combustibles	0.1%	0.3%
Nappies	0.0%	0.1%

[7] In particular, the Municipal irregular/special waste (non-Hazardous) category; Furniture; Bicycles, scooters, prams, and other wheeled leisure/transport items; Toys; Mattresses.

Total	100.0%	100.0%

As noted, the new primary waste category non-hazardous municipal waste (40%) influences the comparability with 2021 and requires caution to evaluate

There was a significant reduction (12%) in the proportion of organics in non-household skips between 2021 (14%) and 2023/2024 (2%). This decreased is primarily due to a reduction in biodegradable waste from garden and parks, an effect possibly related to weather affecting generation, or to small sample size effects.

The proportion of textiles (excl. nappies) have in non-household skips have increased 2024 (9%) since 2021 (1%). It is now the third largest primary waste category.

There was a decease (8%) in cardboard between 2021 (11%) and 2023/2024 (3%).

The volume of black bag waste identified in non-household skips decreased slightly from 8% in 2021 to 7% in 2023/2024.

The proportions of materials that should be managed at CAS increased from 54% in 2021 to 78% in 2023/2024.

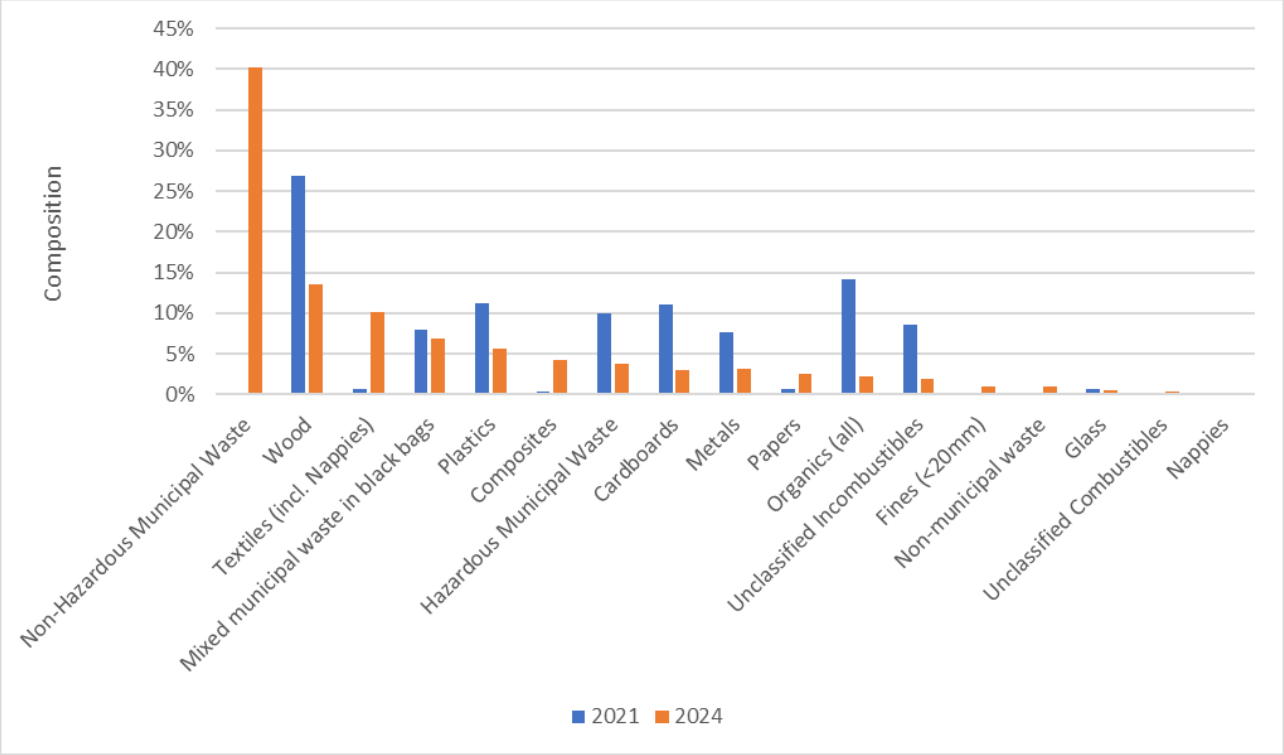

Figure 4-6: Non-household Composition (2021 and 2023/2024)

The other waste categories of note in municipal non-household skips were:

- The proportion of hazardous municipal waste decreased by 6% from 2021 (10%) and 2023/2024 (4%).
- Unclassified incombustibles reduced by 7% between 2021 (9%) and 2023/2024 (2%)
- Composites increased by 4% from 2021 (0.3%) and 2023/2024 (4%).

The share of BMW in non-household skips decreased by 18% between 2021 and 2023/2024 as shown in **Figure 4-7**. The BMW calculation[8] may be slightly affected by the addition of non-hazardous waste as a primary category, as some waste now recorded as furniture may previously have been classified as wood (where broken up). The remaining primary categories included in the calculation are less likely to be affected by the introduction of this new primary waste category.

[8] Organics (100%), Paper (100%), Cardboard (100%), Textiles (excl. nappies) (50%), Nappies (50%), Composites (50%), Wood (50%) and Fines (50%)

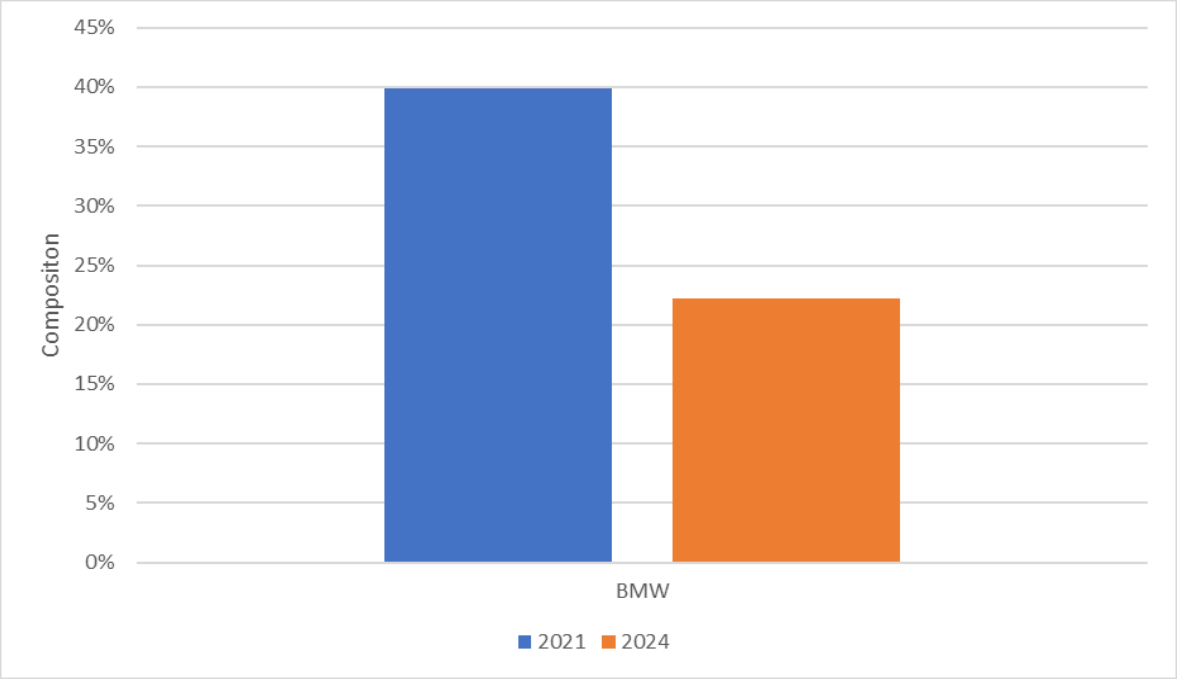

Figure 4-7: Proportion of BMW in Non-household Skips

The proportion of packaging waste in municipal non-households is shown in **Figure 4-8**.

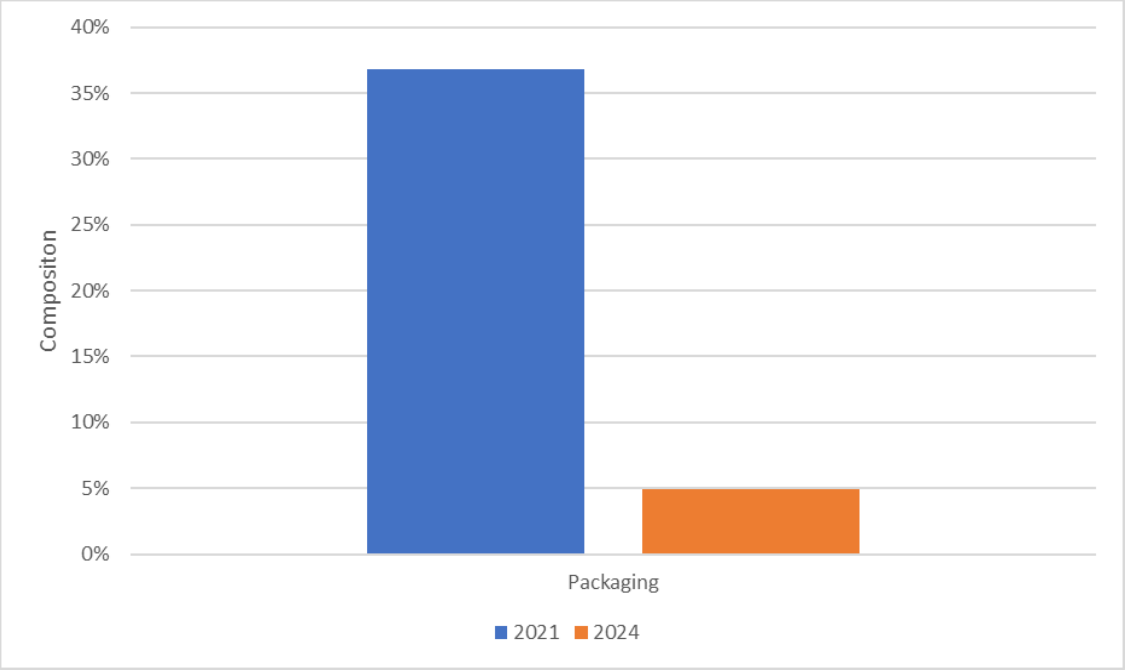

Figure 4-8: Portion of Packaging in Non-household Skips (2021 and 2023/2024)

Packaging waste in non-household has decreased significantly (32%) between 2021 (37%) and 2023/2024 (5%). The main changes in packaging materials of note were:

- There was a significant reduction (22%) in wood packaging (typically pallets) since 2021.
- Cardboard packaging decreased by 9% between 2021 (11%) and 2023/2024 (3%).
- The proportion of plastic packaging has decreased slightly (1%).

