Scottish Environment Protection Agency
Buidheann Dìon Àrainneachd na h-Alba

For the future of our environment

Scottish Household Waste Generated and Managed – 2022

Official Statistics



October 2023

Scottish Household Waste Generated and Managed – 2022

This release shows the 2022 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 – 2022 calendar year

- The total amount of household waste generated in Scotland was 2.33 million tonnes (Table 1) in 2022, a decrease of 148,000 tonnes (6.0%) from 2021. This is the lowest amount of Scottish household waste generated that has been recorded since 2011.

- For 2022, the Scottish household waste recycling rate[1] was 43.3%, an increase of 0.3 percentage points from the 43.0% (Table 1) rate achieved in 2021[2]. However, the overall amount of household waste recycled between 2021 and 2022 decreased by 56,000 tonnes (5.2%) to 1.01 million tonnes, broadly in line with the reduction in household waste generated.

- The reduction in waste generated and waste recycled follows a previous spike from 2020 to 2021, which was attributed to the impact of the COVID-19 lockdown and other restrictions.

- The amount of Scottish household waste landfilled in 2022 was 585,000 tonnes, a decrease of 78,000 tonnes (11.7%) from 2021. This continues a long-term trend, with a reduction of 868,000 tonnes (59.7%) of household waste landfilled since 2011. The rate

[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 24.

[2] A minor revision to the methodology to calculate recycling was made in 2022 to include metals from incinerator bottom ash recycled, and applied to all historic data. Both the 2022 and 2021 datasets refer to the new method. For further information and detailed recycling rates using the old and new method, refer to the Methodology section on page 24.

of landfill between 2021 and 2022 decreased by 1.6 percentage points from 26.7% to 25.1%.

- For 2022, the total amount of Scottish household waste managed by other diversion from landfill was 736,000 tonnes, a decrease of 15,000 tonnes (1.9%) from 2021. Most of the diverted waste in 2022 was managed by incineration (604,000 tonnes, 82.0%).
- The carbon impact of Scottish household waste generated and managed in 2022 was 5.5 million tonnes of carbon dioxide equivalent (TCO2e, Table 1), which is the equivalent to 1.02 TCO2e per person (Table 2). This was a decrease of 357,000 TCO2e (6.1%) from 2021, and a reduction of 1.22 million TCO2e from 2011.

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

Enquiries on this publication to: SEPA Communications Department: media@sepa.org.uk
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Lead statistician: Peter Ferrett

Table 1. Scottish Household waste generated and managed in 2022 - summary data[3]

LOCAL AUTHORITY	GENERATED (TONNES)	RECYCLED (TONNES)*	RECYCLED (%)*	OTHER DIVERSION FROM LANDFILL (TONNES)*	OTHER DIVERSION FROM LANDFILL (%)*	LANDFILLED (TONNES)	LANDFILLED (%)	CARBON IMPACT (TCO2e)	2021 RECYCLED (%)*
Aberdeen City	88,802	37,091	*41.8*	22,007	*24.8*	29,706	*33.5*	*227,309*	*46.8*
Aberdeenshire	109,675	44,130	*40.2*	5,517	*5.0*	60,029	*54.7*	*296,479*	*41.1*
Angus	50,730	26,208	*51.7*	23,549	*46.4*	973	*1.9*	*104,113*	*54.7*
Argyll and Bute	48,969	19,963	*40.8*	7,029	*14.4*	21,978	*44.9*	*116,646*	*39.3*
City of Edinburgh	187,628	69,656	*37.1*	112,758	*60.1*	5,215	*2.8*	*463,742*	*39.9*
Clackmannanshire	24,328	12,453	*51.2*	0	*0.0*	11,875	*48.8*	*54,898*	*50.0*
Dumfries and Galloway	66,020	29,747	*45.1*	30,246	*45.8*	6,028	*9.1*	*160,045*	*39.8*
Dundee City	60,499	20,469	*33.8*	38,812	*64.2*	1,220	*2.0*	*143,230*	*32.6*
East Ayrshire	49,578	24,060	*48.5*	17,325	*34.9*	8,194	*16.5*	*112,286*	*48.5*
East Dunbartonshire	54,589	28,272	*51.8*	24,160	*44.3*	2,157	*4.0*	*124,550*	*45.3*
East Lothian	49,448	26,245	*53.1*	18,603	*37.6*	4,600	*9.3*	*106,489*	*53.9*
East Renfrewshire	41,421	23,193	*56.0*	14,968	*36.1*	3,261	*7.9*	*86,646*	*58.1*
Falkirk	64,308	33,060	*51.4*	33	*0.1*	31,215	*48.5*	*149,701*	*48.2*
Fife	172,084	78,572	*45.7*	16,185	*9.4*	77,328	*44.9*	*390,253*	*43.6*
Glasgow City	244,483	67,435	*27.6*	115,829	*47.4*	61,219	*25.0*	*714,985*	*27.3*
Highland	111,118	41,295	*37.2*	3,749	*3.4*	66,074	*59.5*	*284,558*	*37.4*
Inverclyde	24,982	11,685	*46.8*	1,534	*6.1*	11,763	*47.1*	*58,208*	*48.5*
Midlothian	41,096	19,401	*47.2*	16,644	*40.5*	5,051	*12.3*	*97,375*	*47.4*
Moray	48,714	28,154	*57.8*	1	*0.0*	20,559	*42.2*	*93,245*	*52.2*
Na h-Eileanan Siar	13,469	4,289	*31.8*	92	*0.7*	9,089	*67.5*	*36,342*	*33.5*
North Ayrshire	59,166	32,726	*55.3*	25,986	*43.9*	455	*0.8*	*117,506*	*56.9*
North Lanarkshire	146,546	63,055	*43.0*	60,128	*41.0*	23,363	*15.9*	*334,123*	*43.4*
Orkney Islands	9,951	2,314	*23.3*	4,506	*45.3*	2,482	*24.9*	*26,267*	*24.2*
Perth and Kinross	70,604	34,793	*49.3*	5,110	*7.2*	30,700	*43.5*	*139,313*	*50.2*
Renfrewshire	78,103	41,980	*53.7*	34,008	*43.5*	2,115	*2.7*	*162,708*	*51.7*
Scottish Borders	50,610	29,012	*57.3*	21,181	*41.9*	227	*0.4*	*115,472*	*55.2*
Shetland Islands	9,004	1,860	*20.7*	5,019	*55.7*	2,124	*23.6*	*26,616*	*18.1*
South Ayrshire	49,477	26,865	*54.3*	7,056	*14.3*	15,515	*31.4*	*105,684*	*56.0*
South Lanarkshire	147,086	60,525	*41.1*	63,879	*43.4*	22,682	*15.4*	*338,618*	*41.0*
Stirling	40,209	20,648	*51.4*	660	*1.6*	18,901	*47.0*	*83,988*	*50.9*
West Dunbartonshire	43,897	17,042	*38.8*	2,874	*6.5*	23,981	*54.6*	*110,189*	*35.6*
West Lothian	78,064	35,849	*45.9*	36,830	*47.2*	5,385	*6.9*	*161,141*	*41.3*
Total Scotland	***2,334,659***	***1,012,045***	***43.3***	***736,277***	**31.5**	***585,461***	***25.1***	***5,542,725***	***43.0***

*All Recycled and Other diversion from landfill figures are calculated by a revised method in which metals from incineration bottom ash, which are recycled, contribute to Recycled figures. Previously, these were part of the Other diversion from landfill figures.

[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.

Table 2. Scottish Household Waste Generated and Managed per person in 2022 - summary data[4]

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	0.40	0.17	0.10	0.13	1.01
Aberdeenshire	0.42	0.17	0.02	0.23	1.12
Angus	0.44	0.23	0.21	0.01	0.91
Argyll and Bute	0.57	0.23	0.08	0.26	1.36
City of Edinburgh	0.37	0.14	0.22	0.01	0.90
Clackmannanshire	0.47	0.24	0.00	0.23	1.06
Dumfries and Galloway	0.45	0.20	0.21	0.04	1.10
Dundee City	0.41	0.14	0.26	0.01	0.97
East Ayrshire	0.41	0.20	0.14	0.07	0.93
East Dunbartonshire	0.50	0.26	0.22	0.02	1.14
East Lothian	0.44	0.23	0.17	0.04	0.95
East Renfrewshire	0.43	0.24	0.15	0.03	0.90
Falkirk	0.41	0.21	0.00	0.20	0.95
Fife	0.46	0.21	0.04	0.21	1.05
Glasgow City	0.39	0.11	0.19	0.10	1.15
Highland	0.47	0.18	0.02	0.28	1.21
Inverclyde	0.32	0.15	0.02	0.15	0.74
Midlothian	0.43	0.20	0.17	0.05	1.01
Moray	0.52	0.30	0.00	0.22	1.00
Na h-Eileanan Siar	0.51	0.16	0.00	0.35	1.39
North Ayrshire	0.44	0.25	0.19	0.00	0.88
North Lanarkshire	0.43	0.18	0.18	0.07	0.98
Orkney Islands	0.45	0.11	0.20	0.11	1.19
Perth and Kinross	0.47	0.23	0.03	0.20	0.92
Renfrewshire	0.42	0.23	0.19	0.01	0.89
Scottish Borders	0.43	0.25	0.18	0.00	0.99
Shetland Islands	0.39	0.08	0.22	0.09	1.16
South Ayrshire	0.44	0.24	0.06	0.14	0.95
South Lanarkshire	0.45	0.18	0.20	0.07	1.03
Stirling	0.43	0.22	0.01	0.20	0.91
West Dunbartonshire	0.50	0.19	0.03	0.27	1.25
West Lothian	0.43	0.20	0.20	0.03	0.89
Total Scotland	**0.43**	**0.19**	**0.14**	**0.11**	**1.02**

[4] 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 - Scotland's Census 2022 - rounded population estimates.

