**Scottish Household waste – summary data 2018**

This release shows the 2018 calendar year summary of household waste data generated in Scotland and managed by or on behalf of Scottish local authorities. Information on the methodology used to prepare this release and a definition of terms is in the methodology and glossary at the end of this document.

## Key points

Scottish Household waste – 2018 calendar year

- The total amount of household waste generated in Scotland was 2.41 million tonnes (Table 1) in 2018, a decrease of 55,574 tonnes (2%) from 2017.
- For 2018, the Scottish household waste recycling rate was 44.7%, a decrease of 0.9 percentage points from the 45.5% (Table 1) rate achieved in 2017[1]. The amount of household waste recycled decreased by 45,886 tonnes to 1.07 million tonnes. This is the first year on year decrease in the household waste recycling rate since the start of reporting under the current definition of household waste in 2011. A seventh consecutive increase in plastics recycled was offset by a decrease in paper and cardboard wastes recycled and organic wastes composted.
- The amount of Scottish household waste landfilled in 2018 was 1.03 million tonnes, a decrease of 75,491 tonnes (7%) from 2017, and a decrease of 422,322 tonnes (29%) since 2011. This is the seventh consecutive decrease in household waste landfilled since 2011.
- For the second consecutive year, in 2018 there was more Scottish waste recycled (1.07 million tonnes) than landfilled (1.03 million tonnes).
- For 2018, the total amount of Scottish household waste managed by other diversion from landfill was 298,356 tonnes, an increase of 65,818 tonnes (28%) from 2017. Over three-quarters of the diverted waste was managed by incineration (81%, 240,935 tonnes), an increase of 65,638 tonnes from 2017.
- The carbon impact is a measure of the whole-life carbon impacts of waste, from resource extraction and manufacturing emissions, right through to waste management emissions. The carbon impact of household waste generated and managed in 2018 was 5.76 million tonnes of carbon dioxide equivalent ($TCO_2e$, Table 1), which is the equivalent to 1.06 $TCO_2e$ per person (Table 2). This was a decrease of 104,228 $TCO_2e$) from 2017, and a decrease of 1,007,754 $TCO_2e$ from 2011.

All of the data in this report is available in the Household Waste Discover Data tool on Scotland's Environment website. Annual household waste summary data tables are also available to download in Excel format on SEPA's web site.

---

**Enquiries on this publication to**: SEPA Communications Department: 01786 452546.

This is an Official Statistics publication. These statistics have been produced to the high professional standards defined in the Code of Practice for Official Statistics, which sets out fourteen principles under the pillars of Trustworthiness, Quality and Value. More information on the Official Statistics Code of Practice can be found here: http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html.

[1] The 2017 recycling rate has been revised downwards from 45.6% to 45.5%. Refer to Table 11, *Revisions to 2017 Scottish Waste Data.*

**Table 1. Scottish Household waste generated and managed in 2018 - summary data[2]**

| Local Authority | Generated (tonnes) | Recycled (tonnes) | *Percentage Recycled (%)* | Other diversion from landfill (tonnes) | *Percentage Other diversion from Landfill (%)* | Landfilled (tonnes) | *Percentage Landfilled (%)* | Carbon Impact ($TCO_2e$) | *2017 Recycled (Percentage)* |
|---|---|---|---|---|---|---|---|---|---|
| Aberdeen City | 85,540 | 40,483 | *47.3* | 27,438 | *32.1* | 17,619 | *20.6* | *198,518* | *43.9* |
| Aberdeenshire | 120,519 | 52,298 | *43.4* | 2,784 | *2.3* | 65,437 | *54.3* | *308,193* | *43.7* |
| Angus | 54,619 | 29,890 | *54.7* | 22,346 | *40.9* | 2,383 | *4.4* | *112,134* | *55.2* |
| Argyll and Bute | 47,972 | 18,150 | *37.8* | 7,725 | *16.1* | 22,098 | *46.1* | *119,149* | *38.7* |
| City of Edinburgh | 193,341 | 74,962 | *38.8* | 17,678 | *9.1* | 100,701 | *52.1* | *492,832* | *41.0* |
| Clackmannanshire | 26,122 | 14,706 | *56.3* | 492 | *1.9* | 10,924 | *41.8* | *53,571* | *59.5* |
| Dumfries and Galloway | 79,325 | 21,757 | *27.4* | 22,504 | *28.4* | 35,064 | *44.2* | *227,001* | *27.8* |
| Dundee City | 60,773 | 21,761 | *35.8* | 34,673 | *57.1* | 4,340 | *7.1* | *148,299* | *35.5* |
| East Ayrshire | 53,148 | 27,553 | *51.8* | 4,957 | *9.3* | 20,647 | *38.8* | *118,087* | *52.9* |
| East Dunbartonshire | 51,643 | 28,218 | *54.6* | 9,994 | *19.4* | 13,431 | *26.0* | *111,395* | *47.9* |
| East Lothian | 50,134 | 26,623 | *53.1* | 1,987 | *4.0* | 21,524 | *42.9* | *110,686* | *53.1* |
| East Renfrewshire | 43,927 | 29,090 | *66.2* | 1,085 | *2.5* | 13,753 | *31.3* | *89,068* | *67.1* |
| Falkirk | 68,571 | 34,800 | *50.8* | 3,175 | *4.6* | 30,595 | *44.6* | *154,954* | *55.9* |
| Fife | 167,353 | 85,471 | *51.1* | 10,560 | *6.3* | 71,322 | *42.6* | *339,867* | *54.7* |
| Glasgow City | 245,318 | 60,438 | *24.6* | 17,377 | *7.1* | 167,502 | *68.3* | *733,950* | *26.7* |
| Highland | 127,880 | 54,571 | *42.7* | 7,280 | *5.7* | 66,029 | *51.6* | *317,214* | *43.6* |
| Inverclyde | 28,027 | 15,690 | *56.0* | 1,724 | *6.2* | 10,614 | *37.9* | *57,554* | *57.2* |
| Midlothian | 41,890 | 24,369.0 | *58.2* | 5,194 | *12.4* | 12,327 | *29.4* | *91,870* | *51.6* |
| Moray | 47,522 | 27,256 | *57.4* | 0 | *0.0* | 20,266 | *42.6* | *91,661* | *57.8* |
| Na h-Eileanan Siar | 14,325 | 3,305 | *23.1* | 1,756 | *12.3* | 9,265 | *64.7* | *37,897* | *23.9* |
| North Ayrshire | 61,421 | 33,510 | *54.6* | 6,815 | *11.1* | 21,096 | *34.3* | *141,057* | *55.8* |
| North Lanarkshire | 146,175 | 63,879 | *43.7* | 19,970 | *13.7* | 62,326 | *42.6* | *353,977* | *39.6* |
| Orkney Islands | 10,221 | 2,153 | *21.1* | 4,826 | *47.2* | 2,650 | *25.9* | *27,128* | *18.3* |
| Perth and Kinross | 71,815 | 37,120 | *51.7* | 4,045 | *5.6* | 30,650 | *42.7* | *140,239* | *55.6* |
| Renfrewshire | 81,255 | 39,998 | *49.2* | 24,087 | *29.6* | 17,010 | *20.9* | *189,505* | *47.8* |
| Scottish Borders | 52,491 | 20,365 | *38.8* | 1,455 | *2.8* | 30,671 | *58.4* | *134,140* | *39.9* |
| Shetland Islands | 9,649 | 1,017 | *10.5* | 6,477 | *67.1* | 2,156 | *22.3* | *31,049* | *8.0* |
| South Ayrshire | 55,814 | 29,340 | *52.6* | 6,490 | *11.6* | 19,984 | *35.8* | *124,772* | *52.5* |
| South Lanarkshire | 150,470 | 66,676 | *44.3* | 11,261 | *7.5* | 72,533 | *48.2* | *361,238* | *47.3* |
| Stirling | 41,925 | 22,688 | *54.1* | 434 | *1.0* | 18,804 | *44.9* | *88,173* | *55.1* |
| West Dunbartonshire | 41,867 | 18,206 | *43.5* | 4,036 | *9.6* | 19,624 | *46.9* | *102,739* | *47.6* |
| West Lothian | 74,194 | 48,340 | *65.2* | 7,730 | *10.4* | 18,124 | *24.4* | *152,069* | *61.3* |
| **Total Scotland** | **2,405,246** | **1,074,682** | ***44.7*** | **298,356** | ***12.4*** | **1,031,467** | ***42.9*** | ***5,759,986*** | ***45.5*** |

[2] Note: The carbon impact of mixed residual household waste is based on a national waste composition study and therefore does not reflect any difference in waste composition which may exist between Local Authorities.

