2012 Waste Data Quality Report

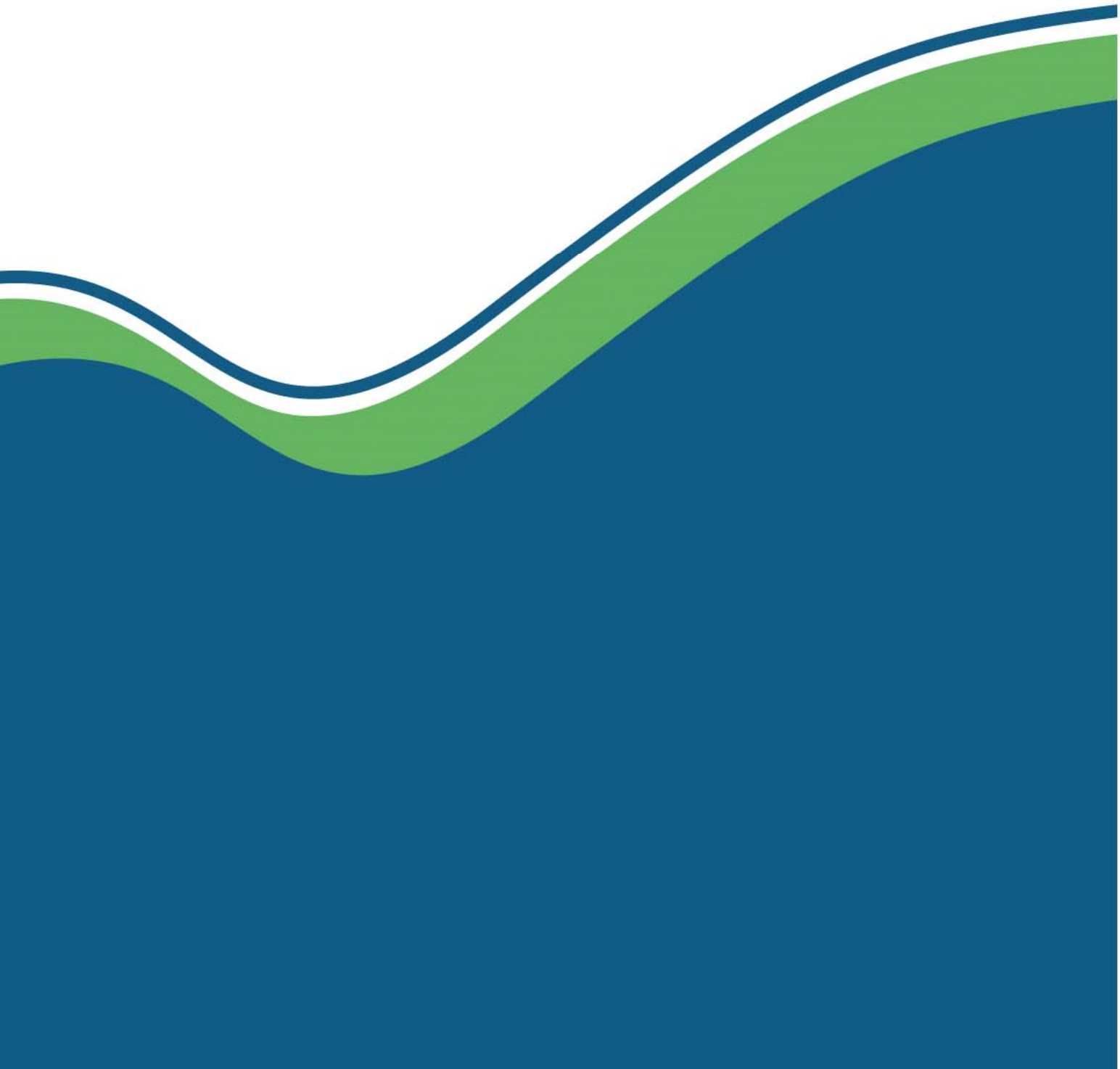


Table of Contents

1 Introduction 4

1.1 Historical Data 6

2 Progress against Zero Waste Plan Targets 7

2.1 Introduction 7

2.2 Recycling/composting and preparing for re-use of household waste 8

2.3 The preparing for re-use and the recycling by weight of waste materials such as paper, metal, plastic and glass from household waste and similar 8

2.4 Recycling and preparing for re-use of construction and demolition waste 9

2.5 Biodegradable municipal waste to be sent to landfill 9

2.6 Percentage of waste from all sources landfilled 9

2.7 Percentage of waste from all sources recycled 10

3 Prevention 11

3.1 Introduction 11

3.2 Commercial and industrial waste generated 11

3.2.1 Introduction 11

3.2.2 Methodology 12

3.3 Construction and demolition waste generated 16

3.3.1 Summary 16

3.3.2 Introduction 16

3.3.3 Methodology 17

3.4 Special waste generated 19

3.5 Packaging waste generated 19

3.6 Waste generated per unit of Gross Value Added 19

4 Recycled 21

4.1 Introduction 21

4.2 Composting in Scotland 21

4.2.1 Composting at licensed/permitted sites 21

4.2.2 Exempt composting activity 23

4.3 Glass, plastic and wood recycled in Scotland 23

4.4 Batteries, discarded equipment, end of life vehicles, glass, metal, paper and card, plastic and wood recycled outside Scotland 24

4.5 Recycling by complex exempt activities in Scotland 25

4.6 Aggregates recycled in Scotland 27

5 Recovered 28

5.1 Introduction 28

5.2 Recovery by incineration and co-incineration within Scotland 28

5.3 Recovery by incineration outside Scotland 29

6 Disposed 30
6.1 Introduction 30
6.2 Waste disposed via landfill 30
6.3 Waste disposed via incineration 30

7 Special waste 31

8 Imports and exports 32

9 Household waste 33
9.1 Introduction 33
9.2 Methodology 33
9.2.1 The introduction of Question 100 during 2012 33
9.2.2 Benefits of Question 100 34
9.2.3 Waste types 35
9.2.4 Household waste generated 35
9.2.5 Household waste landfilled 35
9.2.6 Household waste incinerated 35
9.2.7 Household waste recycled 35
9.2.8 Household waste prepared for reuse 36
9.2.9 Household waste composted 36
9.2.10 Household waste managed by other methods 36
9.2.11 Final destination reporting 36

10 Further information 38

Appendix 1 39

Appendix 2 43

Appendix 3 48

Appendix 4 50

Appendix 5 51

Appendix 6 52

Appendix 7 53

Version Control 54

1 Introduction

This report describes the methodologies to produce summary waste data for Scotland for the 2012 calendar year. The report should be used alongside the 2012 waste data tables, which are published as two distinct datasets: the first dataset covers waste from household sources only, the second dataset covers waste from all sources (WFAS) which is the total waste managed, whether it be waste from households, waste from construction and demolition, or waste from commerce and industry.

The 2012 data are presented as follows:

- Scotland's Environment Waste Discover Data tool presents the WFAS in an interactive and visual format and is found on Scotland's Environment web at http://www.environment.scotland.gov.uk/get-interactive/data/waste-from-all-sources/

- Scotland's Environment Household Waste Discover Data tool presents the waste from household sources in an interactive and visual format and is found on Scotland's Environment web at http://www.environment.scotland.gov.uk/get-interactive/data/household-waste/

- Both the waste from household sources and the WFAS data tables may be downloaded in Excel format from SEPA's website at www.sepa.org.uk/waste/waste_data/waste_data_digest.aspx

The waste from all sources data tables that accompany this report are structured according to the waste management options set out in the Scottish Government's Guidance on applying the waste hierarchy[1]:

- Prevention
- Prepare for reuse
- Recycle
- Recover other value
- Disposal.

This document is structured in the same way as the data tables, except for household waste, which is presented in a stand-alone section. This is because household data is taken from a discrete dataset (WasteDataFlow[2]) and it is more concise to report the methodology in a single section.

In some cases the quantities of household waste and waste from all sources are counterintuitive. For example, there is more household waste than waste from all sources for a given reporting category. This is a product of using different datasets and corresponding methodologies which are not comparable.

Each methodology in this document highlights any important limitations with each dataset. We explain any important assumptions we have made about the data during our analysis. We also highlight areas where SEPA, local authorities and Zero Waste

[1] www.scotland.gov.uk/Resource/0042/00420711.pdf

[2] http://www.sepa.org.uk/waste/waste_data/lacw/lacmw.aspx

Scotland are working to improve data quality in the future. This will be co-ordinated by the Waste Data Strategy for Scotland[3] which is due for review in 2014. A technical advisory group has also been established to support the aims of the strategy.

For the WFAS data tables, no attempt has been made to reconcile the tonnages of waste generated and waste managed. Several data sources used for varying purposes have been used to generate the data used in this tool. There will be double counting of some data: for example, incinerator tonnages are gross input tonnages to incinerators. No attempts have been made to exclude from the landfill tonnages any incinerator outputs of ash sent to landfill.

It should be noted that this approach differs from the household data tables, in which waste generated and waste managed is balanced, with the exception of waste sent to interim storage. Using the incineration example: in the household tool, 'incineration' reports net inputs to incinerators to avoid double counting of incinerator outputs.

The WFAS waste generated is approximately 15% greater than that managed. Part of this difference may be due to some waste not captured using the existing methodology. For example, waste that is exported to another part of the UK for landfill or incineration, and is sent to an interim storage site outside Scotland before it is sent for disposal, will not be captured in the existing methodology. However, these are believe to be relatively minor tonnages and the reason for the majority of this discrepancy is currently unknown. SEPA is undergoing a review of it's waste reporting in 2015 with the objective of identifying any potential gaps in the reporting methodologies and datasets.

The five data sources referred to at various parts of the document are listed below. The agency that carries out the analysis of the dataset is provided in brackets.

- Scottish licensed/permitted site returns (SEPA)
- Household wastes managed by Scottish local authorities (SEPA)
- Wastes managed by exempt activities in Scotland (SEPA)
- Scottish accredited packaging waste re-processors (SEPA)
- UK packaging waste generated (Defra)
- Zero Waste Scotland Aggregates Quality Protocol Supplier Directory (ZWS)

Appendix 1 provides a fuller description for four of the datasets listed above, including any links to return forms and guidance.

Appendix 2 lists three separate conversions of data that were used in the Commercial and Industrial (C&I) generated methodology (also see Section 3.2).

Appendix 3 and Appendix 4 list the waste categories used in the household waste methodology (also see Section 9).

Appendix 5 provides a brief summary of the coding of waste using European Waste Catalogue (EWC) and European Waste Catalogue for Statistics (EWC-STAT), which are used throughout this document.

Appendix 6 provides a glossary of terms.