Trends

Waste Generated

The total amount of household waste generated in Scotland in 2022 was 2.33 million tonnes, a decrease of 148,000 tonnes (6.0%) from 2021.

The decrease follows a 61,000 tonne (2.5%) increase between 2019 and 2021. The increase, and subsequent reduction in 2022, has been attributed by several local authorities to COVID-19 restrictions with an increase in waste from home working and home improvements, and a decrease for 2022 following the easing of restrictions. This is the lowest amount of Scottish household waste generated that has been recorded (see Figure 1 below).

The amount of segregated recyclate collected for recycling via kerbside collections in 2022 was 663,000 tonnes, a decrease of 59,000 tonnes (8.1%) from 2021, reflecting the overall reduction in waste generated.

The percentage of recyclate collected via kerbside schemes, as a total of all recyclate collected, decreased between 2021 and 2022 by 1.5 percentage units. The reduction followed a spike in the percentage of waste collected by kerbside collection between 2019 and 2020, due to the unavailability of other methods of collection during the COVID-19 restrictions, such as household waste recycling centres. The 66.4% of segregated recyclate collected by kerbside collection in 2022 is consistent with a longer-term increasing trend since 2013 (see Figure 2 below).

The change in kerbside collection between 2021 and 2022 was less pronounced for rural authorities[5] (a decrease of 16,000 tonnes, 5.6%) compared to urban authorities (a decrease of 42,000 tonnes, 9.9%, see Figure 3 below).

[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 2020 - gov.scot (www.gov.scot).

Figure 1. Household waste generated in Scotland 2011 - 2022

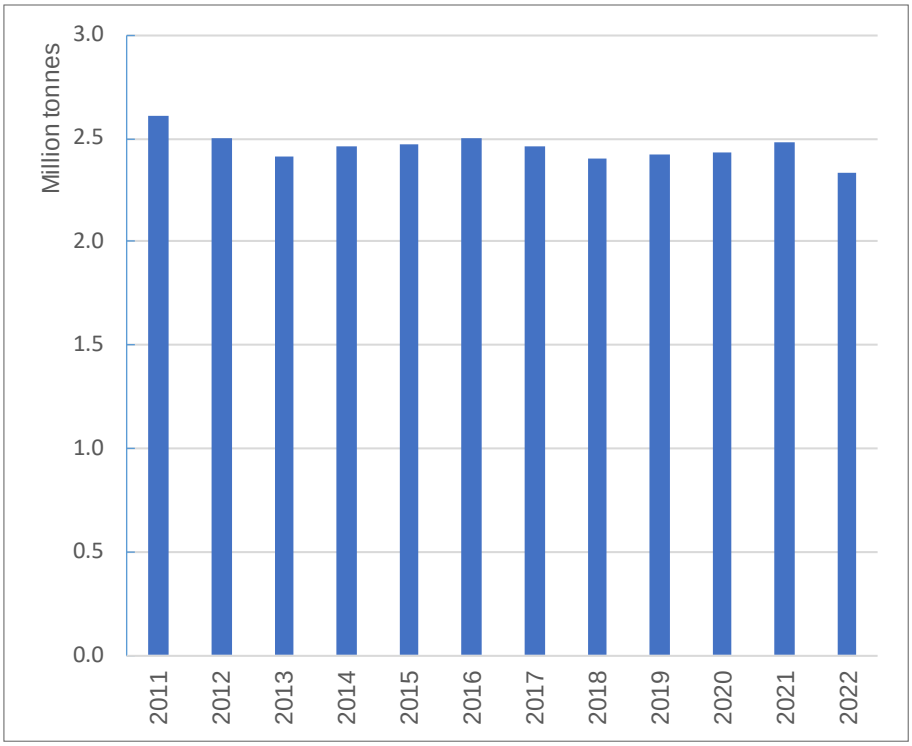


Table 3. Household waste generated in Scotland 2011 - 2022

YEAR	WASTE GENERATED (TONNES)
2011	2,606,759
2012	2,500,933
2013	2,412,630
2014	2,459,558
2015	2,468,781
2016	2,498,978
2017	2,460,820
2018	2,405,246
2019	2,421,790
2020	2,428,253
2021	2,482,604
2022	2,334,659

Figure 2. Scottish segregated recyclate collected at the kerbside by authority type 2013 - 2022 (tonnes)

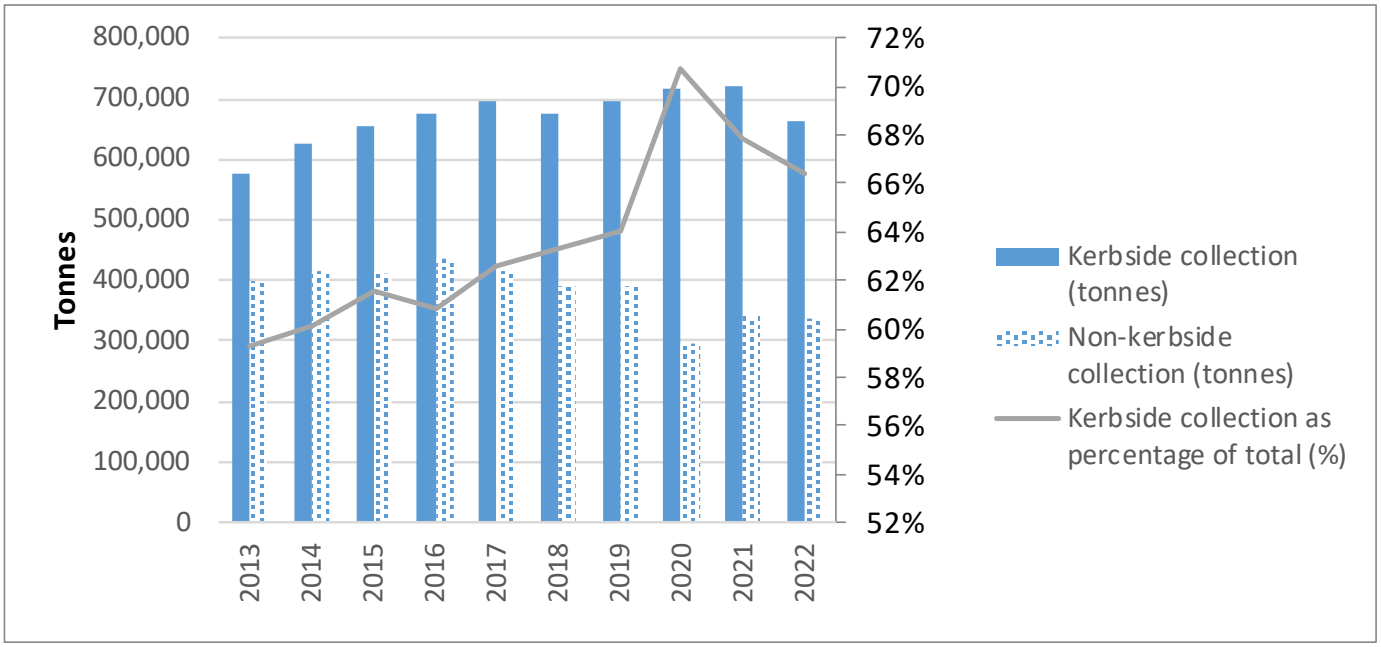


Table 4. Scottish segregated recyclate collected at the kerbside by authority type 2013 - 2022 (tonnes)

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	624,548	415,169	1,039,718	60.1%
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	342,384	1,063,659	67.8%
2022	662,734	335,998	998,732	66.4%

Note: Data series starts with 2013, which is the start for the data source of WasteDataFlow question 100

Figure 3. Scottish segregated recyclate collected at the kerbside 2011 - 2022 by rurality[5]