**Table 2. Scottish Household waste generated and managed per person in 2018 - summary data[3]**

| Local Authority | Generated (tonnes per person) | Recycled (tonnes per person) | Other diversion from landfill (tonnes per person) | Landfilled (tonnes per person) | Carbon Impact ($TCO_2e$ per person) |
|---|---|---|---|---|---|
| Aberdeen City | 0.38 | 0.18 | 0.12 | 0.08 | 0.87 |
| Aberdeenshire | 0.46 | 0.20 | 0.01 | 0.25 | 1.18 |
| Angus | 0.47 | 0.26 | 0.19 | 0.02 | 0.97 |
| Argyll and Bute | 0.56 | 0.21 | 0.09 | 0.26 | 1.38 |
| City of Edinburgh | 0.37 | 0.14 | 0.03 | 0.19 | 0.95 |
| Clackmannanshire | 0.51 | 0.29 | 0.01 | 0.21 | 1.04 |
| Dumfries and Galloway | 0.53 | 0.15 | 0.15 | 0.24 | 1.53 |
| Dundee City | 0.41 | 0.15 | 0.23 | 0.03 | 1.00 |
| East Ayrshire | 0.44 | 0.23 | 0.04 | 0.17 | 0.97 |
| East Dunbartonshire | 0.48 | 0.26 | 0.09 | 0.12 | 1.03 |
| East Lothian | 0.47 | 0.25 | 0.02 | 0.20 | 1.05 |
| East Renfrewshire | 0.46 | 0.31 | 0.01 | 0.14 | 0.94 |
| Falkirk | 0.43 | 0.22 | 0.02 | 0.19 | 0.97 |
| Fife | 0.45 | 0.23 | 0.03 | 0.19 | 0.91 |
| Glasgow City | 0.39 | 0.10 | 0.03 | 0.27 | 1.17 |
| Highland | 0.54 | 0.23 | 0.03 | 0.28 | 1.35 |
| Inverclyde | 0.36 | 0.20 | 0.02 | 0.14 | 0.74 |
| Midlothian | 0.46 | 0.27 | 0.06 | 0.13 | 1.01 |
| Moray | 0.50 | 0.29 | 0.00 | 0.21 | 0.96 |
| Na h-Eileanan Siar | 0.53 | 0.12 | 0.07 | 0.35 | 1.41 |
| North Ayrshire | 0.45 | 0.25 | 0.05 | 0.16 | 1.04 |
| North Lanarkshire | 0.43 | 0.19 | 0.06 | 0.18 | 1.04 |
| Orkney Islands | 0.46 | 0.10 | 0.22 | 0.12 | 1.22 |
| Perth and Kinross | 0.47 | 0.25 | 0.03 | 0.20 | 0.93 |
| Renfrewshire | 0.46 | 0.22 | 0.14 | 0.10 | 1.07 |
| Scottish Borders | 0.46 | 0.18 | 0.01 | 0.27 | 1.16 |
| Shetland Islands | 0.42 | 0.04 | 0.28 | 0.09 | 1.35 |
| South Ayrshire | 0.50 | 0.26 | 0.06 | 0.18 | 1.11 |
| South Lanarkshire | 0.47 | 0.21 | 0.04 | 0.23 | 1.13 |
| Stirling | 0.44 | 0.24 | 0.00 | 0.20 | 0.93 |
| West Dunbartonshire | 0.47 | 0.20 | 0.05 | 0.22 | 1.15 |
| West Lothian | 0.41 | 0.27 | 0.04 | 0.10 | 0.83 |
| **Total Scotland** | **0.44** | **0.20** | **0.05** | **0.19** | **1.06** |

[3] Note: The carbon impact of mixed residual household waste is based on a national waste composition study and therefore does not reflect any difference in waste composition which may exist between Local Authorities

## Trends

- The total amount of household waste generated in Scotland in 2018 was 2.41 million tonnes, a decrease of 55,574 tonnes (2%) from 2017 and 201,513 tonnes from 2011. This is the lowest amount of household waste generated since household waste statistics were first published using the current definition of household waste in 2011. Several authorities have attributed reductions in waste generated to a move from fortnightly to three weekly waste collection services.

**Figure 1. Household waste generated in Scotland 2011-2018**

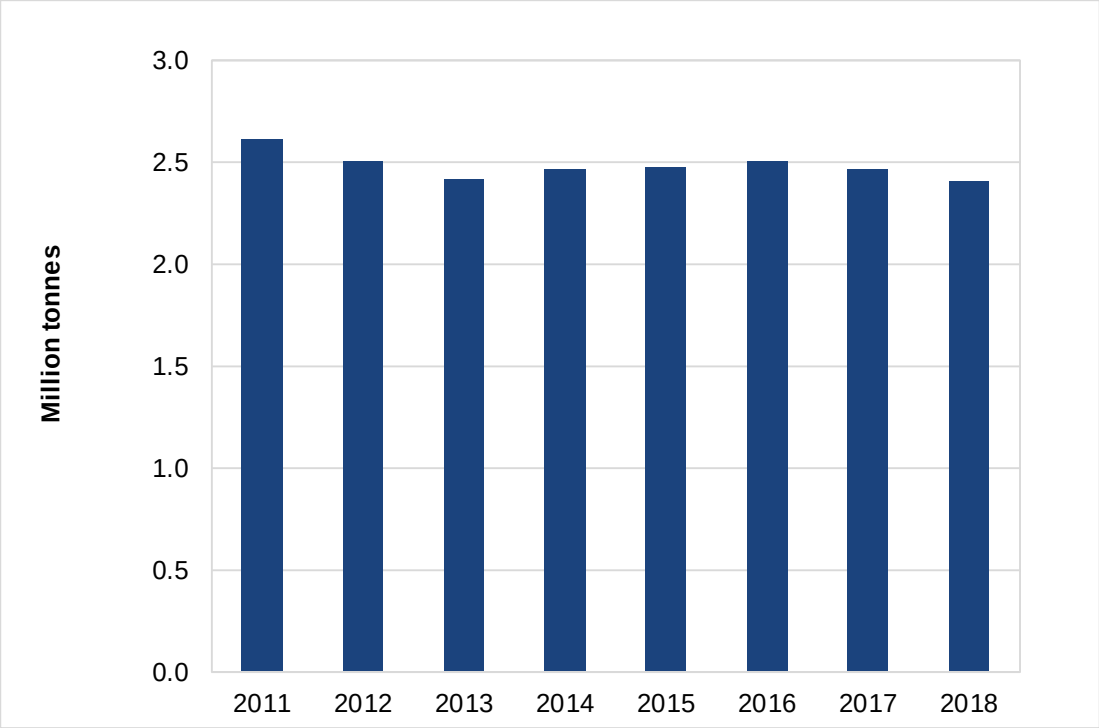



**Table 3. Household waste generated in Scotland 2011-2018**

| Year | Waste generated (tonnes) |
|---|---|
| **2011** | 2,606,759 |
| **2012** | 2,500,995 |
| **2013** | 2,412,630 |
| **2014** | 2,459,558 |
| **2015** | 2,468,781 |
| **2016** | 2,498,978 |
| **2017** | 2,460,820 |
| **2018** | 2,405,246 |

- For the second consecutive year, in 2018 there was more Scottish waste recycled (1.07 million tonnes) than landfilled (1.03 million tonnes, see Table 4 below).

**Figure 2. Household waste managed in Scotland 2011-2018**

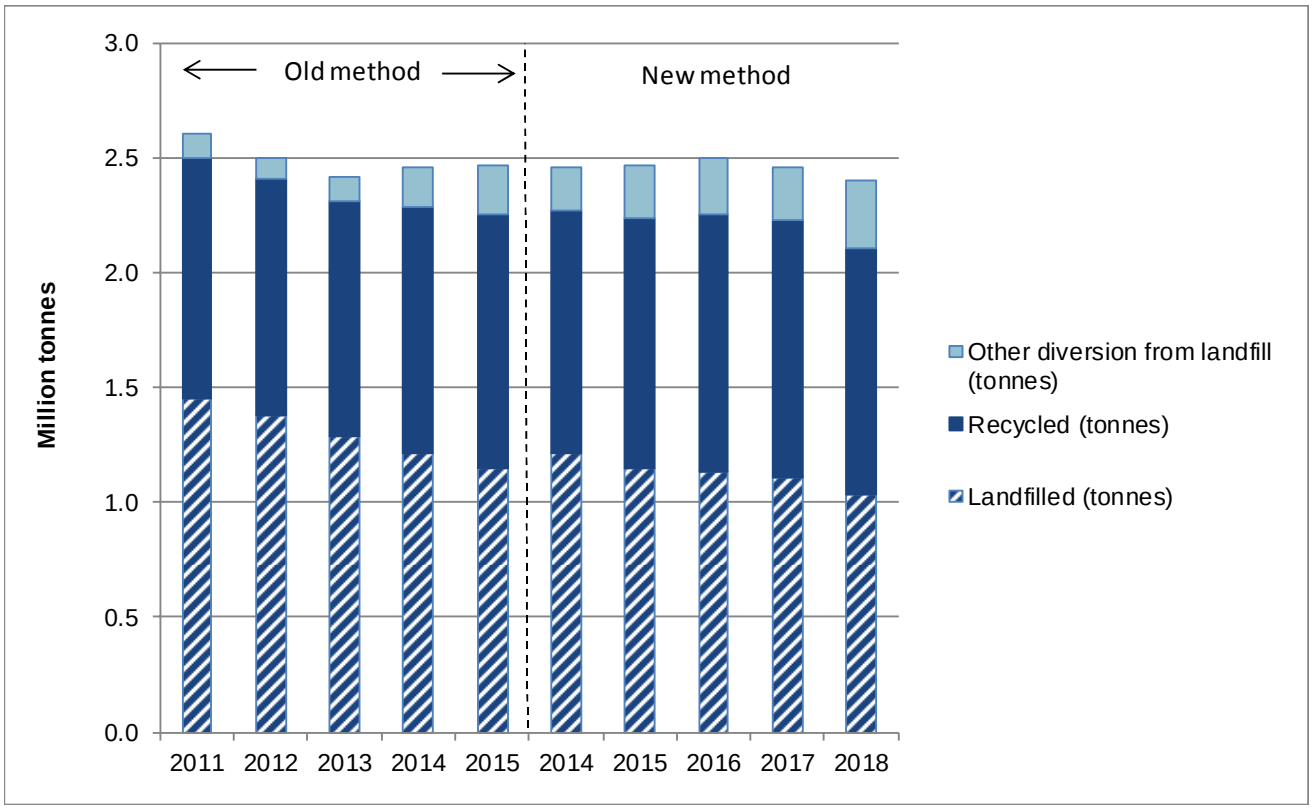



**Table 4. Household waste managed in Scotland 2011-2018**

| Year | Landfilled | Recycled | Other diversion from landfill | Total Managed |
|---|---|---|---|---|
| **2011 - OLD METHOD** | 1,453,789 | 1,045,013 | 107,831 | 2,606,633 |
| **2012 - OLD METHOD** | 1,382,153 | 1,029,150 | 85,754 | 2,497,057 |
| **2013 - OLD METHOD** | 1,290,829 | 1,018,189 | 104,512 | 2,413,530 |
| **2014 - OLD METHOD** | 1,212,479 | 1,072,953 | 173,433 | 2,458,865 |
| **2015 - OLD METHOD** | 1,150,537 | 1,105,211 | 212,737 | 2,468,485 |
| **2014** | 1,212,479 | 1,053,241 | 193,146 | 2,458,865 |
| **2015** | 1,150,537 | 1,088,426 | 229,522 | 2,468,485 |
| **2016** | 1,131,806 | 1,124,925 | 241,785 | 2,498,516 |
| **2017** | 1,106,959 | 1,120,568 | 232,538 | 2,460,065 |
| **2018** | 1,031,467 | 1,074,682 | 298,356 | 2,404,505 |