Figure 4-9 shows the proportion of recyclables in non-household skips.

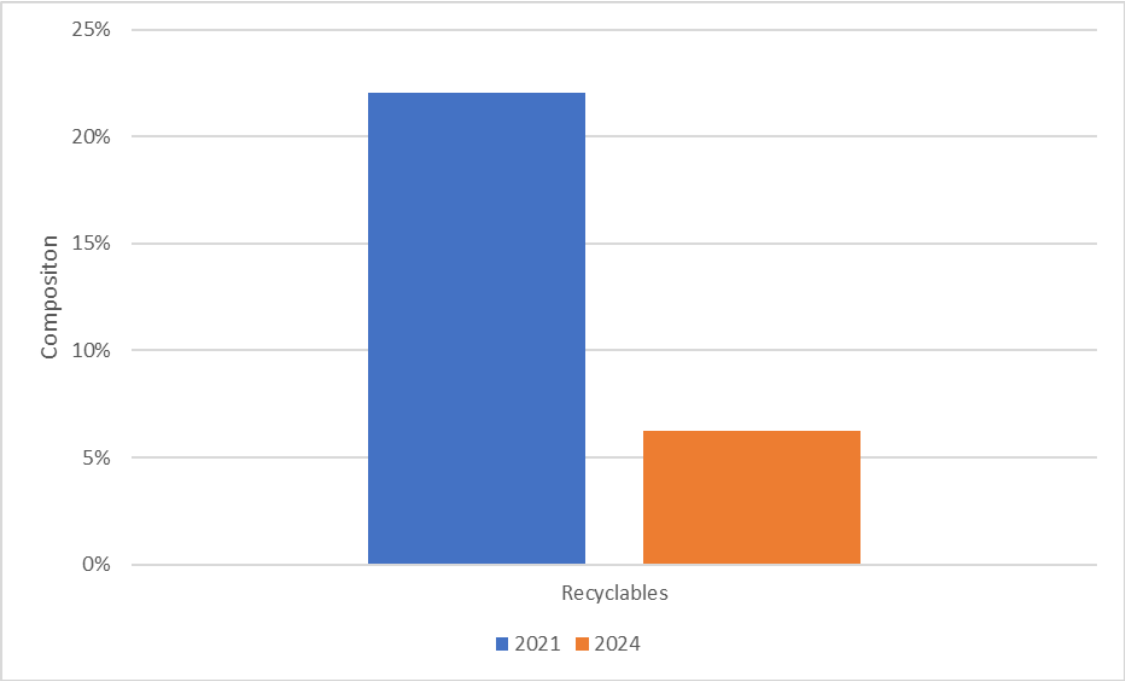

Figure 4-9: Portion of Recyclables in Non-household Skips (2021 and 2023/2024). notable changes include:

- Recyclable cardboards increased by 8% between (10%) since 2021 (3%).
- Recyclable papers fell by 2% between 2021 (0.4%) and 2023/2024 (2%).
- Recyclable plastics have reduced (10%) since 2021 (11%).

4.3.2 Bulky Waste at Civic Amenity Sites (CAS) (20 03 07 CA)

A comparison of Bulky Waste at CAS for 2021 and 2023/2024 is shown in **Table 4-3** and **Figure 4-12**.

Table 4-3: Bulky Waste at CAS composition (2021 and 2023/2024)

Waste Categories - Civic Amenity Site	2021	2023/2024
Non-Hazardous Municipal Waste	No data	37.6%
Textiles (excl. Nappies)	8.3%	15.6%
Wood	31.0%	15.6%
Mixed municipal waste in black bags	0.9%	6.5%
Cardboards	1.7%	5.9%
Hazardous Municipal Waste	3.8%	5.7%
Plastics	3.9%	4.8%
Non-municipal waste	0.0%	2.9%
Composites	0.0%	1.6%
Fines (<20mm)	8.0%	1.1%
Metals	8.7%	0.9%
Unclassified Incombustibles	23.0%	0.9%
Organics (all)	2.0%	0.6%
Unclassified Combustibles	3.8%	0.1%
Papers	1.1%	0.1%
Nappies	0.0%	0.0%
Glass	3.9%	0.0%
Total	100.0%	100.0%

As noted, the new primary waste category non-hazardous municipal waste (38%) influences the comparability with 2021 and requires caution to evaluate

The proportions of materials that were recorded as being correctly managed at CAS increased by 13%, from 71% in 2021 to 84% in 2023/2024. This may be influenced by the new primary waste category non-hazardous municipal waste.

The most notable changes in bulky skips at CAS were:

- The proportion of unclassified incombustibles decreased (22%) between 2021 (23%) and 2023/2024 (1%)
- Wood has decreased by 15% between 2021 (31%) and 2023/2024 (16%).
- Textiles (excl. Nappies) were the second largest primary waste category. It increased by 7% between 2021 (8%) to 2023/2024 (16%).
- Metals decreased (8%) between 2021 (9%) and 2023/2024 (1%).
- Cardboards have increased by 4% since 2021 (2%).

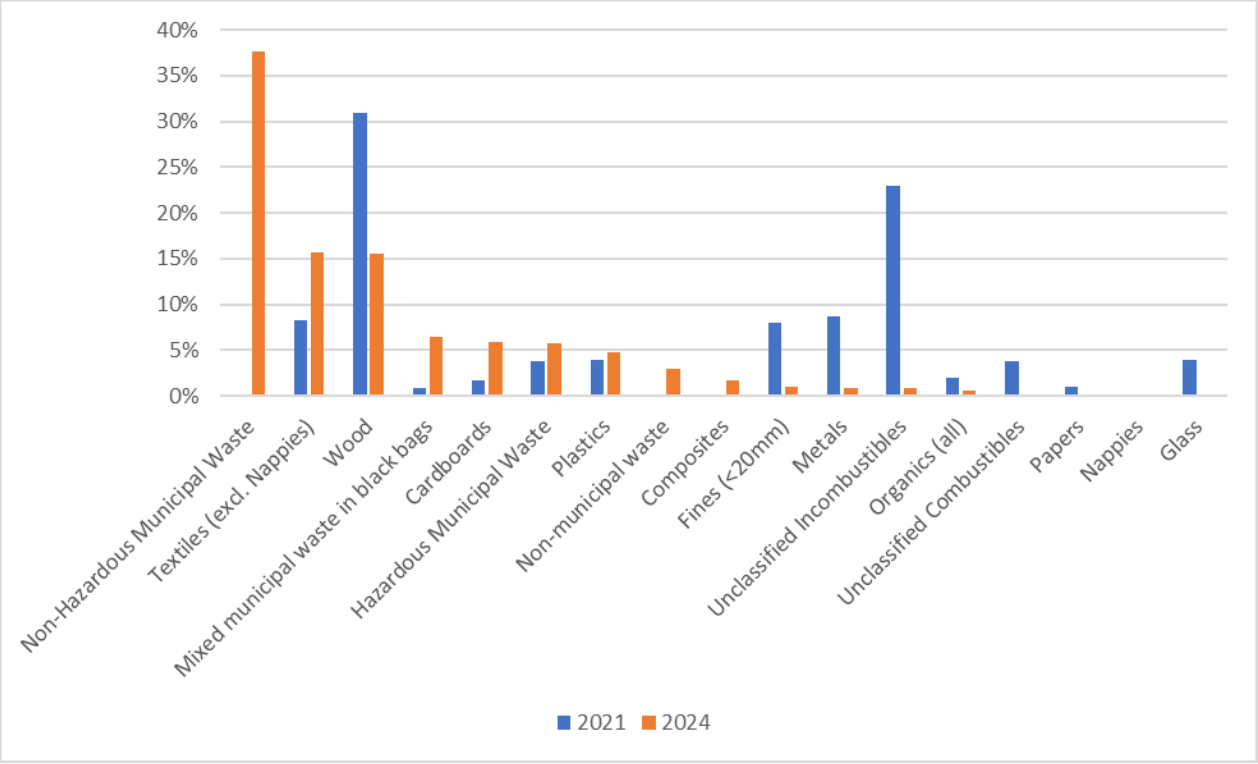

Figure 4-10: Bulky Skips at CAS Composition (2021 and 2023/2024)

Figure 4-11 shows a reduction (11%) in the proportion of BMW in CAS since 2021.

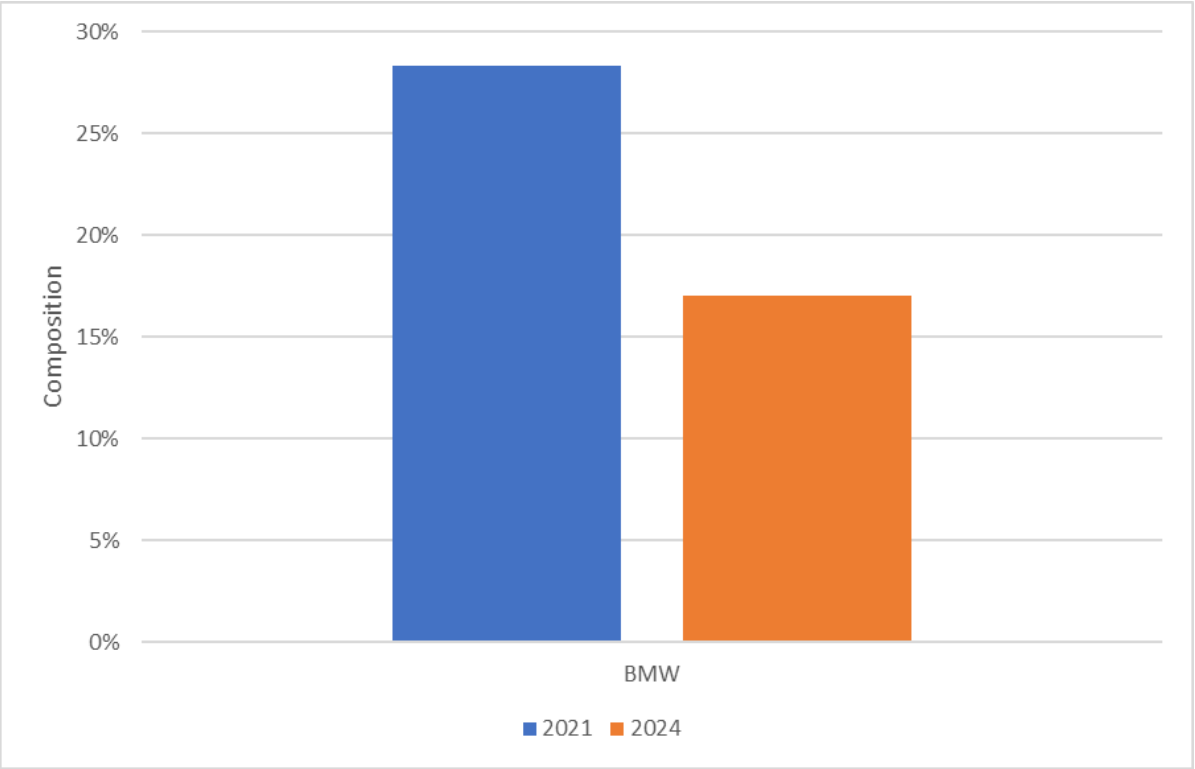

Figure 4-11: Proportion of BMW in Bulky Skips at CAS (2021 and 2023/2024)