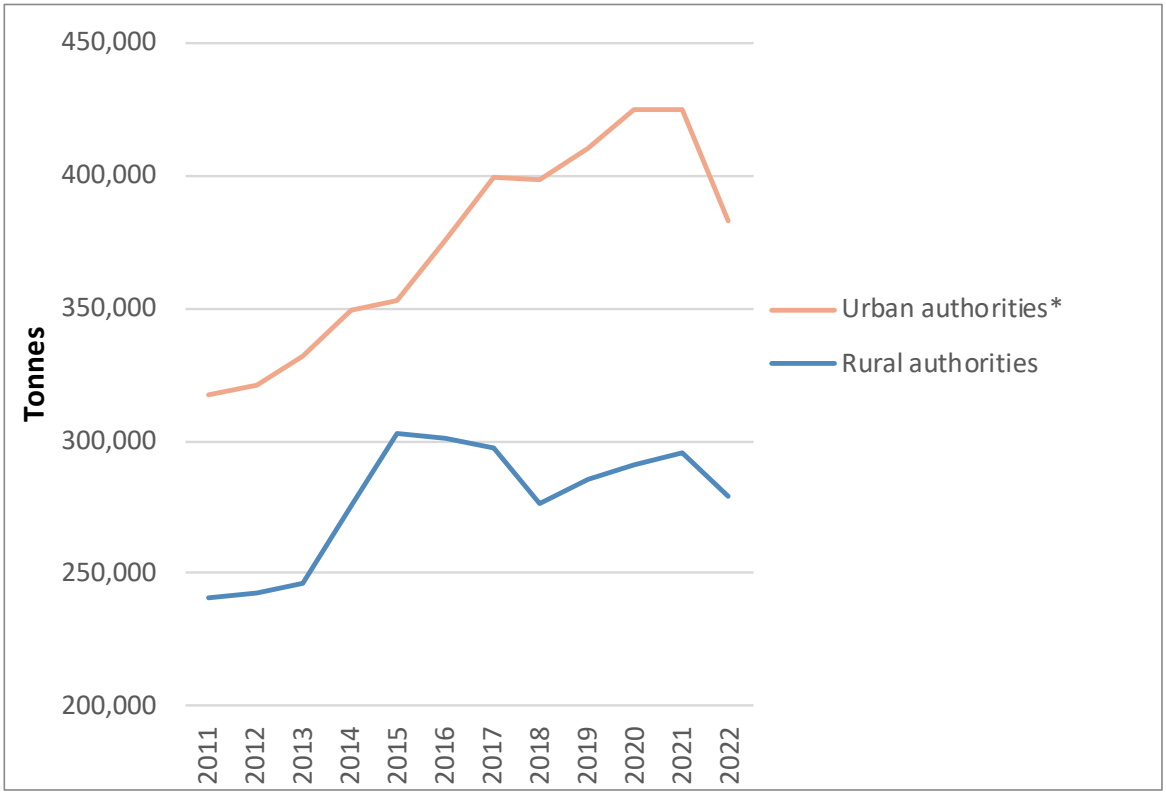


Table 5. Scottish segregated recyclate collected at the kerbside 2011 - 2022 by rurality[5] (tonnes)

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	275,360	**624,548**
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**
2022	383,170	279,564	**662,734**

Figure 4. Household waste managed in Scotland 2011 - 2022[7]

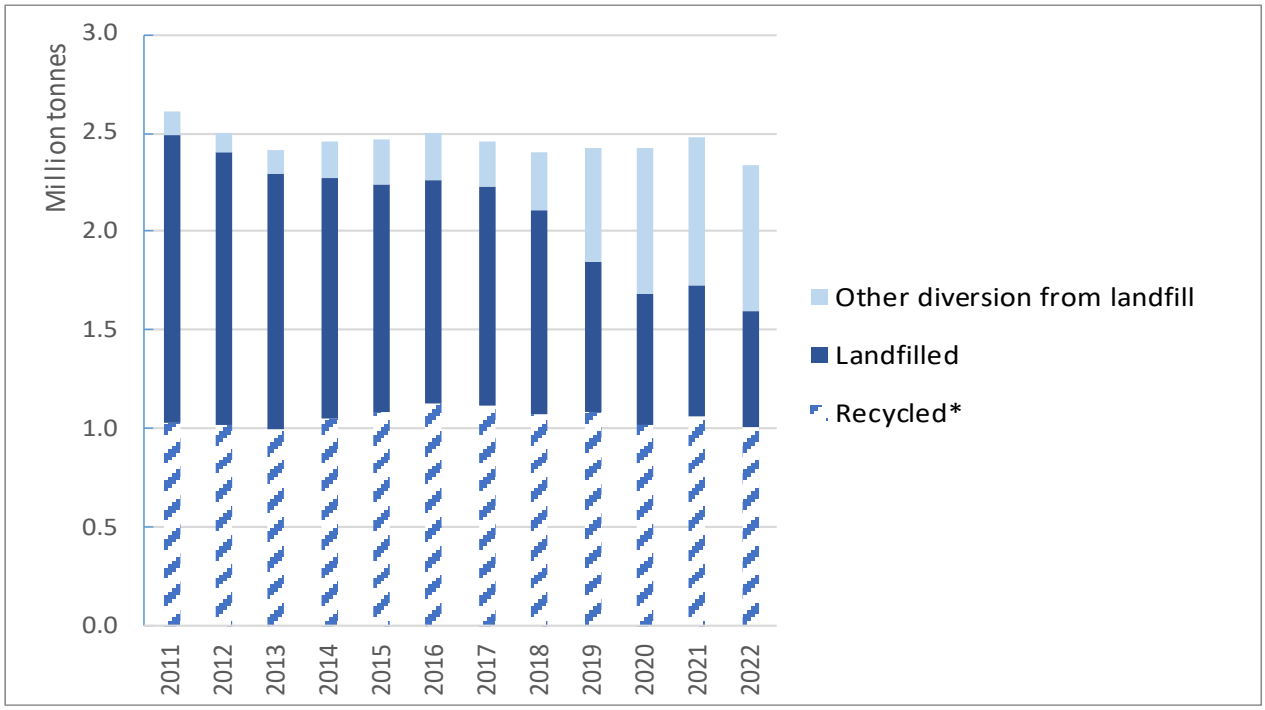


Table 6. Household waste managed in Scotland 2011-2022[7]

YEAR	RECYCLED*	LANDFILLED	OTHER DIVERSION FROM LANDFILL	TOTAL MANAGED
2011	1,032,156	1,453,789	120,688	2,606,633
2012	1,015,021	1,382,153	99,821	2,496,995
2013	1,002,840	1,290,829	119,861	2,413,530
2014	1,054,208	1,212,479	192,179	2,458,865
2015	1,089,407	1,150,537	228,541	2,468,485
2016	1,125,938	1,131,806	240,772	2,498,516
2017	1,121,683	1,106,959	231,423	2,460,065
2018	1,075,960	1,031,467	297,074	2,404,501
2019	1,087,997	758,141	575,071	2,421,209
2020	1,023,063	659,406	745,017	2,427,487
2021	1,067,599	663,140	750,781	2,481,520
2022	1,012,045	585,461	736,277	2,333,783

Waste Recycled

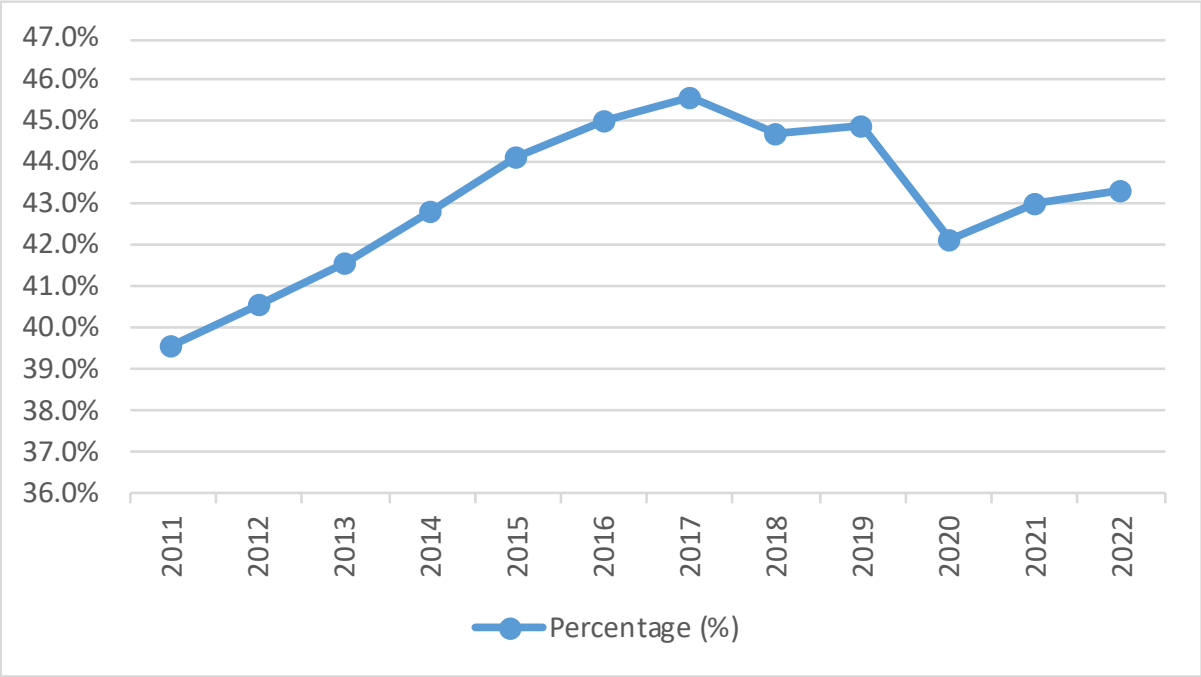
Waste recycled includes waste reused or recycled and composted. A full description of recycling is given in the glossary.

For 2022, the Scottish household waste recycling rate was 43.3% (see Figure 5 below and Figure 4 above), an increase of 0.3 percentage points from the 43.0% recycling rate achieved in 2021, and an increase of 3.8 percentage points from the 39.6% achieved in 2011[7].

For 2022, the total tonnage of Scottish household waste recycled was 1.01 million tonnes, a decrease of 56,000 tonnes (5.2%) from 2021 and 20,000 tonnes (1.9%) less than the 1.03 million tonnes of waste recycled in 2011[7].

