

2014 Household Waste Data Quality Report

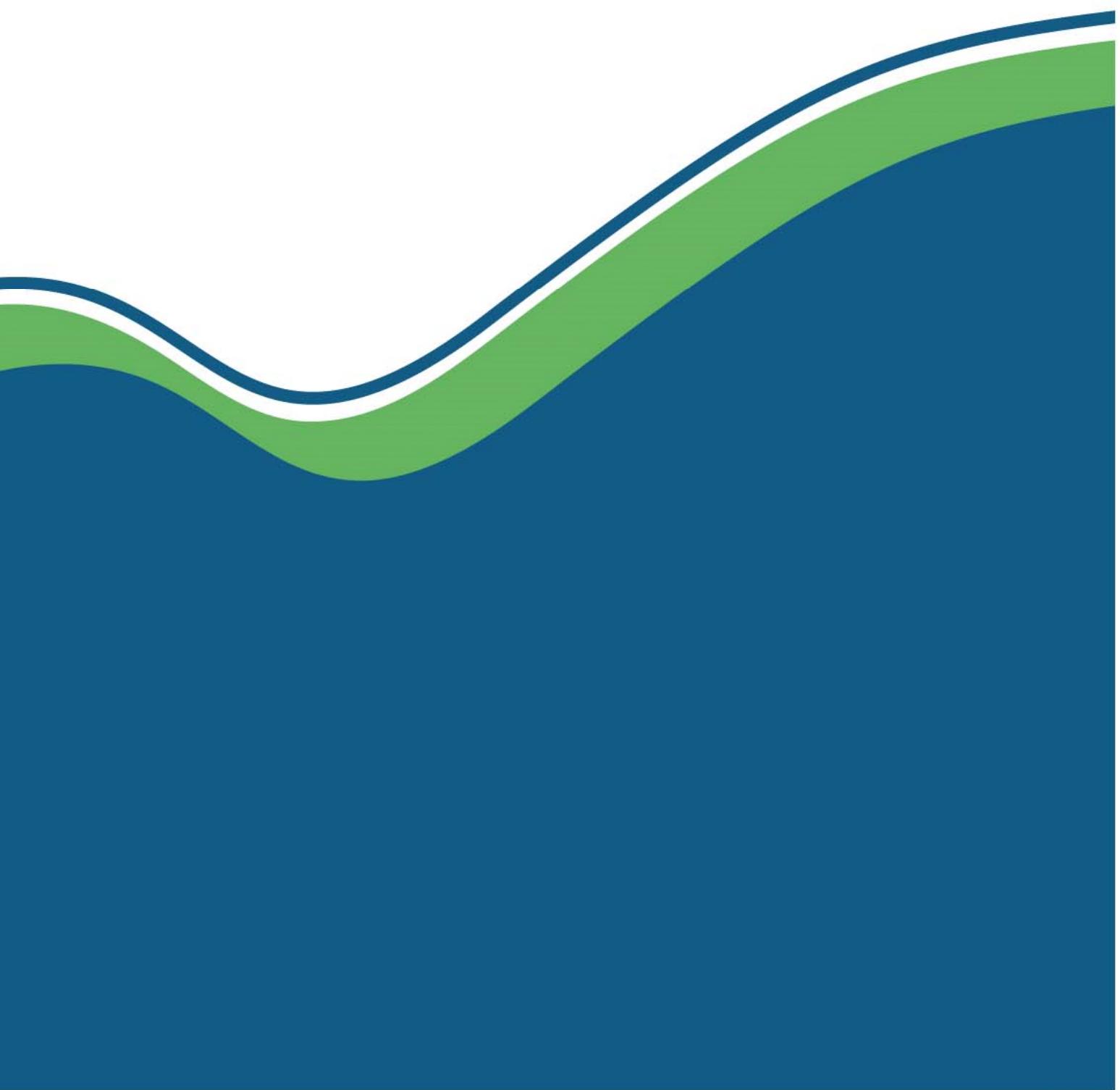


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1 Introduction

This report describes the methodologies to produce summary waste data for Scotland household waste for the 2014 calendar year. The report should be used alongside the 2014 household waste data tables.

The 2014 data are presented as follows:

- 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/>
- The tables may be downloaded in Excel format from SEPA's website at
<http://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/waste-data-for-scotland/>

The data source for household waste generated and managed is from an electronic return system called WasteDataFlow (WDF). WDF is a UK wide system administered by Defra. Local authorities are responsible for entering data, which cannot be modified by SEPA. Data entry is via a series of numbered questions¹. All 32 Scottish local authorities report on a quarterly or annual basis.

In 2014 there was a 100% response rate. SEPA reviewed annual data 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.

For 2014 there was one change to the methodology that was used for aggregation of the 2011-2013 datasets. In 2014 compost that was produced in a facility accredited to the British Standards Institution (BSI) for compost quality (BSI PAS100, BSI PAS 110) was allocated to "Organics Recycled" category. Compost that did not meet this standard was allocated to "Other diversion from landfill" in the household waste data tables. This change is part of a Scottish Government policy to improve the quality of recycling materials.

