

2019 HOUSEHOLD WASTE DATA QUALITY REPORT

27 OCTOBER 2020

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We call this **One Planet Prosperity**

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Table of Contents

Table of Contents	3
1 Introduction	5
1.1 Revisions Policy	9
2 Progress against Targets	10
2.1 Introduction	10
2.2 Recycling/composting and preparing for re-use of household waste	11
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	12
3 Household waste.....	13
3.1 Introduction	13
3.2 Methodology.....	13
3.2.1 WasteDataFlow question 100	13
3.2.2 Waste categories	14
3.2.3 Household waste generated	15
3.2.4 Household waste landfilled	15
3.2.5 Household waste recovered by incineration, recovered by co- incineration, disposed by incineration	15
3.2.6 Household waste recycled.....	15
3.2.7 Household waste prepared for reuse	16
3.2.8 Household organic waste recycled through biological treatment ..	16
3.2.9 Household waste managed by other methods	16
3.2.10Final destination reporting	17
4 Further information	18
Appendix 1	18
Datasets used in the 2019 methodology	18
Household wastes managed by Scottish local authorities (WasteDataFlow)	18
Appendix 2	19
Appendix 3	23
Appendix 4	23
European Waste Catalogue	23
European Waste Catalogue List of Waste (EWC 2000)	23

European Waste Catalogue for Statistics (EWC-STAT)	24
Appendix 5	25
Glossary	25
Appendix 6	26
Acronyms	26
Version Control.....	26

1 Introduction

This report describes the methodologies to produce summary household waste data for Scotland for the 2019 calendar year. The report should be used alongside the 2019 Household waste data official statistics and associated data tables.

The 2019 data are presented as follows:

- The Household waste data for Scotland and associated data tables are presented in a summary and commentary document. This narrative describes the major trends and provides an interpretation of the data. They are located at <http://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/waste-data-for-scotland/>.
- 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/>
- 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/>. This tool covers the total waste managed, whether it be waste from households, waste from construction and demolition, or waste from commerce and industry. This tool includes waste generated and waste management methods including waste recycled, incinerated, composted and waste landfilled.
 - It should be noted that to provide consistency across the datasets for the WFAS Discover tool, additional years of waste generation and management data are updated at the same time. The statistical release and Excel landfill data tables are released about six months before the annual update of the WFAS Discover tool. This is because the landfill and incineration data comes primarily from discrete datasets and can be prepared and published earlier.

In some cases, the quantities of household waste and WFAS are counterintuitive. For example, there may be more household waste than WFAS for a given reporting category. This is a product

of using different datasets and corresponding methodologies which are not comparable. If such an inconsistency exists, attempts have been made in this document to outline possible reasons for the inconsistency and steps that are planned to address the shortcomings.

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. For example: in the household tool, 'incineration' reports net inputs to incinerators to avoid double-counting of incinerator outputs. SEPA in partnership with Zero Waste Scotland and the Scottish Government is currently reviewing Scotland's waste data strategy. Part of this review is to identify and address gaps in the reporting dataset.

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.

- Household wastes managed by Scottish local authorities (SEPA)

Appendix 1

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

Appendix 2

and

Appendix 3

list the waste categories used in the household waste methodology (also see Section 3).

Appendix 4

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 5

provides a glossary of terms.

Appendix 6

provides a list of acronyms.

1.1 Revisions Policy

Revisions could occur for various reasons, including when data from third parties is unavailable or provisional at the time of publishing or if there are subsequent methodological improvements or refinements.

The figures are accurate at the time of publication. However the data may be updated if further revisions are necessary. Normally these revisions will be published concurrent with the next release.

Where there have been changes in methodology for the waste data tables, the complete dataset is to be revised for all years to ensure that comparisons between years are valid.

2 Progress against Targets

2.1 Introduction

The Scottish Government's [Making Things Last – A Circular Economy Strategy for Scotland](#) 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.

This policy document sets a number of objective and measurable targets for tracking progress against the objectives specified in the plan. Some of these targets are derived from EU directives such as the Waste Framework Directive. A summary of these targets are provided in Table 1 below.

Table 1 Scottish Government Policy Targets

Target	Year	Set by
Reduce waste generated in Scotland to 93% of 2011 baseline	2019	Scottish Government
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	EU
60% recycling/composting and preparing for re-use of household waste	2020	Scottish Government
No more than 1.26 million tonnes of biodegradable municipal waste to be sent to landfill	2020	EU
70% recycling and preparing for re-use of construction and demolition waste	2020	EU
No more than 5% of all waste to go to landfill	2025	Scottish Government

70% recycling/composting and preparing for re-use of all waste by 2025	2025	Scottish Government
Reduce waste generated in Scotland to 85% of 2011 baseline	2025	Scottish Government

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 waste from households reported in WasteDataFlow (see section 3).