---

[3] www.sepa.org.uk/waste/waste_data.aspx

Appendix 7 provides a list of acronyms.

1.1 Historical Data

Where there have been any changes in methodology since publication of the 2011 waste data tables, the 2011 data has been revised in line with the 2012 methods.

The changes in methodology introduced in 2012 are:

- No attempts were made to estimate for the licensed/permitted site return dataset and the complex exemption dataset for returns not submitted. Historically, attempts have been made to estimate data based on waste tonnages that operators indicated in their application form (exemptions), or based on historical returns if available (site returns). Consequently, the following datasets have been revised: waste sent to landfill in Scotland (2005 – 2011); waste composted in Scotland (2011); commercial and industrial waste generated (2011); construction and demolition waste generated (2011).

- Zero Waste Scotland Aggregates Quality Protocol Supplier Directory has been used as a data source. It is used as part of the methodology to estimate the construction and demolition waste generated (2011 and 2012) and to estimate the aggregate waste recycled (2011 and 2012).

Further details are provided in the relevant sections.

2 Progress against Zero Waste Plan Targets

2.1 Introduction

The Scottish Government's first Zero Waste Plan (ZWP), published on the 9th June 2010, sets out the Scottish Government's vision for a zero waste society. This vision describes a Scotland where **all** waste is seen as a resource, where waste is minimised, where valuable resources are not disposed of in landfills, and where most waste is sorted, leaving only limited amounts to be treated.

The ZWP sets a number of objective and measurable targets for tracking progress against the objectives specified in the plan. A summary of these targets is specified in Section 13 of Annex A of the plan, and is summarised below in Table 1 below.

Table 1 Zero Waste Plan Targets

Target/Cap	Year	Derivation
40% recycling/composting and preparing for re-use of household waste	2010	Scottish Government target
No more than 2.7 million tonnes of biodegradable municipal waste to be sent to landfill	2010	Article 5(2) of the EU Landfill Directive
50% recycling/composting and preparing for re-use of household waste	2013	Scottish Government target
The preparing for re-use and the recycling of 50% by weight of waste materials such as paper, metal, plastic and glass from household waste and similar	2020	Article 10(2)a of the EU Waste Framework Directive
No more than 1.8 million tonnes of biodegradable municipal waste to be sent to landfill	2013	Article 5(2) of the EU Landfill Directive
60% recycling/composting and preparing for re-use of household waste	2020	Scottish Government target
No more than 1.26 million tonnes of biodegradable municipal waste to be sent to landfill	2020	Article 5(2) of the EU Landfill Directive
70% recycling and preparing for re-use of construction and demolition waste	2020	Article 11(2)(b) of the revised EU Waste Framework Directive
No more than 5% of all waste to go to landfill	2025	Scottish Government target
70% recycling/composting and preparing for re-use of all waste by 2025	2025	Scottish Government target

2.2 Recycling/composting and preparing for re-use of household waste

The method used to prepare the household waste recycling/composting and preparing for re-use figure is based on household waste collected and managed in WasteDataFlow (see Section 9: Household Waste). The total waste reused, composted and recycled for all 32 Scottish local authorities has been taken as a proportion of the total waste generated for all 32 Scottish local authorities.

> [Percentage Waste from households Recycled] = [Waste from households Recycled] / [Waste from households Generated] * 100

The meaning of household waste changed in 2011 with the introduction of the Zero Waste Plan. The household recycling figures use the revised meaning for 2011 – 2012[4]. The household waste recycling figures for 2004 – 2010 are based on the old definition of household waste. Changes in the definition of household waste include:

- compost like output from mechanical and biological treatment (MBT) of household wastes previously counted as recycled was re-classified as 'Other recovery';
- metals and ash from incineration previously counted as recycled was re-classified as 'Other recovery';
- street-sweeping, gully waste, healthcare waste, and beach-cleansing waste were re-classified from household to commercial waste.

2.3 The preparing for re-use and the recycling by weight of waste materials such as paper, metal, plastic and glass from household waste and similar

This is a European target that has been incorporated into the ZWP.

Article 11(2)(a) of the Waste Framework Directive (Directive 2008/98/EC) specifies that member states must meet a recycling target of 50% by weight for the recycling of waste materials such as paper, metal, plastic and glass from households.

The first triennial submission for calendar year 2010, 2011 and 2012 was made to Europe in 2012. The figures in the waste data tables that track progress against this ZWP target are based on the Scotland dataset provided to Defra for this purpose.

The recycling tonnages for this target differs from the Scotland target in that waste soils and waste from construction and demolition is excluded from the definition of household waste.

> [Waste from households Generated (EU)] = [Waste from households Generated] - [Waste soils and waste C&D from Households Recycled]
>
> [Percentage Household Waste Recycled (EU)] = ([Household Waste Recycled] - [Waste Soils and waste C&D from households Recycled]) / [Household Waste Generated (EU)] * 100

[4] The above changes were introduced for reporting in the April-June 2011 quarter onwards. The January-March 2011 data for all 32 local authorities was re-analysed to be consistent with the other three quarters for the year.

2.4 Recycling and preparing for re-use of construction and demolition waste

This is a European target that has been incorporated into the ZWP.

Article 11(2)(b) of the Waste Framework Directive (Directive 2008/98/EC) specifies that, by 2020, construction and demolition (C&D) waste[5] which is prepared for re-use, recycled or materially recovered, shall be increased to a minimum of 70% by weight.

The first triennial submission for C&D waste for calendar years 2010, 2011 and 2012 was made to Europe in 2012. The data were prepared using a consistent methodology that was agreed by all the constituent administrations of the UK. However, subsequent to this submission the EU has advised Defra that the methodology used should be revised. Therefore a methodology for a revised C&D recycling rate is currently in progress in consultation with Defra and other devolved countries. For this reason, a C&D recycling rate has not been included in this publication. The waste data tables will be revised with the C&D recycling rates as soon as practicable after these data are available.

2.5 Biodegradable municipal waste to be sent to landfill

Biodegradable Municipal Waste (BMW) is the fraction of municipal waste that will degrade within a landfill, giving rise to landfill gas emissions, primarily methane. It includes, amongst other materials, food waste, green waste, paper and cardboard.

The BMW of waste sent to landfill is calculated based on the EWC code of the waste. A percentage biodegradability has been determined for all waste sent to landfill, ranging from 100% for materials such as paper and food, 50% for materials such as textiles and furniture, and 0% for inert materials like tyres and metals.

For all waste landfilled a percentage biodegradability was applied to each EWC code and this was multiplied by the tonnes of waste for each code. This gives the total biodegradable waste landfilled by waste type. This was then split down further to provide data on municipal and non-municipal biodegradable waste. Municipal waste was identified as all waste coded under EWC Chapter 20, selected codes under Chapter 15, and Chapter 19 where the source prior to treatment is deemed to be municipal. Conversely, non-municipal waste is determined to be the waste not coded according to these criteria.

2.6 Percentage of waste from all sources landfilled

As indicate in section 1, the WFAS waste generated is approximately 15% greater than that managed This discrepancy make the calculation of a landfill percentage problematic. To account for this discrepancy, for the purpose of the calculation of the WFAS percentage waste landfilled, the methodology used considers the WFAS ‘generated’ as the sum of WFAS managed: reused, recycled, composted, incinerated and landfilled. The percentage WFAS landfilled is then taken as the tonnage of WFAS landfilled as a proportion of the waste generated.

---

[5] In this specification, construction and demolition waste means waste corresponding to the waste codes in Chapter 17 of the EWC catalogue, excluding hazardous waste and naturally occurring material as defined in category 17 05 04

In this methodology:

[Total Generated] = [Waste Reused] + [Waste Recycled] + [Waste Composted] + [Waste Incinerated] + [Waste Landfilled]

The percentage landfilled is then taken as:

[Percentage Landfilled] = [Waste Landfilled] / [Total Generated] * 100

2.7 Percentage of waste from all sources recycled

To determine the WFAS recycling rate, an approach similar to that used to derive the percentage of WFAS landfilled was used. The methodology considers the WFAS 'generated' as the sum of WFAS managed: reused, recycled, composted, incinerated and landfilled. The percentage recycled is taken as the tonnage of WFAS recycled as a proportion of the waste generated

In this methodology:

[Total Generated] = [Waste Reused] + [Waste Recycled] + [Waste Composted] + [Waste Incinerated] + [Waste Landfilled]

The percentage recycled is then taken as:

[Percentage Recycled] = [Waste Recycled] / [Total Generated] *100

3 Prevention

3.1 Introduction

Waste prevention is a term that relates to waste materials and is defined in European Law as measures taken before a substance, material or product has become waste that reduce:

- the quantity of waste, including through the re-use of products or the extension of the lifespan of products;
- the adverse impacts of the generated waste on the environment or human health;
- the content of harmful substances in materials and products.

For the purposes of reporting, we use both total waste generated and waste generated per unit of Gross Value Added (GVA) as indicators of waste prevention. Further details for the GVA method are provided in Section 3.6. The methodologies detailed in the following section do not focus on how and where the waste is generated.

The following section is split into five distinct methods:

- Commercial and industrial waste generated
- Construction and demolition waste generated
- Special waste generated
- Packaging waste generated
- Waste generated per unit of gross value added

The methodology for household waste generated is detailed in Section 9.2.4.

3.2 Commercial and industrial waste generated

3.2.1 Introduction

Commercial and industrial (C&I) waste referred to in this section relates to waste produced by businesses and excludes Construction and Demolition (C&D) waste.

The method used to estimate Scottish C&I waste generated for 2012 is based on the use of SEPA regulatory data. It uses data from licensed/permitted site returns and complex exempt activities to provide estimates of waste generated by business sector.

This is the same method used in 2011 but, prior to this, data on the wastes produced by businesses was collected by SEPA using business waste surveys[6].

6

www.sepa.org.uk/waste/waste_data/commercial__industrial_waste/business_waste_surveys.aspx

Overview

In order to produce estimates of C&I waste generated, an analysis was carried out of all waste inputs to licensed/permitted and complex exempt sites in Scotland. The sector producing the waste, as defined by Standard Industry Classification[7] (SIC) codes, was determined using four different approaches depending on the size of the operator, or the type of site.

Once SIC codes had been assigned to all waste inputs then waste arising from specific sectors was excluded to produce the final dataset. The sectors excluded were construction, waste management and households.

3.2.2 Methodology

Inputs to waste management sites from licensed/permitted site returns (Table B – Waste inputs to site) were used as the primary source of data for this study, together with returns from complex exempt activities. The principle was to count waste when it first entered the waste management system, at which point the producer can be determined.

All operational sites in 2012 were considered relevant to this study and comprised 760 waste management sites and 427 complex exempt activities. The total waste input to these sites was 15.5 million tonnes.