In 2022, of the 1.01 million tonnes of household waste recycled, the majority (657,000 tonnes, 65.0%) was recycled or reused, with household waste composted contributing the remaining 355,000 (35.0%) (see Figure 6 below).

Figure 5. Scottish household waste recycling rates 2011-2022[7]



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

Table 7. Scottish household waste recycling rates 2011-2022[7]

YEAR	PERCENTAGE (%)
2011	39.6%
2012	40.6%
2013	41.6%
2014	42.9%
2015	44.1%
2016	45.1%
2017	45.6%
2018	44.7%
2019	44.9%
2020	42.1%
2021	43.0%
2022	43.3%

Figure 6. Breakdown of Scottish household waste recycled 2011-2022[7]

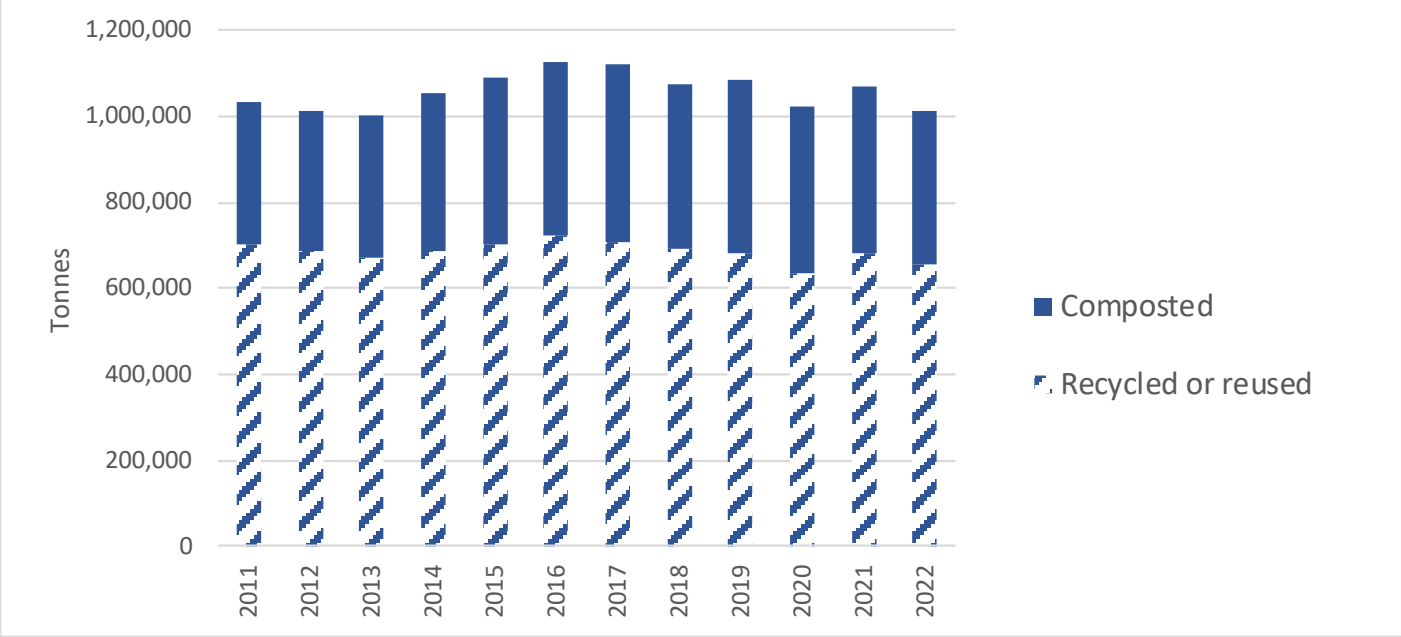


Table 8. Breakdown of Scottish household waste recycled 2011-2022[7] (tonnes)

YEAR	RECYCLED OR REUSED	COMPOSTED	TOTAL
2011	700,316	331,840	**1,032,156**
2012	686,024	328,997	**1,015,021**
2013	670,354	332,486	**1,002,840**
2014	685,168	369,040	**1,054,208**
2015	704,133	385,273	**1,089,407**
2016	722,194	403,743	**1,125,938**
2017	706,485	415,198	**1,121,683**
2018	693,244	382,716	**1,075,960**
2019	683,427	404,571	**1,087,997**
2020	634,693	388,370	**1,023,063**
2021	683,997	383,603	**1,067,599**
2022	657,444	354,601	**1,012,045**

Waste recycled or reused

The 657,000 tonnes of Scottish household waste recycled or reused in 2022 was a decrease of 27,000 tonnes (3.9%) compared with 2021, which is broadly in line with the decrease in waste generated.

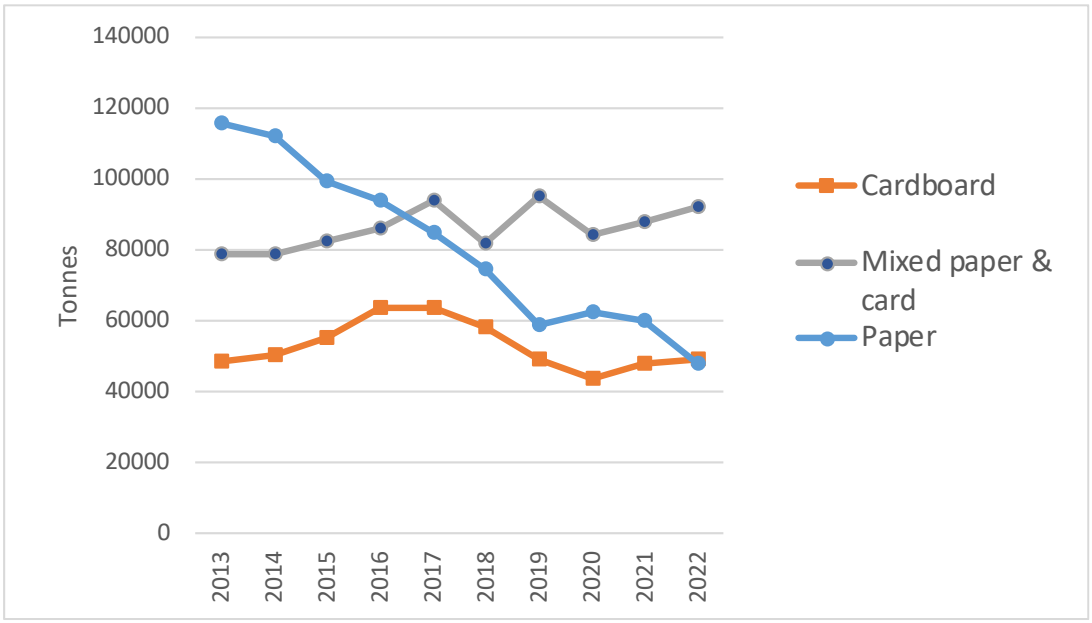
The amount of Scottish waste recycled or reused has remained fairly constant since 2011 (see Figure 6 above), and, with the exception of the 2020 COVID-19 year, has not varied by more than 5.3% from the average of 686,000 tonnes recycled or reused from 2011 to 2022.

The largest material category of Scottish household waste recycled or reused in 2022 was Paper and cardboard wastes (181,000 tonnes, 27.6% of all waste recycled or reused, see Table 9 below). There was a decrease of 2.7% for these materials recycled or reused between 2021 and 2022, which fits with the longer-term downward trend of Paper and cardboard wastes recycled or reused, which reduced by 59,000 tonnes (24.6%) from 2011.

Of the seven material categories that comprised the highest amount of waste recycled or reused in 2022 (see Figure 8 below), Plastic wastes showed the largest increase compared with 2021 (increase of 3,000 tonnes, 4.2%) followed by Mixed and undifferentiated materials (an increase of 1,000 tonnes, 3.7%). The largest reductions in waste recycled or reused were Glass wastes (a decrease of 10,000 tonnes, 8.1%) followed by Construction and soils (a decrease of 9,000 tonnes, 8.6%).

The WasteDataFlow categories that contribute to Paper and cardboard wastes recycled or reused, as depicted in Figure 7 below, indicates that the recycling or reuse of segregated paper waste have been trending downward since 2013, while that of cardboard wastes, and mixed paper and cardboard wastes have remained constant or increased over time. 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.

Figure 7. Scottish Paper and cardboard wastes recycled or reused by WasteDataFlow categories (tonnes) 2013 – 2022



Notes:

Recycled includes waste recycled or reused and waste composted.