The total waste reused, composted and recycled for all 32 Scottish local authorities is calculated as follows:

Figure 1. Waste from households recycling rate calculation

$$\text{Percentage waste from households recycled} = \frac{\text{Waste from households recycled}}{\text{Waste from households generated}} * 100$$

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 – 2019¹. 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.

¹ 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.

2.3 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

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. This calculation of this metric is depicted in Figure 2 below.

Figure 2. Waste from households recycling rate (by material) calculation

1. Waste from households generated (EU) (tonnes)	=	Waste from households generated (tonnes)	<i>minus</i>	waste soils and waste construction and demolition waste from households recycled
2. Percentage waste from households recycled (EU)	=	Household waste recycled <i>minus</i> Waste Soils and Mixed waste from construction and demolition from households recycled	<hr style="width: 50%; margin: 0 auto;"/>	* 100
		Household Waste Generated (EU)		

3 Household waste

3.1 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.

In 2019 local authorities submitted returns annually. All returns were checked and verified by SEPA staff for data entry errors, consistency with previous returns and consistency with the site returns dataset.

All waste collected is reported in WDF in the same return period in which it is sent to management. This allows balancing of the waste generated and waste managed for a period. The waste generated figures may include treated waste stockpiled prior to final management. The waste managed figures exclude treated waste held in stockpile at the end of the reporting year.

3.2 Methodology

3.2.1 WasteDataFlow question 100

Local authorities report waste managed in WDF using question 100 (Q100). Data entry is via building a graphical 'tree' that depicts the movement of waste in a chain. Each 'branch' of the tree is associated with a waste facility and tonnage inputs to and outputs from each facility are reported.

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 reprocessors and reuse facilities, and waste sent to the same facilities following the sorting/treatment of mixed wastes (e.g. MRFs, MBT)

A "primary facility" in Q100 is a facility where the authority records waste as sent direct from collection. Input tonnages to the facility at this level are broken down into three waste sources by local authorities: Household, Commercial, Industrial. The household tonnages are directly

obtained from the data for these facilities. Where the facility is not a primary facility (e.g. the waste sent to landfill is recorded as an output from another facility such as a materials recycling facility), the household waste tonnage is not specifically recorded. In this instance the household waste was calculated by applying the percentage household waste at the primary level in the tree to the total tonnage of waste sent to the facility. For example, if waste inputs to a MRF facility are 80% household wastes, the output rejects from the MRF sent to landfill will be designated as 80% household in origin.

3.2.2 Waste categories

A list of SEPA reporting categories and corresponding WDF waste types are provided in Appendix 2 and

Appendix 3. The mapping of these categories follows the approach taken by UK reporting to Europe for waste statistics regulation reporting.

3.2.3 Household waste generated

Household waste generated were taken from the household tonnage inputs to primary level facilities in question 100.

3.2.4 Household waste landfilled

Household waste sent to landfill was derived from the waste recorded as sent to a landfill facility in Q100.

3.2.5 Household waste recovered by incineration, recovered by co-incineration, disposed by incineration

The quantity of household waste incinerated in the Household Waste Discover Data tool is the net tonnage input to the incinerator. This is to provide consistency with the waste reported in the official statistics publication². This differs from the WFAS Waste Discover Data tool, in which gross inputs to incineration³ are reported.

Incineration tonnages were allocated to the *incineration by recovery* category where the incineration facility meets the R1 Waste Framework Directive criteria for incineration efficiency. Similarly, where waste was incinerated in a co-incineration process, tonnages were allocated to the *incineration by co-incineration* category in the data tables. Where the incinerator was not recognised as meeting the Waste Framework Directive criteria for incineration efficiency, the incineration tonnages were allocated to the *incineration by disposal* category. As there are no recognised recovery incinerators in Scotland, all incineration in Scotland falls under either the *recovery by co-incineration* or the *disposal by incineration* category. It was assumed that all waste exported outside the UK was sent for *incineration by recovery*, and waste exported to an England incinerator was sent to *incineration by disposal* or *incineration by co-incineration*.

3.2.6 Household waste recycled

The quantity of household waste recycled is the net sum of household waste recorded as sent to reprocessor facilities in Q100. This includes waste sent direct to a reprocessor from collection and

² <http://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/household-waste-data/>

³ Net incineration is the gross inputs, less outputs such as bottom ash and metals which are disposed/recycled.

also the recyclable materials sent to a reprocessor following sorting of mixed wastes at a waste treatment facility (e.g. MRFs, MBT).