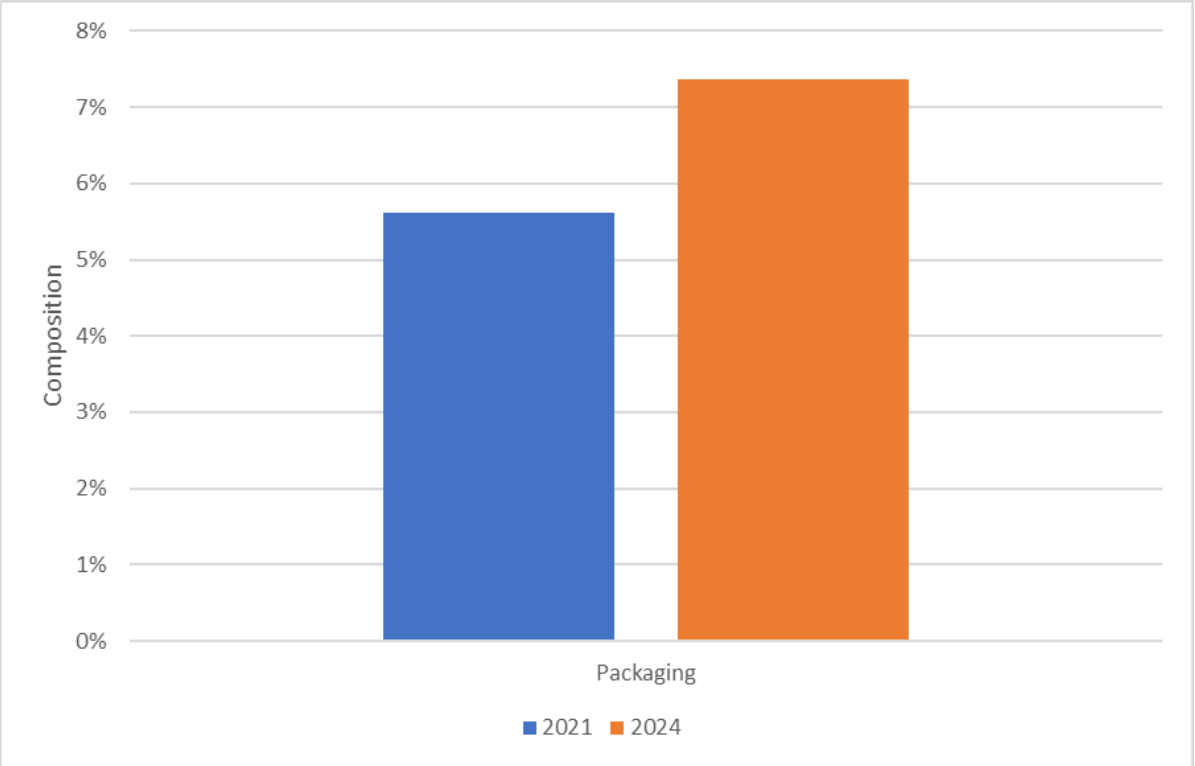

Figure 4-12: Proportion of Packaging materials in Bulky Skips at CAS (2021 and 2023/2024)

The proportion of packaging materials in bulky skips at CAS increased slightly (2%) between 2021 and 2023/2024, as shown in **Figure 4-12**. Cardboard the largest packaging category in 2023/2024 (6%), increased by 4% since 2021 (2%). Plastic packaging remained relatively unchanged between 2021 (%) and 2023/2024 (1%) and is now the second largest packaging category. Wood packaging decreased 2% between 2021 (3%) and 2023/2024 (0.4%).

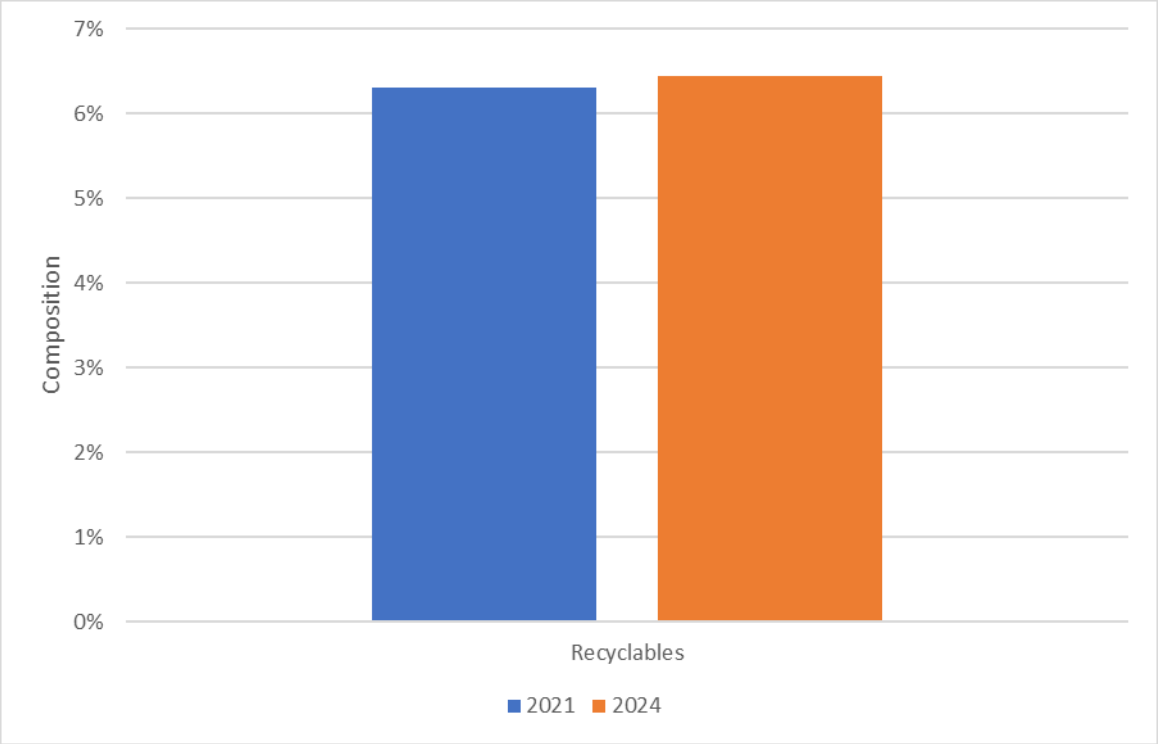

Figure 4-13: Proportion of Recyclable materials in Bulky Skips at CAS (2021 and 2023/2024)

The proportion of recyclable materials in bulky skips at CAS remained constant between 2021 (6) and 2023/2024 (6%). The most noticeable changes in recyclable materials since 2021 include:

- Recyclable cardboard increased by 4% and is now the largest recyclable material in CAS bulky skips.
- Recyclable plastic decreased by 3% between 2021 (4%) and 2023/2024 (0.4%).
- Recyclable paper decreased by 1%. It is now the third largest recyclable material.

5 CONCLUSION

The aim of the project is to provide accurate up-to-date national information on the composition of waste derived from the three streams (household skip waste (20 03 07 A) non-household skip waste (20 03 07 B) and bulky waste at CAS) (20 03 07 CA)) to enable accurate waste statistics reporting and to inform national waste and circular economy policy, infrastructure planning and regulatory and enforcement activities.

The project encountered difficulties gathering samples of municipal household, and particularly non-household bulky waste skips (EWC 20 03 07) that were not contaminated heavily with CDW (EWC 17 series). The ratio of proposed skips rejected to proposed skips accepted exceeded 5:1 on some sites. Dialogue with waste management operators and with IWMA indicates that skips containing CDW being mis-designated as 'bulky skips' is a widespread issue. Industry was undertaking action (surveys, customer profiling and training) during 2023 and early 2024 to understand the issue; changes had not been implemented during the conduct of this project and did not affect this project. The outcome of this difficulty was that a reduced number of skips were sampled – 16 versus the initial target of 30 samples.

The findings from this project are presented in two deliverables, this report and a model that contains and analyses the data underlying this report.

