Scottish Household waste – summary data – 2021

This release shows the 2021 calendar year summary of household waste 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 – 2021 calendar year

- The total amount of household waste generated in Scotland was 2.48 million tonnes (Table 1) in 2021, an increase of 55,000 tonnes (2.3%) from 2020.
- For 2021, the Scottish household waste recycling rate[1] was 42.7% an increase of 0.7 percentage points from the 42.0% (Table 1) rate achieved in 2020. The amount of household waste recycled between in 2020 and 2021 increased by 41,000 tonnes (4.0%) to 1.06 million tonnes.
- The increase in waste recycled between 2020 and 2021 is likely due to a bounce back from the impact of the COVID-19 lockdown and other restrictions in 2020, in which the amount of waste recycled and the waste recycling rate was the lowest recorded since 2013.
- The amount of Scottish household waste landfilled in 2021 was 664,000 tonnes, an increase of 4,000 tonnes (0.6%) from 2020, however a reduction of 790,000 tonnes (54.4%) since 2011. This is the first time in ten years that there has not been a decrease in household waste landfilled. There was, however, a decrease in the landfill rate from 2020 (27.2%) and 2021 (26.7%) of 0.4 percentage points.
- For 2021, the total amount of Scottish household waste managed by other diversion from landfill was 758,000 tonnes, an increase of 10,000 tonnes (1.4%) from 2020. Most of the diverted waste in 2021 was managed by incineration (612,000 tonnes, 80.7%), which was also the case in 2020, although the proportion of the total was higher (81.9%) in 2020.
- The carbon impact of Scottish household waste generated and managed in 2021 was 5.9 million tonnes of carbon dioxide equivalent (TCO2e, Table 1), which is the equivalent to 1.08 TCO2e per person (Table 2). This was an increase of 53,000 TCO2e (0.9%) from 2020, however a reduction of 0.86 million TCO2e from 2011.

Summary data tables are also available to download in Excel format on SEPA's web site.

Enquiries on this publication to: SEPA Communications Department: media@sepa.org.uk

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

[1] Recycling rates refer to Scotland's national measure which differs from the Waste from households measure published in Defra's UK Statistics on Waste. For further information refer to the Methodology section on page 19.

information on the Official Statistics Code of Practice can be found here: https://code.statisticsauthority.gov.uk/the-code/

Lead statistician: Peter Ferrett

Table 1. Scottish Household waste generated and managed in 2021 - summary data[2]

Local Authority	Generated (tonnes)	Recycled (tonnes)	Recycled (%)	Other diversion from landfill (tonnes)	Other diversion from Landfill (%)	Landfilled (tonnes)	Landfilled (%)	Carbon Impact (TCO2e)	2020 Recycled (%)
Aberdeen City	93,747	42,574	45.4	41,799	44.6	9,376	10.0	224,549	45.6
Aberdeenshire	117,505	48,268	41.1	2,946	2.5	66,292	56.4	316,787	40.8
Angus	54,058	29,592	54.7	22,803	42.2	1,661	3.1	105,955	58.0
Argyll and Bute	49,042	19,285	39.3	6,806	13.9	22,950	46.8	119,612	31.2
City of Edinburgh	207,205	79,270	38.3	120,927	58.4	7,006	3.4	496,442	37.0
Clackmannanshire	23,777	11,880	50.0	6	0.0	11,891	50.0	54,991	48.7
Dumfries and Galloway	65,775	26,473	40.2	32,090	48.8	7,212	11.0	174,785	30.1
Dundee City	65,011	21,224	32.6	41,337	63.6	2,452	3.8	150,179	34.7
East Ayrshire	53,330	25,876	48.5	5,101	9.6	22,352	41.9	125,236	41.1
East Dunbartonshire	57,693	26,110	45.3	25,519	44.2	6,063	10.5	129,610	50.9
East Lothian	53,952	29,091	53.9	19,372	35.9	5,487	10.2	115,300	52.4
East Renfrewshire	40,574	23,573	58.1	16,015	39.5	985	2.4	82,061	56.6
Falkirk	75,818	36,258	47.8	3,976	5.2	35,583	46.9	171,527	51.2
Fife	166,981	72,787	43.6	14,651	8.8	79,543	47.6	390,154	43.7
Glasgow City	258,941	70,670	27.3	90,856	35.1	97,417	37.6	779,740	29.6
Highland	116,068	43,339	37.3	6,021	5.2	66,707	57.5	293,160	35.7
Inverclyde	26,632	12,905	48.5	2,651	10.0	10,822	40.6	59,684	37.1
Midlothian	43,837	20,761	47.4	17,651	40.3	5,428	12.4	101,518	47.3
Moray	42,539	22,211	52.2	0	0.0	20,329	47.8	89,111	54.9
Na h-Eileanan Siar	14,125	4,734	33.5	55	0.4	9,337	66.1	37,940	34.6
North Ayrshire	63,051	35,512	56.3	24,138	38.3	3,470	5.5	124,955	52.1
North Lanarkshire	161,069	69,610	43.2	72,273	44.9	19,190	11.9	359,363	39.4
Orkney Islands	9,360	2,215	23.7	4,603	49.2	1,956	20.9	24,662	25.9
Perth and Kinross	77,372	38,803	50.2	5,862	7.6	32,707	42.3	148,586	49.4
Renfrewshire	85,449	44,194	51.7	34,255	40.1	6,999	8.2	179,380	49.1
Scottish Borders	54,563	29,910	54.8	24,435	44.8	172	0.3	124,538	52.8
Shetland Islands	9,625	1,630	16.9	5,594	58.1	2,400	24.9	29,049	18.4
South Ayrshire	57,828	32,367	56.0	5,755	10.0	19,706	34.1	121,313	55.3
South Lanarkshire	164,764	66,492	40.4	60,608	36.8	37,663	22.9	373,975	40.5
Stirling	43,955	22,345	50.8	744	1.7	20,868	47.5	90,816	47.9
West Dunbartonshire	42,507	15,125	35.6	5,013	11.8	22,369	52.6	109,851	36.8
West Lothian	87,151	35,958	41.3	44,051	50.5	7,140	8.2	196,691	45.0
Total Scotland	2,483,304	1,061,042	42.7	757,913	30.5	663,533	26.7	5,901,520	42.0

[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 2021 - 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 (TCO2e per person)
Aberdeen City	0.41	0.19	0.18	0.04	0.99
Aberdeenshire	0.45	0.18	0.01	0.25	1.21
Angus	0.47	0.25	0.20	0.01	0.91
Argyll and Bute	0.57	0.22	0.08	0.27	1.39
City of Edinburgh	0.39	0.15	0.23	0.01	0.94
Clackmannanshire	0.46	0.23	0.00	0.23	1.07
Dumfries and Galloway	0.44	0.18	0.22	0.05	1.17
Dundee City	0.44	0.14	0.28	0.02	1.02
East Ayrshire	0.44	0.21	0.04	0.18	1.03
East Dunbartonshire	0.53	0.24	0.23	0.06	1.19
East Lothian	0.49	0.27	0.18	0.05	1.05
East Renfrewshire	0.42	0.24	0.17	0.01	0.85
Falkirk	0.47	0.23	0.02	0.22	1.07
Fife	0.45	0.19	0.04	0.21	1.04
Glasgow City	0.41	0.11	0.14	0.15	1.23
Highland	0.49	0.18	0.03	0.28	1.23
Inverclyde	0.35	0.17	0.03	0.14	0.78
Midlothian	0.46	0.22	0.19	0.06	1.07
Moray	0.44	0.23	0.00	0.21	0.92
Na h-Eileanan Siar	0.53	0.18	0.00	0.35	1.42
North Ayrshire	0.47	0.26	0.18	0.03	0.93
North Lanarkshire	0.47	0.20	0.21	0.06	1.05
Orkney Islands	0.42	0.10	0.20	0.09	1.09
Perth and Kinross	0.50	0.25	0.04	0.21	0.97
Renfrewshire	0.47	0.25	0.19	0.04	1.00
Scottish Borders	0.47	0.26	0.21	0.00	1.07
Shetland Islands	0.42	0.07	0.24	0.10	1.27
South Ayrshire	0.51	0.29	0.05	0.18	1.08
South Lanarkshire	0.51	0.21	0.19	0.12	1.16
Stirling	0.47	0.24	0.01	0.22	0.97
West Dunbartonshire	0.48	0.17	0.06	0.25	1.25
West Lothian	0.47	0.19	0.24	0.04	1.06
Total Scotland	**0.45**	**0.19**	**0.14**	**0.12**	**1.08**

[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. Population data is from the National Records of Scotland 2021 mid year population estimates.