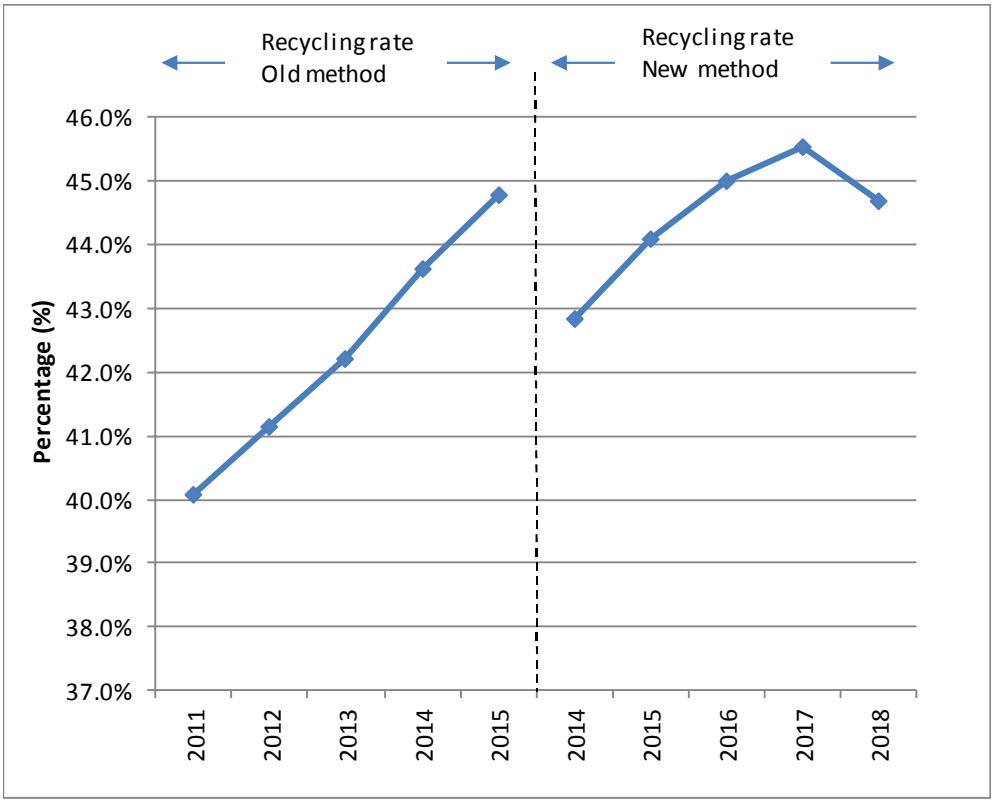
## Waste Recycled

- Waste recycled includes waste reused, recycled or composted. A full description of what recycling is given in the glossary.

- For 2018, the Scottish household waste recycling rate was 44.7% (Figure 3), a decrease of 0.9 percentage points from the 45.5% recycling rate achieved in 2017[4]. Prior to 2014, household waste composted that did not reach the quality standards set by PAS 100/110 was included in the recycling figures. If this management method was included, as in the previous method, the overall recycling rate in 2018 would have been 45.4%, an increase of 5.3 percentage points from the 40.1% achieved in 2011.

- For 2018, the total tonnage of Scottish household waste recycled was 1.07 million tonnes, a decrease of 45,886 tonnes (4%) from 2017. Prior to 2014, household waste composted that did not reach the quality standards set by PAS 100/110 was included in the recycling figures. If such waste was included, as in the previous method, the total household waste recycled in 2018 would have been 1.09 million tonnes, which is 47,653 tonnes (5%) greater than the 1.05 million tonnes of waste recycled in 2011.

**Figure 3. Scottish household waste recycling rates 2011-2018**




[4] The 2017 recycling rate has been revised downwards from 45.6% to 45.5%. Refer to Table 11, *Revisions to 2017 Scottish Waste Data.*

**Table 5. Scottish household waste recycling rates 2011-2018**

| Recycling rate | Percentage (%) |
|---|---|
| **2011 - OLD METHOD** | 40.1% |
| **2012 - OLD METHOD** | 41.1% |
| **2013 - OLD METHOD** | 42.2% |
| **2014 - OLD METHOD** | 43.6% |
| **2015 - OLD METHOD** | 44.8% |
| **2014** | 42.8% |
| **2015** | 44.1% |
| **2016** | 45.0% |
| **2017** | 45.5% |
| **2018** | 44.7% |

Note: recycled includes waste recycled or reused and waste composted

- In 2018, household waste recycled and reused comprised 691,966 tonnes (64%) of the 1.07 million tonnes of household waste recycled, with household waste composted contributing the remaining 382,716 tonnes (36%) (see Figure 4 below).

**Figure 4. Breakdown of Scottish household waste recycled 2011-2018**

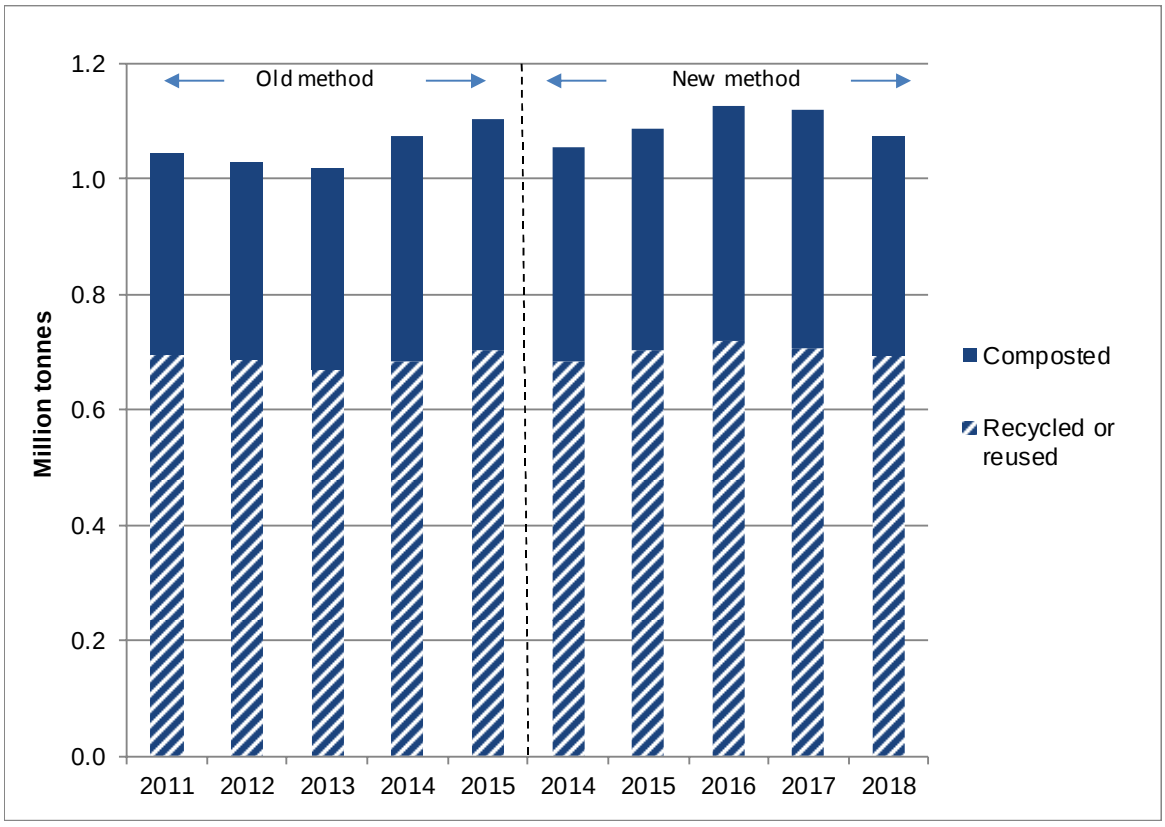


**Table 6. Breakdown of Scottish household waste recycled 2011-2018**

| Year | Recycled + reused | Composted | Total |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| **2014** | 684,201 | 369,040 | 1,053,241 |
| **2015** | 703,152 | 385,273 | 1,088,426 |
| **2016** | 721,181 | 403,743 | 1,124,925 |
| **2017** | 705,370 | 415,198 | 1,120,568 |
| **2018** | 691,966 | 382,716 | 1,074,682 |

- The 691,966 tonnes of household waste recycled or reused in 2018 was a decrease of 13,404 tonnes (2%) compared with 2017 and an decrease of 5,938 tonnes (0.9%) compared with 2011, indicating that the amount of household waste recycled or reused has remained relatively stable during the last seven years.

- The largest type of household waste recycled or reused in 2018 was Paper and cardboard wastes (209,120 tonnes, 19% of all waste recycled or reused, see Table 7 below). However, there is a general downward trend of Paper and cardboard wastes recycled or reused since 2011, with a 16,374 tonne (7%) reduction from 2017 and 31,226 tonne (13%) from 2011 (see Figure 5 below).

- In 2018 there was an increase of 8,163 tonnes (5%) of Plastic wastes recycled and an increase of 832 tonne (0.8%) of Glass wastes recycled. Recycling of Plastic wastes has increased each year for the last seven years, and Glass wastes has increased for all except one of the last seven years. The increase in plastics has been attributed to a variety of sources by local authorities, ranging from changes in waste recycling collections to increased awareness of consumers.