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 but they are included under "other diversion from landfill" unless these materials are landfilled. These materials are also excluded from the recycling data in the household waste data tables.

3.2.7 Household waste prepared for reuse

The quantity of household waste prepared for reuse is the net sum of household waste recorded as sent to reuse facilities in Q100, either directly or as outputs from a sorting facility.

3.2.8 Household organic waste recycled through biological treatment

The quantity of household organic waste recycled through biological treatment is the net sum of household waste recorded as sent to organic recycling facilities in Q100. There are three categories of organic recycling facilities in Q100: windrow composting, in-vessel composting, and anaerobic digestion facilities.

In 2019 only PAS100/110-accredited facilities were considered for the recycling data in line with Scotland's Zero Waste Plan, the third year in which only PAS compliant facilities were considered. This change stems from the Scottish Government policy to improve quality of recycling, first introduced with the publication of the Zero Waste Plan in 2011. Waste composted or digested that has not reached the quality standards set by PAS100/110 and diverted from landfill was considered under "other diversion from landfill".

3.2.9 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 household waste data tables. Also included in this category is any process loss during waste treatment, and process loss of organic waste composted in which the compost product is disposed.

3.2.10 Final destination reporting

The geographic allocation (Scotland / Outwith Scotland) for 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.

SEPA guidance requires authorities to report the final destination of the waste in Q100 (i.e. the facility where waste is recycled). Waste often goes through a complex chain of sites before reaching its final destination. This, together with the reluctance of some operators to report where waste is sent due to commercial reason, means many authorities struggle to obtain final destination information for the WDF report. Although the roll out of Q100 has improved final destination reporting, many authorities still continue to report MRFs as final destinations. The geographic information for household waste managed, in particular the household waste recycled, should therefore be treated with caution in the waste data tables.

4 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

waste.data@sepa.org.uk

Note: During the COVID 19 emergency SEPA offices have been closed. Please refer all correspondence to the email address above.

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Appendix 1

Datasets used in the 2019 methodology

Household wastes managed by Scottish local authorities (WasteDataFlow⁴)

In 2019, all 32 Scottish local authorities reported on a quarterly or annual basis using an electronic return system called WasteDataFlow (WDF). WDF is a UK wide system administered by Defra.

⁴ www.WasteDataFlow.org/

Local authorities are responsible for entering data, which cannot be modified by SEPA. Data entry is via a series of numbered questions⁵.

In 2019 there was a 100% response rate. SEPA reviewed annual data using a verification tool and informed local authorities where possible of 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 2019 are provided in section 3.2.1 on page 13.

Appendix 2

Table 2. 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	25% of 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
Combustion wastes	Incinerator bottom ash	NH
Construction and demolition waste	Rubble	NH
Construction and demolition waste	Plasterboard	NH

⁵www.wastedataflow.org/documents/guidancenotes/Scotland/GeneralGuidance/Scotland_WDF_User_Guidance_Rev_Oct_12.PDF

SEPA reporting	WasteDataFlow	Hazardous (H) / non-hazardous (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
Health care and biological wastes	Adsorbent Hygiene Products (AHP)	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	Co-mingled materials	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

SEPA reporting	WasteDataFlow	Hazardous (H) / non-hazardous (NH)
Rubber wastes	Van tyres	NH
Rubber wastes	Large vehicle tyres	NH
Rubber wastes	Mixed tyres	NH
Soils	Soil	NH
Textile wastes	Textiles only	
Textile wastes	Footwear only	
Textile wastes	Textiles and footwear	NH
Textile wastes	Carpets	NH
Used oils	Mineral oil	H
Vegetal wastes	Green garden waste only	NH
Vegetal wastes	Other compostable waste	NH
Vegetal wastes	75% of Mixed garden and food 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 3

Table 3. Mixed household waste categories for SEPA reporting and WasteDataFlow

SEPA reporting	WasteDataFlow	Hazardous (H) / non-hazardous (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 collected	H

Appendix 4

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 5

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
WasteDataFlow	A web-based reporting tool used by Scottish local authorities to report the wastes they manage

Appendix 6

Acronyms

CLO	Compost-Like Output
Defra	Department of the Environment Food and Rural Affairs
EWC	European Waste Catalogue
EWC-STAT	European Waste Catalogue for Statistics
MBT	Mechanical biological treatment
MRF	Materials recovery facility
PAS	Publicly Available Specification for Composted Materials
SEPA	Scottish Environment Protection Agency
WFAS	Waste From All Sources
WDF	WasteDataFlow

Version Control

Version	Description	Date
1	Initial published report	27 October 2020