The main findings from the analysis of the 16 samples for this project are discussed in below:

- **Non-hazardous municipal waste:** A new primary waste category, 'non-hazardous municipal waste[9]' was introduced for the 2023/2024 survey. In the 2021 study, items now placed in these subcategories were distributed among different primary waste subcategories. The introduction of this new category means that comparison between 2021 and 2023/2024 data requires caution to evaluate.
- **Furniture** (28%) and treated/composite wood (non-packaging) (11%) and Textiles Non-Packaging - other than clothes (7%) together made the largest fractions of the overall skip waste stream
- **Construction and demolition waste:** CDW comprised just 8% of the skips that passed the screening process. CDW was primarily found in household skip waste (18%), with non-household (1%) and CAS (3%) comprising the remainder. The highest proportion of CDW was concentrated in three of the six household skip waste samples. This indicates that skips are either primarily CDW or primarily bulky waste. The admixture may be occurring as households 'top up' underfilled bulky skips. Skips are typically pay-by-lift not pay-by-weight which incentivises users to fill skips *'to get most value for money'*. Further the assessment of skip waste at the 50% cutoff was effective.
- **Wood:** Wood was present at 13% across all streams. Of this, 11% was treated/composite wood, a stream that is difficult to divert anywhere else other than energy recovery due to the treatment chemicals.
- **Textiles:** Textiles accounted for 11% of skip waste overall. Some of these textiles could be diverted into the existing textile collection stream, including non-clothing, non-packaging textiles including bedding and other household textiles (e.g. rugs or curtains etc) which were the largest fraction, along with clothing.
- **Black Bag Waste:** Mixed household waste in black bags and non-household waste in black bags together comprised 7% of the skip waste stream, although low in CAS skips. Further work on household and non-household skip waste is required to reduce black bag waste in this stream.
- **Hazardous waste:** Hazardous waste was present at 4% across all skip waste.
- **Waste segregation:** Textiles, mixed municipal black bag waste, hazardous waste and other streams including recyclables and organic waste have well-established waste collection systems. It may be that it proves difficult to reduce this contamination without significant enforcement and education as skips are convenient, are expensive and are paid-by volume meaning that people wish to *"get their money's worth"*.
- **Contamination:** This is the first Irish skips waste characterisation project to publish data with contamination on packaging waste extracted into its own category. Comparisons with 2021 data are made without extracting this contamination data, meaning that 2021 to 2023/2024 comparisons are 'like-for-like'. It is important to understand the difference between the two types of data presented, corrected ('clean' with contamination accounted for separately) and uncorrected ('dirty' with contamination not accounted for

[9] Contains subcategories including including Municipal irregular/special waste (non-Hazardous); Furniture; Bicycles, scooters, prams, and other wheeled leisure/transport items; Toys; Mattresses

separately and used in this report only for comparisons with 2021 data). The composition of the contamination fraction was not analysed. Future surveys would benefit from gathering this data.

This is the first skip study to investigate the proportion of **reusable items**. This study will help inform and can be used to track trends in reusable items being discarded in skip streams. The condition of items and materials that fell into these product categories were examined for their potential for reuse, and a listing of materials found in each sample is included in the model developed.

- **Furniture** was the largest primary waste subcategory in each of the three skip streams. Only a small portion was suitable for reuse, most being damaged beyond repair. The low levels of reusability could be due to furniture being broken into smaller pieces to make it easier to handle or transport in the case of skips at CAS, especially very bulky items such as couches and armchairs.
- **Construction and demolition waste** (CDW) was the second largest primary waste subcategory in household skips (18%), (but just 8% between all 3 skip waste streams). However, only 4% of construction materials encountered in household skips was suitable for reuse, as the majority had been damaged beyond repair during demolition.
- **Textiles** products were examined for their reuse potential. Non-household (5%) and bulky skips at CAS (5%) contained the highest portion of reusable textiles, with lower levels encountered in household skip waste (3%). Clothes were the main textiles with potential for reuse in each skip stream.
- The proportion of **WEEE** was low in each of the three skips streams. Only 20% of WEEE in household skips appeared suitable for reuse, and none in the non-household or CAS samples.
- The **'other products'** product category includes items such as water butts for rainwater harvesting bicycles, books, and toys. Despite the variety of items that fall into this reuse category low levels of reusable 'other products' were encountered.

The findings emphasise the need for improved bulky municipal waste segregation practices and develop a robust system for capturing reusable items. To address these challenges and aid the move towards a circular economy, targeted actions are recommended in Section 5.1 following. By implementing these measures, Ireland can increase recycling rates of skip waste, reduce environmental impacts, enhance resource efficiency, and support the transition to a circular economy.

5.1 Recommendations

The following recommendations are generated to assist in achieving the aim of improving waste management practices and segregation.

Areas for action

Key actions on waste streams that require targeted action include:

1. Future surveys should gather data on the composition of the contamination fraction.
2. The project encountered significant difficulties gathering municipal bulky waste skips (EWC 20 03 07) that were not contaminated heavily with construction and demolition waste (EWC 17 series). Future surveys of skip waste should prepare a sampling approach that accounts for this issue if encountered.
3. Household and municipal mixed municipal waste ('black bag' waste) is present at a high proportion (7%) in the skip waste stream. Targeted campaigns emphasising of proper waste management, coupled with stricter monitoring, enforcement and penalties are necessary to decrease these proportions.
4. The 2023/2024 survey has identified materials, present in larger proportions that require further attention to better manage their presence. These include furniture wood (especially treated wood), non-clothing textiles, and WEEE.
5. This waste characterisation campaign quantified new primary subcategories, for the first time, including furniture, bicycles, scooters, prams and other wheeled leisure/transport items, mattresses, and toys. Combined, these formed 34% of the skip waste stream. This data forms a baseline to track arisings over time and to assess the effectiveness of policies and initiatives.

APPENDIX A

Skip Waste Categories

(Changes since 2022 Updated Methodology to Characterise Municipal Skip Waste in red)

Primary Category	LOW CODE	Primary subcategory description	Examples	Packaging	Reuse	Contamination Categories
Organics	20 01 08 and 20 01 25	Food Waste	Unused or partially used packaged food that cannot easily be separated from packaging. e.g., Jar of honey, a tub of soft cheese, packet of ham, cheese in packaging. Vegetables, fruit, cheese, or sausages removed from packaging. e.g., Fruit & vegetables, block of cheese, sausages, bread Inedible food wastes. e.g., fruit & vegetables peelings, tea bags, meat carcasses.		Not Applicable	Not Applicable
Organics	21 01 08	Liquid fit for human consumption	Liquid contained in drink or milk containers. e.g., Milk, soft drinks, juices. (NB: weigh without the packaging).		Not Applicable	Not Applicable
Organics	20 02 01	Biodegradable waste from garden & park	Grass and bush cuttings, twigs, soil, flowers, leaves, tree branches, weeds		Not Applicable	Not Applicable
Papers	15 01 01	Recyclable paper packaging	Brown or white paper bags, egg cartons, bread Wrappers.	Packaging	Not Applicable	Recyclable paper packaging
Papers	15 01 01	Unrecyclable paper packaging	Soiled/contaminated bags, cartons, and wrappers.	Packaging	Not Applicable	Unrecyclable paper packaging
Papers	20 01 01	Recyclable paper non-packaging	Newspapers, newsprint-type advertising publications, other newsprint, Magazines and advertisements on glossy paper, shop catalogues & supermarket flyers, Office type envelopes, letters, reports, print outs.		Not Applicable	Not Applicable
Papers	21 01 01	Unrecyclable paper non-packaging	Till receipts, books, telephone directories, nonglossy junk mail, loose leaf paper, non-glossy brochures and catalogues, notebooks, envelopes, Tissue paper, kitchen roll, disposable tissues, hand drying tissue sheets and blue paper roll		Not Applicable	Not Applicable
Cardboards	15 01 01	Recyclable cardboard packaging	Cereal boxes, toy boxes, washing powder containers, corrugated packaging cardboard used for household items packaging (tv, computer hardware, furniture etc.).	Packaging	Not Applicable	Recyclable paper packaging
Cardboards	15 01 01	Unrecyclable cardboard packaging.	Unrecyclable flat and corrugated card packaging e.g., ready packed meats, contaminated pizza box.	Packaging	Not Applicable	Unrecyclable paper packaging
Cardboards	20 01 01	Recyclable cardboard non-packaging.	Greeting cards, postcards, files and folders, tickets.		Not Applicable	Not Applicable
Cardboards	21 01 01	Unrecyclable cardboard non-packaging.	Contaminated greeting cards, postcards, files and folders, tickets.		Not Applicable	Not Applicable

Composites	15 01 05	Composite SUP drinking bottles incl. caps and lids (packaging)	SUP composite drinking bottles.	Packaging	Not Applicable	Composite packaging
Composites	15 01 05	Other composites (packaging)	Beverage/juice cartons (tetra Pak), soup, smoothie cups (NB: Covers and lids to be put into a plastics category if they are made from plastic), Packaging containers, wrappers, trays, pringles tubes, tablet packaging.	Packaging	Not Applicable	Other composites (packaging)
Composites	20 01 08 and 20 01 25	Other composites (non- packaging)	Composite cups (including covers and lids) and containers (including covers) bought in multipack for home use (e.g., children parties) (nonpackaging).		Textiles	Not Applicable
Textiles	15 01 09	Textiles Packaging	Shoe bag, handbag cover, potato sacks.	Packaging	Textiles	Not Applicable
Textiles	20 01 11	Textiles non-packaging - clothes	Clothing, shoes (non-plastic).		Textiles	Not Applicable
Textiles	21 01 11	Textiles non-packaging - other than clothes	Rags, household soft furnishings (cushions) and upholstery, blankets, towels, carpets, curtains, rucksacks.		Not Applicable	Not Applicable
Textiles	20 01 99	Nappies, healthcare textiles and similar	Nappies, Dressings, plasters, linen, disposable clothing, bandages. Covid-19 PPE (PERSONAL PROTECTIVE EQUIPMENT) - masks, booties.		Not Applicable	Not Applicable
Plastics	15 01 02	PET SUP packaging drinking bottles including their caps and lids	SUP PET bottles e.g., soft drink, water bottles (NB: Lids to be put into another plastics category if they are made from a different polymer).	Packaging	Not Applicable	PET packaging beverage bottles
Plastics	15 01 02	Other than PET SUP packaging drinking bottles including their caps and lids	SUP PP, PP, and other plastic bottles e.g., soft drink, water bottles (NB: Lids to be put into another plastics category if they are made from a different polymer).	Packaging	Not Applicable	PE and PP packaging beverage bottles SUP
Plastics	15 01 02	Hard Plastic packaging other than SUP packaging drink bottles (incl. caps and lids).	PET, PP, PP and other plastic cups, packaging trays and containers (NB: Covers and lids to be put into another plastics category if they are made from a different polymer).	Packaging	Not Applicable	Hard Plastic packaging other than SUP packaging drink bottles (incl. caps and lids).
Plastics	15 01 02	Soft plastic packaging (bags and films)	Lightweight supermarket shopping bags, crisp packets, sandwich bags from other than home use, compost/peatmoss bags, cling film from other than home use, biscuit wrappers.	Packaging	Not Applicable	Supermarket bags, plastic bags and films, wrappers, including compostable bags (packaging)
Plastics	20 01 39	Plastic non-packaging			Other	Not Applicable
Plastics		Styrofoam, polystyrene (PS) and expanded polystyrene (EPS)			Not Applicable	Not Applicable
Plastics	15 01 02	Styrofoam, polystyrene (PS) and expanded polystyrene (EPS) (packaging)	Styrofoam and EPS (nonpackaging), Cutlery, stirrers, plates, straws, cotton buds, toys, CDs, buckets, clothes hangers, lighters, rulers, babies' bottles, shoes, reusable plastics bags (no	Packaging	Not Applicable	Styrofoam, polystyrene (PS) and expanded polystyrene (EPS) (packaging)