**Figure 5 Scottish Paper and cardboard wastes recycled or reused (tonnes) 2011-2018**

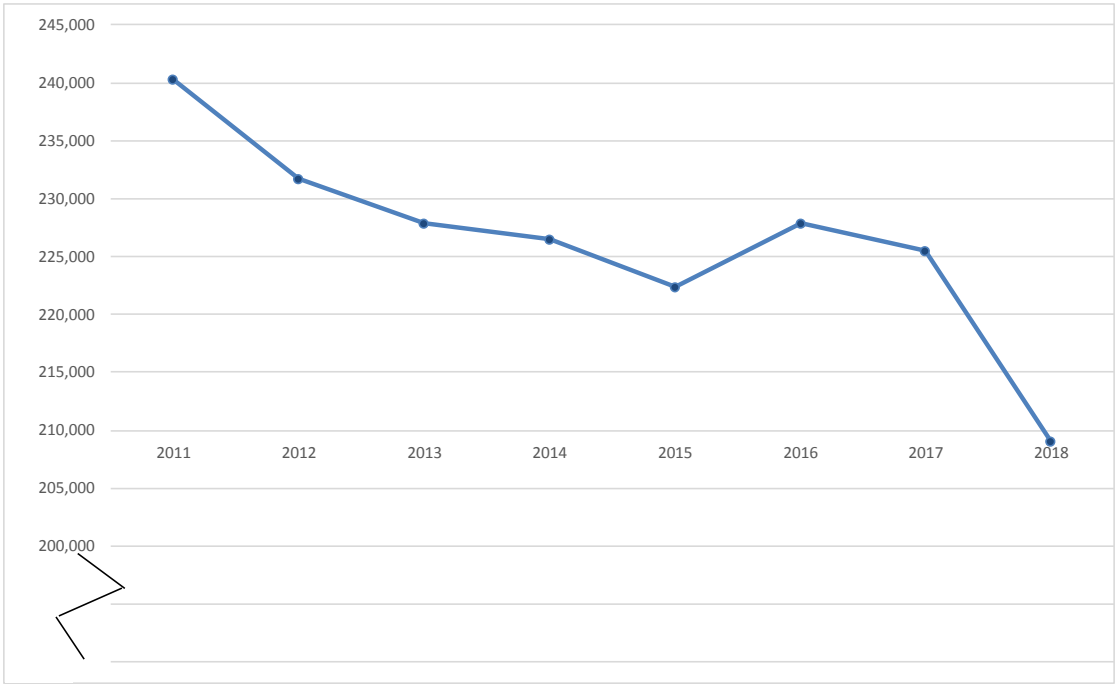


**Figure 6 Scottish household waste recycled or reused by material 2011-2018**

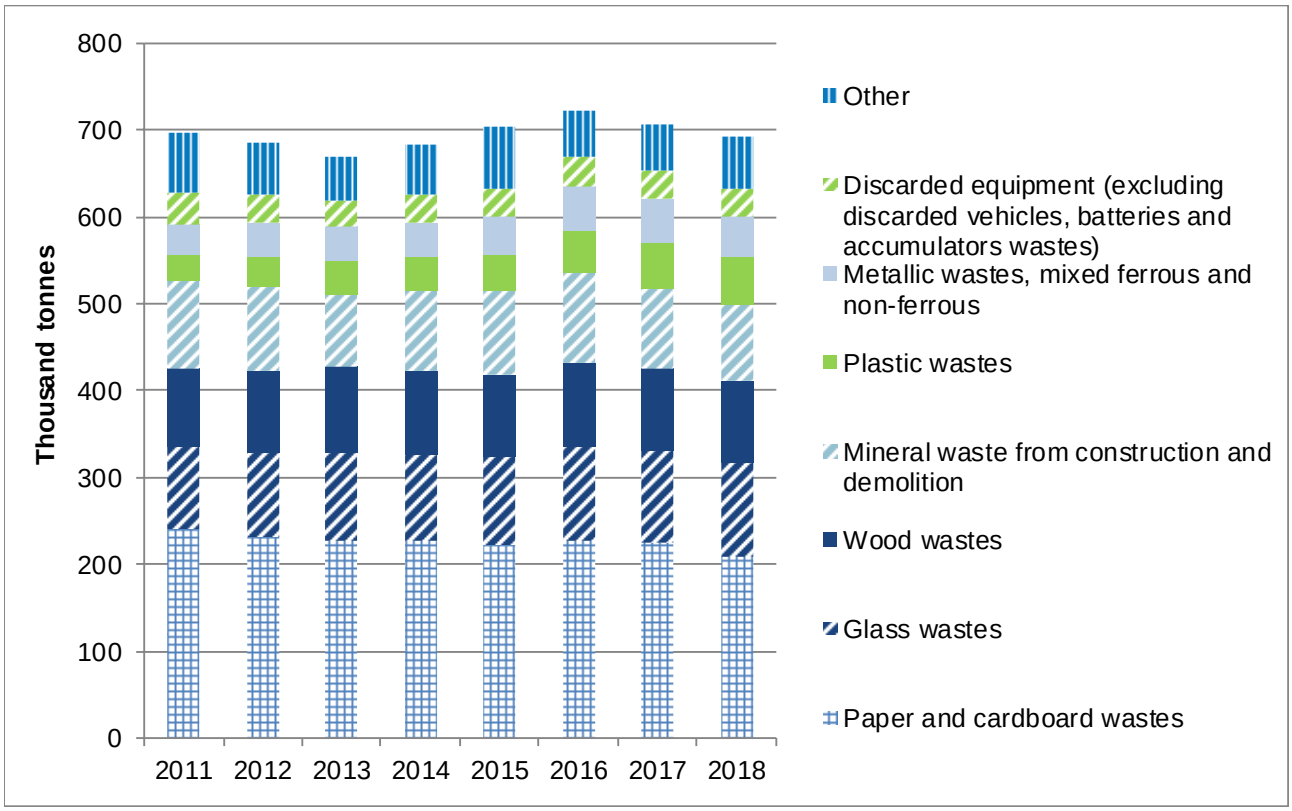



**Table 7. Scottish Household waste recycled or reused by material 2011-2018 (tonnes)**

| Year | Paper and cardboard wastes | Glass wastes | Wood wastes | Mineral waste from construction and demolition | Plastic wastes | Metallic wastes, mixed ferrous and non-ferrous | Discarded equipment (excluding discarded vehicles, batteries and accumulators wastes) | Other | Total |
|---|---|---|---|---|---|---|---|---|---|
| **2011** | 240,346 | 94,903 | 89,468 | 101,810 | 29,299 | 35,281 | 36,616 | 70,180 | 697,904 |
| **2012** | 231,776 | 96,658 | 93,857 | 96,701 | 34,528 | 39,082 | 33,743 | 59,304 | 685,648 |
| **2013** | 227,899 | 99,973 | 98,688 | 84,907 | 38,097 | 38,313 | 31,366 | 50,513 | 669,756 |
| **2014** | 226,463 | 100,580 | 94,800 | 93,290 | 39,525 | 39,316 | 31,748 | 58,478 | 684,201 |
| **2015** | 222,403 | 102,033 | 93,072 | 97,158 | 41,285 | 45,025 | 31,740 | 70,437 | 703,152 |
| **2016** | 227,921 | 106,548 | 97,672 | 102,974 | 48,422 | 50,935 | 34,378 | 52,331 | 721,181 |
| **2017** | 225,495 | 104,679 | 93,940 | 94,037 | 51,833 | 50,275 | 33,604 | 51,508 | 705,370 |
| **2018** | 209,120 | 107,380 | 94,877 | 86,984 | 56,586 | 45,796 | 30,946 | 60,277 | 691,966 |

- Waste composted is waste recycled by biological treatment through composting at a composting plant or through digestion at an anaerobic digestion facility.

- For 2018, the amount of Scottish household waste composted was 382,716 tonnes, a decrease of 32,482 tonnes (8%) from 2017. Prior to 2014, household waste composted that attained the quality standards set by PAS 100/110 were included in the composting figures. If such waste was included, as in the previous method, the total household waste composted in 2018 would have been 400,700 tonnes, which is 53,591 tonnes (15%) greater than the 347,109 tonnes composted in 2011.

- In 2018, three-quarters of the household waste composted was vegetal wastes (75%) with animal and mixed food waste, and wood wastes making up the remainder

(24% and 1% respectively). These proportions were similar to 2017. In 2011, the percentage of vegetal waste was higher (95%) and the percentages of animal and mixed food waste and wood waste were lower (5% and 0.1% respectively).

- For 2018, the total tonnage of Vegetal wastes composted was 287,309 tonnes, a decrease of 23,653 tonnes (8%) from 2017. Prior to 2014, vegetal wastes composted that did not reach the quality standards set by PAS 100/110 was included in the composting figures. If such waste were included, as in the previous method, the total vegetal waste composted in 2018 would have been 304,600 tonnes, which is 23,939 tonnes (7%) less than the 328,539 tonnes of vegetal wastes composted in 2011. The amount of vegetal wastes composted has been fairly constant from 2011 through 2016, with annual tonnages composted not varying from the average by over 5% over this period. At least one local authority attributed a decrease in Vegetal wastes composted in 2018 to the unusual "Beast from the east" cold weather pattern in 2018.

- For 2018, the total amount of Animal and mixed food waste composted was 91,076 tonnes, a decrease of 8,646 tonnes (9%) from 2017. Prior to 2014, Animal and mixed food waste composted that did not reach the quality standards set by PAS 100/110 was included in the composting figures. If such waste were included, as in the previous method, the total Animal and mixed food waste composted in 2018 would have been 91,418 tonnes, which is 73,314 tonnes (405%) greater than the 18,104 tonnes of food waste composted in 2011.

- For 2018, the amount of Wood wastes composted was 4,331 tonnes, a decrease of 183 tonnes (4%) from 2017, but an overall increase of 4,216 tonnes (905%) from 2011.