Trends

- The total amount of household waste generated in Scotland in 2021 was 2.48 million tonnes, an increase of 55,000 tonnes (2.3%) from in 2020. This follows a 6,000 tonne (0.3%) increase between 2019 and in 2020. Overall there has been a general fluctuation of waste generated between 2.4 and 2.5 million tonnes since 2012 (see Figure 1 below).

Figure 1. Household waste generated in Scotland 2011 - 2021.

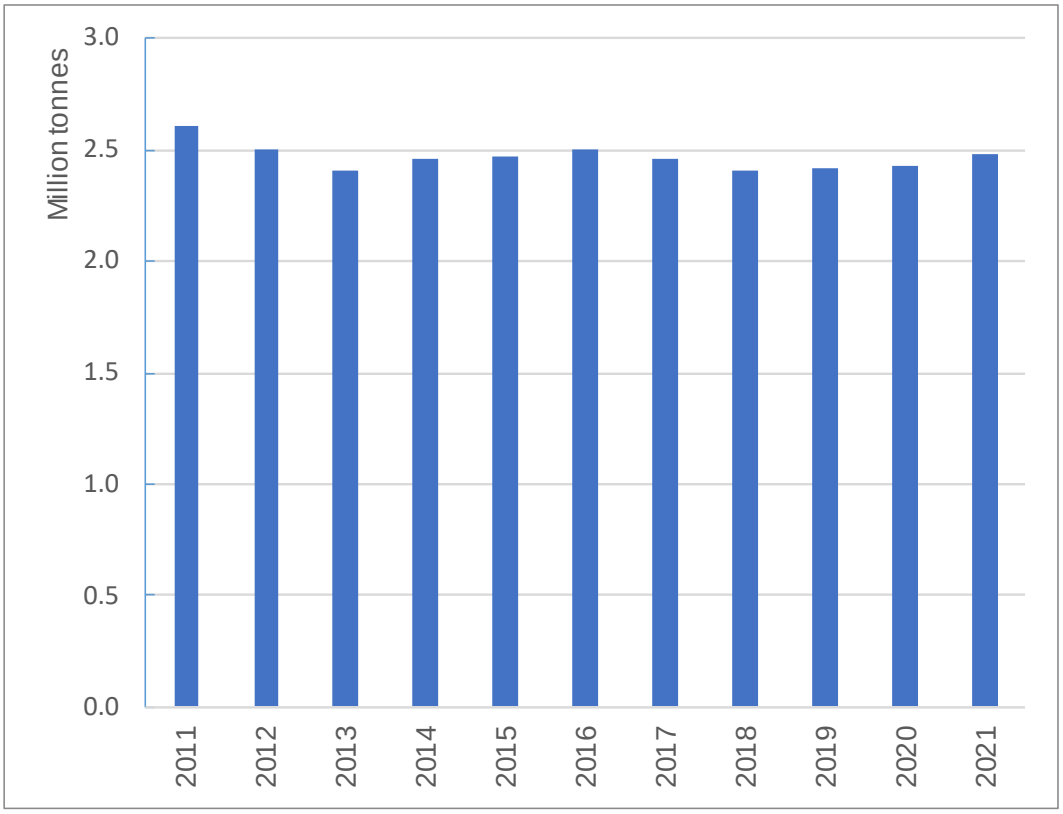


Table 3. Household waste generated in Scotland 2011 - 2021

Year	Waste generated (tonnes)
2011	2,606,759
2012	2,500,995
2013	2,412,651
2014	2,459,557
2015	2,468,777
2016	2,498,975
2017	2,460,830
2018	2,405,251
2019	2,421,797
2020	2,428,271
2021	2,483,304

- The amount of segregated recyclate collected for recycling via kerbside collections in 2021 was 721,000 tonnes, an increase of 5,400 tonnes (0.7%) from 2020. The increase in collection of recyclate via kerbside schemes has been trending upwards, with a 24.8% increase in collection of recylate since 2013[4] (see Figure 2 below).

- The percentage of recyclate collected via kerside schemes, as a total of all recyclate collected, decreased between 2020 and 2021 by 2.9 percentage points (see Figure 2 below). This was due to an increase in the amount of waste collected for recycling by other methods in 2021, such as household waste recycling centres, which were closed by many local authorities in 2020 due to COVID-19 restrictions and re-opened again in 2021.

Figure 2. Scottish segregated recyclate collected 2013 - 2021 (tonnes)

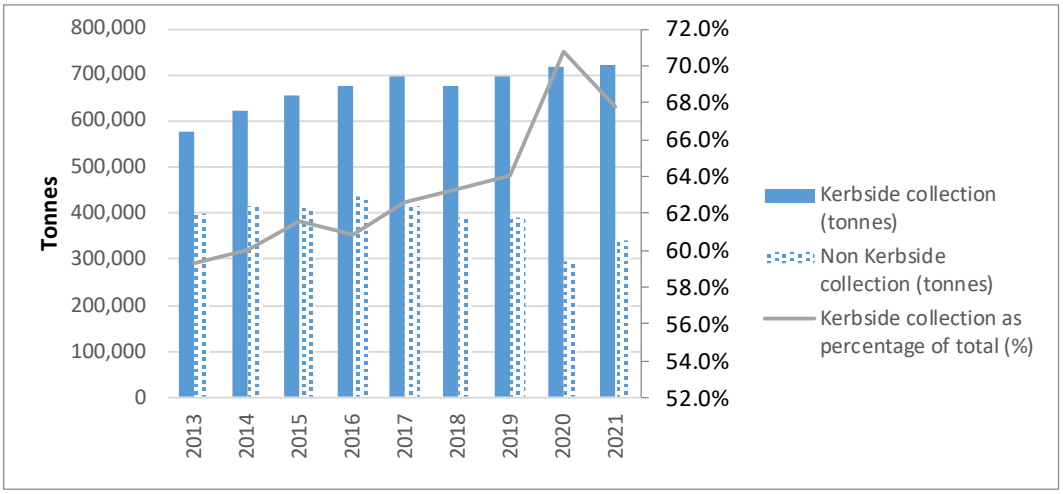


Table 4. Scottish segregated recyclate collected 2013 - 2021 (tonnes)

Year	Kerbside collection (tonnes)	Non Kerbside collection (tonnes)	Total (tonnes)	Kerbside collection as percentage of total (%)
2013	578,096	397,481	975,578	59.3%
2014	624,008	415,710	1,039,718	60.0%
2015	655,866	409,845	1,065,710	61.5%
2016	676,979	435,485	1,112,464	60.9%
2017	696,414	416,542	1,112,956	62.6%
2018	674,830	390,916	1,065,746	63.3%
2019	695,937	390,359	1,086,297	64.1%
2020	715,911	296,013	1,011,924	70.7%
2021	721,275	342,463	1,063,738	67.8%

[4]The time series commences with 2013, as the non-kerbside collection dataset was analysed using WasteDataFlow question 100, which was introduced in 2013.

- The change in kerbside collection between 2020 and 2021 was more pronounced for rural authorities[5] (an increase of 4,700 tonnes, 1.6%) compared to urban authorities (an increase of 600 tonnes, 0.1%, see Figure 3 below).