Four approaches were used to obtain information on the producer of waste, based on the following groups:

- large waste operators that handled more than 50,000 tonnes of waste in total;
- small waste operators that handled less than 50,000 tonnes of waste in total;
- local authorities;
- complex exempt activities.

The approach taken for each of these groups is explained in more detail below.

Large waste operators

Operators that handled more than 50,000 tonnes of waste in total in 2012 were identified from their licensed/permitted site returns by adding together the inputs to all of their sites (71 operators). These operators were then split into two sub-groups:

- those that needed to be contacted to obtain information on the origin of waste;
- those that did not need to be contacted because the origin of waste was clear.

Operators in the group that needed to supply information were sent a document which summarised their licensed/permitted site returns data and were asked to indicate the origin of waste by broad SIC group for each EWC code. A return rate of 86% was received to this request and resulted in operators assigning SIC codes to 32% of the 15.5 million tonnes of waste handled by all types of site.

---

[7] www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/index.html

For the eight large operators that did not respond to the SIC data request the approach used for small operators was followed.

For those in the second group, where the origin of the waste was clear, we assigned SIC codes based on either:

- type of operator (Appendix 2);
- type of waste using the standard assumptions (Appendix 2).

This accounted for a further 22% of the total waste handled by all types of site.

Small waste operators

The origin of waste (SIC group) for returns from operators that handled less than 50,000 tonnes of waste was estimated using the standard assumptions in Appendix 2. These assumptions were based on the EWC code (where it indicated the waste came from a specific sector, e.g. waste from the food industry) or information from SEPA's business waste data 2010. Data from WasteDataFlow was also used to identify household waste sent to non-local authority sites.

Local authorities

Individual authorities were not contacted during the study as detailed information on sites handling local authority collected waste was readily available from WasteDataFlow.

For sites operated by a local authority, the overall percentage split of household/commercial waste for each authority reported in WasteDataFlow was used to assign waste inputs to either the household or commerce SIC group depending on the type of waste allowed by the site licence. If a site was only licensed to accept household waste then all of the waste was assigned to the household SIC group. If the site was licensed to accept both household and commercial waste then waste was assigned to the household and commerce SIC groups in accordance with the split. The exception to this rule were two landfill sites operated by Glasgow City Council and Fife Council which accepted large quantities of waste from private construction companies. These authorities were contacted separately to confirm the quantities of construction waste accepted at their sites and a construction sector SIC code was assigned to these wastes.

Waste handled by local authority sites accounted for 20% of the total waste handled.

Complex exempt activities

Returns from complex exempt activities that operated in 2012 were also used to estimate waste generated. The origin of waste (SIC group) for wastes handled by these sites was estimated using the standard assumptions detailed in Appendix 2.

Inclusions and exclusions in the dataset

Once the main analysis was complete and SIC codes assigned to all 15.5 million tonnes of waste, the inclusion, exclusion or recalculation of specific wastes was necessary in order to produce the final dataset. The actions carried out are explained below.

Waste handled by sewage treatment and wastewater treatment works

Waste waters are excluded from the scope of the Waste Framework Directive as they are covered by other European legislation and therefore inputs of sewage and septic tank sludge to sewage and wastewater treatment plant were removed from the dataset. Other wastes handled by these treatment works were included.

Wet and dry weights

Under the European Waste Statistics Regulation, the majority of data is required to be reported as wet weight, except for common sludges, industrial effluent sludges and dredging spoils. To provide consistency with European reporting these wastes were converted to dry weights in the final dataset by the use of standard UK conversion factors. These factors are set out in Appendix 2.

Wastes produced by the waste management industry

There are two issues associated with waste produced by the waste management industry.

First, in order to avoid double-counting of waste, inputs to any site that arrived from another waste management site (mostly waste coded under EWC Chapter 19) were assumed to have been counted earlier in the chain and were removed from the dataset.

Second, it is difficult to identify waste produced by the waste management sector itself (e.g. from the company's offices or workshops) because these wastes are often combined with wastes from the commercial side of their business and are not measured separately. For this study a small amount of waste was estimated using the standard assumptions in Appendix 2. It is acknowledged that this estimate is in need of improvement as it does not include all wastes that could potentially be produced by the industry.

Wastes produced by households

Waste identified as arising from households was excluded from the final dataset.

Wastes from the construction sector

Waste identified as arising from the construction industry (coded under European Waste Catalogue Chapter 17) was excluded from the final dataset.

Removal of non-Scottish waste

Waste with an origin of outside Scotland was excluded from the final dataset.

Addition of missing data

Once the actions described above had been carried out, and the near final dataset produced, the latter was compared with the 2011 C&I waste generated data as part of the quality assurance process. The purpose was to identify any large differences between SIC sectors and/or waste types between the two datasets and investigate these further. As a result a number of issues were checked and followed up.

As with the 2011 dataset four instances were identified where data was underreported in 2012 because the wastes (legitimately) did not pass through a licensed/permitted or complex exempt site in Scotland. This missing data was therefore estimated and added to the final dataset, ensuring no waste was double-counted. The issues and solutions are described in Table 2 below.

Table 2. Waste types not captured under the licensed/permitted or complex exempt datasets and the alternative approach used

Sector/waste type	Waste type	Issue	Solution
Agriculture	Chemical wastes	Sheep dip and pesticides may be disposed on farm	Estimated using Agricultural Waste Estimates Model[8]
Agriculture	Plastics	Often handled by simple exempt activities with no data reporting requirement	Estimated using Agricultural Waste Estimates Model[9]
Chemical manufacture	Solvents	May be transported directly to the rest of the UK for processing	Scottish solvents identified using Environment Agency Hazardous Waste Interrogator
Commerce	Tyres	May be transported directly to the rest of the UK for processing or for use overseas	Estimated tyre exports from Zero Waste Scotland market research

It should also be noted that waste produced by a business in Scotland that is exported directly and does not pass through a Scottish waste management site will not be captured in the dataset. The scale of this missing data is not currently known.

Final dataset

Once SIC codes had been assigned to the 15.5 million tonnes of waste handled by all types of site, and the inclusions/exclusions applied, the waste generated from households, the construction sector and waste handled by the waste management sector were removed from the total. The resulting dataset provided the commercial and industrial waste generated data for 2012 and amounted to 4.09 million tonnes.

[8] Agricultural Waste Estimates Model developed by Marcus Hodges Environment and BDB Associates on the behalf of the Environment Agency

[9] Agricultural Waste Estimates Model developed by Marcus Hodges Environment and BDB Associates on the behalf of the Environment Agency

Accuracy of SIC codes

Overall, SIC codes were assigned to 74% of the total waste handled by all types of site based on operator responses, the type of site, or if the site was operated by a local authority (Table 3 below). Standard assumptions were used to assign SIC codes for the remaining 26% of the total waste analysed.

Table 3. Summary of how much SIC code data was produced (as a % of total waste analysed) using one of four methods

Origin of SIC code	Percentage of total waste analysed
Operator responses	32%
Type of site	22%
Local authorities	20%
Standard assumptions	26%

3.3 Construction and demolition waste generated

3.3.1 Summary

The total quantity of C&D waste generated in Scotland in 2012 was 4.77 million tonnes. The equivalent figure for 2011 was 6.28 million tonnes, representing a decrease of 1.51 million tonnes between 2011 and 2012.

3.3.2 Introduction

This section describes the methodology for reporting the quantities of Construction and Demolition (C&D) waste generated in Scotland in 2012. It captures all waste types recorded in the data returns as European Waste Catalogue (EWC) Chapter 17 (C&D wastes including excavated soil from contaminated sites), such as soil, stones, wood and metals.

The methodology for 2012 uses data from three sources: licensed/permitted site returns and complex exempt activity returns, both of which are managed by SEPA, and the Zero Waste Scotland Aggregates Quality Protocol Supplier Directory, managed by ZWS.

In 2012, neither of the two C&D data sources managed by SEPA contained estimated data for non-submitted returns. To ensure compatibility for trends, the equivalent SEPA C&D data sources for 2011 were reworked to remove estimated data.

The aggregates data supplied by ZWS was introduced for the first time in 2012. It does contain some estimated data as explained in Appendix 1. To ensure the 2011 and 2012 datasets were compiled using a similar methodology, the 2012 aggregate data was used as an estimate for the 2011 dataset.

3.3.3 Methodology

Licensed/permitted sites dataset

Data returns from 308 licensed/permitted sites operating in 2012 were used to calculate C&D waste generated. To avoid double-counting, 13 sites were excluded as it was thought their waste they might already be included in the aggregates dataset provided by ZWS. Thus, 295 sites were used overall.

Waste with an origin outside Scotland was removed from the dataset (18,532 tonnes).

As a consignment of waste may be managed at more than one licensed/permitted site, we use the following calculation to avoid double-counting and produce our best estimate of C&D waste generated:

Chapter 17 waste inputs – Chapter 17 waste outputs = Chapter 17 waste generated

This is calculated at the Scotland level, not at the site level. The difference in inputs minus outputs is estimated as waste generated. This can be waste that has been:

- treated so that it changes from waste to a final (non-waste) product;
- treated onsite and recoded to a non-Chapter 17 waste type;
- stored onsite for the reporting period before being moved offsite.

Metal recycling

The exception to the above calculation is metal waste which has a high economic value and ends up at a small number of recycling sites before being exported from Scotland for recycling. To estimate the amount of metal waste generated, we use the quantity of EWC Chapter 17 waste metals exported from selected recycling sites.

Plastic wastes

In 2012, slightly more plastic wastes left sites than entered them. The amount of plastic waste generated was taken to be the higher reported figure of wastes leaving sites.

Recoding of wastes to Chapter 19

Some of the EWC Chapter 17 codes may be recoded to EWC Chapter 19 (wastes from waste management facilities etc) as a result of onsite treatment, e.g. physical sorting/shredding. For example, a mixed skip of C&D waste (17 09 04) may be sorted onsite and reported as separated fractions of ferrous metal (19 12 12), non-ferrous metal (19 12 03), glass (19 12 05) and other wastes (19 12 12). This is not an issue for the calculation of waste generation as the input minus outputs approach described above captures the tonnages of EWC Chapter 17 wastes at the input stage.

Waste storage

Sites with Chapter 17 outputs but no inputs (e.g. those storing waste from a previous reporting period) were removed from the analysis, as their waste will be captured in the previous year. There were 30 such sites in 2012.

Complex exemption dataset

Further details of the methodology for the exemptions dataset can be found in Section 4.5. This section provides more specific details on the use of the exemptions dataset for reporting C&D waste generated.