**Figure 7. Scottish household waste composted by material 2011-2018**

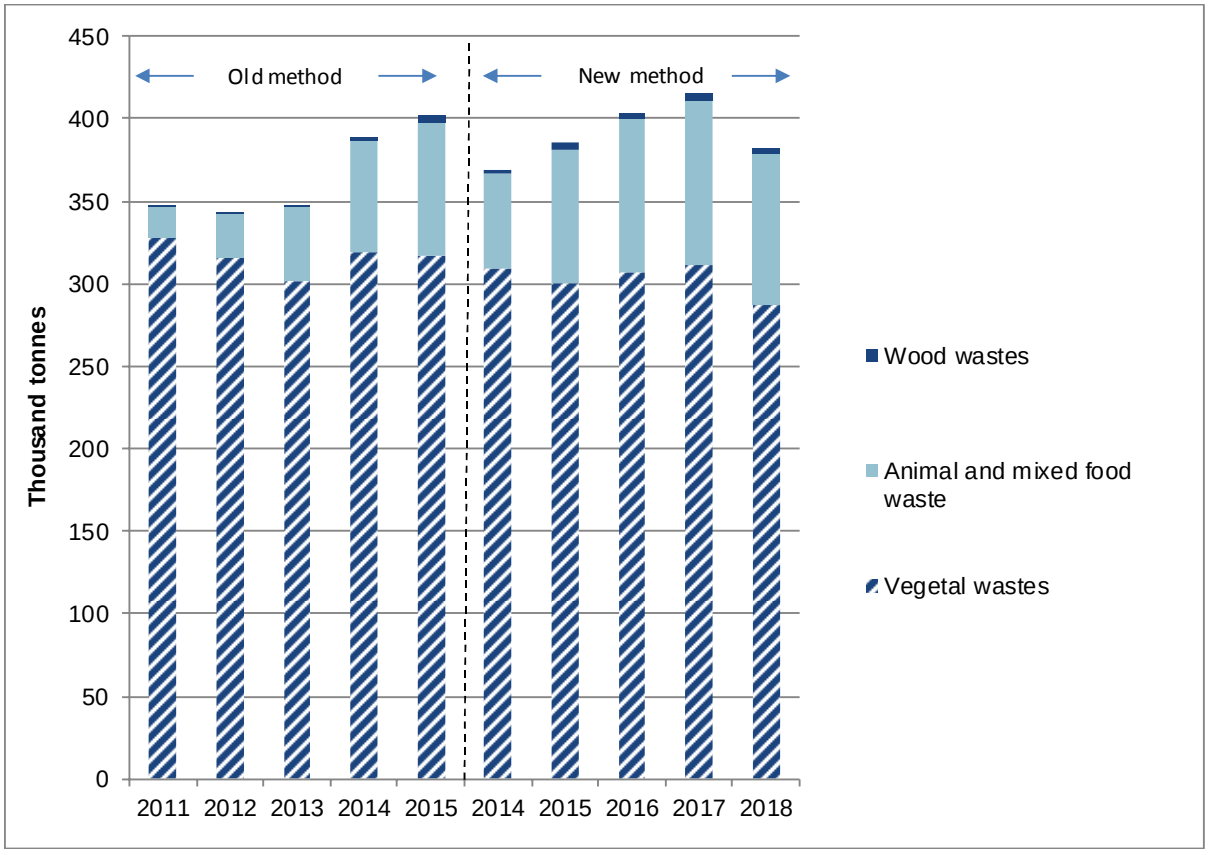


**Table 8. Scottish household waste composted by material 2011-2018 (tonnes)**

| Year and method | Vegetal wastes | Animal and mixed food waste | Wood wastes | Total |
|---|---|---|---|---|
| **2011 - OLD METHOD** | 328,539 | 18,104 | 466 | 347,109 |
| **2012 - OLD METHOD** | 315,751 | 26,296 | 1,454 | 343,501 |
| **2013 - OLD METHOD** | 300,899 | 45,672 | 1,861 | 348,433 |
| **2014 - OLD METHOD** | 319,247 | 67,029 | 2,477 | 388,753 |
| **2015 - OLD METHOD** | 316,851 | 81,348 | 3,860 | 402,058 |
| **2014** | 308,705 | 57,858 | 2,477 | 369,040 |
| **2015** | 300,463 | 80,951 | 3,860 | 385,273 |
| **2016** | 306,681 | 93,287 | 3,775 | 403,743 |
| **2017** | 310,962 | 99,722 | 4,514 | 415,198 |
| **2018** | 287,309 | 91,076 | 4,331 | 382,716 |

**Other Diversion from Landfill**

- Other diversion from landfill is waste material not recycled or landfilled. This includes net waste incinerated, incinerator outputs recycled, and organic material recycled that does not meet quality standards. A full description is given in the glossary.

- For 2018, the total amount of Scottish household waste managed by other diversion from landfill was 298,356 tonnes, an increase of 65,818 tonnes (28%) from the 232,538 tonnes[5] diverted in 2017 (see Figure 8 below). Prior to 2014, household waste composted that did not reach the quality standards set by PAS 100/110 was excluded from the other diversion from landfill figures. If such waste was excluded, as in the previous method, the total amount of household waste managed by other diversion from landfill in 2018 would have been 280,372 tonnes, which is 172,541 tonnes (160%) greater than the 107,831 tonnes of other waste diverted from landfill in 2011.

- In 2018, over three-quarters of the waste diverted was managed by incineration (81%, 240,935 tonnes), followed by other treatment (13%, 39,437 tonnes) and non-certified composting/digestion (6%, 17,984 tonnes) (Figure 6 and Table 8).

- The 240,935 tonnes of Scottish household waste diverted from landfill through incineration was 65,638 tonnes (37%) greater than in 2017, and 160,319 tonnes (199%) greater in 2011, excluding incinerator outputs that are landfilled. In 2018 the total amount of Scottish household waste inputted to incineration facilities was 284,798 tonnes. The increase was primarily due to a 50,673 tonne increase (42%) of Household and similar wastes and 10,039 tonne (30%) increase of Mixed and undifferentiated materials incinerated (see Figure 9 below). Household and similar wastes comprise primarily general refuse, and Mixed and undifferentiated materials comprises primarily rejects following sorting of waste for recycling, and in previous years such wastes would be landfilled.

- There were 39,437 tonnes of waste diverted by other treatments in 2018, which was 4,941 tonnes (11%) less than in 2017. Other treatments include process loss associated with mechanical and biological treatments (e.g. production of CLO and production of RDF); process loss associated with waste composted that is disposed to landfill; and CLO diverted from landfill.

[5] The 2017 Other diversion from landfill has been revised upwards from 230,983 tonnes to 232,538 tonnes. Refer to Table 11 on Page 17.

**Figure 8. Breakdown of Scottish household waste that is not recycled or landfilled 2011-2018**

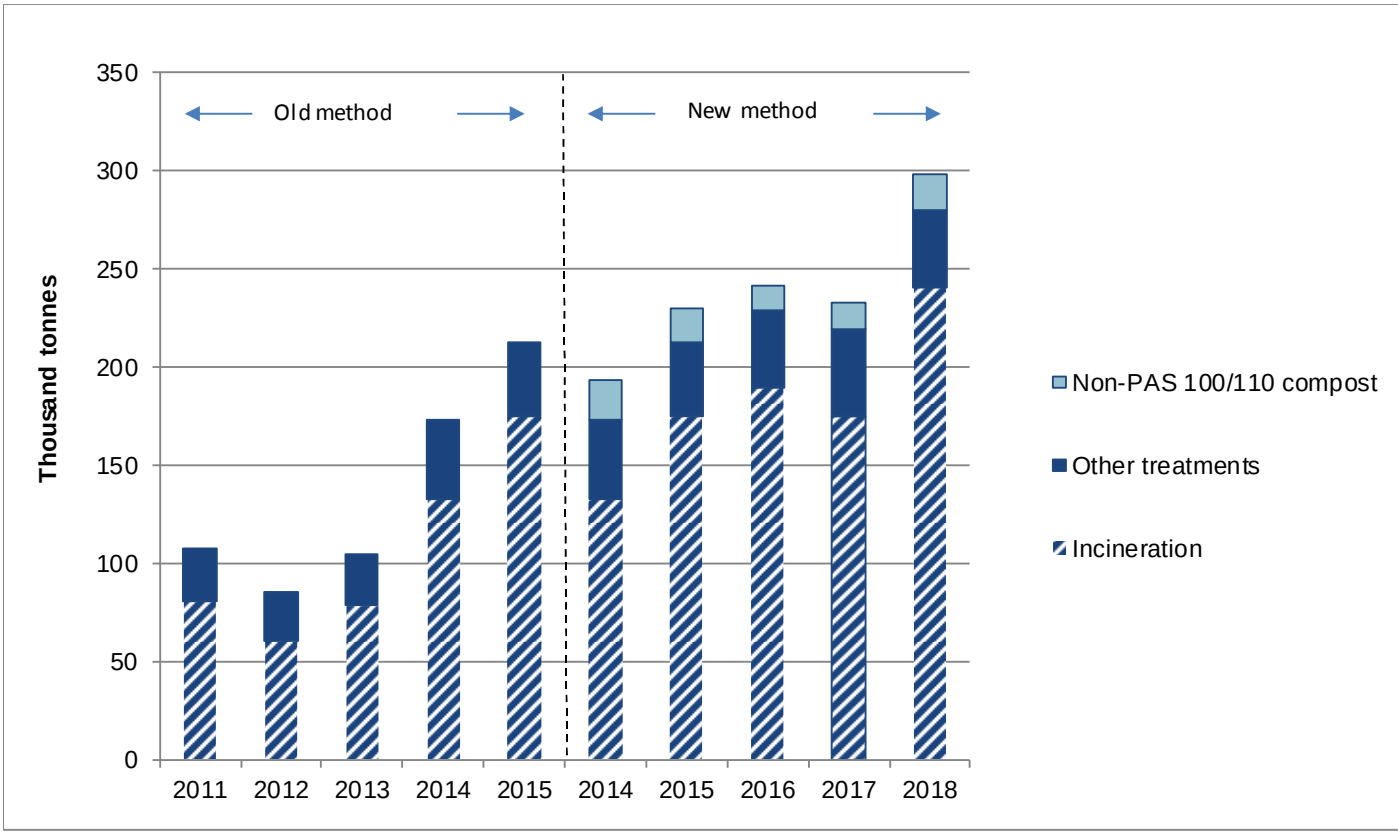



**Table 9. Breakdown of Scottish household waste that is not recycled or landfilled 2011-2018 (tonnes)**

| Year and method | Incineration | Other treatments | Non-PAS 100/110 compost | Total |
|---|---|---|---|---|
| **2011 - OLD METHOD** | 80,616 | 27,215 | 0 | 107,831 |
| **2012 - OLD METHOD** | 60,452 | 25,302 | 0 | 85,754 |
| **2013 - OLD METHOD** | 78,257 | 26,256 | 0 | 104,512 |
| **2014 - OLD METHOD** | 132,881 | 40,552 | 0 | 173,433 |
| **2015 - OLD METHOD** | 174,594 | 38,144 | 0 | 212,737 |
| **2014** | 132,881 | 40,552 | 19,713 | 193,146 |
| **2015** | 174,594 | 38,144 | 16,785 | 229,522 |
| **2016** | 189,417 | 39,366 | 13,002 | 241,785 |
| **2017** | 175,296 | 44,378 | 12,864 | 232,538 |
| **2018** | 240,935 | 39,437 | 17,984 | 298,356 |

**Figure 9. Scottish household waste diverted from landfill through incineration broken down by waste category 2011-2018**