Figure 3. Scottish segregated recyclate collected 2011 - 2021 (tonnes)

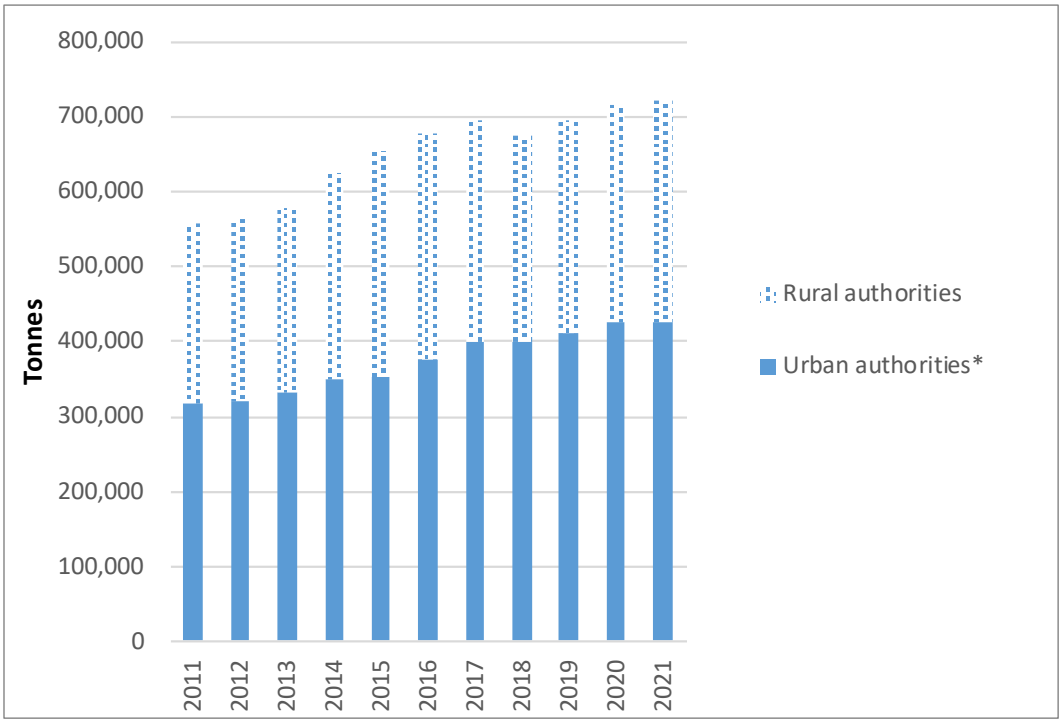
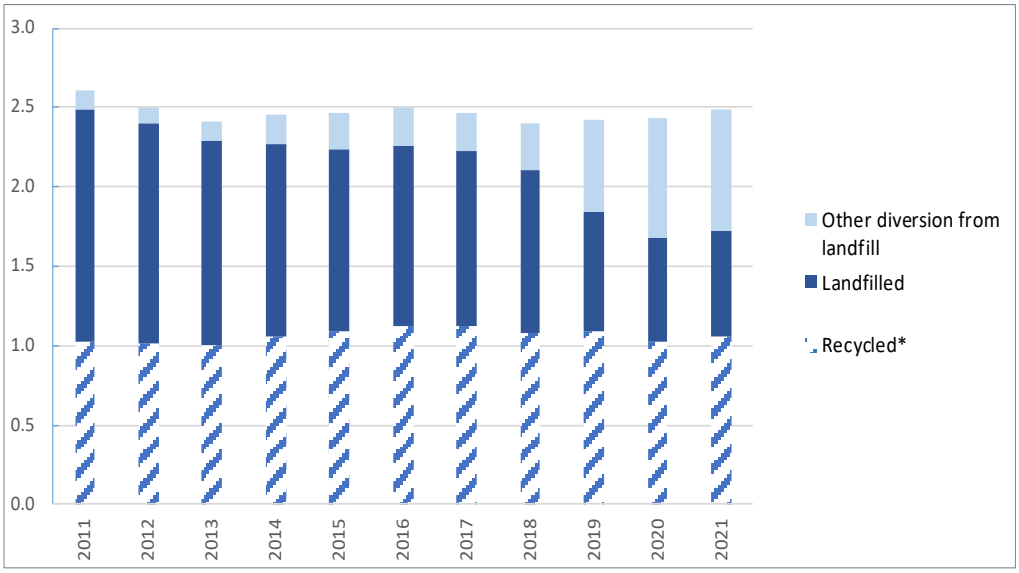


Table 5. Scottish segregated recyclate collected at the kerbside 2011 - 2021 by rurality[5] (tonnes)

Year	Urban authorities*	Rural authorities	Total
2011	317,141	241,294	**558,435**
2012	320,639	242,774	**563,413**
2013	332,139	245,958	**578,096**
2014	349,189	274,820	**624,008**
2015	353,069	302,797	**655,866**
2016	375,525	301,453	**676,979**
2017	399,300	297,114	**696,414**
2018	398,718	276,113	**674,830**
2019	410,790	285,147	**695,937**
2020	424,651	291,261	**715,911**
2021	425,275	296,000	**721,275**

[5] Urban authorities are defined as those with greater than 75% population residing in "Large Urban Areas" or "Other Urban Areas" as listed in the Scottish Government Urban Rural Classification 2016.

Figure 4. Household waste managed in Scotland 2011 - 2021



*The definition of recycling changed in 2014 to exclude non PAS compost. Recycling data for 2011 - 2013 has been modelled under the new definition to provide consistency for the time series

Table 6. Household waste managed in Scotland 2011-2021

Year	Recycled*	Landfilled	Other diversion from landfill	Total Managed
2011	1,029,744	1,453,789	123,100	2,606,633
2012	1,014,645	1,382,153	100,259	2,497,057
2013	1,002,260	1,290,828	120,462	2,413,550
2014	1,053,234	1,212,484	193,143	2,458,861
2015	1,088,425	1,150,533	229,519	2,468,477
2016	1,124,922	1,131,808	241,779	2,498,509
2017	1,120,559	1,106,963	232,537	2,460,059
2018	1,074,676	1,031,465	298,357	2,404,498
2019	1,086,268	758,139	576,791	2,421,198
2020	1,020,285	659,410	747,809	2,427,504
2021	1,061,042	663,533	757,913	2,482,488

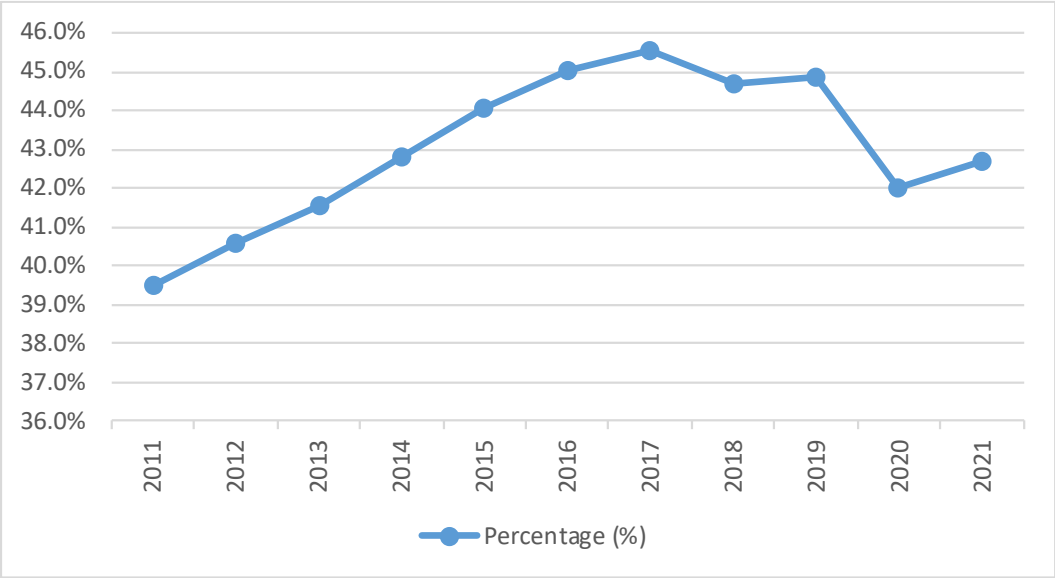
*The definition of recycling changed in 2014 to exclude non PAS compost. Recycling data for 2011 - 2013 has been modelled under the new definition to provide consistency for the time series

Waste Recycled

- Waste recycled includes waste reused or recycled and composted. A full description of recycling is given in the glossary.
- For 2021, the Scottish household waste recycling rate was 42.7% (see Figure 5 below), an increase of 0.7 percentage points from the 42.0% recycling rate achieved in in 2020, and an increase of 3.2 percentage points from the 39.5% achieved in 2011[6].