Segregated paper includes the WasteDataFlow category of Books

Data series starts with 2013, which is the start for the data source of WasteDataFlow question 100

Figure 8. Scottish household waste recycled or reused by material 2011-2022[6]

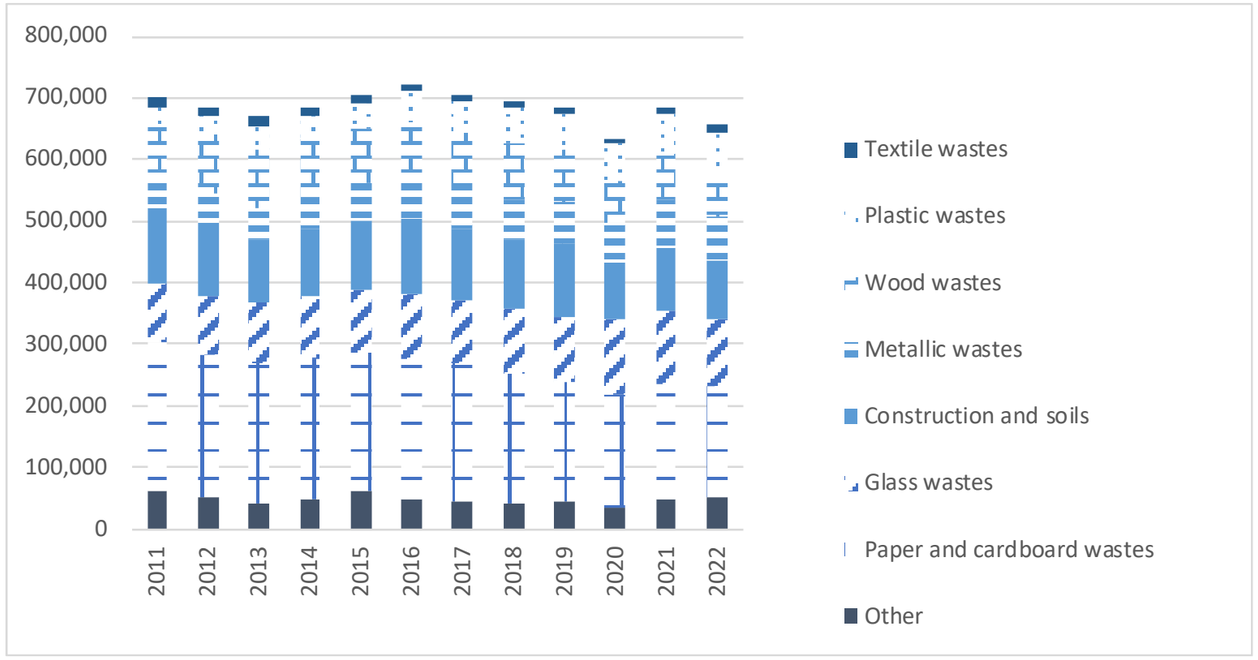


Table 9. Scottish Household waste recycled or reused by material 2011-– 2022 (tonnes)[6]

YEAR	PAPER AND CARDBOARD WASTES	GLASS WASTES	CONSTRUCTION AND SOILS	METALLIC WASTES	WOOD WASTES	PLASTIC WASTES	MIXED AND UNDIFFERENTIATED MATERIALS	OTHER	TOTAL
2011	240,346	94,903	124,335	45,668	89,002	29,299	15,111	61,652	**700,316**
2012	231,776	96,658	118,167	48,148	92,403	34,528	7,054	57,291	**686,024**
2013	227,899	99,973	102,126	48,625	96,827	38,097	2,483	54,324	**670,354**
2014	226,463	100,580	111,046	52,094	92,324	39,525	8,949	54,186	**685,168**
2015	222,403	102,033	114,901	59,098	89,212	41,285	17,600	57,601	**704,133**
2016	227,921	106,548	120,559	65,630	93,897	48,422	1,567	57,650	**722,194**
2017	225,495	104,679	115,345	66,168	89,426	51,833	1,485	52,057	**706,485**
2018	209,120	107,380	112,869	64,440	90,547	56,586	4,496	47,808	**693,244**
2019	192,562	106,637	119,095	69,604	83,232	57,379	4,141	50,779	**683,427**
2020	182,309	121,996	93,485	65,710	65,320	62,151	7,634	36,088	**634,693**
2021	186,368	120,340	101,835	77,026	74,881	64,144	16,064	43,339	**683,997**
2022	181,244	110,620	93,085	74,164	68,165	66,809	16,662	46,695	**657,444**

[6] The methodology to calculate recycling was revised in 2022 to include metals from incinerator bottom ash recycled, and applied to all historic data.

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 2022, the amount of Scottish household waste composted was 355,000 tonnes, a decrease of 29,000 tonnes (7.6%) from 2021. This was however, an increase of 23,000 tonnes (6.9%) from 2011[7].

In 2022, just under three-quarters of the household waste composted was Vegetal wastes (74.8%) with animal and mixed food waste making up the remainder (25.2%, see Figure 9 below). These proportions were similar in 2021. In 2011, however, the percentage of vegetal waste was higher (94.6%) and the percentages of animal and mixed food waste was lower (5.3%). 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[8].

For 2022, the total tonnage of Vegetal wastes composted was 265,000 tonnes, a decrease of 16,000 tonnes (5.8%) from 2021 and a reduction of 49,000 tonnes (15.5%) from 2011[7]. The Animal and mixed food waste composted in 2022 reduced by 10,000 tonnes (9.9%) from 2021 to 89,000 tonnes. The longer term trend for the composting of animal and mixed food waste was an increase of 72,000 tonnes (413%) between 2021 and 2022.

[7] 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. The methodology to calculate recycling was revised in 2022 to include metals from incinerator bottom ash recycled, and applied to all historic data.

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

Figure 9. Scottish household waste composted by material 2011-– 2022 (tonnes)[7]

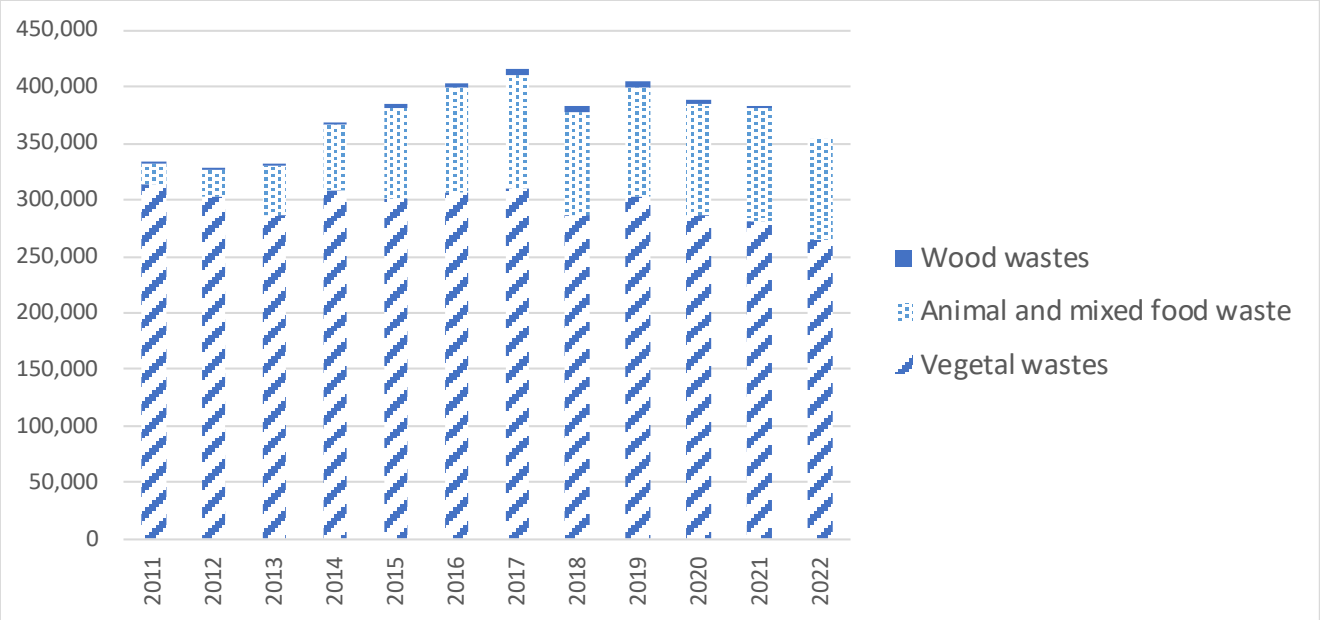


Table 10. Scottish household waste composted by material 2011-– 2022 (tonnes)[7]

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	57,858	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**
2019	302,986	97,063	4,521	**404,571**
2020	285,813	99,363	3,195	**388,370**
2021	281,480	99,175	2,948	**383,603**
2022	265,288	89,312	0	**354,601**

Other Diversion from Landfill

Other diversion from landfill is waste material not recycled or landfilled. This includes net waste incinerated, incinerator bottom ash recycled (excluding metals), and organic material recycled that does not meet quality standards. A full description is found in the glossary.

For 2022, the total amount of Scottish household waste managed by other diversion from landfill was 736,000 tonnes, a decrease of 15,000 tonnes (1.9%) from 2021, however an increase of 616,000 tonnes (510%) from 2011 (see Figure 10 below)[7].

In 2022, most of the waste diverted was managed by incineration (604,000 tonnes, 82.0%).

The 604,000 tonnes of Scottish household waste diverted from landfill through incineration in 2022 was 8,000 tonnes (1.2%) less than in 2021, however 534,000 tonnes (761%) greater than in 2011. The decrease between 2021 and 2022 was mainly due to a decrease in Household and similar wastes incinerated (55,000 tonnes, 10.4%), which was partly offset by an increase in the incineration of Mixed and undifferentiated materials (an increase of 35,000 tonnes, 50.0%) and Wood wastes (an increase of 2,000 tonnes, 15.8%). 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 these waste streams would be landfilling.