			supermarket logo) and similar, wet wipes, beakers, reusable bottles.			
Plastics	20 01 39	Styrofoam, polystyrene (PS) and expanded polystyrene (EPS) (non-packaging)	Styrofoam and EPS (nonpackaging), Cutlery, stirrers, plates, straws, cotton buds, toys, CDs, buckets, clothes hangers, lighters, rulers, babies' bottles, shoes, reusable plastics bags (no supermarket logo) and similar, wet wipes, beakers, reusable bottles.		Not Applicable	Not Applicable
Glass	15 01 07	Glass (packaging)	Wine bottles, beer bottles, water bottles, jam jars and medicine bottles.	Packaging	Other	Not Applicable
Glass	20 01 02	Glass (non-packaging)	Mirrors, plate glass, flat glass, cookware (Pyrex), mixed broken glass, drinking glasses.		Not Applicable	Not Applicable
Metals	15 01 04	Ferrous metal packaging	Canned food, biscuit tins, tins of polish, beer bottle tops, glass jar lids.	Packaging	Not Applicable	Ferrous metal (packaging)
Metals	20 01 40	Ferrous metal non-packaging			Not Applicable	Not Applicable
Metals	15 01 04	Aluminium drinking cans (packaging)	Beverage cans - soft drinks, beer.	Packaging	Not Applicable	Aluminium cans (packaging)
Metals	15 01 04	Other aluminium packaging		Packaging	Not Applicable	Other non-ferrous metal (packaging)
Metals	20 01 40	Aluminium non-packaging	Foil trays, some toothpaste/cosmetic products tubes.		Not Applicable	Not Applicable
Metals	15 01 04	Other non-ferrous metal (packaging)		Packaging	Other	Other non-ferrous metal (packaging)
Metals	20 01 40	Other non-ferrous metal (non-packaging)			Not Applicable	Not Applicable
Wood	15 01 03	Wood Packaging	Bottle corks, cork packaging, pallets, ice-cream sticks, wooden boxes for wine/cheese/garden products/ slates, wooden separators between products e.g., slats used to separate windows in transport, wooden spools for cables).	Packaging	Construction Materials	Not Applicable
Wood	20 01 38	Untreated wood (non-packaging)	Wood fencing (unpainted/unvarnished), some wood from DIY.		Construction Materials	Not Applicable
Wood	20 01 37	Treated/composite wood (non-packaging)	Kitchen units, particle wood, toilet seats, skirting (chipboard, plywood, MDF), baskets.		Not Applicable	Not Applicable
Mixed household municipal waste (often in black bags)	20 03 01	Mixed household municipal waste (often in black bags)			Not Applicable	Not Applicable
Mixed municipal (non-household) waste in black bags		Mixed municipal (non-household) waste in black bags			Not Applicable	Not Applicable
Hazardous / Non-Hazardous Municipal Waste	2 01 35* / 36	WEEE (incl fluorescent tubes)	Household appliances (toasters etc.), electronic toys, remote controls, phone chargers, other mercury containing wastes, fluorescent tubes and other mercury containing wastes.		Electrical and Electronic Equipment (EEE)	Not Applicable
Hazardous / Non-Hazardous Municipal Waste	20 01 35* / 36	Electrical or electronic toys			Electrical and Electronic Equipment (EEE)	Not Applicable

Hazardous / Non-Hazardous Municipal Waste	20 01 33* / 34	Batteries & Accumulators			Electrical and Electronic Equipment (EEE)	Not Applicable
Hazardous / Non-Hazardous Municipal Waste	15 01 04	Aerosols (packaging)	Deodorant, perfume, hairspray.	Packaging	Not Applicable	Apply Average Metal Packaging
Hazardous / Non-Hazardous Municipal Waste	20 03 99	Other municipal irregular/special waste (Hazardous)	Any other items e.g., hair dye, waste oil, oil filters, ink cartridges and toner, sharps, vials.		Not Applicable	Not Applicable
Non-Hazardous Municipal Waste	20 03 99	Municipal irregular/special waste (non-hazardous)			Other	Not Applicable
Non-Hazardous Municipal Waste	20 03 99	Furniture			Other	Not Applicable
Non-Hazardous Municipal Waste	20 03 99	Bicycles, scooters, prams, and other wheeled leisure/transport items			Other	Not Applicable
Non-Hazardous Municipal Waste	20 03 99	Toys			Other	Not Applicable
Non-Hazardous Municipal Waste	20 03 99	Mattresses			Furniture	Not Applicable
Unclassified combustibles	15 XX XX	Unclassified combustibles (packaging)		Packaging	Furniture	Not Applicable
Unclassified combustibles	20 03 99	Unclassified combustibles (non-packaging)	Bagged dog dirt, animal hair, linoleum (lino), non-PPE household rubber gloves, candles, full tube body lotion, paint brush. Tobacco without filters.		Not Applicable	Not Applicable
Unclassified incombustibles	15 XX XX	Unclassified incombustibles (packaging)		Packaging	Not Applicable	Not Applicable
Unclassified incombustibles	20 03 99	Unclassified incombustibles (non-packaging)			Not Applicable	Not Applicable
Fines		Fines (<20mm)			Not Applicable	Not Applicable
Non-Municipal Waste	17 XX XX	C&D waste			N Construction materials	Not Applicable
Non-Municipal Waste		Non-municipal and non-C&D waste			Not Applicable	Not Applicable
Other		Contamination			Not Applicable	Not Applicable

APPENDIX B

Results – Household Skip Waste (20 03 07 A)

Results (%) - Municipal Household Skip

Contamination has been removed from the results

Sample number	1	5	8	9	11	14
Authorised Waste Collector (name)	Keywaste	Thorntons	Oxigen Drogheda	Oxigen Drogheda	Panda	Thorntons
Waste Region	EMR	EMR	EMR	EMR	EMR	EMR
Skip Type	Municipal Household	Municipal Household	Municipal Household	Municipal Household	Municipal Household	Municipal Household
LoW	20 03 07 A	20 03 07 A	20 03 07 A	20 03 07 A	20 03 07 A	20 03 07 A
Area Type (Urban/Rural)	Urban	Urban	Rural	Rural	Rural	Urban
Date of Survey	10/11/2023	18/12/2023	08/02/2024	08/02/2024	28/03/2024	19/06/2024