- For 2021, the total tonnage of Scottish household waste recycled was 1.06 million tonnes, an increase of 41,000 tonnes (4.0%) from 2020 and 31,000 tonnes (3.0%) greater than the 1.03 million tonnes of waste recycled in 2011[6].

Figure 5. Scottish household waste recycling rates 2011-2021[6]



Note: Recycled includes waste recycled or reused and waste composted.

Table 7. Scottish household waste recycling rates 2011-2021[6]

Year	Percentage (%)
2011	39.5%
2012	40.6%
2013	41.5%
2014	42.8%
2015	44.1%
2016	45.0%
2017	45.5%
2018	44.7%
2019	44.9%
2020	42.0%
2021	42.7%

- In 2021, of the 1.06 million tonnes of household waste recycled, the majority (677,000 tonnes, 63.8%) was recycled or reused, with household waste composted contributing the remaining 384,000 (36.2%) (see Figure 6 below).

[6] The definition of recycling changed in 2014 to exclude non PAS compost. Recycling data for 2011 - 2013 has been modelled under the new definition to provide consistency for the time series

Figure 6. Breakdown of Scottish household waste recycled 2011-2021

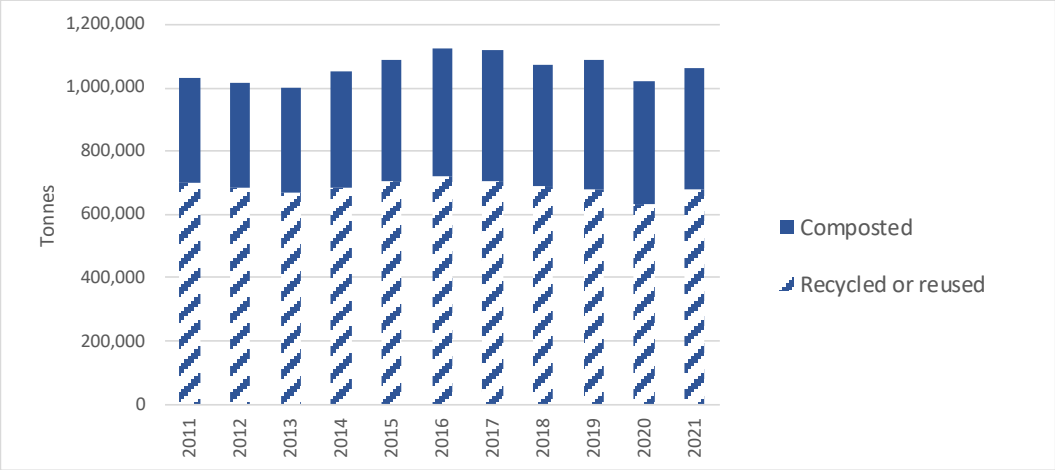


Table 8. Breakdown of Scottish household waste recycled 2011-2021

Year	Recycled or reused	Composted	Total
2011	697,904	331,840	**1,029,744**
2012	685,648	328,997	**1,014,645**
2013	669,774	332,486	**1,002,260**
2014	684,193	369,041	**1,053,234**
2015	703,151	385,274	**1,088,425**
2016	721,180	403,742	**1,124,922**
2017	705,359	415,200	**1,120,559**
2018	691,963	382,713	**1,074,676**
2019	681,698	404,570	**1,086,268**
2020	631,909	388,376	**1,020,285**
2021	677,434	383,608	**1,061,042**

Waste recycled or reused

- The 677,000 tonnes of Scottish household waste recycled or reused in 2021 was an increase of 46,000 tonnes (7.2%) compared with 2020 (see Figure 6 above). There was a 7.3% drop in Scottish household waste recycled or reused between 2019 and 2020, and that year was the lowest recorded since 2011. Most authorities have attributed this dip in 2020, and subsequent increase in 2021, to COVID-19 lockdown restrictions being imposed and then lifted. The amount of waste recycled or reused has been flat since 2011, sitting within a range of 632,000 tonnes (2020) to 721,000 tonnes (2016) during this period (see Figure 6 above).

- Of the seven material categories that comprised the highest amount of waste recycled or reused in 2021 (see Figure 7 below), Wood wastes showed the largest change compared with 2020 (increase of 10,000 tonnes, 14.7%) followed by Construction and soils waste (increase of 8,000 tonnes, 9.0%). The increase in the recycling or reuse of these two wastes in 2021 follows a 21.5% reduction for each in 2020. This decrease is likely due in part to a

reduction in the number and scale of home improvement projects, resulting from COVID-19 factors, such as lockdown and the inability to source raw materials. This is consistent with a reduction in the sale of ready-mixed concrete, which was down by 41% in Q2 2020 compared with Q2 2019, then recovered with an increase of 38% between Q2 2020 and Q2 2021. A similar pattern also exists for other building materials such as sand and gravel (data not shown)[7].

- The largest material category of Scottish household waste recycled or reused in 2021 was Paper and cardboard wastes (186,000 tonnes, 27.5% of all waste recycled or reused, see Table 7 below). While there was an increase of 2.2% for these materials recycled or reused between 2020 and 2021, there is a longer term downward trend of Paper and cardboard wastes recycled or reused, with a reduction of 54,000 tonnes (22.5%) from 2011.

- The WasteDataFlow categories that contribute to Paper and cardboard wastes recycled or reused, as depicted in Figure 8 below, indicates that the recycling or reuse of segregated paper waste has been in continual decline since 2013, while that of cardboard wastes, and mixed paper and cardboard wastes have remained constant or increased over time. This may be partly due to replacement of segregated paper collections with mixed paper and cardboard collections. The decrease in segregated paper recycled or reused is also likely to be partly due to a move away from print media to electronic media. Cardboard waste recycling or reuse has not decreased in the same scale as segregated paper wastes, which could be a result of increased packaging materials as consumer shopping habits move online.

[7] Monthly Statistics of Building Materials and Components, December 2021.

Figure 7. Scottish household waste recycled or reused by material 2011-2021

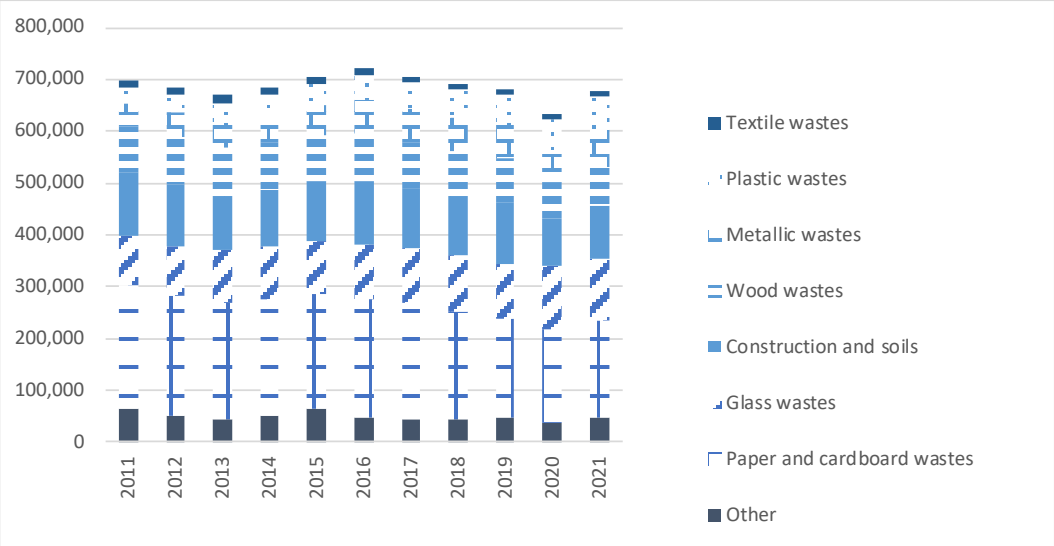
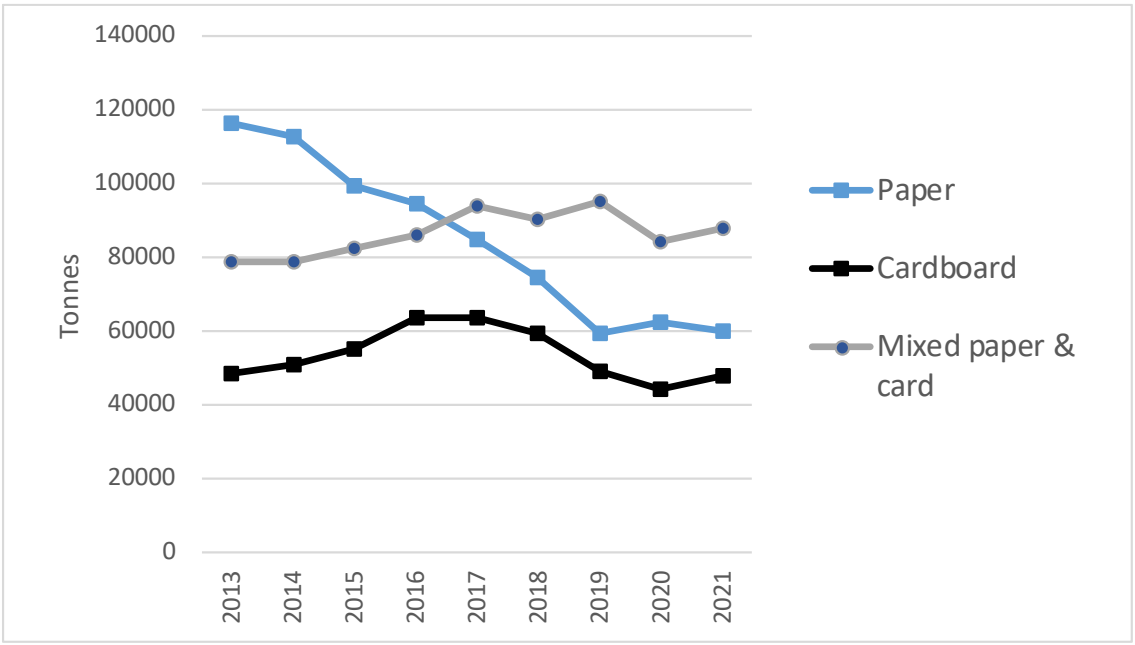