Figure 10. Breakdown of treatment for Scottish household waste managed by other diversion from landfill 2011-– 2022[Error! Bookmark not defined.]**9**

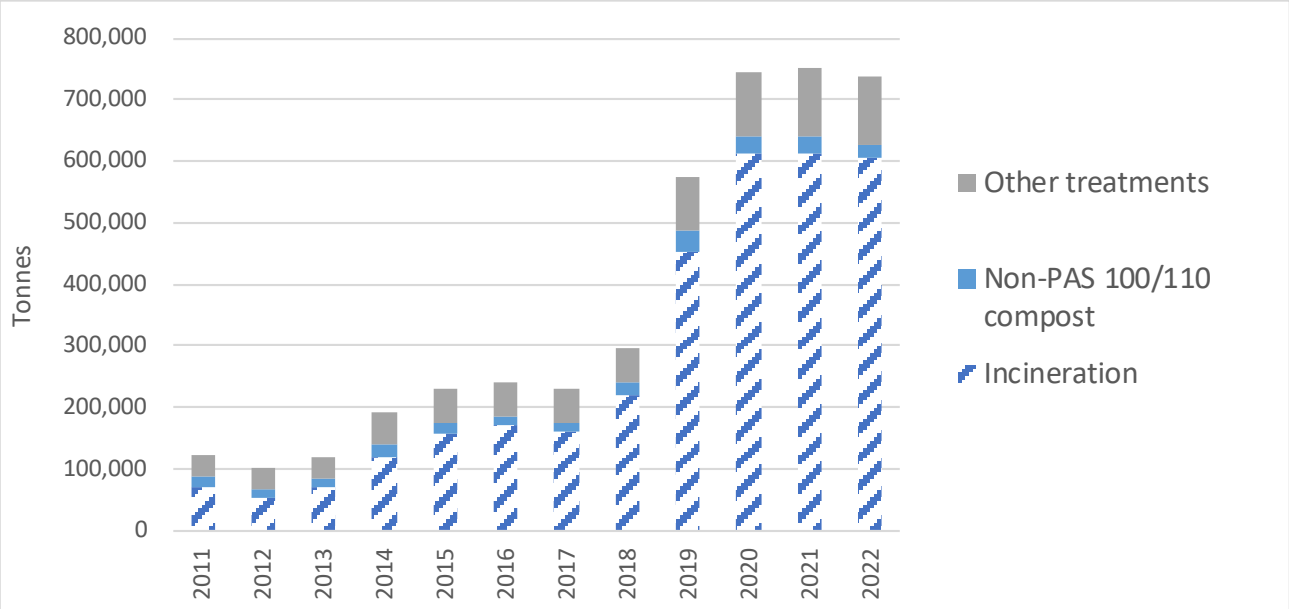
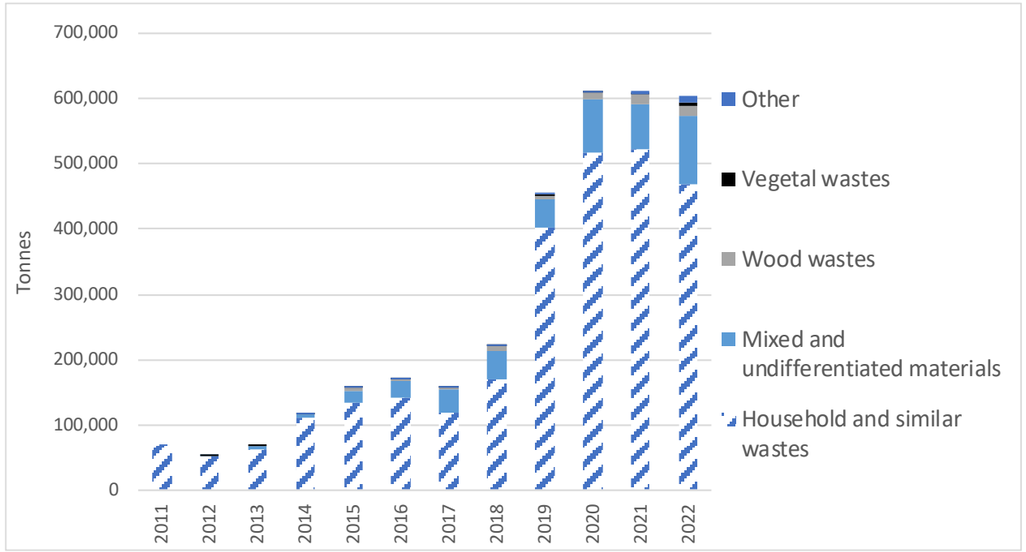


Table 11. Breakdown of treatment for Scottish household waste managed by other diversion from landfill 2011-– 2022[Error! Bookmark not defined.]

YEAR	INCINERATION	NON-PAS 100/110 COMPOST	OTHER TREATMENTS	TOTAL
2011	70,134	15,269	35,286	**120,688**
2012	51,473	14,504	33,844	**99,821**
2013	68,511	15,946	35,404	**119,861**
2014	118,678	19,713	53,788	**192,179**
2015	157,090	16,785	54,666	**228,541**
2016	170,601	13,002	57,170	**240,772**
2017	160,271	12,864	58,289	**231,423**
2018	220,792	17,984	58,297	**297,074**
2019	453,738	32,107	89,227	**575,071**
2020	612,727	26,903	105,388	**745,017**
2021	611,457	27,403	111,920	**750,781**
2022	603,825	23,658	108,794	**736,277**

[9] The definition of Other diversion from landfill changed in 2014 to include non PAS compost. Other diversion data for 2011 - 2013 has been modelled under the new definition to provide consistency for the time series. The methodology to calculate Other diversion was revised in 2022 to exclude metals from incinerator bottom ash recycled, which are now counted in Recycling, and applied to all historic data.

Figure 11. Scottish household waste diverted from landfill through incineration by waste category 2011-– 2022[9]



Note: Incineration is net incineration.

Table 12. Scottish household waste diverted from landfill by incineration by waste category 2011-– 2022 (tonnes)[9]

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	**68,511**
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**
2019	401,664	44,575	5,550	621	1,327	**453,738**
2020	517,090	83,223	8,507	529	3,377	**612,727**
2021	522,190	70,710	14,244	1,085	3,229	**611,457**
2022	467,683	106,096	16,493	3,104	10,448	**603,825**

Note: Incineration is net incineration.

Waste Landfilled

The amount of Scottish household waste landfilled in 2022 was 585,000 tonnes, a decrease of 78,000 tonnes (11.7%) from 2021. This continues a long-term trend, with a reduction of 868,000 tonnes (59.7%) of household waste landfilled since 2011 (see Figure 12 below).

For 2022, Scottish household waste landfilled as a percentage of waste generated was 25.1%. This is 1.6 percentage points lower than 2021 (26.7%) and a decrease of 30.7 percentage points from 2011 (55.8%).

In 2022, most of the Scottish household waste landfilled comprised Household and similar wastes (488,000 tonnes, 83.4% of total, see Figure 12 below), followed by Combustion wastes which comprised 77,000 tonnes (13.1% of the total). Combustion wastes decreased by 16,000 tonnes (17.0%) compared with 2021, however increased by 66,000 tonnes (630%) from 2011, and much of that from 2019 onwards.

Figure 12. Scottish household waste landfilled by waste category 2011 - 2022

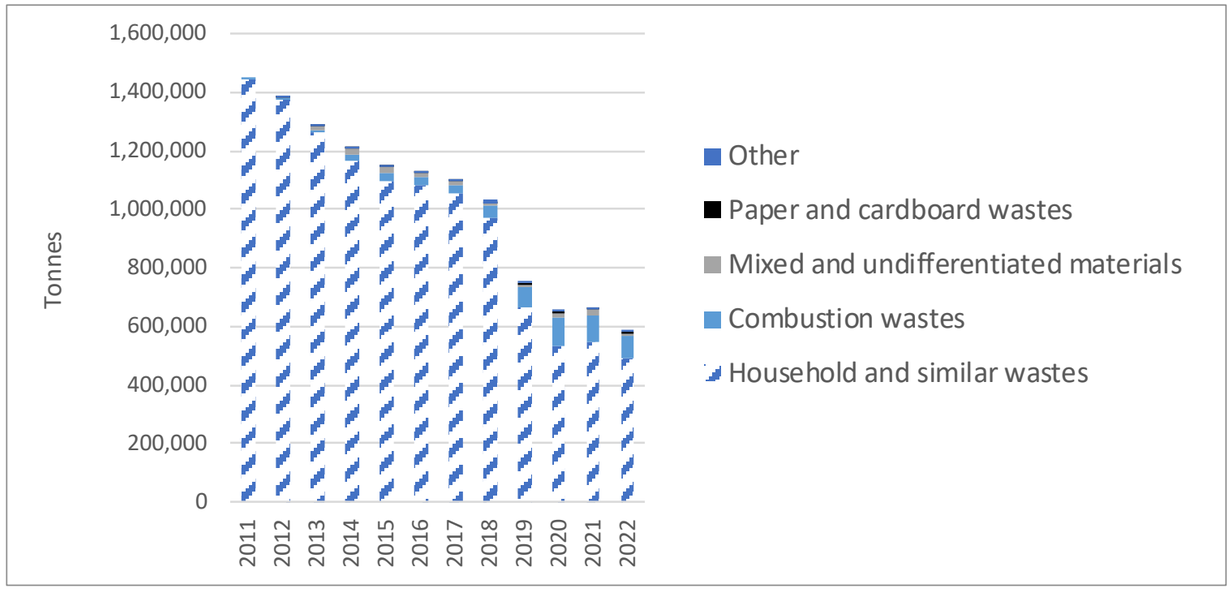


Table 13. Scottish household waste landfilled by waste category 2011 - 2022 (tonnes)

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	1,264,485	7,815	15,256	37	3,236	**1,290,829**
2014	1,169,886	18,281	18,905	119	5,288	**1,212,479**
2015	1,099,661	25,918	17,487	283	7,187	**1,150,537**
2016	1,081,587	26,917	14,643	663	7,997	**1,131,806**
2017	1,055,166	27,170	14,756	1,155	8,712	**1,106,959**
2018	973,437	36,804	8,035	4,962	8,230	**1,031,467**
2019	663,675	70,432	8,125	6,286	9,623	**758,141**
2020	535,210	96,962	14,476	8,230	4,528	**659,406**
2021	545,383	92,580	17,039	3,199	4,940	**663,140**
2022	488,070	76,861	13,071	3,698	3,760	**585,461**

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 cradle-to-grave impacts of the material. Negative values for Recycling and Other Diversion indicate that these management methods result in a net carbon saving through avoided raw material or energy demand.