Number Category	Primary Waste Categories	Packaging	Single Use Plastics (SUP	Secondary Categories	Primary Subcategory Waste Categories	% Net weight	% Net weight	% Net weight	% Net weight	% Net weight	% Net weight	Average	Min	Max	Lower Limit	Upper Limit	Standard Deviation	Confidence Interval 90%	N	Target	Reference	Packaging
1	Organics	No	No		Food Waste	0%	2%	0%	0%	1%	2%	1.0%	0%	2%	1%	2%	1%	1%	6	OW	Panda	0
2	Organics	No	No		Liquid fit for human consumption	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	OW	Panda	0
3	Organics	No	No		Biodegradable waste from garden & park	4%	2%	2%	0%	4%	2%	2.4%	0%	4%	1%	3%	1%	1%	6	OW	Panda	0
4	Papers	Packaging	No		Recyclable paper packaging	0%	0%	0%	0%	0%	0%	0.1%	0%	0%	0%	0%	0%	0%	6	MDR	Mywaste	P
5	Papers	Packaging	No		Unrecyclable paper packaging	0%	0%	0%	0%	0%	0%	0.1%	0%	0%	0%	0%	0%	0%	6	MRW	Panda	P
6	Papers	No	No		Recyclable paper non-packaging	8%	2%	1%	1%	0%	0%	2.1%	0%	8%	0%	4%	3%	2%	6	MDR	Mywaste	0
7	Papers	No	No		Unrecyclable paper non-packaging	0%	1%	0%	0%	0%	1%	0.4%	0%	1%	0%	1%	0%	0%	6	MRW	Mywaste	0
8	Cardboards	Packaging	No		Recyclable cardboard packaging	8%	2%	0%	0%	1%	1%	1.9%	0%	8%	0%	4%	3%	2%	6	MDR	Mywaste	P
9	Cardboards	Packaging	No		Unrecyclable cardboard packaging.	0%	0%	1%	0%	0%	0%	0.4%	0%	1%	0%	1%	0%	0%	6	MRW	Panda	P
10	Cardboards	No	No		Recyclable cardboard non-packaging.	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	MDR	Mywaste	0
11	Cardboards	No	No		Unrecyclable cardboard non-packaging.	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	MRW	Mywaste	0
12	Composites	Packaging	SUP	Secondary Categories	Composite SUP drinking bottles incl. caps and lids (packaging)	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	MDR	Mywaste	P
13	Composites	Packaging	No		Other composites (packaging)	0%	0%	0%	0%	0%	0%	0.1%	0%	0%	0%	0%	0%	0%	6	MRW	Panda	P
14	Composites	No	No		Other composites (non- packaging)	4%	4%	12%	10%	2%	1%	5.4%	1%	12%	3%	8%	4%	3%	6	MRW	Mywaste	0
15	Textiles	Packaging	No		Textiles Packaging	0%	1%	0%	0%	0%	0%	0.2%	0%	1%	0%	0%	0%	0%	6	CAS	Mywaste	P
16	Textiles	No	No		Textiles Non-Packaging - clothes	1%	3%	1%	0%	5%	0%	1.9%	0%	5%	1%	3%	2%	1%	6	CAS	Mywaste	0
17	Textiles	No	No		Textiles Non-Packaging - other than clothes	12%	13%	2%	2%	0%	3%	5.4%	0%	13%	2%	9%	5%	3%	6	CAS	Mywaste	0
18	Textiles	No	No		Nappies, healthcare textiles and similar	0%	1%	0%	0%	0%	1%	0.4%	0%	1%	0%	1%	0%	0%	6	MRW	Panda	0
19	Plastics	Packaging	SUP	Secondary Categories	PET SUP packaging drinking bottles including their caps and lids	0%	0%	0%	0%	0%	0%	0.1%	0%	0%	0%	0%	0%	0%	6	DRS	Mywaste	P
20	Plastics	Packaging	SUP	Secondary Categories	Other than PET SUP packaging drinking bottles including their caps and lids	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	DRS	Mywaste	P
21	Plastics	Packaging	SUP	Secondary Categories	Hard Plastic packaging other than SUP packaging drink bottles (incl. caps and lids).	0%	2%	0%	1%	2%	1%	0.9%	0%	2%	0%	1%	1%	0%	6	MDR	Mywaste	P
22	Plastics	Packaging	No		Soft plastic packaging (bags and films)	0%	1%	0%	1%	2%	1%	0.9%	0%	2%	0%	1%	1%	0%	6	MDR	Mywaste	P
23	Plastics	No	No		Plastic non-packaging	1%	5%	3%	2%	7%	2%	3.3%	1%	7%	2%	5%	2%	1%	6	CAS	Mywaste	0
24.1	Plastics	Packaging	No		Styrofoam, polystyrene (PS) and expanded polystyrene (EPS) (packaging)	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	P
24.2	Plastics	No	No		Styrofoam, polystyrene (PS) and expanded polystyrene (EPS) (non-packaging)	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	0
25	Glass	Packaging	No		Glass (packaging)	0%	0%	0%	0%	1%	0%	0.3%	0%	1%	0%	1%	0%	0%	6	CAS	Mywaste	P
26	Glass	No	No		Glass (non-packaging)	2%	0%	0%	0%	0%	1%	0.6%	0%	2%	0%	1%	1%	0%	6	CAS	Mywaste	0
27	Metals	Packaging	No		Ferrous metal packaging	4%	0%	0%	0%	0%	1%	0.9%	0%	4%	0%	2%	1%	1%	6	MDR	Mywaste	P
28	Metals	No	No		Ferrous metal non-packaging	12%	0%	5%	2%	7%	0%	4.6%	0%	12%	2%	8%	4%	3%	6	CAS	Mywaste	0
29	Metals	Packaging	No		Aluminium drinking cans (packaging)	0%	0%	0%	0%	0%	0%	0.1%	0%	0%	0%	0%	0%	0%	6	DRS	Mywaste	P
30	Metals	Packaging	No		Other aluminium packaging	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	MDR	Mywaste	P
31	Metals	No	No		Aluminium non-packaging	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	0
32	Metals	Packaging	No		Other non-ferrous metal (packaging)	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	P
33	Metals	No	No		Other non-ferrous metal (non-packaging)	0%	3%	2%	2%	4%	0%	1.8%	0%	4%	1%	3%	1%	1%	6	CAS	Mywaste	0
34	Wood	Packaging	No		Wood Packaging	0%	0%	0%	0%	0%	0%	0.01%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	P
35	Wood	No	No		Untreated wood (non-packaging)	2%	0%	0%	8%	0%	3%	2.1%	0%	8%	0%	4%	3%	2%	6	CAS	Mywaste	0
36	Wood	No	No		Treated/composite wood (non-packaging)	5%	16%	11%	1%	19%	6%	9.7%	1%	19%	6%	14%	6%	4%	6	CAS	Mywaste	0
38.1	Hazardous Municipal Waste	No	No		WEEE (incl fluorsecent tubes)	3%	10%	0%	3%	1%	2%	3.2%	0%	10%	1%	6%	3%	2%	6	CAS	Mywaste	0
38.2	Hazardous Municipal Waste	No	No		Electrical or electronic toys	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	0
39	Hazardous Municipal Waste	No	No		Batteries & Accumulators	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	0
40	Hazardous Municipal Waste	Packaging	No		Aerosols (packaging)	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	P
41	Hazardous Municipal Waste	No	No		Other municipal irregular/special waste (Hazardous)	0%	0%	4%	1%	0%	0%	0.8%	0%	4%	0%	2%	1%	1%	6	CAS	Mywaste	0
42.1	Non-Hazardous Municipal Waste	No	No		Municipal irregular/special waste (Non-Hazardous)	0%	0%	0%	1%	0%	0%	0.2%	0%	1%	0%	0%	0%	0%	6	CAS	Mywaste	0
42.2	Non-Hazardous Municipal Waste	No	No		Furniture	23%	10%	16%	10%	21%	44%	20.7%	10%	44%	13%	28%	11%	8%	6	CAS	Mywaste	0
42.3	Non-Hazardous Municipal Waste	No	No		Bicycles, scooters, prams and other wheeled leisure/transport items	0%	0%	0%	0%	9%	0%	1.6%	0%	9%	-1%	4%	3%	2%	6	CAS	Mywaste	0
42.4	Non-Hazardous Municipal Waste	No	No		Toys	1%	2%	13%	0%	1%	0%	2.9%	0%	13%	0%	6%	5%	3%	6	CAS	Mywaste	0
42.5	Non-Hazardous Municipal Waste	No	No		Mattresses	0%	1%	0%	0%	0%	0%	0.1%	0%	1%	0%	0%	0%	0%	6	CAS	Mywaste	0
43	Unclassified combustibles	Packaging	No		Unclassified combustibles (packaging)	0%	4%	0%	0%	0%	0%	0.7%	0%	4%	0%	2%	2%	1%	6	MRW	Panda	P
44	Unclassified combustibles	No	No		Unclassified combustibles (non-packaging)	0%	0%	0%	0%	0%	0%	0.1%	0%	0%	0%	0%	0%	0%	6	MRW	Panda	0
45	Unclassified incombustibles	Packaging	No		Unclassified incombustibles (packaging)	0%	0%	0%	0%	0%	0%	0.0%	0%	0%	0%	0%	0%	0%	6	CAS	Panda	P
46	Unclassified incombustibles	No	No		Unclassified incombustibles (non-packaging)	1%	0%	0%	2%	0%	0%	0.6%	0%	2%	0%	1%	1%	0%	6	CAS	Panda	0
47	Fines	No	No		Fines (<20mm)	1%	1%	0%	1%	2%	9%	2.2%	0%	9%	0%	4%	3%	2%	6	MRW	Mywaste	0
48	Non Municipal Waste	No	No		C&D waste	2%	8%	23%	48%	6%	20%	17.9%	2%	48%	7%	28%	15%	10%	6	CAS	Mywaste	0
49	Non Municipal Waste	No	No		Non-municipal and non-C&D waste	0%	0%	0%	0%	0%	0%	0.02%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	0
50	Other	No	No		Contamination	3%	2%	2%	1%	2%	1%	1.8%	1%	3%	1%	2%	1%	0%	6			
					Total	100%	100%	100%	100%	100%	100%											

APPENDIX C

Results – Non-household Skip Waste (20 03 07 B)

Results (%) - Municipal Non-Household Skip

Contamination has been removed from the results

Sample number	2	3	10	12	13	15
Authorised Waste Collector (name)	Thorntons	Thorntons	Panda	Panda	Panda	Thorntons
Waste Region	EMR	EMR	EMR	EMR	EMR	EMR
Skip Type	Municipal Non-Household	Municipal Non-Household	Municipal Non-Household	Municipal Non-Household	Municipal Non-Household	Municipal Non-Household
LoW	20 03 07 B	21 03 07 B	20 03 07 A	21 03 07 B	22 03 07 B	24 03 07 B
Area Type (Urban/Rural)	Urban	Urban	Rural	Urban	Rural	Rural
Date of Survey	15/12/2023	15/12/2023	28/03/2024	01/05/2024	01/05/2024	19/06/2024