Table 9. Scottish Household waste recycled or reused by material 2011-– 2021 (tonnes)

Year	Paper and cardboard wastes	Glass wastes	Construction and soils	Wood wastes	Metallic wastes	Plastic wastes	Textile wastes	Other	Total
2011	240,346	94,903	124,335	89,002	43,257	29,299	14,589	62,173	**697,904**
2012	231,776	96,658	118,167	92,403	47,711	34,528	14,474	49,933	**685,648**
2013	227,902	99,972	102,125	96,828	48,031	38,098	15,014	41,804	**669,774**
2014	226,462	100,578	111,047	92,324	51,129	39,523	13,575	49,555	**684,193**
2015	222,402	102,032	114,904	89,213	58,116	41,286	12,202	62,996	**703,151**
2016	227,921	106,545	120,558	93,897	64,616	48,422	11,363	47,858	**721,180**
2017	225,494	104,678	115,343	89,422	65,047	51,834	10,695	42,846	**705,359**
2018	209,116	107,384	112,866	90,547	63,164	56,580	10,010	42,296	**691,963**
2019	192,564	106,638	119,090	83,230	67,876	57,378	9,854	45,068	**681,698**
2020	182,308	121,997	93,490	65,322	62,910	62,151	8,326	35,405	**631,909**
2021	186,369	120,341	101,862	74,926	70,386	64,141	11,190	48,219	**677,434**

Figure 8. Scottish Paper and cardboard wastes recycled or reused by WasteDataFlow categories (tonnes) 2013 – 2021



Notes:
Recycled includes waste recycled or reused and waste composted.
Paper includes the WasteDataFlow category of Books
Data series starts with 2013, which is the start for the data source of WasteDataFlow question 100

Waste Composted

- Waste composted is waste recycled by biological treatment through composting at a composting plant or through digestion at an anaerobic digestion facility.
- For 2021, the amount of Scottish household waste composted was 384,000 tonnes, a decrease of 5,000 tonnes (1.2%) from in 2020. This was an increase of 52,000 tonnes (15.6%) from 2011[8].
- In 2021, just under three-quarters of the household waste composted was vegetal wastes (73.4%) with animal and mixed food waste, and wood wastes making up the remainder (25.9% and 0.8% respectively, see Figure 9 below). These proportions were similar in 2020. In 2011, however, the percentage of vegetal waste was higher (94.6%) and the percentages of animal and mixed food waste and wood waste were lower (5.3% and 0.14% respectively). The increase in the proportion of animal and mixed food waste over time corresponds to the roll out of segregated food waste collections by urban local authorities[9].

[8] The definition of recycling changed in 2014 to exclude non PAS compost. Recycling data for 2011 - 2013 has been modelled under the new definition to provide consistency for the time series

[9] The Waste (Scotland) Regulations 2012 (legislation.gov.uk)

- For 2021, the total tonnage of Vegetal wastes composted was 281,000 tonnes, a decrease of 4,000 tonnes (1.5%) from 2020 and a reduction of 32,000 tonnes (10.3%) from 2011[10].

Figure 9. Scottish household waste composted by material 2011-– 2021 (tonnes)[10]

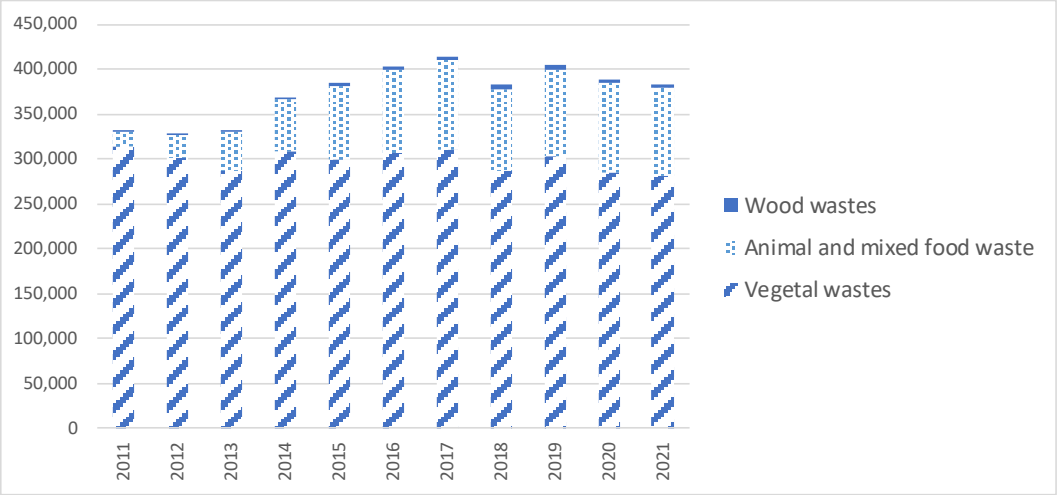


Table 10. Scottish household waste composted by material 2011-– 2021 (tonnes)[10]

Year	Vegetal wastes	Animal and mixed food waste	Wood wastes	Total
2011	313,948	17,426	466	**331,840**
2012	302,224	25,319	1,454	**328,997**
2013	286,885	43,740	1,861	**332,486**
2014	308,705	57,859	2,477	**369,041**
2015	300,462	80,952	3,860	**385,274**
2016	306,680	93,287	3,775	**403,742**
2017	310,963	99,723	4,514	**415,200**
2018	287,309	91,073	4,331	**382,713**
2019	302,987	97,062	4,521	**404,570**
2020	285,815	99,366	3,195	**388,376**
2021	281,482	99,178	2,948	**383,608**

[10] The definition of recycling changed in 2014 to exclude non PAS compost. Recycling data for 2011 - 2013 has been modelled under the new definition to provide consistency for the time series

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 found in the glossary.

- For 2021, the total amount of Scottish household waste managed by other diversion from landfill was 758,000 tonnes, an increase of 10,000 tonnes (1.4%) from 2020 and an increase of 635,000 tonnes (515.7%) from 2011 (see Figure 10 below)[11].

- In 2021, most of the waste diverted was managed by incineration (612,000 tonnes, 80.7%).