The carbon impact of Scottish household waste generated and managed in 2022 was 5.5 million tonnes of carbon dioxide equivalent (TCO2e, see Table 14 below), a decrease of 357,000 TCO2e (6.1%) from 2021. This is equivalent to 1.02 TCO2e per person (Table 2).

The amount of waste generated by Scottish households in 2022 was 10.4% below 2011 levels (see Table 3 on page 6). In contrast, the carbon impact of Scottish household waste generated and managed in 2022 was 18.1% (1.22 million TCO2e) below the 2011 level.

The carbon impact of a tonne of Scottish household waste (TCO2e/tonnes of waste generated) has declined by 8.5% between 2011 and 2022 (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-– 2022 (TCO2e)

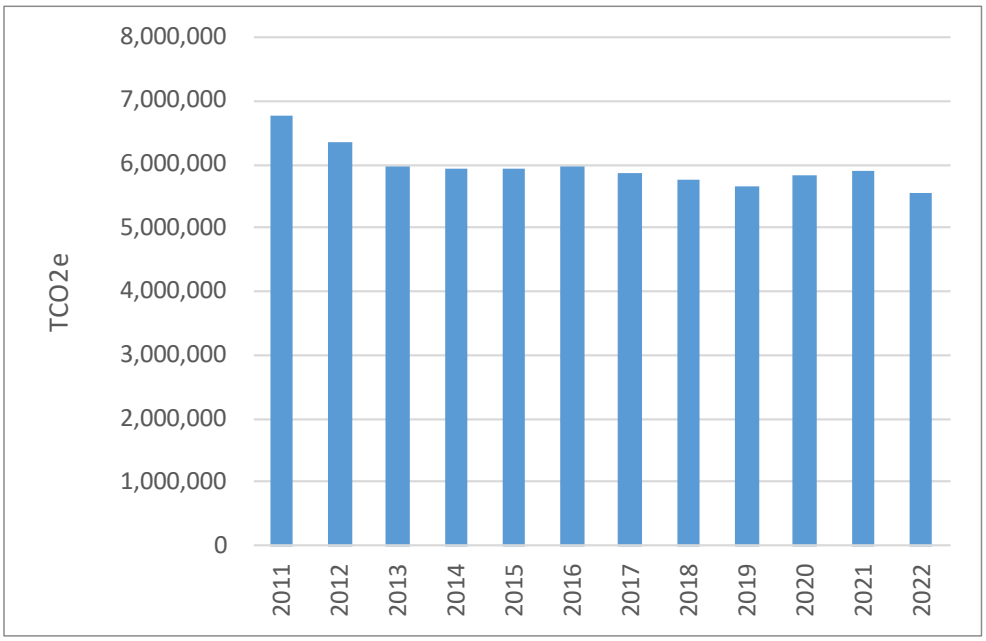


Table 14. Carbon impact of Scottish household waste generated and managed 2011 – 2022 (TCO2e)

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	5,872,541	-506,827	14,601	597,019	678	**5,978,011**
2014	5,899,607	-520,049	25,730	540,921	904	**5,947,112**
2015	5,946,447	-544,199	28,018	506,859	882	**5,938,008**
2016	5,989,293	-547,654	32,511	498,495	867	**5,973,512**
2017	5,881,279	-540,354	30,109	494,101	1,049	**5,866,184**
2018	5,787,919	-543,944	50,919	467,012	-1,134	**5,760,771**
2019	5,775,984	-549,424	129,683	312,314	-659	**5,667,898**
2020	5,971,187	-545,222	177,349	248,334	-5,126	**5,846,521**
2021	6,087,380	-618,097	180,618	250,623	-338	**5,900,187**
2022	5,773,472	-623,017	161,681	230,845	-256	**5,542,725**

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 are 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 2021 data has resulted from:

- Amendments to WasteDataFlow returns for two authorities;
- Change in recycling methodology to include metals from incinerator bottom ash recycled.

Revisions are depicted in Tables 15 and 16 below.

Methodology

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

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 2022 there were no new sites that met this criterion.

Metals from incineration recorded as recycled

This is the first dataset in which a change has been made to include metals from incineration bottom ash (IBA) in recycling figures. Previously these metals formed part of the Other diversion from landfill figures. The change in methodology was discussed by SEPA with Scotland's Waste Data Strategy board and there was broad agreement with the change, which recognises that metals from IBA are of high value and reflects what actually happens to these materials. Scotland already includes metals from incineration in recycling rates reported to Defra for UK statistics, and the methodology is recommended by the EU in the EU Circular Economy Package.

All historical household data dating back to 2011 was revised to reallocate metals from IBA that is sent for recycling from Other diversion from landfill to Recycling.

Scottish waste recycled (tonnes, percentage) and waste diverted from landfill (tonnes, percentage) for 2022 calculated using the old and new method is depicted in Table 15 below.

Table 15. Scottish household waste recycled and diverted from landfill 2022 - new methodology compared with old methodology

LOCAL AUTHORITY	RECYCLED (NEW METHOD, TONNES)	RECYCLED (OLD METHOD, TONNES)	RECYCLED (NEW METHOD, %)	RECYCLED (OLD METHOD, %)	OTHER DIVERSION (NEW METHOD, TONNES)	OTHER DIVERSION (OLD METHOD, TONNES)	OTHER DIVERSION (NEW METHOD, %)	OTHER DIVERSION (OLD METHOD, %)
Aberdeen City	37,091	36,368	*41.8*	*41.0*	22,007	22,729	*24.8*	*25.6*
Aberdeenshire	44,130	44,104	*40.2*	*40.2*	5,517	5,543	*5.0*	*5.1*
Angus	26,208	26,208	*51.7*	*51.7*	23,549	23,549	*46.4*	*46.4*
Argyll and Bute	19,963	19,963	*40.8*	*40.8*	7,029	7,029	*14.4*	*14.4*
City of Edinburgh	69,656	67,435	*37.1*	*35.9*	112,758	114,979	*60.1*	*61.3*
Clackmannanshire	12,453	12,453	*51.2*	*51.2*	0	0	*0.0*	*0.0*
Dumfries and Galloway	29,747	29,747	*45.1*	*45.1*	30,246	30,246	*45.8*	*45.8*
Dundee City	20,469	20,469	*33.8*	*33.8*	38,812	38,812	*64.2*	*64.2*
East Ayrshire	24,060	24,060	*48.5*	*48.5*	17,325	17,325	*34.9*	*34.9*
East Dunbartonshire	28,272	28,272	*51.8*	*51.8*	24,160	24,160	*44.3*	*44.3*
East Lothian	26,245	26,245	*53.1*	*53.1*	18,603	18,603	*37.6*	*37.6*
East Renfrewshire	23,193	23,193	*56.0*	*56.0*	14,968	14,968	*36.1*	*36.1*
Falkirk	33,060	33,060	*51.4*	*51.4*	33	33	*0.1*	*0.1*
Fife	78,572	78,572	*45.7*	*45.7*	16,185	16,185	*9.4*	*9.4*
Glasgow City	67,435	66,681	*27.6*	*27.3*	115,829	116,583	*47.4*	*47.7*
Highland	41,295	41,278	*37.2*	*37.1*	3,749	3,765	*3.4*	*3.4*
Inverclyde	11,685	11,685	*46.8*	*46.8*	1,534	1,534	*6.1*	*6.1*
Midlothian	19,401	19,401	*47.2*	*47.2*	16,644	16,644	*40.5*	*40.5*
Moray	28,154	28,154	*57.8*	*57.8*	1	1	*0.0*	*0.0*
Na h-Eileanan Siar	4,289	4,289	*31.8*	*31.8*	92	92	*0.7*	*0.7*
North Ayrshire	32,726	32,697	*55.3*	*55.3*	25,986	26,015	*43.9*	*44.0*
North Lanarkshire	63,055	62,948	*43.0*	*43.0*	60,128	60,235	*41.0*	*41.1*
Orkney Islands	2,314	2,263	*23.3*	*22.7*	4,506	4,557	*45.3*	*45.8*
Perth and Kinross	34,793	34,748	*49.3*	*49.2*	5,110	5,155	*7.2*	*7.3*
Renfrewshire	41,980	41,980	*53.7*	*53.7*	34,008	34,008	*43.5*	*43.5*
Scottish Borders	29,012	29,012	*57.3*	*57.3*	21,181	21,181	*41.9*	*41.9*
Shetland Islands	1,860	1,777	*20.7*	*19.7*	5,019	5,102	*55.7*	*56.7*
South Ayrshire	26,865	26,738	*54.3*	*54.0*	7,056	7,182	*14.3*	*14.5*
South Lanarkshire	60,525	59,504	*41.1*	*40.5*	63,879	64,901	*43.4*	*44.1*
Stirling	20,648	20,622	*51.4*	*51.3*	660	686	*1.6*	*1.7*
West Dunbartonshire	17,042	17,021	*38.8*	*38.8*	2,874	2,895	*6.5*	*6.6*
West Lothian	35848.63	35,836	*45.9*	*45.9*	36,830	36,843	*47.2*	*47.2*
Total Scotland	***1,012,045***	***1,006,780***	***43.3***	***43.1***	***736,277***	***741,542***	***31.5***	**31.8**