Number Category	Primary Waste Categories	Packaging	Single Use Plastics (SUP)	Secondary Categories	Primary Subcategory Waste Categories	% Net weight	% Net weight	% Net weight	% Net weight	% Net weight	% Net weight	Average	Min	Max	Lower Limit	Upper Limit	Standard Deviation	Confidence Interval 90%	N	Target	Reference	Packaging
1	Organics	No	No		Food Waste	0%	3%	0%	1%	1%	2%	1%	0%	3%	1%	2%	1%	1%	6	OW	Panda	0
2	Organics	No	No		Liquid fit for human consumption	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	OW	Panda	0
3	Organics	No	No		Biodegradable waste from garden & park	0%	3%	5%	7%	2%	1%	3%	0%	7%	1%	5%	2%	2%	6	OW	Panda	0
4	Papers	Packaging	No		Recyclable paper packaging	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	6	MDR	Mywaste	P
5	Papers	Packaging	No		Unrecyclable paper packaging	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	MRW	Panda	P
6	Papers	No	No		Recyclable paper non-packaging	0%	1%	11%	0%	2%	1%	2%	0%	11%	0%	5%	4%	3%	6	MDR	Mywaste	0
7	Papers	No	No		Unrecyclable paper non-packaging	0%	2%	0%	0%	0%	0%	0%	0%	2%	0%	1%	1%	0%	6	MRW	Mywaste	0
8	Cardboards	Packaging	No		Recyclable cardboard packaging	3%	1%	0%	0%	1%	8%	2%	0%	8%	0%	4%	3%	2%	6	MDR	Mywaste	P
9	Cardboards	Packaging	No		Unrecyclable cardboard packaging.	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	MRW	Panda	P
10	Cardboards	No	No		Recyclable cardboard non-packaging.	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	MDR	Mywaste	0
11	Cardboards	No	No		Unrecyclable cardboard non-packaging.	3%	0%	0%	0%	0%	0%	0%	0%	3%	0%	1%	1%	1%	6	MRW	Mywaste	0
12	Composites	Packaging	SUP	Secondary Categories	Composite SUP drinking bottles incl. caps and lids (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	MDR	Mywaste	P
13	Composites	Packaging	No		Other composites (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	MRW	Panda	P
14	Composites	No	No		Other composites (non- packaging)	0%	0%	18%	1%	2%	5%	4%	0%	18%	0%	8%	6%	4%	6	MRW	Mywaste	0
15	Textiles	Packaging	No		Textiles Packaging	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	P
16	Textiles	No	No		Textiles Non-Packaging - clothes	1%	2%	1%	4%	4%	11%	4%	1%	11%	2%	6%	3%	2%	6	CAS	Mywaste	0
17	Textiles	No	No		Textiles Non-Packaging - other than clothes	11%	9%	0%	1%	5%	13%	7%	0%	13%	3%	10%	5%	3%	6	CAS	Mywaste	0
18	Textiles	No	No		Nappies, healthcare textiles and similar	0%	1%	0%	0%	1%	1%	1%	0%	1%	0%	1%	0%	0%	6	MRW	Panda	0
19	Plastics	Packaging	SUP	Secondary Categories	PET SUP packaging drinking bottles including their caps and lids	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	DRS	Mywaste	P
20	Plastics	Packaging	SUP	Secondary Categories	Other than PET SUP packaging drinking bottles including their caps and lids	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	DRS	Mywaste	P
21	Plastics	Packaging	SUP	Secondary Categories	Hard Plastic packaging other than SUP packaging drink bottles (incl. caps and lids).	0%	1%	0%	0%	3%	0%	1%	0%	3%	0%	1%	1%	1%	6	MDR	Mywaste	P
22	Plastics	Packaging	No		Soft plastic packaging (bags and films)	0%	1%	0%	1%	1%	2%	1%	0%	2%	0%	1%	0%	0%	6	MDR	Mywaste	P
23	Plastics	No	No		Plastic non-packaging	0%	3%	4%	10%	8%	2%	5%	0%	10%	2%	7%	3%	2%	6	CAS	Mywaste	0
24.1	Plastics	Packaging	No		Styrofoam, polystyrene (PS) and expanded polystyrene (EPS) (packaging)	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	6	CAS	Mywaste	P
24.2	Plastics	No	No		Styrofoam, polystyrene (PS) and expanded polystyrene (EPS) (non-packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	0
25	Glass	Packaging	No		Glass (packaging)	2%	0%	0%	0%	0%	0%	1%	0%	2%	0%	1%	1%	1%	6	CAS	Mywaste	P
26	Glass	No	No		Glass (non-packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	0
27	Metals	Packaging	No		Ferrous metal packaging	0%	2%	0%	0%	0%	0%	0%	0%	2%	0%	1%	1%	0%	6	MDR	Mywaste	P
28	Metals	No	No		Ferrous metal non-packaging	2%	0%	9%	0%	0%	1%	2%	0%	9%	0%	4%	3%	2%	6	CAS	Mywaste	0
29	Metals	Packaging	No		Aluminium drinking cans (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	DRS	Mywaste	P
30	Metals	Packaging	No		Other aluminium packaging	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	MDR	Mywaste	P
31	Metals	No	No		Aluminium non-packaging	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	0
32	Metals	Packaging	No		Other non-ferrous metal (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	P
33	Metals	No	No		Other non-ferrous metal (non-packaging)	0%	0%	2%	0%	4%	0%	1%	0%	4%	0%	2%	1%	1%	6	CAS	Mywaste	0
34	Wood	Packaging	No		Wood Packaging	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	P
35	Wood	No	No		Untreated wood (non-packaging)	6%	5%	5%	0%	0%	0%	3%	0%	6%	1%	4%	3%	2%	6	CAS	Mywaste	0
36	Wood	No	No		Treated/composite wood (non-packaging)	43%	6%	6%	2%	6%	2%	11%	2%	43%	1%	21%	14%	10%	6	CAS	Mywaste	0
38.1	Hazardous Municipal Waste	No	No		WEEE (incl fluorsecent tubes)	3%	8%	4%	0%	1%	2%	3%	0%	8%	1%	5%	3%	2%	6	CAS	Mywaste	0
38.2	Hazardous Municipal Waste	No	No		Electrical or electronic toys	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	0
39	Hazardous Municipal Waste	No	No		Batteries & Accumulators	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	0
40	Hazardous Municipal Waste	Packaging	No		Aerosols (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	P
41	Hazardous Municipal Waste	No	No		Other municipal irregular/special waste (Hazardous)	1%	0%	0%	0%	0%	3%	1%	0%	3%	0%	1%	1%	1%	6	CAS	Mywaste	0
42.1	Non-Hazardous Municipal Waste	No	No		Municipal irregular/special waste (Non-Hazardous)	2%	0%	0%	0%	3%	0%	1%	0%	3%	0%	2%	1%	1%	6	CAS	Mywaste	0
42.2	Non-Hazardous Municipal Waste	No	No		Furniture	5%	46%	25%	68%	51%	16%	35%	5%	68%	21%	50%	22%	14%	6	CAS	Mywaste	0
42.3	Non-Hazardous Municipal Waste	No	No		Bicycles, scooters, prams and other wheeled leisure/transport items	0%	0%	0%	0%	0%	2%	0.27%	0%	2%	0%	1%	1%	0%	6	CAS	Mywaste	0
42.4	Non-Hazardous Municipal Waste	No	No		Toys	0%	0%	0%	1%	0%	10%	2%	0%	10%	-1%	4%	4%	2%	6	CAS	Mywaste	0
42.5	Non-Hazardous Municipal Waste	No	No		Mattresses	6%	0%	0%	0%	0%	5%	2%	0%	6%	0%	4%	3%	2%	6	CAS	Mywaste	0
43	Unclassified combustibles	Packaging	No		Unclassified combustibles (packaging)	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	6	MRW	Panda	P
44	Unclassified combustibles	No	No		Unclassified combustibles (non-packaging)	0%	0%	0%	1%	1%	0%	0%	0%	1%	0%	0%	0%	0%	6	MRW	Panda	0
45	Unclassified incombustibles	Packaging	No		Unclassified incombustibles (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	CAS	Panda	P
46	Unclassified incombustibles	No	No		Unclassified incombustibles (non-packaging)	6%	0%	3%	0%	0%	3%	2%	0%	6%	1%	3%	2%	1%	6	CAS	Panda	0
47	Fines	No	No		Fines (<20mm)	1%	1%	2%	3%	2%	1%	1%	1%	3%	1%	2%	1%	1%	6	MRW	Mywaste	0
48	Non Municipal Waste	No	No		C&D waste	3%	0%	3%	0%	0%	0%	1%	0%	3%	0%	2%	1%	1%	6	CAS	Mywaste	0
49	Non Municipal Waste	No	No		Non-municipal and non-C&D waste	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6	CAS	Mywaste	0
50	Other	No	No		Contamination	1%	2%	0%	1%	1%	4%	2%	0%	4%	1%	2%	1%	1%	6			
					Total	100%	100%	100%	100%	100%	100%											

APPENDIX D

Results – Bulky Waste at Civic Amenity Sites (20 03 07 CA)

Results (%) - Bulky Waste Skip CA

Contamination has been removed from the results

Sample number	4	6	7	16
Authorised Waste Collector (name)	Thorntons	Thorntons	Oxigen Drogheda	Thorntons
Waste Region	EMR	EMR	EMR	EMR
Skip Type	Bulky Skip CA	Bulky Skip CA	Bulky Skip CA	Bulky Skip CA
LoW	20 03 07 CA	20 03 07 CA	20 03 07 CA	20 03 07 CA
Area Type (Urban/Rural)	Urban	Rural	Rural	Rural
Date of Survey	15/12/2023	18/12/2023	08/02/2024	19/06/2024