- The 612,000 tonnes of Scottish household waste diverted from landfill through incineration in 2021 was 1,000 tonnes (0.2%) less than in 2020, and 542,000 tonnes (772.2%) greater than in 2011. The decrease between 2020 and 2021 was mainly due to increases in Household and similar wastes (5,000 tonnes, 1.0%) and Wood wastes (6,000 tonnes, 67.4%) balanced by a decrease in Mixed and undifferentiated materials (14,000 tonnes, 16.8%). Household and similar wastes comprise primarily general refuse, and Mixed and undifferentiated materials comprise primarily rejects from sorting of general refuse and sorting of mixed wastes collected for recycling. In previous years the main management route for such wastes would be landfilling[12].

[11] The definition of waste diverted changed in 2014 to include non PAS compost. Waste diverted for 2011 - 2013 has been modelled under the new definition to provide consistency for the time series

[12] In the incineration and landfill statistics, the rejects from sorting of waste, which are reported to SEPA as EWC 19 12 12 coded waste, form part of the Sorting residues statistical waste category. In WasteDataFlow, there is no EWC 19 12 12 equivalent coded waste, and these wastes form part of the Household and similar wastes (rejects from sorting of residual waste) or Mixed and undifferentiated materials (rejects from source segregated recyclate) statistical waste categories.

Figure 10. Breakdown of treatment for Scottish household waste managed by other diversion from landfill 2011-– 2021[11]

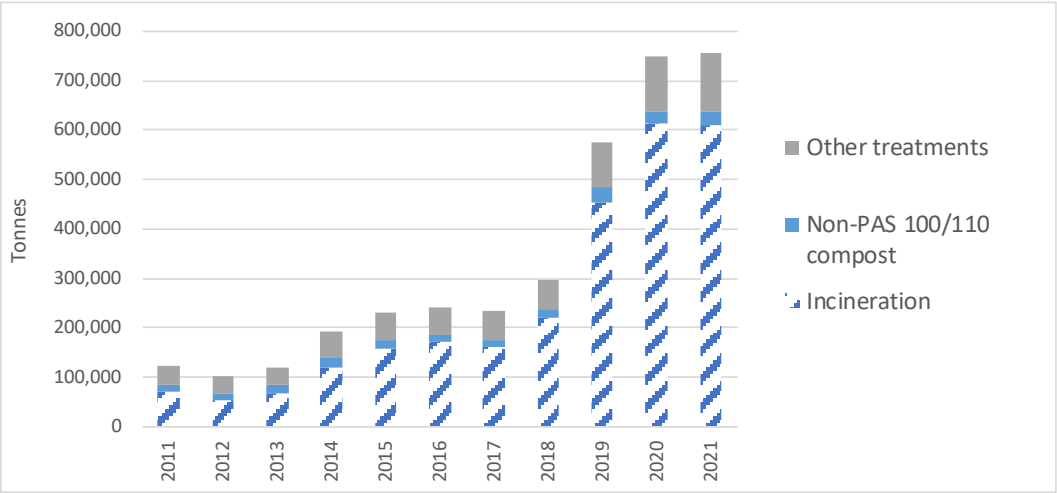
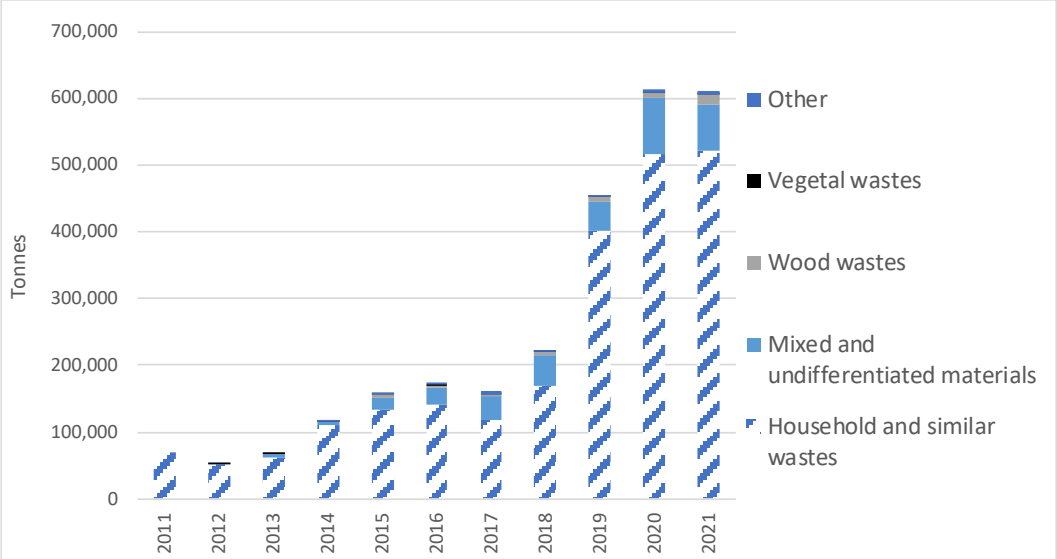


Table 11. Breakdown of treatment for Scottish household waste managed by other diversion from landfill 2011-– 2021 (tonnes)[11]

Year	Incineration	Non-PAS 100/110 compost	Other diversion from landfill	Total
2011	70,134	15,269	37,697	**123,100**
2012	51,473	14,504	34,282	**100,259**
2013	68,513	15,949	36,000	**120,462**
2014	118,678	19,712	54,753	**193,143**
2015	157,090	16,784	55,645	**229,519**
2016	170,597	13,001	58,181	**241,779**
2017	160,272	12,862	59,403	**232,537**
2018	220,791	17,987	59,579	**298,357**
2019	453,736	32,106	90,949	**576,791**
2020	612,723	26,901	108,185	**747,809**
2021	611,683	27,402	118,828	**757,913**

Notes: Incineration is net incineration.

Figure 11. Scottish household waste diverted from landfill through incineration broken down by waste category 2011-– 2021



Note: Incineration is net incineration.

Table 12. Scottish household waste diverted from landfill through incineration broken down by waste category 2011-– 2021

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	62,299	4,622	694	898	0	**68,513**
2014	111,588	4,130	534	496	1,930	**118,678**
2015	133,418	17,804	4,514	406	948	**157,090**
2016	140,698	25,196	4,094	515	94	**170,597**
2017	119,336	33,981	3,476	660	2,819	**160,272**
2018	170,008	44,018	6,006	525	234	**220,791**
2019	401,664	44,575	5,549	621	1,327	**453,736**
2020	517,092	83,221	8,506	529	3,375	**612,723**
2021	522,189	69,243	14,243	1,086	4,922	**611,683**

Note: Incineration is net incineration.

Waste Landfilled

- The amount of Scottish household waste landfilled in 2021 was 664,000 tonnes, an increase of 4,000 tonnes (0.6%) from 2020, however a reduction of 790,000 tonnes (54.4%) from 2011. This is the first time in ten years that there has not been a decrease in household waste landfilled.

- For 2021, Scottish household waste landfilled as a percentage of waste generated was 26.7%. This is 0.4 percentage points lower than the proportion in 2020 (27.2%) and a decrease of 29.1 percentage points from 2011 (55.8%).

- In 2021, most of the Scottish household waste landfilled comprised Household and similar wastes (539,000 tonnes, 81.3% see Figure 12 below). The next largest category was Combustion wastes which comprised 103,000 tonnes (15.5% of the total). Combustion wastes decreased by 5,000 tonnes (4.8%) compared with 2020, but increased by 93,000 tonnes (879.8%) compared with 2011.