Exempt activities are commonly where waste is recycled into new products or reused. The tonnages of waste reported in the exempt activity data returns will be a direct estimate of waste generated. In some cases, waste may travel to exempt sites via a licensed/permitted site, but the input minus outputs approach used with the licensed/permitted site dataset minimises the risk of double counting.

Data returns from 156 complex exempt activities registered in Scotland between 1 November 2011 and 31 October 2012 were used to report on C&D waste (EWC Chapter 17) generated. These exempt activities were registered under Paragraphs 7, 9, 19, and 45, and together they accounted for 37% of the 427 exempt activities that submitted returns and 44% of the overall tonnage handled by exempt activities in Scotland.

No estimated data were included in the 2012 exemptions dataset. All tonnages for 2012 are self-reported by sites using the exemptions return form. Further details are given in Section 4.5. To ensure compatibility for trends, the equivalent SEPA C&D data sources for 2011 were reworked to remove estimated data. These equivalent datasets are compared in Table 4. In 2012, the amount of C&D waste managed by exempt activities was 1.82 million tonnes, which is 0.94 million tonnes less than that managed in 2011.

Table 4. Reported tonnages of C&D waste from the 2011 and 2012 exemptions datasets, by paragraph, and excluding estimated tonnages

	Tonnes		
Paragraph	2011	2012	Difference
7	208,583	3,878	-204,705
8(2)	110	0	-110
9	416,634	134,934	-281,700
12	3,519	0	-3,519
19	1,180,258	721,096	-459,162
45	10,062	15,176	5,114
47	1,240	0	-1,240
Total	**1,820,405**	**875,084**	**-945,321**

Aggregates dataset

The quantity of waste aggregates generated in Scotland in 2012 was based on data from the Aggregates Quality Protocol Supplier Directory provided by Zero Waste Scotland (ZWS). Further details of the Aggregates Quality Protocol Supplier Directory and the dataset provided by ZWS can be found in Appendix 1.

3.4 Special waste generated

The 2012 data for special waste generated is not taken from an independent data set. The data originates from the individual analyses for household, commercial and industrial, and construction and demolition wastes generated as described elsewhere. The wastes classified as hazardous in each waste generated methodology are combined to produce an overall figure.

3.5 Packaging waste generated

Estimates of packaging waste generated for the UK are produced by Defra. Scottish packaging waste generated is assumed to represent 10% of the UK waste generated.

3.6 Waste generated per unit of Gross Value Added

According to the Office of National Statistics (ONS), gross value added (GVA) measures the contribution to the economy of each individual producer, industry or sector in the United Kingdom. GVA is published by ONS at the regional (NUTS1) level[10][10] meaning that data is available specifically for Scotland. An information paper

[10] http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-317145

on the quality and methodology for regional GVA data is also available on the ONS website[11].

GVA is one of the measures chosen by the Scottish Government for waste prevention. In Scotland's waste prevention plan 'Safeguarding Scotland's Resources[12]' waste prevention is measured by the following:

- The total amount of waste produced by sectors - household; commerce and industry; and construction and demolition.
- The amount of waste produced by sectors per unit of GVA.
- The carbon impact of waste - the whole-life impacts of waste including the benefits of prevention and recycling.

Total GVA represents the overall size or value of the economy in pounds. Dividing total waste generated by total GVA gives a measure of waste generated per pound of GVA. This has been expressed as waste generated per £million GVA in the data tables.

Further information on the use of GVA in the context of waste produced is available from the Scottish Government.

[11] http://www.ons.gov.uk/ons/guide-method/method-quality/quality/quality-information/economic-statistics/quality-and-methodology-information-for-regional-gross-value-added--gva-.pdf

[12] http://www.scotland.gov.uk/Publications/2013/10/6262

4 Recycled

4.1 Introduction

This section describes how we report on the recycling of Scottish wastes within Scotland and outside Scotland. The methodology is split into the following sections:

- composting of waste at licensed/permitted and exempt sites in Scotland;
- glass, plastic and wood recycled in Scotland;
- batteries, discarded equipment, End of Life Vehicles (ELV), glass, metal, paper and card, plastic, and wood recycled outside Scotland;
- recycling by exempt activities in Scotland
- aggregates recycled in Scotland.

The data is for WFAS. We do not report separate household, commercial and industrial (C&I), and construction and demolition (C&D) waste using this methodology. There are distinct methodologies for household waste recycling, reuse and composting in Section 9.

4.2 Composting in Scotland

This section describes how we report on the composting of waste within Scotland. We do not report on the composting of Scottish wastes outside Scotland. We assume all waste composted at Scottish sites is Scottish in origin. Composting data are taken from two data sources managed by SEPA: licensed/permitted sites returns and complex exemptions. There was 551,515 tonnes of waste composted in Scotland in 2012, site returns made up 520,762 tonnes and exemptions 9,249 tonnes.

4.2.1 Composting at licensed/permitted sites

The 2012 methodology captures composting of waste using windrow, in-vessel composting (IVC), and anaerobic digestion (AD) of organic wastes at licensed/permitted sites. Data is taken from Table C (Waste treatment on site) for the following two management methods:

- Composting (CP) of all suitable waste types
- Biological treatment (BT) of all suitable waste types, at specific AD/IVC sites

Composting (CP)

For composting (CP) of all suitable waste types, EWC codes with a management method ‘CP’ (composted on site) were assessed as suitable or unsuitable for composting. A total of 431,600 tonnes was reported, of which 427,534 tonnes was judged suitable and 4,067 tonnes unsuitable. Unsuitable waste categories were excluded from final figures. The five largest tonnages for each category are given in Table 5 below.

Composting (CP) of 20 03 01 (mixed municipal waste) was reported by five sites (23.6 thousand tonnes). This is a reduction of approximately one third from the 2011 figure. For 2012 we have included 20 03 01 in the figures for composting, but the coding of this waste will be further scrutinised and it is anticipated that the tonnage reported will continue to decline in future years.

Table 5. The five largest waste types judged suitable/unsuitable for composting from Table C data (management method 'composting')

EWC code	Suitable?	Tonnes
20 02 01	Yes	267,838
20 01 08	Yes	75,815
20 03 01	Yes	23,620
20 03 03	Yes	13,419
02 02 03	Yes	5,244

EWC code	Suitable?	Tonnes
19 12 12	No	3,405
19 05 03	No	279
15 02 03	No	121
03 01 04*	No	107
17 08 02	No	62

* Hazardous wastes

Biological treatment (BT)

Prior to 2011 the composting methodology only used waste reported as management method 'CP' (composted). In 2011 biological treatment (BT) of 20 01 08 (kitchen and canteen waste, 1,967 tonnes) by specific AD/IVC sites was included in final composting reporting.

For 2012 we included all the wastes reported as biological treatment by the same AD/IVC sites. The use of specific AD/IVC sites will ensure other forms of biological treatment (e.g. types of sewage sludge treatment) are excluded from compost reporting. A total of 116.3 thousand tonnes was reported for BT, of which 93.2 thousand tonnes was judged suitable for reporting and 22.2 thousand tonnes unsuitable. The five largest waste types (by tonnes) deemed suitable are shown in Table 6 below. Wastes from food processing and manufacture and agriculture dominate. The wastes judged unsuitable and excluded from the final data were 21.5 thousand tonnes of 19 07 03 (landfill leachate) and 718 tonnes of 19 12 12 (other wastes form mechanical treatment).

Table 6. The five largest waste types deemed suitable for compost reporting using biological treatment (BT) from Table C, for specific AD/IVC sites

EWC Code	EWC Description	Tonnes
20 01 08	Kitchen and canteen waste	28,181
02 02 04	Sludges from on-site effluent treatment	22,220
02 01 06	Animal faeces, urine and manure	12,717
02 06 01	Baking and confectionary waste	9,577
02 02 03	Meat, fish and other animal processing waste	5,038

In 2011 the site returns dataset contributed 0.44 million tonnes to the total composting figure. In 2012 this has increased to 0.52 million tonnes, due to the additional tonnage reported as BT by defined AD/IVC sites. This is in line with what we know about the growth of AD/IVC facilities and collected feedstock during the reporting period.

4.2.2 Exempt composting activity

Some of the composting activity in Scotland is exempt from licensing and is carried out under exemption. Paragraph 12[13] composting is the only data considered for 2012 and represented 9.2 thousand tonnes of waste. The Paragraph 12 data tends to represent smaller tonnage sites.

More recently anaerobic digestion of agricultural and distillery wastes may have taken place under Paragraph 51, but this was not in place during 2012.

For a more general description of the exemptions dataset, including Paragraph 12 composting, please see section 4.5.

4.3 Glass, plastic and wood recycled in Scotland

Data is taken predominantly from the 2012 accredited re-processor dataset, and to a lesser degree the 2012 site returns dataset, both of which are managed by SEPA.

2012 accredited re-processor dataset

The 2012 accredited re-processor dataset consisted of twelve re-processors: seven glass, two plastic and three wood. Data from the single energy-from-waste site was excluded from the methodology. The quantity of UK packaging waste recycled under the scheme decreased from 331,623 tonnes in 2011 to 270,231 tonnes in 2012. Further details of the accredited re-processor dataset can be found in Appendix 1.

UK packaging waste recycled by Scottish re-processors (so called 'scheme data') is reported quarterly and audited annually by SEPA. In addition to scheme data, at the time of registration for a forthcoming year re-processors also provide details of any non-packaging waste and non-UK sourced packaging waste recycled (so called 'non-scheme' data). Non-scheme data is not audited by SEPA and quality is therefore uncertain. The contributions of scheme and non-scheme data in 2012 are given below in Table 7 below.

Table 7. The relative contributions of UK packaging waste ('scheme data'); and non-packaging waste and non-UK packaging waste ('non-scheme data')

Scheme data (tonnes)	Non-scheme data (tonnes)	Total recycled (tonnes)	Non-scheme data (as % of total)
270,231	206,579	476,810	43%

For the 2012 data, waste recycled by Scottish accredited re-processors is reported as 100% Scottish in origin.

[13] For further details on tonnage thresholds and process types covered under Paragraph 12 see www.sepa.org.uk/waste/waste_regulation/application_forms/exempt_activities/paragraph_12.aspx

2012 site returns dataset

One of the accredited re-processors registered in 2011 chose not to register in 2012, which meant we could not obtain their tonnage data via the accredited re-processor scheme. In this particular case the re-processor was known to have continued operating[14] the same type of activity and was also a licensed site. In this specific case we could use the data from Table C of the site data return to include in the overall tonnage reported for waste recycled in Scotland.

4.4 Batteries, discarded equipment, end of life vehicles, glass, metal, paper and card, plastic and wood recycled outside Scotland

Data is taken from the 2012 licensed/permitted site returns dataset. The methodology focuses on eight common waste types – it is not an exhaustive list of every possible waste produced within Scotland which is subsequently recycled elsewhere. For all eight waste types we used Table D (Waste sent off site) tonnages for specific European Waste Catalogue (EWC)/European Waste Catalogue – STAT (EWC-STAT) codes reported as leaving Scotland as separated wastes.