Table 16. Revisions to 2021 Scottish household waste 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	93,747	93,749	42,574	43,865	*45.4*	*46.8*	41,799	40,508	*44.6*	*43.2*	9,376	9,376	*10.0*	*10.0*	*224,549*	224,495
Aberdeenshire	117,505	117,503	48,268	48,301	*41.1*	*41.1*	2,946	2,911	*2.5*	*2.5*	66,292	66,292	*56.4*	*56.4*	*316,787*	316,786
Angus	54,058	54,058	29,592	29,592	*54.7*	*54.7*	22,803	22,805	*42.2*	*42.2*	1,661	1,661	*3.1*	*3.1*	*105,955*	106,042
Argyll and Bute	49,042	49,042	19,285	19,286	*39.3*	*39.3*	6,806	6,806	*13.9*	*13.9*	22,950	22,950	*46.8*	*46.8*	*119,612*	119,610
City of Edinburgh	207,205	207,204	79,270	82,739	*38.3*	*39.9*	120,927	117,459	*58.4*	*56.7*	7,006	7,005	*3.4*	*3.4*	*496,442*	496,298
Clackmannanshire	23,777	23,777	11,880	11,880	*50.0*	*50.0*	6	6	*0.0*	*0.0*	11,891	11,891	*50.0*	*50.0*	*54,991*	54,989
Dumfries and Galloway	65,775	65,774	26,473	26,203	*40.2*	*39.8*	32,090	32,090	*48.8*	*48.8*	7,212	7,211	*11.0*	*11.0*	*174,785*	175,470
Dundee City	65,011	65,012	21,224	21,225	*32.6*	*32.6*	41,337	41,335	*63.6*	*63.6*	2,452	2,452	*3.8*	*3.8*	*150,179*	150,681
East Ayrshire	53,330	53,329	25,876	25,876	*48.5*	*48.5*	5,101	5,101	*9.6*	*9.6*	22,352	22,352	*41.9*	*41.9*	*125,236*	125,237
East Dunbartonshire	57,693	57,694	26,110	26,108	*45.3*	*45.3*	25,519	25,519	*44.2*	*44.2*	6,063	6,064	*10.5*	*10.5*	*129,610*	129,607
East Lothian	53,952	53,952	29,091	29,093	*53.9*	*53.9*	19,372	19,372	*35.9*	*35.9*	5,487	5,487	*10.2*	*10.2*	*115,300*	115,300
East Renfrewshire	40,574	40,574	23,573	23,573	*58.1*	*58.1*	16,015	16,016	*39.5*	*39.5*	985	985	*2.4*	*2.4*	*82,061*	82,060
Falkirk	75,818	75,127	36,258	36,179	*47.8*	*48.2*	3,976	3,976	*5.2*	*5.3*	35,583	34,971	*46.9*	*46.5*	*171,527*	169,230
Fife	166,981	166,981	72,787	72,788	*43.6*	*43.6*	14,651	14,651	*8.8*	*8.8*	79,543	79,542	*47.6*	*47.6*	*390,154*	390,154
Glasgow City	258,941	258,941	70,670	70,669	*27.3*	*27.3*	90,856	90,855	*35.1*	*35.1*	97,417	97,416	*37.6*	*37.6*	*779,740*	779,741
Highland	116,068	116,066	43,339	43,362	*37.3*	*37.4*	6,021	5,997	*5.2*	*5.2*	66,707	66,707	*57.5*	*57.5*	*293,160*	293,220
Inverclyde	26,632	26,632	12,905	12,906	*48.5*	*48.5*	2,651	2,426	*10.0*	*9.1*	10,822	11,046	*40.6*	*41.5*	*59,684*	59,722
Midlothian	43,837	43,835	20,761	20,758	*47.4*	*47.4*	17,651	17,650	*40.3*	*40.3*	5,428	5,427	*12.4*	*12.4*	*101,518*	101,482
Moray	42,539	42,539	22,211	22,210	*52.2*	*52.2*	0	0	*0.0*	*0.0*	20,329	20,329	*47.8*	*47.8*	*89,111*	89,109
Na h-Eileanan Siar	14,125	14,125	4,734	4,733	*33.5*	*33.5*	55	55	*0.4*	*0.4*	9,337	9,337	*66.1*	*66.1*	*37,940*	37,938
North Ayrshire	63,051	63,050	35,512	35,856	*56.3*	*56.9*	24,138	23,796	*38.3*	*37.7*	3,470	3,469	*5.5*	*5.5*	*124,955*	124,088
North Lanarkshire	161,069	161,070	69,610	69,858	*43.2*	*43.4*	72,273	72,022	*44.9*	*44.7*	19,190	19,190	*11.9*	*11.9*	*359,363*	360,344
Orkney Islands	9,360	9,361	2,215	2,267	*23.7*	*24.2*	4,603	4,552	*49.2*	*48.6*	1,956	1,956	*20.9*	*20.9*	*24,662*	24,662
Perth and Kinross	77,372	77,370	38,803	38,803	*50.2*	*50.2*	5,862	5,860	*7.6*	*7.6*	32,707	32,707	*42.3*	*42.3*	*148,586*	148,585
Renfrewshire	85,449	85,448	44,194	44,194	*51.7*	*51.7*	34,255	34,256	*40.1*	*40.1*	6,999	6,998	*8.2*	*8.2*	*179,380*	179,347
Scottish Borders	54,563	54,562	29,910	30,111	*54.8*	*55.2*	24,435	24,235	*44.8*	*44.4*	172	172	*0.3*	*0.3*	*124,538*	124,033
Shetland Islands	9,625	9,626	1,630	1,745	*16.9*	*18.1*	5,594	5,481	*58.1*	*56.9*	2,400	2,400	*24.9*	*24.9*	*29,049*	29,111
South Ayrshire	57,828	57,828	32,367	32,370	*56.0*	*56.0*	5,755	5,752	*10.0*	*9.9*	19,706	19,706	*34.1*	*34.1*	*121,313*	121,315
South Lanarkshire	164,764	164,765	66,492	67,583	*40.4*	*41.0*	60,608	59,519	*36.8*	*36.1*	37,663	37,663	*22.9*	*22.9*	*373,975*	374,162
Stirling	43,955	43,957	22,345	22,364	*50.8*	*50.9*	744	726	*1.7*	*1.7*	20,868	20,867	*47.5*	*47.5*	*90,816*	90,814
West Dunbartonshire	42,507	42,505	15,125	15,144	*35.6*	*35.6*	5,013	4,992	*11.8*	*11.7*	22,369	22,369	*52.6*	*52.6*	*109,851*	109,864
West Lothian	87,151	87,149	35,958	35,958	*41.3*	*41.3*	44,051	44,052	*50.5*	*50.5*	7,140	7,140	*8.2*	*8.2*	*196,691*	196,690
Total Scotland	***2,483,304***	**2,482,604**	***1,061,042***	**1,067,599**	***42.7***	***43.0***	***757,913***	**750,781**	**30.5**	***30.2***	***663,533***	**663,140**	***26.7***	***26.7***	***5,901,520***	**5,900,187**

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

Revised data contains the change to new recycling method to include metals from incinerator bottom ash, and Other diversion from landfill to exclude metals from incineration bottom ash.

Carbon Metric

For the 2022 dataset, the 2021 factors were used in the carbon metric to calculate CO_2e. Specific factors for 2022 were not developed as:

- year-on-year changes in factors are relatively minor;
- effort was focused on developing factors for Scotland's Waste Environmental Footprint Tool (SWEFT)[10], which will replace the carbon metric from 2023 onwards.

National Method vs UK method

Recycling figures are calculated according to Scotland's national recycling rate methodology. This methodology differs to the Waste from households measure published by Defra in its UK Statistics on waste publication. The differences are summarised in Table 17 below.

Table 17. Comparison of Scotland's 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*	✓	✓

* Metals from incineration were first included in Scotland's national method in 2022, and all historical data revised to include metals. This publication is the first publication to use this revised national method.

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" at Household waste data | Scottish Environment Protection Agency (SEPA).

[10] For further information on SWEFT see Targeted approach (circularonline.co.uk)

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 five 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 waste 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).

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:

- Ash outputs from the incineration of household waste that is recycled,
- 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.,

Vegetal wastes – a statistical waste category that includes the WasteDataFlow categories *Green garden waste only*, *Mixed garden and food waste* (75% allocation to *Vegetal wastes*, 25% allocation to *Animal and mixed food waste* statistical categories), and *Other compostable waste*.

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. From 2022, the waste recycled include metals from the outputs of incineration that have been recycled, previous to 2022 these were counted as Other diversion from landfill.

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