Figure 12. Scottish household waste landfilled by waste category 2011 - 2021

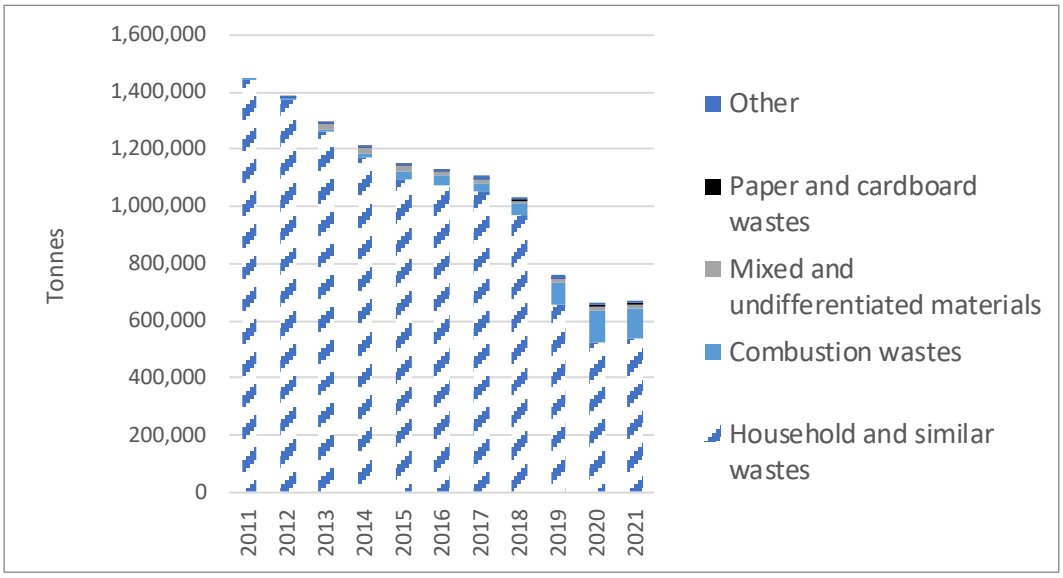


Table 13. Scottish household waste landfilled by waste category 2011 - 2021 (tonnes)

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	1,264,025	8,275	15,254	38	3,236	**1,290,828**
2014	1,168,571	19,599	18,905	119	5,290	**1,212,484**
2015	1,098,472	27,325	17,468	283	6,985	**1,150,533**
2016	1,076,564	31,955	14,632	663	7,994	**1,131,808**
2017	1,050,456	31,882	14,760	1,154	8,711	**1,106,963**
2018	968,043	43,861	8,033	4,964	6,564	**1,031,465**
2019	653,128	82,697	8,053	6,286	7,975	**758,139**
2020	526,466	108,304	12,136	8,232	4,272	**659,410**
2021	539,229	103,113	14,569	3,199	3,423	**663,533**

Carbon impacts of Scottish household waste

- 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. Further information is available in the glossary.

- Most carbon impacts are associated with the waste generated (Table 14 below) which encapsulates the whole-life carbon impacts of the material. Negative values for Recycling and Other Diversion indicate that these waste management methods lead to carbon reductions (e.g. from reducing raw material demand) that outweigh the carbon emissions of managing the waste.

- The carbon impact of Scottish household waste generated and managed in 2021 was 5.9 million tonnes of carbon dioxide equivalent (TCO2e, see Table 14 below), which is the equivalent to 1.08 TCO2e per person (Table 2). This was an increase of 53,000 TCO2e (0.9%) from 2020.

- The amount of waste generated by Scottish households in 2021 was 4.7% below 2011 levels (see page 5). In contrast, the carbon impact of Scottish household waste generated and managed in 2021 was 12.8% (0.86 million TCO2e) below the 2011 level.

- The carbon impact of a tonne of Scottish household waste (TCO2e/tonnes of waste generated) has declined by 7% decrease between 2011 and 2021 (data not shown). This is largely a result of increased recycling rates, particularly for high impact waste materials such as non ferrous metallic wastes and glass wastes, as well as a reduction in waste generated and reduced landfilling of biodegradable waste.

Figure 13. Carbon impact of Scottish household waste generated and managed 2011-– 2021 (TCO2e)

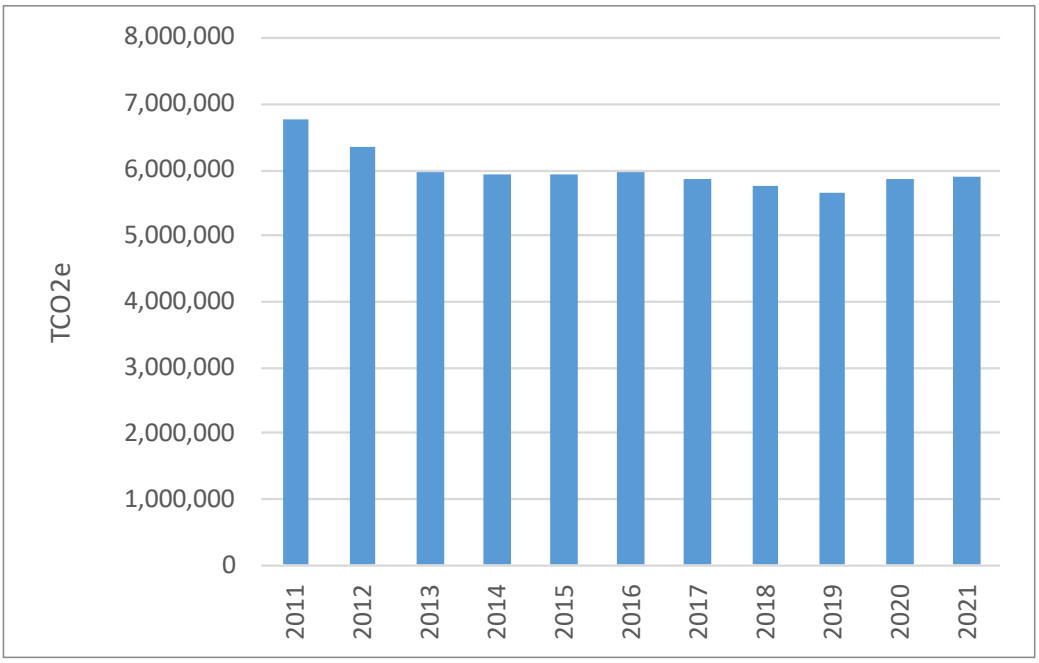


Table 14. Carbon impact of Scottish household waste generated and managed 2011 – 2021 (TCO2e)

Year	Generated	Recycled	Incinerated	Landfilled	Other Diversion	Total
2011	6,622,467	-497,896	19,156	626,519	-5,281	**6,764,965**
2012	6,208,226	-502,690	13,035	621,489	-421	**6,339,638**
2013	5,872,529	-505,294	14,599	596,811	-783	**5,977,869**
2014	5,899,606	-517,587	25,716	540,326	-1,464	**5,946,593**
2015	5,946,446	-541,709	28,013	506,325	-1,535	**5,937,533**
2016	5,989,298	-545,077	32,508	496,241	-1,639	**5,971,344**
2017	5,881,279	-537,533	30,110	491,955	-1,611	**5,864,230**
2018	5,787,925	-540,679	50,914	464,517	-3,298	**5,759,375**
2019	5,775,987	-545,054	129,682	307,545	-3,176	**5,665,010**
2020	5,971,181	-538,113	177,346	244,241	-6,031	**5,848,634**
2021	6,089,420	-601,326	180,569	247,660	-14,827	**5,901,520**

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 contribute to the UK Statistics on waste and 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.

Revision to 2020 local authority data since the last household statistical publication, published in December 2021, are shown in Table 15 below.