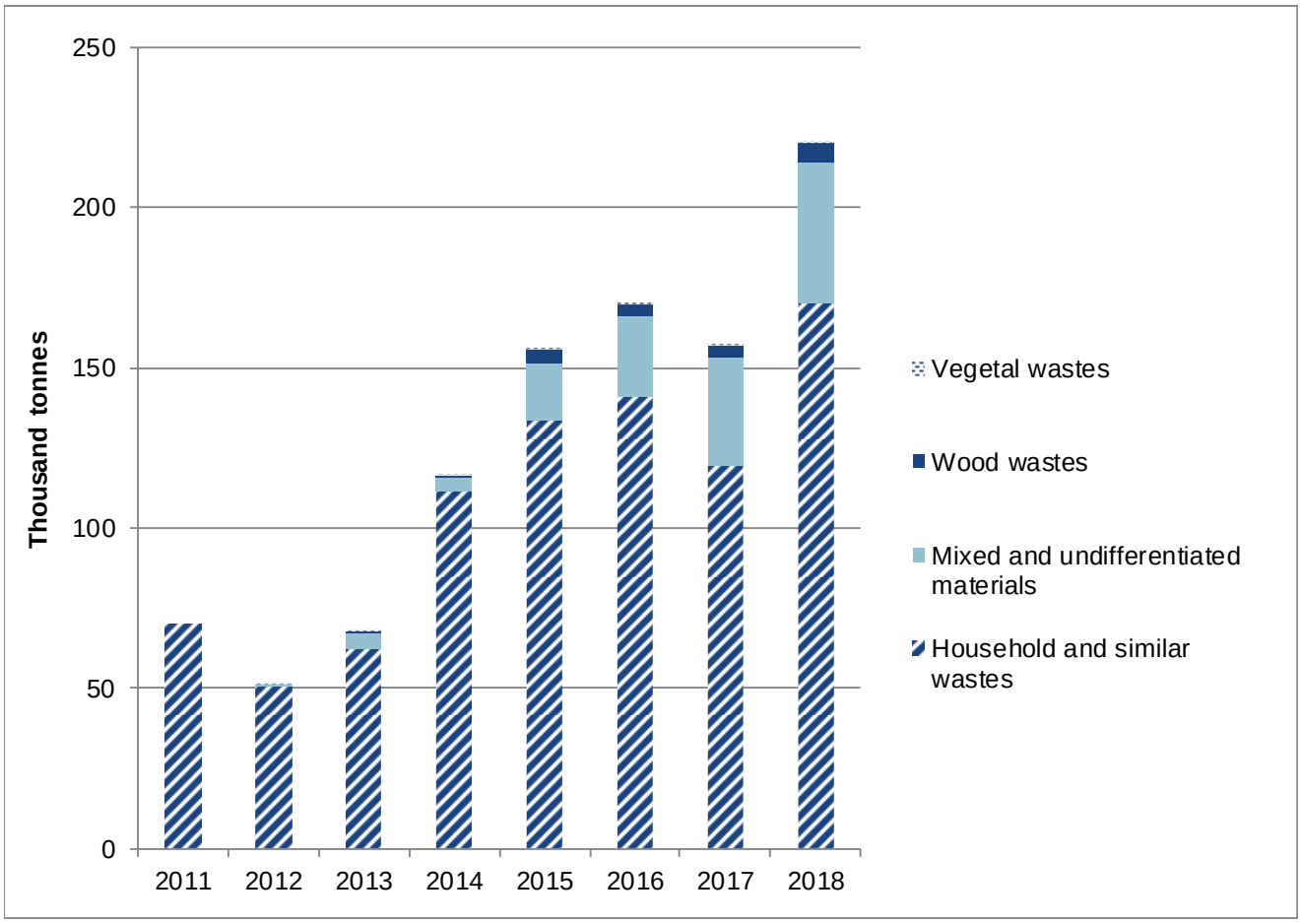



**Table 10. Scottish household waste diverted from landfill through incineration broken down by waste category 2011-2018**

| Year | Household and similar wastes | Mixed and undifferentiated materials | Wood wastes | Vegetal wastes | Other | Total |
|---|---|---|---|---|---|---|
| **2011** | 70,134 | 0 | 0 | 0 | 0 | 70,134 |
| **2012** | 50,541 | 429 | 0 | 502 | 0 | 51,473 |
| **2013** | 62,298 | 4,621 | 694 | 898 | 0 | 68,510 |
| **2014** | 111,587 | 4,131 | 534 | 496 | 1,930 | 118,678 |
| **2015** | 133,418 | 17,803 | 4,514 | 406 | 948 | 157,090 |
| **2016** | 140,699 | 25,198 | 4,094 | 515 | 95 | 170,601 |
| **2017** | 119,335 | 33,980 | 3,476 | 660 | 2,819 | 160,271 |
| **2018** | 170,008 | 44,019 | 6,005 | 525 | 235 | 220,792 |

**Waste Landfilled**

- The amount of household waste landfilled in 2018 was 1.03 million tonnes, a decrease of 75,491 tonnes (7%) from 2017, and a decrease of 422,322 tonnes (29%) since 2011. This is the seventh consecutive decrease in household waste landfilled since 2011. This decrease is due to in part less waste generated and partly more waste being diverted from landfill to incineration.

- For 2018, household waste landfilled as a percentage of waste generated was 42.9%, a decrease of 2.1 percentage points from 2017 and a decrease of 12.9 percentage points from 2011.

- In 2018, 94% (0.97 million tonnes) of the total household waste landfilled comprised Household and similar wastes (see Figure 10 below).

- Over one quarter (30%, 300,735 tonnes) of the total household waste landfilled first passed through another waste management facility (data not shown). This included any reject wastes from mixed waste that was sent to waste sorting facilities for segregation prior to recycling, and it also included combustion waste outputs from incineration facilities.

**Figure 10. Scottish household waste landfilled by waste category 2011-2018**

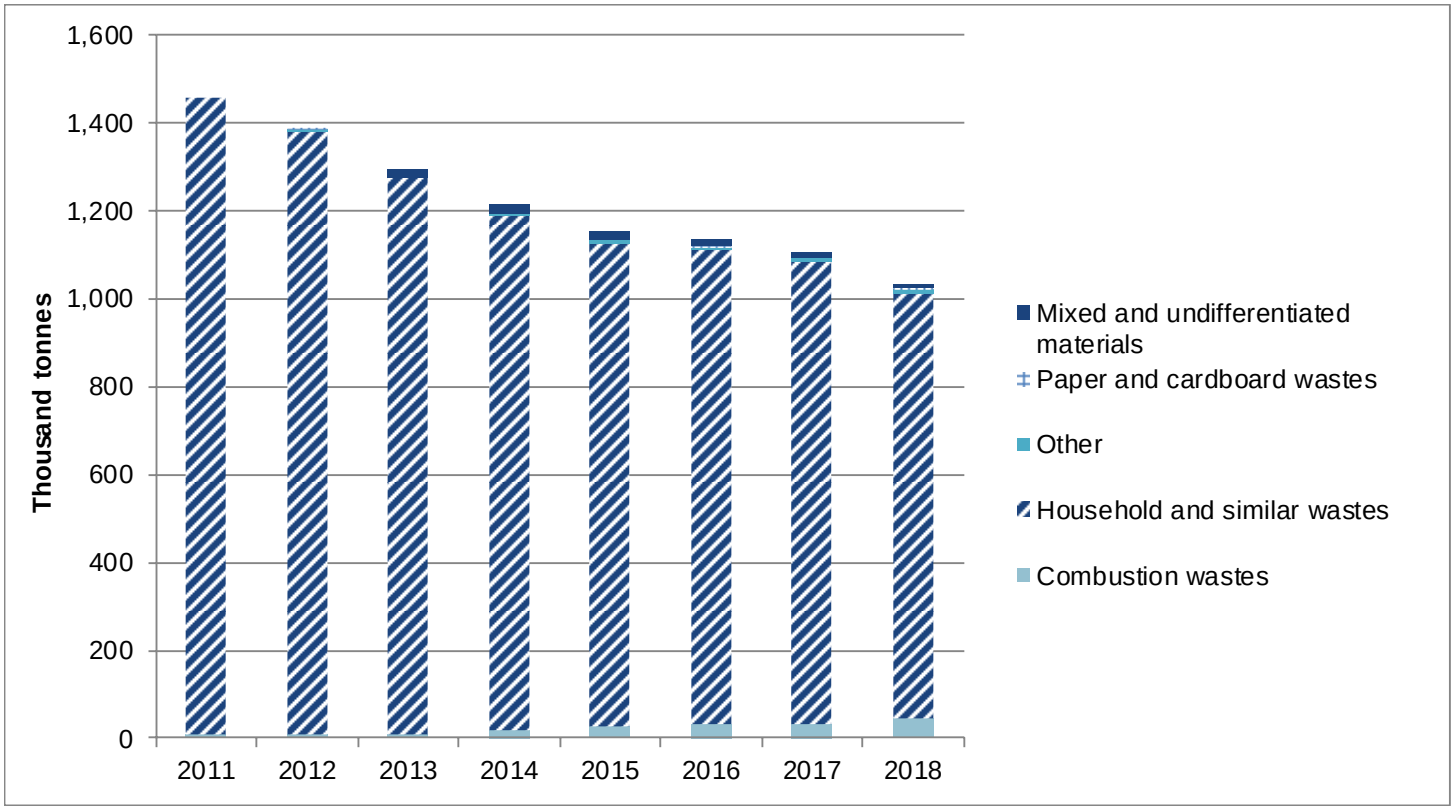


**Table 11. Scottish household waste landfilled by waste category 2011-2018 (tonnes)**

| Year | Household and similar wastes | Combustion wastes | Mixed and undifferentiated materials | Paper and cardboard wastes | Other | Total |
|---|---|---|---|---|---|---|
| **2011** | 1,443,265 | 10,524 | 0 | 0 | 0 | 1,453,789 |
| **2012** | 1,372,426 | 8,050 | 0 | 8 | 1,669 | 1,382,153 |
| **2013** | 1,264,024 | 8,276 | 15,256 | 37 | 3,236 | 1,290,829 |
| **2014** | 1,168,571 | 19,596 | 18,905 | 119 | 5,288 | 1,212,479 |
| **2015** | 1,098,473 | 27,324 | 17,470 | 283 | 6,987 | 1,150,537 |
| **2016** | 1,076,562 | 31,956 | 14,630 | 663 | 7,996 | 1,131,806 |
| **2017** | 1,050,454 | 31,882 | 14,756 | 1,155 | 8,712 | 1,106,959 |
| **2018** | 968,043 | 43,863 | 8,035 | 4,962 | 6,565 | 1,031,467 |

## Carbon impacts of Scottish household waste

- The whole of life carbon impact of household waste generated and managed in 2018 was 5.76 $TCO_2e$. This was a decrease of 104,228 $TCO_2e$ (2%) from 2017, and a decrease of 1,007,754 $TCO_2e$ (15%) since 2011 (see Figure 11 below).