It is not practicable to revise the historical datasets to be consistent with this change. This is because the take-up of BSI PAS accredited facilities in Scotland is fairly recent, and the use by local authorities of these facilities has increased since the intention to abide by this standard was announced in Government policy in 2011².

¹www.wastedataflow.org/documents/guidancenotes/Scotland/GeneralGuidance/Scotland_WDF_User_Guidance_Rev_Oct_12.PDF

²http://www.wastedataflow.org/documents/guidancenotes/Scotland/zero_waste_plan_recycling_guidance1.pdf

2 Household waste

2.1 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 2014 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 might include treated waste stockpiled prior to final management. The waste managed figures include stockpiled waste from a previous year sent to final management but excludes treated waste stockpiled prior to final management.

2.2 Methodology

2.2.1 WasteDataFlow question 100

2014 was the second full year that local authorities reported data in WDF using question 100 (Q100). Data entry using Q100 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 re-processors 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. Inputs tonnages to the facility at this level are broken down into three categories by local authorities: Household, Commercial, Industrial. The household tonnages can be 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.

2.2.2 Waste types

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.

2.2.3 Household waste generated

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

2.2.4 Household waste landfilled

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

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

The quantity of household waste incinerated in the waste data tables is the gross tonnage input to the incinerator, rather than net incineration³ reported in the official statistics publication⁴.

Incineration tonnages were allocated to the *incineration by recovery* category where the incineration facility meets the Waste Framework Directive criteria for incineration efficiency. Similarly, where waste was incinerated in a co-incineration process, as defined by Environment Agency guidance, the 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*.

2.2.6 Household waste recycled

The quantity of household waste recycled is the net sum of household waste recorded as sent to re-processor facilities in Q100. This includes waste sent direct to a reprocessor from collection and also the recyclable materials sent to a re-processor 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 Net incineration is the gross inputs, less outputs such as bottom ash and metals which are disposed/recycled.

⁴ <http://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/household-waste-data/>

2.2.7 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.

2.2.8 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 organic recycling through biological treatment facility types in Q100: windrow composting, in-vessel composting, and anaerobic digestion facilities.

In 2014 only PAS100/110-accredited facilities were considered for the recycling data in line with Scotland's Zero Waste Plan, the first 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. Local authorities were provided a "grace period" before this policy was introduced to the household dataset, to allow sufficient time to obtain PAS accreditation for composting and AD facilities. 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" in the official statistics publication and household waste data tables.

Prior to 2014 all organic wastes were included in the household recycling figures, regardless of whether they were composted at a PAS100/110-accredited facility.

In 2014, 19.7 thousand tonnes of the 388.8 thousand tonnes of household organic waste treated by composting or other biological treatment were sent to facilities not accredited to the PAS standard. This equates to 5.1% of organics wastes treated, and 1.8% of total non-organic and organic household waste reused or recycled.

2.2.9 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.

2.2.10 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 Scottish

government, in partnership with Zero Waste Scotland, have convened a working group to address the issues that local authorities face in ascertaining and reporting on correct 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.

3 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

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Appendix 1

Datasets used in the 2014 methodology

Household wastes managed by Scottish local authorities (WasteDataFlow⁵)

WDF is a UK wide system administered by Defra. Local authorities are responsible for entering data, which cannot be modified by SEPA. Data entry is via a series of numbered questions⁶. All data is submitted annually, although local authorities may enter data monthly or quarterly.

In 2014 there was a 100% response rate. SEPA reviewed annual data 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.

⁵ www.WasteDataFlow.org/

⁶ www.wastedataflow.org/documents/guidancenotes/Scotland/GeneralGuidance/Scotland_WD_F_User_Guidance_Rev_Oct_12.PDF

Appendix 2

Table 1. 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 |
| Metal wastes, non-ferrous | Aluminium foil | NH |
| Mixed and undifferentiated | Cardboard beverage packaging | NH |

| SEPA reporting | WasteDataFlow | Hazardous (H) / non-hazardous (NH) |
|--------------------------------------|---------------------------|------------------------------------|
| materials | | |
| 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 3

Table 2. 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 4

Glossary

| | |
|------------------------------------|--|
| Anaerobic digestion | A process commonly used to break down biodegradable wastes (e.g. food and green wastes) in the absence of oxygen |
| Household waste | Waste generated by households (see full definition in Paragraph 1.2 of the <i>Zero Waste Plan - guidance for local authorities</i> here). |
| 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 |
| Waste recycled | includes recyclable materials that have been recycled or reused and also biodegradable materials that have been composted or digested. The amount of waste recycled, reused and composted is that accepted by the reprocessor. As such it excludes any recycling rejects that occur during collection, sorting or further treatment. From 2014, the composting figures using the new calculation methodology do not include any waste composted that has not reached the quality standards set by PAS 100/110. |
| WasteDataFlow | A web-based reporting tool used by Scottish local authorities to report the wastes they manage |

Appendix 5

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 |
| WDF | WasteDataFlow |
| WEEE | Waste Electrical and Electronic Equipment |

Version Control

| Version | Description | Date |
|---------|--------------------------|-------------------|
| 1 | Initial published report | 30 September 2015 |