Table 15. Revisions to 2020 Scottish household wase data

Local Authority	Generated (tonnes)		Recycled (tonnes)		Percentage Recycled (%)		Other diversion from landfill* (tonnes)		Percentage Other diversion from Landfill (%)		Landfilled (tonnes)		Percentage Landfilled (%)		Carbon Impact (TCO2e)	
	Original	Revised	Original	Revised	Original	Revised	Original	Revised	Original	Revised	Original	Revised	Original	Revised	Original	Revised
Aberdeen City	95,919	95,919	43,778	43,780	*45.6*	*45.6*	29,782	29,781	*31.0*	*31.0*	22,359	22,358	*23.3*	*23.3*	217,678	217,677
Aberdeenshire	114,951	114,953	46,942	46,943	40.8	*40.8*	2,505	2,505	2.2	*2.2*	65,503	65,504	57.0	*57.0*	306,108	306,109
Angus	52,166	52,167	30,226	30,231	57.9	*58.0*	18,924	18,924	36.3	*36.3*	3,016	3,016	5.8	*5.8*	102,591	102,592
Argyll and Bute	42,567	42,567	13,262	13,262	31.2	*31.2*	6,963	6,963	16.4	*16.4*	22,342	22,342	52.5	*52.5*	115,131	115,132
City of Edinburgh	201,202	201,202	74,467	74,465	37.0	*37.0*	120,302	120,302	59.8	*59.8*	6,433	6,434	3.2	*3.2*	498,919	498,920
Clackmannanshire	23,221	23,224	11,296	11,299	48.6	*48.7*	2	2	0.0	*0.0*	11,923	11,923	51.3	*51.3*	55,171	55,170
Dumfries and Galloway	65,039	65,039	19,581	19,582	30.1	*30.1*	33,519	33,519	51.5	*51.5*	11,938	11,939	18.4	*18.4*	188,732	188,732
Dundee City	63,609	63,608	22,056	22,056	34.7	*34.7*	36,410	36,410	57.2	*57.2*	5,143	5,143	8.1	*8.1*	148,215	148,214
East Ayrshire	52,305	52,305	21,521	21,507	41.1	*41.1*	5,657	5,671	10.8	*10.8*	25,126	25,126	48.0	*48.0*	130,933	130,934
East Dunbartonshire	54,573	54,573	27,776	27,776	50.9	*50.9*	19,545	19,545	35.8	*35.8*	7,252	7,252	13.3	*13.3*	118,006	123,939
East Lothian	51,755	51,756	27,137	27,137	52.4	*52.4*	19,669	19,668	38.0	*38.0*	4,950	4,950	9.6	*9.6*	111,532	111,534
East Renfrewshire	44,360	44,359	25,098	25,098	56.6	*56.6*	14,384	14,384	32.4	*32.4*	4,878	4,878	11.0	*11.0*	89,208	89,207
Falkirk	77,069	77,071	39,438	39,441	51.2	*51.2*	3,778	3,778	4.9	*4.9*	33,853	33,854	43.9	*43.9*	166,909	166,911
Fife	156,151	156,152	68,219	68,219	43.7	*43.7*	14,633	14,634	9.4	*9.4*	73,299	73,300	46.9	*46.9*	356,220	356,219
Glasgow City	265,910	265,909	78,816	78,815	29.6	*29.6*	110,268	110,269	41.5	*41.5*	76,826	76,825	28.9	*28.9*	788,987	788,988
Highland	109,109	109,108	38,909	38,911	35.7	*35.7*	5,639	5,639	5.2	*5.2*	64,560	64,561	59.2	*59.2*	282,807	282,807
Inverclyde	29,009	29,010	10,760	10,760	37.1	*37.1*	2,030	2,031	7.0	*7.0*	16,148	16,149	55.7	*55.7*	75,647	75,648
Midlothian	42,153	42,153	19,938	19,938	47.3	*47.3*	17,332	17,332	41.1	*41.1*	4,838	4,837	11.5	*11.5*	97,890	97,889
Moray	41,520	41,519	22,792	22,790	54.9	*54.9*	0	0	0.0	*0.0*	18,729	18,729	45.1	*45.1*	86,520	86,522
Na h-Eileanan Siar	13,146	13,147	4,553	4,554	34.6	*34.6*	40	40	0.3	*0.3*	8,553	8,552	65.1	*65.0*	34,628	34,630
North Ayrshire	61,773	61,775	32,177	32,177	52.1	*52.1*	24,797	24,797	40.1	*40.1*	4,800	4,800	7.8	*7.8*	125,160	125,161
North Lanarkshire	156,611	156,611	61,715	61,712	39.4	*39.4*	76,849	76,848	49.1	*49.1*	18,048	18,049	11.5	*11.5*	365,571	365,568
Orkney Islands	8,481	7,680	1,985	1,988	23.4	*25.9*	3,680	3,259	43.4	*42.4*	2,157	1,774	25.4	*23.1*	20,163	18,600
Perth and Kinross	77,535	77,535	38,312	38,313	49.4	*49.4*	5,563	5,562	7.2	*7.2*	33,661	33,661	43.4	*43.4*	152,742	152,743
Renfrewshire	84,011	84,012	41,262	41,260	49.1	*49.1*	32,593	32,591	38.8	*38.8*	10,156	10,156	12.1	*12.1*	178,748	178,746
Scottish Borders	50,716	50,717	26,771	26,772	52.8	*52.8*	23,808	23,809	46.9	*46.9*	136	136	0.3	*0.3*	119,080	119,080
Shetland Islands	9,087	9,087	1,674	1,673	18.4	*18.4*	5,235	5,234	57.6	*57.6*	2,179	2,179	24.0	*24.0*	26,900	26,898
South Ayrshire	56,376	56,378	31,202	31,204	55.3	*55.3*	5,469	5,468	9.7	*9.7*	19,706	19,706	35.0	*35.0*	117,465	117,464
South Lanarkshire	153,658	153,659	62,198	62,200	40.5	*40.5*	64,168	64,168	41.8	*41.8*	27,292	27,292	17.8	*17.8*	355,092	355,092
Stirling	44,505	44,506	21,295	21,297	47.8	*47.9*	295	294	0.7	*0.7*	22,919	22,920	51.5	*51.5*	97,347	97,349
West Dunbartonshire	44,352	44,352	16,337	16,337	36.8	*36.8*	4,977	4,976	11.2	*11.2*	23,038	23,038	51.9	*51.9*	115,416	115,418
West Lothian	86,217	86,218	38,786	38,788	*45.0*	*45.0*	39,405	39,406	*45.7*	*45.7*	8,028	8,027	*9.3*	*9.3*	198,740	198,741
Total Scotland	**2,429,057**	**2,428,271**	**1,020,278**	**1,020,285**	***42.0***	***42.0***	**748,222**	**747,809**	***30.8***	***30.8***	**659,789**	**659,410**	***27.2***	***27.2***	**5,844,256**	**5,848,634**

Cells shaded in grey represent revisions amounting to a change of greater than 50 tonnes, greater than 100 TCO2e, or greater than 0.1 percentage point

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 2021 there were no new sites that met this criterion.

As we move further away from the old composting measure, it becomes less important and a back series is helpful for understanding changes over a long period of time. For 2011 – 2013 the waste that met the PAS 100/110 standard was modelled to produce a back series. For each authority, the proportion of waste that was sent to a PAS 100/110 facility on average in 2014-2015 was applied to the waste sent for composting for each of the years 2011, 2012 and 2013. For example, if an authority sent 60% of its waste to a PAS 100/110 facility in 2014-15, then for the back series years of 2011, 2012 and 2013, 60% of waste sent for composting were counted as recycled. The non PAS 100/110 tonnes were allocated to the "Other Diversion" category.

Recycling figures are calculated according to Scotland's national recycling rate methodology. The methodology differs to the Waste from households measure published by Defra in its UK Statistics on waste publication. The differences are summarised in Table 16 below.

Table 16. Comparison of Scotland national recycling measure vs UK waste from households measure (key differences)

Measure	Scotland national method	UK waste from households
Include waste sent to non PAS compost facility	✘	✓
Include construction waste from householders	✓	✘
Include metals from incineration recycled	✘	✓

Further information about differences between the national recycling measures of the four UK countries may be found in the Recycling Explainer published by Defra.

Further details on the methodology used to produce the figures in this document are provided in the "Household waste quality report" on SEPA's web site.

Waste categories used in this document are those described in the EC2150/2002 Waste Statistics Regulation. Further information about the mapping of WasteDataFlow waste material categories to the statistical waste category can be found in the household waste

quality report. For intelligibility, in this document the statistical waste categories “Metallic wastes, ferrous “, “Metallic wastes, non-ferrous”, and “Metallic wastes, mixed ferrous and non-ferrous” have been combined into the one category “Metallic wastes” , and the statistical waste categories “Mineral waste from construction and demolition” and “Soils” have been combined into one “Construction and soils” category. The Household Waste Discover Data tool retains the original statistical categories.

Release

The release of this publication is in line with release practices specified in the Code of Practice for Statistics. The statistics are released at the standard time of 9.30 am on a pre-announced 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).

Kerbside Collection – A service provided by local authorities to households, of collecting and disposing of household waste and recyclables, which are presented to the authority on the kerb. It includes individual household waste containers, as well as communal bin stores provided to multiple tenants.

Landfill rate – waste landfilled 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.

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.

Segregated recyclate – waste materials collected for recycling separately from residual waste collections. This includes collection of single materials as well as co-mingled materials.

TCO2e – 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 thenew calculation methodology do not include any waste composted that has not reached the quality standards set by PAS 100/110.