- The amount of waste generated by Scottish households was 8% below 2011 levels (see Page 4). In contrast, the carbon impact of Scottish household waste generated and managed in 2018 was 15% (1,007,754 $TCO_2e$) below the 2011 level.

- The lifecycle impact of a tonne of household waste ($TCO_2e$/tonnes of waste) has been steadily declining since 2011, with an 8% decrease from 2011 to 2018. This was largely a result of improved recycling rates, particularly for high impact waste materials, as well as reduction in waste generated and reduced landfilling of biodegradable waste.

**Figure 11. Carbon impact of Scottish waste generated and managed 2011-2018 (TCO2e)**

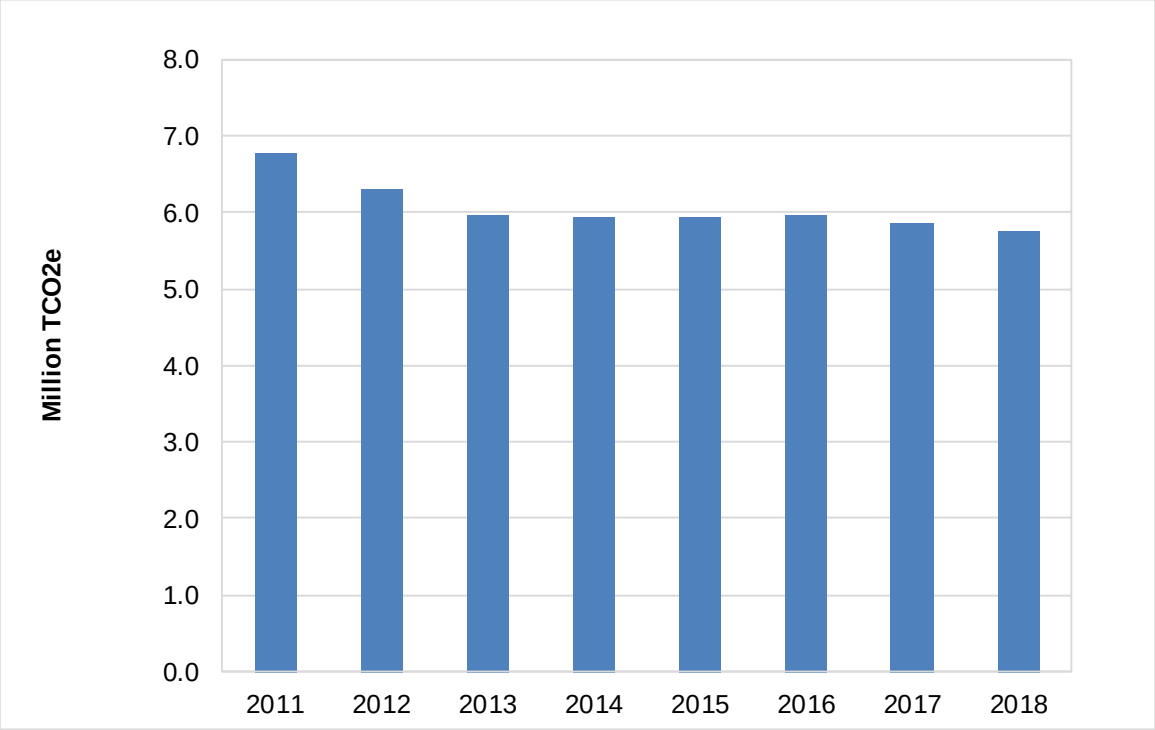



**Table 12. Carbon impact of Scottish waste generated and managed 2011-2018 (TCO2e)**

| Year | TCO2e |
|---|---|
| **2011** | 6,767,740 |
| **2012** | 6,304,982 |
| **2013** | 5,976,790 |
| **2014** | 5,946,619 |
| **2015** | 5,937,542 |
| **2016** | 5,971,329 |
| **2017** | 5,864,215 |
| **2018** | 5,759,986 |

## DATA USES, FEEDBACK, REVISIONS POLICY, METHODOLOGY, GLOSSARY OF TERMS AND MEASURES, AND REFERENCES

### User Statement

Data on Scottish household waste generation and management are collected to support policy development and monitor policy effectiveness, particularly the commitments in Making Things Last - A Circular Economy Strategy for Scotland. The data are also used to meet legislative reporting targets on recycling as set out in the Waste Framework Directive (2008/98/EC), and in the Commission Decision establishing rules and calculation methods for verifying compliance with the targets set in the Waste Framework Directive (2011/753/EU) and used to fulfil the reporting requirements of the Waste Statistics Regulation (2002/2150/EC). The data are also used extensively by local and central government, the waste industry, researchers and the general public.

### Feedback

We welcome feedback on the data from all users including how and why the data are used. This helps us to understand the value of the statistics to external users. Please see our contact details at the bottom of the first page of this notice or e-mail: WasteData.Flow@sepa.org.uk.

### Revisions Policy

SEPA will provide information about any revisions made to published information in this statistics release and the associated datasets. 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 official release.

Corrections to 2017 local authority data since the last statistical publication in September 2018 are shown in Table 13 below. These corrections were published simultaneous with the 2018 dataset in September 2019.

The carbon metric method has been revised, resulting in revised data for $TCO_2e$ emissions from waste (see Table 14 below). The revised methodology is for estimating the waste composition of residual waste (Household and similar wastes). Previously, the food waste content of residual waste was assumed constant and therefore unaffected by an increase in separately collected food waste, resulting in an implied increase in total household food waste over time. In the new method, total per capita food waste in source segregated and residual waste is now assumed constant, so any change in separately collected food waste tonnage will result in an equal and opposite change in residual food waste. SEPA, Zero Waste Scotland and the Scottish Government are reviewing the frequency of waste composition studies to better understand these changes in future.