We assume that wastes reported as leaving Scotland as separate fractions will eventually be recycled. Any relevant codes reported as disposed (landfill/incineration) at the next site were excluded from the analysis. For a summary of the EWC/EWC-STAT codes used in each analysis, see Table 8 below. Further details on the EWC/EWC-STAT list of wastes can be found in Appendix 5.

Table 8. Summary of the EWC or EWC-STAT codes used for eight waste types reported as recycled outside Scotland

Waste type	EWC or EWC-STAT codes
Batteries	16 06 01*, 16 06 02*, 16 06 04, 16 06 05, 16 06 06*, 20 01 33* and 20 01 34
Discarded equipment	16 02 09*, 16 02 11*, 16 02 13*, 16 02 14, 16 02 15*, 16 02 16, 20 01 21*, 20 01 23*, 20 01 35* and 20 01 36
End of life vehicles (ELV)	16 01 06 only (whole de-polluted vehicles)
Glass	EWC-STAT 7.1
Metals (excluding whole ELV's)	EWC-STAT 6.1-6.3
Paper and card	EWC-STAT 7.2
Plastic	EWC-STAT 7.4
Wood	EWC-STAT 7.5

* Hazardous wastes

The individual analyses above are heavily skewed to a relatively small number of large sites which send recyclable materials to the rest of the UK or further afield. For

[14] For further details on the accredited re-processor dataset, including registering/de-registering of companies, please see Appendix 1

example, 69 sites were included in the final analysis for metal wastes, comprising 512,090 tonnes. The 8 largest sites contributed 461,550 tonnes, or 90% of the total.

The tonnage of paper and card sent outside Scotland for recycling in 2012 was 20% higher than in 2011. Two sites (out of a total of 55) were responsible for the majority of this increase. For one of the sites there appears to be a genuine increase in paper and card managed. For the other site SEPA did not receive a complete set of returns for 2011. The relative increase between 2011 and 2012 is therefore a combination of an actual increase in reported tonnage and improved data capture when compared to the previous year.

The tonnage of plastic sent outside Scotland for recycling in 2012 was 60% less than 2011, a difference of just under 30,000 tonnes. This is due to an error in reporting for the highest tonnage site in 2011, where the waste reported as recycled was actually disposed. In 2012 the same site continued to report landfilling of plastic waste and therefore has been excluded from 2012 figures.

In the final data tables all waste sent from Scotland for recycling is reported as originating from Scotland. We know there may be relatively small quantities of non-Scottish waste that are input to the sites which are eventually used to report waste sent outside Scotland for recycling. In all but two of the waste types used in final reporting less than 5% of reported site inputs were from outside Scotland. For metals/ELV's and discarded equipment/batteries up to 11% of site inputs were reported as originating from outside Scotland. Rather than an accurate reflection of waste origin, this is more likely to be a result of inaccurate reporting of waste origin (e.g. Scottish waste reported as 'UK'), and will be targeted during 2013 verification.

4.5 Recycling by complex exempt activities in Scotland

Waste management exemptions[15] are split into 'simple' and 'complex' activities. Some simple exempt activities also carry out recycling, but are not required to report to SEPA. This section describes the methodology for reporting recycling by complex exemptions.

In 2012, 921 exempt activities were registered under Paragraphs 7, 8(2), 9, 10, 12, 19, 42, 45, 47 and 50 between 1 November 2012 and 31 October 2012. There were no Paragraph 46 exemptions registered in 2012.

Missing returns (i.e. those registered who had not reported) were chased at the end of the reporting period and were prioritised according to tonnage that the applicant forecast they will recycled on the application form. In 2012, SEPA received data returns from 427 activities, or 46% of the total number of returns expected. A further 494 activities (54% of the total number believed to be operating in 2012) did not submit returns. Many of the returns not submitted were for returns in which the applicant indicated on the exemption application form that they would recycle only a small amount of tonnages. For many of these activities, there is no legal requirement for the operator to submit a return. Taking into account the tonnages that the applicant forecast they would recycle in the application form, the returns received were covered 73% of the total tonnages applied for.

[15] More details on waste management exemptions can be found in Appendix 1

Quality assurance of data returns was carried out to check for duplicates and incorrect EWC codes. Reported tonnages were also compared to tonnages at the time of application to check for inconsistencies.

No attempt has been made to estimate data in the waste data tables for sites in which returns have not been submitted. Prior to the publication of the waste data tables, attempts have been made to do so based on the tonnages that operators applied for in the original application form. However, historical data indicates that doing so overestimates by a significant margin the actual tonnages processed, as sites typically process less than 15% of the tonnages stated in the original application form. Additionally, sites which do not submit a return are more likely to be those that have not operated during the year.

Table 9. Recycling by complex exempt activities in Scotland in 2012, by exemption paragraph

Paragraph	Tonnes in 2012
7	343,392
8(2)	96,657
9	256,170
10	264,566
12	9,249
19	850,457
42	0
45	116,376
47	48,536
50	5
Total	1,985,408

The waste managed in the 2012 complex exemption dataset was less than for 2011 when compared in a like-to-like manner. Table 10 below compares the 2011 complex exemption data with the 2012 complex exemption data.

Table 10. Comparison of compex exemption tonnages in 2011 and 2012 excluding the estimated tonnages from the 2011 dataset

Year	Tonnes
2011	2,534,706
2012	1,958,408

4.6 Aggregates recycled in Scotland

This section describes how we report on waste recycled into aggregates in Scotland. Data is provided by Zero Waste Scotland (ZWS) taken from its Aggregates Quality Protocol Supplier Directory. Further details of the Aggregates Quality Protocol Supplier Directory and the dataset provided by ZWS can be found in Appendix 1.

For 2012 there were 42 Scottish sites identified in the Directory as producers of aggregate from waste materials. Recycling data are available for nine producers. These sites correspond to the largest aggregate producers and comprise the majority of aggregate production. The recycling tonnages for the remaining 33 sites were estimated. The estimation was based on the aggregate production range provided to SEPA, which was based on an audit of the site by ZWS. The mid-point of the production range was used for this estimation. The data received from the nine sites and the data estimated from the remaining 33 sites is listed in the Table 11 below.

Table 11. The contribution of actual and estimated data for recycling of aggregate in 2012

Actual/estimated	Number	Tonnes	% of total
Actual	9	721,335	65%
Estimated	33	390,000	35%
Total	**42**	**1,111,335**	**100%**

5 Recovered

5.1 Introduction

This section describes how we report the recovery of waste via incineration. The methodology covers WFAS; we do not report separate commercial and industrial (C&I) and construction and demolition (C&D) waste. There is a separate methodology for household waste recovered by incineration in Section 9.2.6. We use a separate section (see 6.3) for waste disposed by incineration, but the methodologies are the same as that described in the following section.

In the waste data tables “Recovered by incineration” means that waste has been incinerated at a facility that has been accredited as meeting the energy efficiency standard of a recovery facility as defined in the Waste Framework Directive. “Recovered by co-incineration” means waste incinerated at a facility that normally generates energy from incineration of non-waste sources such as coal or gas. This may include, for example, a cement kiln that normally uses natural gas as an energy source. “Disposed by incineration” means waste incinerated at an incineration facility that is not accredited as meeting the energy efficiency standard of a recovery facility.

The following methodology is split into two sections:

- recovery by incineration and co-incineration within Scotland;
- recovery by incineration outside Scotland.

Waste type descriptions are separated into non-hazardous/hazardous using European Waste Catalogue (EWC) codes.

5.2 Recovery by incineration and co-incineration within Scotland

A list of Scottish incinerators is maintained and checked with SEPA regulatory staff annually, prior to starting the analysis. For co-incinerators, we exclude any non-waste fuels from our analysis. There were 17 operational sites used in the final 2012 analysis. Eight sites reported quarterly using the licensed/permitted site return form; a further 9 sites reported annually via monitoring returns supplied to SEPA.

In 2012 there were no Scottish facilities accredited by SEPA as a recovery incinerator under the definition of the Waste Framework Directive. Consequently, all waste incinerated in Scotland is either classified as waste disposed by incineration or waste disposed by co-incineration.

In the majority of cases waste data are supplied as EWC codes, which are aggregated into final reporting categories. For two sites, where EWC codes were missing, we consulted SEPA colleagues to check permitted waste type(s) and assigned tonnage to the most appropriate EWC code based on the information available.

The origin of waste incinerated (i.e. Scottish/non-Scottish) is only reported for sites using the licensed/permitted site returns. For the remaining nine sites, origin of waste is not a reporting requirement. SEPA regulatory staff provided estimates (% splits) based on their knowledge of the site.

5.3 Recovery by incineration outside Scotland

Wastes recovered by incineration outside Scotland were taken from Table D (Waste sent off site) of the site returns, with a management method of 'incineration' at the next site. In 2012 there were 21 operators that sent waste for incineration outside Scotland.

The following assumptions were made for type of incinerator the waste was sent to:

- All incinerators in the UK are disposal. As there are some incinerators in Wales that are recognised as recovery facilities, where possible attempts were made to determine the facility and the type of incinerator for waste sent to Wales.
- All incinerators in Europe outside the UK are recovery

It should be noted that this methodology will not capture waste that is transferred to a temporary storage facility outside Scotland before sent to a final incineration facility. In 2012 there was 4,195 tonnes of waste coded as combustible waste (refuse derived fuel – EWC code 19 12 10) recorded as transferred off-site direct to an interim facility outside Scotland. This comprises approximately 7% of the total tonnages of waste recorded as sent direct to incineration outside Scotland.

6 Disposed

6.1 Introduction

This section describes how we report the disposal of wastes via landfill and incineration. The data are for WFAS; we do not report separate commercial and industrial (C&I) and construction and demolition (C&D) waste. There are separate methodologies for household wastes disposed via landfill and incineration, which are described in Sections 9.2.5 and 9.2.6.

The following methodology is split into two sections:

- waste disposed via landfill;
- waste disposed via incineration.

Waste type descriptions are separated into non-hazardous/hazardous using European Waste Catalogue (EWC) codes.

6.2 Waste disposed via landfill

Data on waste disposed by landfill in Scotland and elsewhere was taken from the licensed/permitted site returns dataset.

The data for landfilled in Scotland was taken from Tables B (Waste inputs to site) and C4 (Waste landfilled on-site after treatment – landfill sites only) of the licensed/permitted site returns, with the management method 'landfill'. Along with the standard data checks detailed in Appendix 1, we also checked the correct use of 'landfill' as a management method in Tables B and C4. There were 71 Scottish landfill sites included in the analysis. Information from Table B on the origin of waste was used to split data into Scottish and non-Scottish waste landfilled in Scotland.