Number Category	Primary Waste Categories	Packaging	Single Use Plastics (SUP)	Secondary Categories	Primary Subcategory Waste Categories	% Net weight	% Net weight	% Net weight	% Net weight	Average	Min	Max	Lower Limit	Upper Limit	Standard Deviation	Confidence Interval 90%	N	Target	Reference	Packaging
1	Organics	No	No		Food Waste	0%	0%	0%	2%	1%	0%	2%	0%	1%	1%	1%	4	OW	Panda	0
2	Organics	No	No		Liquid fit for human consumption	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	4	OW	Panda	0
3	Organics	No	No		Biodegradable waste from garden & park	0%	0%	2%	0%	1%	0%	2%	0%	2%	1%	1%	4	OW	Panda	0
4	Papers	Packaging	No		Recyclable paper packaging	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	4	MDR	Mywaste	P
5	Papers	Packaging	No		Unrecyclable paper packaging	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	MRW	Panda	P
6	Papers	No	No		Recyclable paper non-packaging	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	4	MDR	Mywaste	0
7	Papers	No	No		Unrecyclable paper non-packaging	0%	0%	0%	1%	0%	0%	1%	0%	1%	0%	0%	4	MRW	Mywaste	0
8	Cardboards	Packaging	No		Recyclable cardboard packaging	1%	16%	0%	2%	5%	0%	16%	0%	10%	7%	5%	4	MDR	Mywaste	P
9	Cardboards	Packaging	No		Unrecyclable cardboard packaging.	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	MRW	Panda	P
10	Cardboards	No	No		Recyclable cardboard non-packaging.	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	MDR	Mywaste	0
11	Cardboards	No	No		Unrecyclable cardboard non-packaging.	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	MRW	Mywaste	0
12	Composites	Packaging	SUP	Secondary Categories	Composite SUP drinking bottles incl. caps and lids (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	MDR	Mywaste	P
13	Composites	Packaging	No		Other composites (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	MRW	Panda	P
14	Composites	No	No		Other composites (non- packaging)	0%	0%	2%	4%	2%	0%	4%	0%	3%	2%	2%	4	MRW	Mywaste	0
15	Textiles	Packaging	No		Textiles Packaging	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	CAS	Mywaste	P
16	Textiles	No	No		Textiles Non-Packaging - clothes	0%	0%	3%	13%	4%	0%	13%	0%	8%	5%	4%	4	CAS	Mywaste	0
17	Textiles	No	No		Textiles Non-Packaging - other than clothes	0%	6%	21%	20%	12%	0%	21%	4%	19%	9%	7%	4	CAS	Mywaste	0
18	Textiles	No	No		Nappies, healthcare textiles and similar	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	MRW	Panda	0
19	Plastics	Packaging	SUP	Secondary Categories	PET SUP packaging drinking bottles including their caps and lids	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	DRS	Mywaste	P
20	Plastics	Packaging	SUP	Secondary Categories	Other than PET SUP packaging drinking bottles including their caps and lids	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	4	DRS	Mywaste	P
21	Plastics	Packaging	SUP	Secondary Categories	Hard Plastic packaging other than SUP packaging drink bottles (incl. caps and lids).	0%	0%	0%	2%	1%	0%	2%	0%	1%	1%	1%	4	MDR	Mywaste	P
22	Plastics	Packaging	No		Soft plastic packaging (bags and films)	0%	1%	0%	0%	0%	0%	1%	0%	1%	0%	0%	4	MDR	Mywaste	P
23	Plastics	No	No		Plastic non-packaging	0%	3%	4%	9%	4%	0%	9%	1%	7%	3%	3%	4	CAS	Mywaste	0
24.1	Plastics	Packaging	No		Styrofoam, polystyrene (PS) and expanded polystyrene (EPS) (packaging)	0%	1%	0%	0%	0%	0%	1%	0%	1%	0%	0%	4	CAS	Mywaste	P
24.2	Plastics	No	No		Styrofoam, polystyrene (PS) and expanded polystyrene (EPS) (non-packaging)	0%	0%	2%	0%	1%	0%	2%	0%	1%	1%	1%	4	CAS	Mywaste	0
25	Glass	Packaging	No		Glass (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	CAS	Mywaste	P
26	Glass	No	No		Glass (non-packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	CAS	Mywaste	0
27	Metals	Packaging	No		Ferrous metal packaging	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	MDR	Mywaste	P
28	Metals	No	No		Ferrous metal non-packaging	0%	1%	0%	0%	0%	0%	1%	0%	1%	0%	0%	4	CAS	Mywaste	0
29	Metals	Packaging	No		Aluminium drinking cans (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	DRS	Mywaste	P
30	Metals	Packaging	No		Other aluminium packaging	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	MDR	Mywaste	P
31	Metals	No	No		Aluminium non-packaging	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	CAS	Mywaste	0
32	Metals	Packaging	No		Other non-ferrous metal (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	CAS	Mywaste	P
33	Metals	No	No		Other non-ferrous metal (non-packaging)	0%	2%	0%	3%	1%	0%	3%	0%	2%	1%	1%	4	CAS	Mywaste	0
34	Wood	Packaging	No		Wood Packaging	2%	0%	0%	0%	0%	0%	2%	0%	1%	1%	1%	4	CAS	Mywaste	P
35	Wood	No	No		Untreated wood (non-packaging)	5%	4%	0%	0%	2%	0%	5%	0%	4%	2%	2%	4	CAS	Mywaste	0
36	Wood	No	No		Treated/composite wood (non-packaging)	23%	27%	1%	1%	13%	1%	27%	3%	23%	12%	10%	4	CAS	Mywaste	0
38.1	Hazardous Municipal Waste	No	No		WEEE (incl fluorsecent tubes)	14%	2%	0%	1%	4%	0%	14%	-1%	9%	6%	5%	4	CAS	Mywaste	0
38.2	Hazardous Municipal Waste	No	No		Electrical or electronic toys	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	CAS	Mywaste	0
39	Hazardous Municipal Waste	No	No		Batteries & Accumulators	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	CAS	Mywaste	0
40	Hazardous Municipal Waste	Packaging	No		Aerosols (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	CAS	Mywaste	P
41	Hazardous Municipal Waste	No	No		Other municipal irregular/special waste (Hazardous)	0%	5%	0%	2%	2%	0%	5%	0%	3%	2%	2%	4	CAS	Mywaste	0
42.1	Non-Hazardous Municipal Waste	No	No		Municipal irregular/special waste (Non-Hazardous)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	CAS	Mywaste	0
42.2	Non-Hazardous Municipal Waste	No	No		Furniture	36%	5%	45%	21%	27%	5%	45%	14%	39%	15%	13%	4	CAS	Mywaste	0
42.3	Non-Hazardous Municipal Waste	No	No		Bicycles, scooters, prams and other wheeled leisure/transport items	0%	0%	3%	0%	1%	0%	3%	0%	2%	1%	1%	4	CAS	Mywaste	0
42.4	Non-Hazardous Municipal Waste	No	No		Toys	0%	12%	6%	3%	5%	0%	12%	2%	9%	4%	4%	4	CAS	Mywaste	0
42.5	Non-Hazardous Municipal Waste	No	No		Mattresses	8%	0%	8%	3%	5%	0%	8%	2%	8%	4%	3%	4	CAS	Mywaste	0
43	Unclassified combustibles	Packaging	No		Unclassified combustibles (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	MRW	Panda	P
44	Unclassified combustibles	No	No		Unclassified combustibles (non-packaging)	0%	0%	0%	3%	1%	0%	3%	0%	2%	1%	1%	4	MRW	Panda	0
45	Unclassified incombustibles	Packaging	No		Unclassified incombustibles (packaging)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4	CAS	Panda	P
46	Unclassified incombustibles	No	No		Unclassified incombustibles (non-packaging)	0%	4%	0%	0%	1%	0%	4%	0%	2%	2%	1%	4	CAS	Panda	0
47	Fines	No	No		Fines (<20mm)	1%	3%	0%	1%	1%	0%	3%	0%	2%	1%	1%	4	MRW	Mywaste	0
48	Non Municipal Waste	No	No		C&D waste	9%	0%	0%	2%	3%	0%	9%	0%	6%	4%	3%	4	CAS	Mywaste	0
49	Non Municipal Waste	No	No		Non-municipal and non-C&D waste	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	4	CAS	Mywaste	0
50	Other	No	No		Contamination	0%	6%	0%	2%	2%	0%	6%	0%	4%	2%	2%	4			
					Total	100%	100%	100%	100%											

APPENDIX E

Results – Reusable Product Categories

Reusable Items

Sample number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Authorised Waste Collector (name)	Keywaste	Thorntons	Thorntons	Thorntons	Thorntons	Thorntons	Oxigen Drogheda	Oxigen Drogheda	Oxigen Drogheda	Panda	Panda	Panda	Panda	Thorntons	Thorntons	Thorntons
Waste Region	EMR	EMR	EMR	EMR	EMR	EMR	EMR	EMR	EMR	EMR	EMR	EMR	EMR	EMR	EMR	EMR
Skip Type	Municipal Household	Municipal Non-Household	Municipal Non-Household	Bulky Skip CA	Municipal Household	Bulky Skip CA	Bulky Skip CA	Municipal Household	Municipal Household	Municipal Non-Household	Municipal Household	Municipal Non-Household	Municipal Non-Household	Municipal Household	Municipal Non-Household	Bulky Skip CA
LoW	20 03 07 A	20 03 07 B	21 03 07 B	20 03 07 CA	20 03 07 A	20 03 07 CA	20 03 07 CA	20 03 07 A	20 03 07 A	20 03 07 A	20 03 07 A	21 03 07 B	22 03 07 B	20 03 07 A	24 03 07 B	20 03 07 CA
Urban/Rural	Urban	Urban	Urban	Urban	Urban	Rural	Rural	Rural	Rural	Rural	Rural	Rural	Rural	Urban	Rural	Rural
Date of Survey	10/11/2023	15/12/2023	15/12/2023	15/12/2023	18/12/2023	18/12/2023	08/02/2024	08/02/2024	08/02/2024	28/03/2024	28/03/2024	01/05/2024	01/05/2024	19/06/2024	19/06/2024	19/06/2024

Number Category	Primary Waste Categories	Product Category	Primary Subcategory Waste Categories	Item Description	Item Description	Item Description	Item Description	Item Description	Item Description	Item Description	Item Description	Item Description	Item Description	Item Description	Item Description	Item Description	Item Description	Item Description
14	Composites	Other	Other composites (non-packaging)					Golf putting green (perfect condition)		Suitcase Floor mat		Rake Wellies Mop Horse saddle	Clipboards	Bin	Suitcase		Mat	Mirror (wooden frame)	Christmas decorations
16	Textiles	Textiles	Textiles Non-Packaging - clothes	Mixture of clothing items	Mixture of clothing items	Mixture of clothing items		Mixture of clothing items	Mixture of clothing items	Mixture of clothing items							Mixture of clothing items	Mixture of clothing items	Mixture of clothing items
17	Textiles		Textiles Non-Packaging - other than clothes							Rugs	Cushion for garden chairs						Cushions Rugs	Rugs	Cushions
23	Plastics	Other	Plastic non-packaging					Water butt (slight damage to one leg) Plant pots		Plant pots	Unbrella stand		Crates Fake flowers Welding helmet Ear defenders	Tubberware Bin		Crate	Cooler Wellies Mirror		Toolboxes
28	Metals		Ferrous metal non-packaging									Tv wall mount Carpet roller Oven tray		Barbell weights Ornament Clothes rack				Repairable hedge clipper Bin	
33	Metals		Other non-ferrous metal (non-packaging)										Mop and brush poles						
35	Wood		Untreated wood (non-packaging)										Brush						
36	Wood		Treated/composite wood (non-packaging)											Baskets					
38.1	Hazardous Municipal Waste	Electrical and Electronic Equipment (EEE)	WEEE (incl fluorsecent tubes)	Heat gun Lamp Juicer								Christmas lights						Repairable grass strimmer	
38.2	Hazardous Municipal Waste		Electrical or electronic toys															Toy guitar	
42.2	Non-Hazardous Municipal Waste	Furniture	Furniture	Two wooden chairs (paint worn)	Armchair (repair to cover required)						Garden chairs Chairs Tables Side table	Repairable wooden chairs	Cabinet			Chair Foot stool	Chair Shoe cabinet	Foot stool	Repairable gaming chair Baby seat
42.3	Non-Hazardous Municipal Waste	Other	Bicycles, scooters, prams and other wheeled leisure/transport items							Pram				Bicycles				Pram	
42.4	Non-Hazardous Municipal Waste		Toys						Christmas Decorations	Teddy Baby walker Play pen	Dolls Toy kitchen Toy buggy Rackets Toy car				Toys including teddys	Football Toys	Scooter		Mixture of toys Repairable scooter Snowboard
42.5	Non-Hazardous Municipal Waste		Mattresses																
44	Unclassified combustibles		Unclassified combustibles (non-packaging)											Puppy training pads					
46	Unclassified incombustibles		Unclassified incombustibles (non-packaging)													Mug		Plates	Plates Bowls
48	Non Municipal Waste	nstruction Materials and Produ	C&D waste				Floor Tiles			Insulation	Wooden floorboards	Bricks							