## Table 13. Revisions to 2017 Scottish household waste data[1]

| Local Authority | Generated (tonnes) | | Recycled (tonnes) | | Percentage Recycled (%) | | Other diversion from landfill* (tonnes) | | Percentage Other diversion from Landfill (%) | | Landfilled (tonnes) | | Percentage Landfilled (%) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Original | Revised | Original | Revised | Original | Revised | Original | Revised | Original | Revised | Original | Revised | Original | Revised |
| Aberdeen City | 87,787 | 87,786 | 38,568 | 38,568 | *43.9* | *43.9* | 17,594 | 17,594 | *20.0* | *20.0* | 31,624 | 31,624 | *36.0* | *36.0* |
| Aberdeenshire | 127,632 | 127,632 | 55,714 | 55,714 | 43.7 | *43.7* | 1,997 | 1,997 | 1.6 | *1.6* | 69,921 | 69,921 | 54.8 | *54.8* |
| Angus | 56,278 | 56,278 | 31,072 | 31,072 | 55.2 | *55.2* | 11,840 | 11,840 | 21.0 | *21.0* | 13,367 | 13,367 | 23.8 | *23.8* |
| Argyll and Bute | 50,437 | 50,437 | 19,536 | 19,536 | 38.7 | *38.7* | 7,323 | 7,323 | 14.5 | *14.5* | 23,578 | 23,578 | 46.7 | *46.7* |
| City of Edinburgh | 200,720 | 200,720 | 82,277 | 82,277 | 41.0 | *41.0* | 5,206 | 5,206 | 2.6 | *2.6* | 113,237 | 113,237 | 56.4 | *56.4* |
| Clackmannanshire | 27,201 | 27,201 | 16,196 | 16,196 | 59.5 | *59.5* | 2,867 | 2,867 | 10.5 | *10.5* | 8,138 | 8,138 | 29.9 | *29.9* |
| Dumfries and Galloway | 76,289 | 76,289 | 21,245 | 21,245 | 27.8 | *27.8* | 23,318 | 23,318 | 30.6 | *30.6* | 31,725 | 31,725 | 41.6 | *41.6* |
| Dundee City | 64,297 | 64,347 | 22,844 | 22,844 | 35.5 | *35.5* | 37,486 | 37,486 | 58.3 | *58.3* | 4,017 | 4,017 | 6.2 | *6.2* |
| East Ayrshire | 55,842 | 55,842 | 29,547 | 29,547 | 52.9 | *52.9* | 5,353 | 5,353 | 9.6 | *9.6* | 20,941 | 20,941 | 37.5 | *37.5* |
| East Dunbartonshire | 56,445 | 56,445 | 27,043 | 27,043 | 47.9 | *47.9* | 6,295 | 6,295 | 11.2 | *11.2* | 23,107 | 23,107 | 40.9 | *40.9* |
| East Lothian | 50,612 | 50,612 | 26,885 | 26,885 | 53.1 | *53.1* | 227 | 227 | 0.4 | *0.4* | 23,499 | 23,499 | 46.4 | *46.4* |
| East Renfrewshire | 47,564 | 47,564 | 31,937 | 31,937 | 67.1 | *67.1* | 1,480 | 1,480 | 3.1 | *3.1* | 14,146 | 14,146 | 29.7 | *29.7* |
| Falkirk | 74,651 | 74,651 | 41,728 | 41,728 | 55.9 | *55.9* | 8,504 | 8,504 | 11.4 | *11.4* | 24,419 | 24,419 | 32.7 | *32.7* |
| Fife | 178,478 | 178,478 | 97,546 | 97,546 | 54.7 | *54.7* | 12,146 | 12,146 | 6.8 | *6.8* | 68,786 | 68,786 | 38.5 | *38.5* |
| Glasgow City | 224,525 | 224,524 | 59,876 | 59,876 | 26.7 | *26.7* | 13,706 | 13,706 | 6.1 | *6.1* | 150,943 | 150,943 | 67.2 | *67.2* |
| Highland | 130,190 | 130,190 | 56,704 | 56,704 | 43.6 | *43.6* | 1,493 | 1,493 | 1.1 | *1.1* | 71,966 | 71,966 | 55.3 | *55.3* |
| Inverclyde | 27,565 | 27,565 | 15,771 | 15,771 | 57.2 | *57.2* | 1,528 | 1,528 | 5.5 | *5.5* | 10,265 | 10,265 | 37.2 | *37.2* |
| Midlothian | 42,725 | 42,725 | 22,049 | 22,049 | 51.6 | *51.6* | 1,819 | 1,819 | 4.3 | *4.3* | 18,857 | 18,857 | 44.1 | *44.1* |
| Moray | 51,090 | 51,090 | 29,517 | 29,517 | 57.8 | *57.8* | 0 | 0 | 0.0 | *0.0* | 21,573 | 21,573 | 42.2 | *42.2* |
| Na h-Eileanan Siar | 14,453 | 14,453 | 3,461 | 3,461 | 23.9 | *23.9* | 1,639 | 1,639 | 11.3 | *11.3* | 9,353 | 9,353 | 64.7 | *64.7* |
| North Ayrshire | 62,954 | 62,954 | 35,125 | 35,125 | 55.8 | *55.8* | 1,778 | 1,778 | 2.8 | *2.8* | 26,052 | 26,052 | 41.4 | *41.4* |
| North Lanarkshire | 156,813 | 156,813 | 62,037 | 62,037 | 39.6 | *39.6* | 7,765 | 7,765 | 5.0 | *5.0* | 87,011 | 87,011 | 55.5 | *55.5* |
| Orkney Islands | 10,798 | 10,798 | 1,980 | 1,980 | 18.3 | *18.3* | 4,855 | 4,855 | 45.0 | *45.0* | 3,325 | 3,325 | 30.8 | *30.8* |
| Perth and Kinross | 74,789 | 74,789 | 41,578 | 41,578 | 55.6 | *55.6* | 4,715 | 4,715 | 6.3 | *6.3* | 28,496 | 28,496 | 38.1 | *38.1* |
| Renfrewshire | 83,526 | 83,526 | 39,923 | 39,923 | 47.8 | *47.8* | 19,871 | 19,871 | 23.8 | *23.8* | 23,641 | 23,641 | 28.3 | *28.3* |
| Scottish Borders | 53,471 | 53,471 | 21,324 | 21,324 | 39.9 | *39.9* | 1,555 | 1,555 | 2.9 | *2.9* | 30,593 | 30,593 | 57.2 | *57.2* |
| Shetland Islands | 9,754 | 9,754 | 778 | 778 | 8.0 | *8.0* | 6,798 | 6,798 | 69.7 | *69.7* | 2,178 | 2,178 | 22.3 | *22.3* |
| South Ayrshire | 56,772 | 56,772 | 31,349 | 29,794 | 55.2 | *52.5* | 5,295 | 6,850 | 9.3 | *12.1* | 20,128 | 20,128 | 35.5 | *35.5* |
| South Lanarkshire | 151,740 | 151,740 | 71,753 | 71,753 | 47.3 | *47.3* | 0 | 0 | 0.0 | *0.0* | 79,987 | 79,987 | 52.7 | *52.7* |
| Stirling | 40,774 | 40,774 | 22,470 | 22,470 | 55.1 | *55.1* | 6,187 | 6,187 | 15.2 | *15.2* | 12,117 | 12,117 | 29.7 | *29.7* |
| West Dunbartonshire | 43,551 | 43,551 | 20,735 | 20,735 | 47.6 | *47.6* | 3,654 | 3,654 | 8.4 | *8.4* | 19,162 | 19,162 | 44.0 | *44.0* |
| West Lothian | 71,051 | 71,051 | 43,556 | 43,556 | *61.3* | *61.3* | 6,688 | 6,688 | *9.4* | *9.4* | 20,807 | 20,807 | *29.3* | *29.3* |
| **Total Scotland** | **2,460,772** | **2,460,820** | **1,122,124** | **1,120,568** | ***45.6*** | ***45.5*** | **230,983** | **232,538** | ***9.4*** | ***9.4*** | **1,106,959** | **1,106,959** | ***45.0*** | ***45.0*** |

1. Cells shaded in grey represent revisions amounting to greater than 50 tonnes or greater than 0.1 percentage points

## Table 14. Revisions to 2017 Scottish household waste carbon metric data[1]

| Local Authority | TCO2e | |
|---|---|---|
| | Original | Revised |
| Aberdeen City | 198,580 | 198,458 |
| Aberdeenshire | 325,283 | 324,744 |
| Angus | 115,900 | 115,851 |
| Argyll and Bute | 127,000 | 126,817 |
| City of Edinburgh | 507,553 | 506,754 |
| Clackmannanshire | 55,349 | 55,303 |
| Dumfries and Galloway | 220,022 | 219,796 |
| Dundee City | 154,653 | 155,826 |
| East Ayrshire | 119,536 | 121,303 |
| East Dunbartonshire | 130,755 | 130,602 |
| East Lothian | 112,099 | 111,918 |
| East Renfrewshire | 95,976 | 95,963 |
| Falkirk | 149,870 | 149,771 |
| Fife | 349,263 | 348,828 |
| Glasgow City | 680,071 | 678,903 |
| Highland | 321,198 | 320,644 |
| Inverclyde | 56,720 | 56,822 |
| Midlothian | 98,306 | 98,178 |
| Moray | 97,536 | 97,368 |
| Na h-Eileanan Siar | 38,652 | 38,582 |
| North Ayrshire | 137,512 | 138,758 |
| North Lanarkshire | 406,737 | 409,845 |
| Orkney Islands | 29,073 | 29,076 |
| Perth and Kinross | 141,124 | 140,920 |
| Renfrewshire | 195,536 | 195,417 |
| Scottish Borders | 134,667 | 134,429 |
| Shetland Islands | 31,975 | 32,007 |
| South Ayrshire | 126,084 | 126,039 |
| South Lanarkshire | 370,821 | 370,202 |
| Stirling | 84,605 | 84,556 |
| West Dunbartonshire | 104,858 | 104,712 |
| West Lothian | 145,935 | 145,822 |
| **Total Scotland** | **5,863,249** | **5,864,215** |

1. Cells shaded in grey represent revisions amounting to greater than 50 $TCO_2e$

## Methodology

Data was submitted by all 32 Scottish local authorities using the web-based reporting tool WasteDataFlow.

From 2014, composted wastes that did not reach the quality standards set by PAS 100/110 were accounted for as other wastes diverted from landfill and not as wastes composted, except where waste was processed at a new composting or anaerobic digestion site and the site indicated they had applied for and were working toward PAS compliance, in which case a 12-month grace period was applied for the purpose of including of wastes composted in household recycling data. In 2018 there were no new sites that met this criterion.

Further details on the methodology used to produce the figures are provided in the "Household waste" section of the annual Waste Data Quality Reports on SEPA's web site. Please note that household waste figures published by individual UK countries may be based on alternative calculation methodologies and as such the figures may not be directly comparable.

## Release

The release of this publication is in line with release practices specified in the Code of Practice for Official Statistics. The statistics are released at the standard time of 9.30 am on a preannounced weekday date. Pre-release access to the statistics in their final form is provided to Scottish ministers and those on a list of named officials advising them 5 working days before the public release. This is to ensure that at the time of release Scottish ministers are able to comment publicly on the statistics based on a correct understanding of them.

## Glossary of terms

**BSI PAS 100 / 110** – a national compost/digestate benchmark that specifies the minimum requirements for the process of composting/anaerobic digestion, the selection of material from which compost/digestate is made, and standards for the compost/digestate product quality. PAS 100 is applicable to composting facilities while PAS 110 is applicable to anaerobic digestion facilities. The use of this standard to improve the quality of compost/digestate in Scotland became Scottish Government policy in 2011, with 2014 being the first year it was applied to the household official statistics.

**Carbon Impact** – a measure of the whole-life carbon impacts of waste, from resource extraction and manufacturing emissions, right through to waste management emissions, regardless of where in the world these impacts occur. The carbon impact of waste was developed by Zero Waste Scotland (https://www.zerowastescotland.org.uk/content/what-carbon-metric).

**Compost like output (CLO)** – partially digested waste outputs generated from the biological treatment of residual municipal solid wastes at a process that involves both mechanical and biological treatment. Outputs typically do not conform to composting standards such as PAS 100/110.

**Household waste** – waste generated by households (see full definition in Paragraph 1.2 of the *Zero Waste Plan - guidance for local authorities* on the WasteDataFlow web site).

**Other diversion from landfill** – describes the fate of waste material not recycled or landfilled. It includes:

- household waste treated by incineration, including any incinerator bottom ash and metals from bottom ash that are diverted from landfill,
- weight loss that occurs during the composting/digestion of waste to PAS 100/110 and non PAS 100/110 compost/digestate where the output is landfilled,
- CLO that is not landfilled,
- weight loss that occurs during mechanical and biological treatment processes (e.g. production of CLO and RDF),
- from 2014, any waste composted/digested that has not reached the quality standards set by PAS 100/110 and is not landfilled.

**Recycling rate** – waste recycled as a percentage of all waste generated. Note that total waste generated does not equal total waste managed due to stockpiled waste, which is counted in the generation figures and will be included in the managed figures in the year it is sent to final management.

**Refuse derived fuel (RDF)** – waste separated from residual municipal solid waste with a calorific value suitable for use as a fuel in combustion processes.

**$TCO_2e$** – tonnes of carbon dioxide equivalent, which is a measure that allows the comparison of greenhouse gases relative to one unit of $CO_2$.

**Waste composted** - is waste recycled by biological treatment through composting at a composting plant or through digestion at an anaerobic digestion facility.

**Waste generated** - is waste collected by or on behalf of local authorities that is managed within the relevant reporting year. This might include treated waste stockpiled prior to final management.

**Waste landfilled** – includes all household waste that is disposed of at a landfill site instead of being recycled or diverted from landfill through other methods. It also includes incinerator ash that is landfilled, plus any recycling and composting rejects that occur during collection, sorting or further treatment that go to landfill.

**Waste managed** - includes all wastes recycled, diverted from landfill and landfilled within the relevant reporting year. This includes stockpiled waste from a previous year sent to final management but excludes treated waste stockpiled prior to final management.

**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 facility. As such it excludes any recycling rejects that occur during collection, sorting or further treatment. From 2015, 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.