The data for Scottish waste landfilled outside Scotland was taken from Table D (Waste sent off site) for all wastes sent outside Scotland with a management method of 'landfill' at the next site. There were 14 operators that sent waste for landfilling outside Scotland in 2012. Scottish waste that does not pass through a Scottish waste management site before being landfilled elsewhere will not be captured using this method. This may include local authority collected waste taken directly from the kerbside.

6.3 Waste disposed via incineration

The methodologies for *recovery by incineration* and *disposed by incineration* (for *in Scotland* or *elsewhere*) are the same. Please see Section 5 (Recovered) for further details.

7 Special waste

For all the other analyses described in this document (recycled, recovered, disposed) waste tonnages are categorised as hazardous or non-hazardous. The special waste data presented in the data tables is the summed hazardous component of all these separate analysis.

8 Imports and exports

The 2012 data for waste imported to Scotland and exported from Scotland was derived from licensed/permitted site returns. Imports were compiled from waste inputs to all sites where the origin of the waste was reported as a location outwith Scotland in site returns Table B. Exports were compiled from waste outputs from all sites where the destination was reported as a location outwith Scotland in site returns Table D.

Origin and destination were reported by three geographical locations:

- rest of the UK;
- Europe;
- outwith Europe.

Waste imported or exported directly to and from Scotland that does not pass through a Scottish waste management site will not be captured using this methodology.

9 Household waste

9.1 Introduction

This section describes how we report on household waste generated in Scotland; and Scottish household waste managed in Scotland or elsewhere. Data is taken from all 32 Scottish local authority returns using the web-based reporting tool WasteDataFlow (WDF). Further details of the WDF dataset can be found in Appendix 1. Throughout this section reference is made to question numbers on WDF.

The 2012 household data includes wastes from the following sources:

- household kerbside residual waste and segregated recycling and composting;
- household residual waste, recycling and composting from civic amenity sites;
- waste deposited for recycling at bring sites;
- bulky household waste collections and other irregular collections

9.2 Methodology

9.2.1 The introduction of Question 100 during 2012

During 2012 a new approach (Question 100 or Q100) to entering data on the management of local authority collected waste was introduced in two phases. Data entry using Q100 is via building a graphical 'tree' of how waste is managed in a chain. Each 'branch' of the tree is associated with a waste facility. The inputs and outputs to each facility are reported as local authority collected waste moves through the management chain.

Question 100 covers the following waste management categories:

- wastes sent direct to landfill, incineration and composting facilities, and waste sent to the same facilities following the sorting/treatment of mixed wastes e.g. at a materials recovery facility (MRF) or mechanical biological treatment (MBT) plant

- segregated recyclates sent direct to re-processors and reuse facilities, and waste sent to the same facilities following the sorting/treatment of mixed wastes (e.g. MRFs, MBT)

The introduction of Q100 midway through 2012 means that the final reported data for 2012 is based on two separate analyses:

- For January-March 2012 the data for all 32 local authorities was analysed as per the description in the 2011 quality report.

- From April 2012 onwards Q100 was rolled out in two phases. Dumfries and Galloway, Perth and Kinross and West Lothian were pilot authorities and first reported using Q100 in the April-June 2012 period.

- The remaining 29 authorities first reported using Q100 in the July-Sept 2012 period.

Table 12 below details the methodologies that were used for each quarterly period in 2012, by reporting period and local authority. Please refer to the 2011 quality report for more details[16]. The rest of this 2012 report focuses on the analysis using Q100 data.

Table 12. Reporting periods during 2012 and corresponding details of the methodologies used to analyse the final data

Reporting period	Methodology details?
January-March 2012 - all 32 authorities	Refer to 2011 quality report
April-June 2012 – 29 local authorities	Refer to 2011 quality report
April-June 2012 - Dumfries and Galloway, Perth and Kinross and West Lothian only	Q100 used – method detailed below
July-Oct and Oct-Dec 2012 - all 32 authorities)	Q100 used – method detailed below

9.2.2 Benefits of Question 100

There are two principle improvements to data quality brought about by the introduction of Q100:

- Prior to the introduction of Q100, information on the geographical destination of outputs from facilities such as MBT or MRF plants was not recorded and was estimated[17]. The introduction of Q100 removes the need to estimate any geographical information, by capturing the location of each site in the chain. This should mean the accuracy of reporting waste managed *in Scotland* and *outside Scotland* is improved.

- Prior to the introduction of Q100, the household proportion of total recyclate captured at residual and clean MRFs was not separately recorded and was estimated[18]. The introduction of Q100 removes the need to estimate, by capturing household, commercial and industrial splits of waste inputs to these facilities. This change does however place greater emphasis on the robustness of local authority methods for reporting the household component prior to data entry.

As highlighted above, 2012 is a transition year where old and new methodologies were used to analyse the dataset. Therefore, the full benefit of the introduction of Q100 will not be felt until reporting year 2013, where Q100 will be used for the entire period for the first time.

[16] see 2011 quality report http://www.sepa.org.uk/waste/waste_data.aspx
[17] see 2011 quality report http://www.sepa.org.uk/waste/waste_data.aspx
[18] see 2011 quality report http://www.sepa.org.uk/waste/waste_data.aspx

9.2.3 Waste types

A list of SEPA reporting categories and corresponding WDF waste types are provided in Appendix 3 and Appendix 4. The mapping of these categories follows the approach taken by UK reporting to Europe for waste statistics regulation reporting in 2012.

Question 18 in WDF does not allow for reporting by material type. For the whole of 2012 all tonnages in Question 18 were allocated to the category 'mixed and undifferentiated materials'. For 2013 onwards, all collected household waste will be derived from Q100. This will allow improved categorisation of materials, as material types previously not recorded in Question 18 will be available.

All waste collected was reported in WDF in the same quarter in which it was sent to management.

9.2.4 Household waste generated

Separately collected recycling waste generated were taken from Questions 10, 16a, 17a and 18a. All waste collected for disposal was taken from Question 23 and allocated to the category 'household and similar wastes'. Collection tonnages were reported in the quarter in which they are managed.

9.2.5 Household waste landfilled

The quantity of household waste landfilled is the sum of household waste sent direct to landfill from kerbside and other collections, and the rejected materials from waste treatment facilities (e.g. MRFs, MBT). The quantity of household waste rejected from treatment facilities was calculated using the total landfilled and the proportion of mixed household waste input to the facility.

9.2.6 Household waste incinerated

The quantity of household waste incinerated is the sum of household waste sent direct to incineration from kerbside and other collections, and the rejected materials sent for incineration from waste treatment facilities (e.g. MRFs, MBT). The quantity of household waste rejected from treatment facilities was calculated using the total incinerated and the proportion of mixed household waste input to the facility.

Individual sites were designated as disposal or recovery incinerators using Waste Framework Directive criteria or co-incineration using EA guidance. The quantity of household waste incinerated in the waste data tables is the gross tonnage input to the incinerator, rather than net incineration[19] reported in the official statistics publication[20].

9.2.7 Household waste recycled

The quantity of household waste recycled is the sum of household waste sent direct to re-processor facilities, and the recyclable materials sent to a re-processor following sorting of mixed wastes at a waste treatment facility (e.g. MRFs, MBT). The quantity

[19] Net incineration is the gross inputs, less outputs such as bottom ash and metals which are disposed/recycled.

[20] www.sepa.org.uk/about_us/official_statistics.aspx

of household waste recycled via waste treatment facilities was calculated using the reported total tonnes of material sent to a re-processor and the proportion of mixed household waste input to the facility.

Under Scotland's Zero Waste Plan the compost-like output (CLO) from MBT of household waste, and recycled metal and ash from incineration of household waste do not count towards household recycling targets and are excluded from household waste recycling figures.

9.2.8 Household waste prepared for reuse

The quantity of household waste reused is the sum of household waste sent direct to reuse facilities, and the recyclable materials sent for reuse following sorting of mixed wastes at a waste treatment facility (e.g. MRFs, MBT). The quantity of household waste reused via waste treatment facilities was calculated using the reported total tonnes of material sent for reuse and the proportion of mixed household waste input to the facility.

9.2.9 Household waste composted

The quantity of household waste composted is the sum of household waste sent direct to windrow and in-vessel composting, and anaerobic digestion facilities, and material sent to the same facilities following sorting of mixed wastes at a waste treatment facility (e.g. MRFs, MBT). The quantity of household waste composted after passing through waste treatment facilities was calculated using the total tonnes of material sent for composting and the proportion of mixed household waste input to the facility.

All organic wastes were included in 2012 household recycling figures, regardless of whether they were composted using PAS100/110-accredited facilities or not.

9.2.10 Household waste managed by other methods

Under Scotland's Zero Waste Plan the compost-like output (CLO) from MBT, and recycled metal and ash from incineration of household waste do not count towards household recycling targets and are excluded from household waste recycling figures. These materials have been allocated into the "Other waste managed" category in the waste data tables.

9.2.11 Final destination reporting

The calculation of household recycling/disposal/recovery relies on the accurate reporting of the final destination of waste materials. For example, a final destination for glass bottles would be the site where the bottles are reprocessed into new materials. A final destination for rejected material from a MRF might be landfill or incineration.

In 2011 reporting year, local authorities commonly reported an intermediary site, rather than the final destination for the waste. For example, a MRF was reported as the final destination for co-mingled recyclate, rather than the re-processors supplied by the MRF.

The roll out of Q100 during 2012 has promoted much greater transparency on final destination reporting. In 2012 data quality was quite variable across the 32 local authorities. Some have used the roll out of Q100 as an opportunity to improve their

final destination reporting, while others continue to report MRFs as final destinations. The Scottish government, through Zero Waste Scotland, have funded a separate study to look at this issue across all 32 authorities during the summer of 2013 (using 2012 data). The findings from that study will inform future work in this area.

10 Further information

Contacting Us

If you have any queries on the contents of this document or the accompanying waste data tables, please contact the Data Unit by email, phone or in writing.

By Email (via our SEPA mailback form)

www.sepa.org.uk/about_us/contacting_sepa/by_email.aspx

By Phone

Telephone 01786 457700 (normal office hours are Mon-Fri 9am- 5pm).

By Post

Data Unit
SEPA Corporate Office
Strathallan House
Castle Business Park
Stirling
FK9 4TZ

Appendix 1

Datasets used in the 2012 methodology

Scottish licensed/permitted site returns

Approximately 900 individual licences submit quarterly returns to SEPA via email or post. A copy of the return form can be downloaded from the SEPA website[21]. The returns dataset is managed and checked by SEPA. The return form consists of Table B (Waste inputs to site), Table C (Waste treated on site), Table C4 (Waste landfilled on-site after treatment on-site – landfill sites only) and Table D (Waste sent off site).

In 2012 an 89% return rate was achieved for those sites from which we expected to receive returns. No attempt was made to estimate data where returns were not received.

SEPA carried out quality assurance of the dataset that included comparing individual site data with previous quarters/years, consistency of EWC codes with the description of waste provided by the operator and missing data. Submissions were manually collected, uploaded and checked. SEPA is currently developing an on-line reporting system for licensed/permitted sites which will improve processing and quality assurance of waste returns.

Household wastes managed by Scottish local authorities (WasteDataFlow[22])

In 2012, all 32 Scottish local authorities reported on a quarterly basis. Local authorities are responsible for entering data, which cannot be modified by SEPA. Data entry is via a series of numbered questions[23].

In 2012 there was a 100% response rate. SEPA reviewed the data on a quarterly basis using a verification tool and informed local authorities where possible inconsistencies required checking. Data checking included the consistency of reported tonnages collected and managed for residual waste, segregated recycling and organic wastes.

Further details of the changes to reporting brought about with the introduction of Question 100 during 2012 are provided in section 9.

Wastes managed by complex exempt activities in Scotland

Some waste management activities are exempt from licensing if they meet the requirements detailed in Regulation 17 of the Waste Management Licensing (Scotland) Regulations 2011. Exemptions are split into ‘simple’ and ‘complex’

---

[21] www.sepa.org.uk/waste/waste_data/statutory_data_returns/licensed-permitted_returns.aspx

[22] www.WasteDataFlow.org/

[23] www.wastedataflow.org/documents/guidancenotes/Scotland/GeneralGuidance/Scotland_WDF_User_Guidance_Rev_Oct_12.PDF

activities. Simple exempt activities are not required to report to SEPA. Operators of complex exempt activities register with SEPA annually and are required to submit annual data returns containing the types and quantities of waste managed. Further information on exempt activities is available on SEPA's website[24].

Scottish accredited packaging waste re-processors

Scottish re-processors of packaging waste can register with SEPA to become an accredited re-processor[25]. Accredited businesses can issue and sell evidence of recycling and recovery to directly registered obligated producers and packaging compliance schemes.

The number of re-processors applying for accreditation in Scotland in a given year varies by a relatively small amount. There is a significant financial incentive to register larger businesses. Smaller businesses are suggested to balance the extra administration costs under the accreditation scheme with the value of recycling credits in a given year. If tonnage and/or prices become too low, they may choose not to register in the following year.

UK packaging waste recycled by Scottish re-processors (so called 'scheme data') is reported quarterly and audited annually by SEPA. In addition to scheme data, at the time of registration for a forthcoming year re-processors also provide details of any non-packaging waste and non-UK packaging waste recycled (so called 'non-scheme' data). Non-scheme data is not audited by SEPA and quality is therefore uncertain.

An accredited re-processor is credited with recycling UK-sourced packaging waste; they are not required to provide a country-specific breakdown of the origin of waste in their returns.

Zero Waste Scotland Aggregates Quality Protocol Supplier Directory

Zero Waste Scotland, working in liaison with SEPA, has created a free online Directory of Recycled Aggregate Producers in Scotland who are working to the WRAP Aggregates Quality Protocol. The Directory currently contains 42 sites that are capable of producing recycled aggregates which meet the terms of the aggregates protocol and have ceased to be waste.

The producer sites listed on the Directory have been audited and were found to be working to the aggregates protocol with the required acceptance criteria, management systems, production control, testing regimes and paperwork in place. These sites have therefore been identified as recycling sites and the aggregates produced have been included in the recycling data produced by SEPA.

Data from these sites was collected by ZWS and provided to SEPA for subsequent analysis.

---

[24] www.sepa.org.uk/waste/waste_regulation/application_forms/exempt_activities.aspx

[25] www.sepa.org.uk/waste/waste_regulation/producer_responsibility/packaging_waste_overview/national_packaging_waste_datab.aspx

As this was the first year collecting data from producer sites, the nine largest sites manufacturing aggregates from waste (by volume) were targeted with a view to collecting data from all sites for the 2013 data. The nine sites were each capable of producing more than 50,000 tonnes of aggregates a year, based on their min/max production figures.

These sites were contacted by ZWS and asked to provide their input, sales and output tonnages for 2012. In most cases operators were sent a standard spreadsheet to complete although some data was also received by email or telephone. Of the nine sites five provided all three sets of data, two provided two sets of data and two further sites provided sales figures only. EWC codes for the waste inputs were not provided in all cases.

For 2012 there were 42 Scottish sites identified in the Directory as producers of aggregate from waste materials. For each site, there was an estimated aggregate production range provided to SEPA, which was based on an audit of the site by ZWS. For the 2012 calendar year, actual production data was provided to SEPA for nine sites. These nine sites correspond to the largest aggregate producers and comprise the majority of aggregate production.

ZWS has indicated that production data will be provided for all 42 sites in 2013. Although there was no 2012 production data for 33 sites, for continuity between 2012 and future years, production estimations were made for these sites.

Although the nine largest sites provided data, only seven provided data for waste generated, with the remaining two providing aggregate production data only. Of the seven sites that provided generation data, only four split the waste generated by EWC code. The remainder were reported as a total tonnage figure.

For sites where input tonnages were not available, the input tonnage was estimated based on the ratio of inputs and outputs from the seven sites where data was available. The average percentage of waste inputs recycled into aggregate for these seven sites was 79.25%. For the remaining 35 sites, the inputs were estimated by dividing the production by 0.7925, and the waste types generated allocated according to the proportion in the table below. This proportion is based on the producers that provided waste input data by EWC code.

Inputs to aggregate producers by reporting category

Actual/estimated	Tonnes	% of total
Waste from construction and demolition	162,253	49%
Soils	167,425	51%
Total	**329,678**	**100%**

For sites where waste generation was unavailable, the waste generated tonnages were estimated from the average of the inputs and outputs from sites where input tonnages were available. There were seven sites with input tonnages available – the four sites which reported the input tonnage by EWC code and a further three sites that reported input tonnages as an absolute tonnage.

As the waste input categories were only available for four aggregate producers, these categorisations should be treated with caution. It is expected that inputs by EWC code will be available for all sites for the 2013 data publication.

The contribution of actual and estimated waste generated tonnages for 2012 is depicted in the table below.

The contribution of actual and estimated waste generated for aggregates in 2012

Actual/estimated	Number	Tonnes	% of total
Actual	7	684,158	48%
Estimated	35	729,371	52%
Total	**42**	**1,413,529**	**100%**

2011 and earlier datasets

Scottish licensed/permitted site returns and complex exemptions

To enable compatibility with the 2012 methods, all site return and complex exemption datasets for 2011 and earlier had estimates removed for returns not submitted. The 2011 waste generated and waste managed was revised to take these revisions into account. For waste sent to landfill, revisions were undertaken for the period 2005 – 2011. All revisions were undertaken in line with the relevant method described in this document.

Appendix 2

Conversions from operator type to SIC group used in the C&I waste generated methodology[26]

Type of operator	SIC group
Water company	Water industry
Power company	Power industry
Oil industry	Mining and quarrying

Wet and dry conversion factors used in the C&I waste generated methodology

Waste Type	Factor
Industrial effluent sludges	multiply wet weight by 0.27
Sludges and liquid wastes from waste treatment	multiply wet weight by 0.27
Common sludges	multiply wet weight by 0.20
Dredging spoils	divide wet weight by 1.91

Source: Defra

Standard assumptions used to assign SIC codes to waste types in the C&I waste generated methodology

EWC chapter or code	Material or activity	Origin of waste	Sector assumption
01	Minerals	All	Mining and quarrying
02 01	Agriculture	All	Agriculture
02 02 - 02 07	Food	All	Food and drink
03 01 - 03 02	Wood	All	Wood products
03 03	Paper	All	Other manufacturing
04	Textiles	All	Other manufacturing
05	Oil and gas industry	All	Mining
06	Chemicals	All	Chemical industry
07	Chemicals	All	Chemical industry
08	Chemicals	All	Chemical industry

[26] www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/index.html

EWC chapter or code	Material or activity	Origin of waste	Sector assumption
09	Photographic	All	Other manufacturing
10 01	Power stations	All	Power industry
10 02 to 10 14	Manufacturing	All	Other manufacturing
11	Manufacturing	All	Other manufacturing
12	Manufacturing	All	Other manufacturing
13	Oils	For non-local authority waste	Apply percentage B
13	Oils	Local authority waste or site[1]	Household
13	Oils	Local authority waste or site[2]	Apply local authority household/commercial split
14	Solvents	All	Apply percentage A
15 01	Packaging	For non-local authority waste3	Commerce
15 01	Packaging	For non-local authority waste4	51% industry (SIC A-E) 49% commerce
15 01	Packaging	Local authority waste or site1	Household
15 01	Packaging	Local authority waste or site2	Apply local authority household/commercial split
15 02	Cloths etc	All	Commerce
15 02	Cloths etc	All	51% industry (SIC A-E) 49% commerce
16 01	ELVs	For non-local authority waste	Apply percentage D
16 01	ELVs	Local authority waste or site1	Household
16 01	ELVs	Local authority waste or site2	Apply local authority household/commercial split
16 02	WEEE	For non-local authority waste	Apply percentage C
16 02	WEEE	Local authority waste or site	Apply local authority household/commercial split
16 03	Off-spec products	All	51% industry (SIC A-E) 49% commerce
16 05	Gas bottles, chemicals	For non-local authority waste	Apply percentage F
16 05	Gas bottles, chemicals	Local authority waste or site	Apply local authority household/commercial

EWC chapter or code	Material or activity	Origin of waste	Sector assumption
			split
16 06	Batteries	For non-local authority waste	Apply percentage E
16 06	Batteries	Local authority waste or site	Apply local authority household/commercial split
16 07	Tanks	All	Apply percentage B
16 08	Catalysts	All	Chemical industry
16 09	Oxidisers	All	Chemical industry
16 10	Aqueous liquid	All	Apply percentage G
16 11	Linings	All	Other manufacturing
17	Construction	All	Construction
18	Healthcare	All	Commerce
19 01 - 19 07	Waste management	All	Waste management
19 08	Untreated sewage sludge	Direct from sewer	Not applicable
19 08	Treated sewage sludge	STW or WWTW	Water industry
19 09	Water sludges	All	Water industry
19 10 - 19 13	Waste management	All	Waste management
20 01	Separate fractions	For non-local authority waste[3]	Commerce
20 01	Separate fractions	For non-local authority waste[4]	51% industry (SIC A-E) 49% commerce
20 01	Separate fractions	Local authority waste or site[1]	Household
20 01	Separate fractions	Local authority waste or site[2]	Apply local authority household/commercial split
20 02	Biodegradable	For non-local authority waste	Commerce
20 02	Biodegradable	Local authority waste or site[1]	Household
20 02	Biodegradable	Local authority waste or site[2]	Apply local authority household/commercial split
20 03 01	Mixed waste	For non-local authority waste[3]	Commerce
20 03 01	Mixed waste	For non-local authority waste[4]	51% industry (SIC A-E) 49% commerce
20 03 01	Mixed waste	Local authority waste or site[1]	Household

EWC chapter or code	Material or activity	Origin of waste	Sector assumption
20 03 01	Mixed waste	Local authority waste or site[2]	Apply local authority household/commercial split
20 03 02	Markets	All	Commerce
20 03 03	Street cleaning	All	Commerce
20 03 04	Septic tank sludge	All	Not applicable
20 03 06	Sewage cleaning	All	Water industry
20 03 07	Bulky	For non-local authority waste[3]	Commerce
20 03 07	Bulky	For non-local authority waste[4]	51% industry (SIC A-E) 49% commerce
20 03 07	Bulky	Local authority waste or site[1]	Household
20 03 07	Bulky	Local authority waste or site[2]	Apply local authority household/commercial split
20 03 99	Other MSW	For non-local authority waste[3]	Commerce
20 03 99	Other MSW	For non-local authority waste[4]	51% industry (SIC A-E) 49% commerce
20 03 99	Other MSW	Local authority waste or site[1]	Household
20 03 99	Other MSW	Local authority waste or site[2]	Apply local authority household/commercial split
20 codes	Local authority waste	Local authority waste sent to non-local authority site	Apply Scotland household/commercial split

[1] If site only accepts household waste
[2] If site accepts household and commercial waste
[3] If site only accepts commercial waste
[4] If site accepts commercial and industrial waste

Notes

1. Percentages A-G refer to the percentage split of the waste across the sectors from the SEPA business waste survey data 2010. For certain generic wastes that are produced by most economic sectors such as oils, batteries, gas bottles the 2010 percentage split was used to apportion these wastes across the sectors for 2012. For example, Percentage B was applied for used oils. This means that the total quantity of oil waste generated in 2012 was apportioned across the economic sectors (1-12 in this example) in accordance with the percentage split from the 2010 data as indicated in the table below:

Economic sector											
1	2	3	4	5	6	7	8	9	10	11	12
(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
9.47	18.25	0.09	2.93	0.06	7.49	1.08	0.02	0.00	0.41	59.11	1.07

2. 51% industry (SIC A-E) 49% commerce refers to the average overall industrial/commercial split of waste from three recent C&I waste generation studies. These were the England C&I survey 2009[27], the Wales C&I survey 2009[28] and the Scotland C&I data 2011[29]. SIC A-E refers to all industrial sectors excluding construction.
3. Local authority household/commercial split is the relative proportion of household and commercial waste collected by the individual local authority.
4. Scotland household/commercial split is the relative proportion of household and commercial waste collected by all local authorities. For 2012 this was 84% household and 16% commercial

[27] http://archive.defra.gov.uk/evidence/statistics/environment/waste/documents/stats-release101216.pdf

[28] http://wales.gov.uk/statistics-and-research/industrial-commercial-waste-survey/?lang=en

[29] http://www.sepa.org.uk/waste/waste_data/commercial__industrial_waste/idoc.ashx?docid=43dcd6ec-d46e-4f52-9a7b-588805ed56e0&version=-1

Appendix 3

Segregated Household waste categories for SEPA reporting and WasteDataFlow

SEPA reporting	WasteDataFlow	Hazardous (H) / non-hazardous (NH)
Animal and mixed food waste	Waste food only	NH
Animal and mixed food waste	Mixed garden and food waste	NH
Animal and mixed food waste	Vegetable oil	NH
Batteries and accumulators wastes	Automotive batteries	H
Batteries and accumulators wastes	Post-consumer, non-automotive batteries	NH
Construction and demolition waste	Rubble	NH
Construction and demolition waste	Plasterboard	NH
Discarded electrical and electronic equipment	WEEE - Large domestic apps	H
Discarded electrical and electronic equipment	WEEE - Small domestic apps	H
Discarded electrical and electronic equipment	WEEE - Cathode ray tubes	H
Discarded electrical and electronic equipment	WEEE - Fridges and freezers	H
Discarded machines and equipment components	WEEE - Fluorescent tubes and other light bulbs	H
Discarded vehicles	Bicycles	NH
Glass wastes	Green glass	NH
Glass wastes	Brown glass	NH
Glass wastes	Clear glass	NH
Glass wastes	Mixed glass	NH
Household and similar wastes	Furniture	NH
Household and similar wastes	Bric-a-brac	NH
Household and similar wastes	Mattresses	NH
Metal wastes, ferrous	Steel cans	NH
Metal wastes, mixed ferrous and non-ferrous	Mixed cans	NH
Metal wastes, mixed ferrous and non-ferrous	Other scrap metal	NH
Metal wastes, non-ferrous	Aluminium cans	NH

SEPA reporting	WasteDataFlow	Hazardous (H) / non-hazardous (NH)
Metal wastes, non-ferrous	Aluminium foil	NH
Mixed and undifferentiated materials	Cardboard beverage packaging	NH
Mixed and undifferentiated materials	Other materials	NH
Off-specification chemical wastes	Aerosols	NH
Off-specification chemical wastes	Fire extinguishers	H
Off-specification chemical wastes	Gas Bottles	H
Off-specification chemical wastes	Ink and toner cartridges	NH
Off-specification chemical wastes	Paint	NH
Paper and cardboard wastes	Paper	NH
Paper and cardboard wastes	Card	NH
Paper and cardboard wastes	Books	NH
Paper and cardboard wastes	Mixed paper and card	NH
Paper and cardboard wastes	Yellow pages	NH
Plastic wastes	Mixed plastics	NH
Plastic wastes	Mixed plastic bottles	NH
Plastic wastes	PET	NH
Plastic wastes	HDPE	NH
Plastic wastes	PVC	NH
Plastic wastes	LDPE	NH
Plastic wastes	PP	NH
Plastic wastes	PS	NH
Plastic wastes	Other plastics	NH
Plastic wastes	Video tapes, DVDs and CDs	NH
Rubber wastes	Car tyres	NH
Rubber wastes	Van tyres	NH
Rubber wastes	Large vehicle tyres	NH
Rubber wastes	Mixed tyres	NH
Soils	Soil	NH
Textile wastes	Textiles and footwear	NH
Used oils	Mineral oil	H
Vegetal wastes	Green garden waste only	NH
Vegetal wastes	Other compostable waste	NH
Wood wastes	Wood for composting	NH
Wood wastes	Wood	NH
Wood wastes	Chipboard and MDF	NH
Wood wastes	Composite wood materials	NH

Appendix 4

Mixed household waste categories for SEPA reporting and WasteDataFlow

SEPA reporting	WasteDataFlow	Hazardous (H) / non-hazardous (NH)
Household and similar wastes	Co-mingled materials	NH
Household and similar wastes	Collected household waste: Regular Collection	NH
Household and similar wastes	Collected household waste: Bulky Waste	NH
Household and similar wastes	Collected household waste: other	NH
Household and similar wastes	Civic amenity sites waste: Household	NH
Other mineral wastes	Asbestos Waste separately	H

Appendix 5

European Waste Catalogue

Throughout this document reference is made to both the European Waste Catalogue (EWC) list of wastes and European Waste Catalogue for Statistics (EWC-STAT). A brief explanation of each is given below, along with links to further information.

European Waste Catalogue List of Waste (EWC 2000)

The EWC 2000 is a harmonised, non-exhaustive list of waste types established by the European Commission (2000/532/EC). The list is used to categorise waste based on a combination of what they are, and the process or activity that produces them.

The full EWC 2000 list and further information is available here:

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2000D0532:20020101:EN:PDF

The list is divided into 20 chapters, most of which are industry-based, although some are based on materials and processes. Each chapter is represented by a two-digit code between 01 and 20 and comprises one or more subchapters. Individual waste types are detailed in the subchapters and are assigned a six-digit code that comprises two digits for the chapter, two for the subchapter and two specific to the waste type.

Hazardous wastes are signified by entries where the EWC code is marked by an asterisk (*).

The use of EWC codes to describe waste on waste transfer notes in Scotland has been statutory since April 2004. The majority of statutory waste data returns received by SEPA, including licensed/permitted site returns, exempt activity returns and special waste consignment notes require waste to be classified according to the EWC 2000.

European Waste Catalogue for Statistics (EWC-STAT)

The EWC-Stat is a (mainly) substance-oriented statistical classification of waste established by the European Commission (2004/574/EC). The EWC-STAT contains 13 categories, each represented by a two-digit code between 01 and 13. These are subdivided into individual waste types.

A table of equivalence allows wastes coded in the EWC 2002 to be converted into the EWC-Stat. However, because of the way the coding system operates, it is not possible to do the reverse conversion. The table of equivalence and further information is available here:

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:253:0002:0041:EN:PDF

Appendix 6

Glossary

Anaerobic digestion	A process commonly used to break down biodegradable wastes (e.g. food and green wastes) in the absence of oxygen
In-vessel composting	A group of methods which confine the composting of organic waste materials within a building, container, or vessel
Mechanical biological treatment	A type of waste processing plant that combines sorting and biological treatment
Materials recovery facility	A waste management plant which separates recyclable materials from mixed wastes
Municipal solid wastes	A collective term commonly used to describe household and similar commercial, industrial and institutional wastes
Standard industrial classification	For business establishments and other statistical units by the type of economic activity in which they are engaged
WasteDataFlow	A web-based reporting tool used by Scottish local authorities to report the wastes they manage

Appendix 7

Acronyms

AD	Anaerobic Digestion
C&D	Construction and Demolition
C&I	Commercial and Industrial
CLO	Compost-Like Output
Defra	Department of the Environment Food and Rural Affairs
GVA	Gross Value Added
EA	Environment Agency
EWC	European Waste Catalogue
EWC-STAT	European Waste Catalogue for Statistics
IVC	In-Vessel Composting
MBT	Mechanical Biological Treatment
NUTS	Nomenclature of Units for Territorial Statistics
ONS	Office of National Statistics
SEPA	Scottish Environment Protection Agency
SIC	Standard Industry Classification
WFAS	Waste From All Sources
WDF	WasteDataFlow
WEEE	Waste Electrical and Electronic Equipment

Version Control

Version	Description	Date
2	Update section 3.6 - GVA methodology	19 February 2015
1	Initial published report	3 November 2014