Scottish Environment Protection Agency
Buidheann Dìon Àrainneachd na h-Alba

For the future of our environment

Waste incinerated in Scotland – 2022

Official Statistics



October 2023

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This release provides a summary of all waste incinerated in Scotland for calendar year 2022. It excludes Scottish waste incinerated elsewhere. 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

Waste incinerated in Scotland – 2022 calendar year

- The total quantity of waste incinerated in Scotland in 2022 was 1.42 million tonnes, an increase of 67,000 tonnes (4.9%) from 2021, and an increase of 1.01 million tonnes (246%) from 2011.

- Over one third (36.4%) of waste incinerated was incinerated by recovery. This follows the accreditation of an additional two municipal waste incineration facilities to the R1 efficiency standard in 2022, bringing the total number of accredited facilities in Scotland to three.

- Sorting residues were the largest waste category incinerated in Scotland in 2022 (492,000 tonnes), which was an increase of 42,000 tonnes (9.4%) from 2021 and comprised over one third (34.7%) of all waste incinerated. The other two main categories of waste incinerated were Wood wastes (443,000 tonnes incinerated, 31.2% of all waste incinerated) and Household and similar wastes (358,000 tonnes, 25.2% of all waste incinerated)

- Hazardous waste comprised 0.04% (500 tonnes) of waste incinerated in 2022, a decrease of 1,800 tonnes (77.9%) compared with 2021. Hazardous waste incinerated was predominantly (89.1%, 470 tonnes) Sludges and liquid wastes from waste treatment.

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

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

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

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Table 1. Waste incinerated in Scotland – Summary data 2022

WASTE CATEGORY	TOTAL INCINERATED (TONNES)
Acid, alkaline or saline wastes	0
Animal and mixed food waste	17,969
Animal faeces, urine and manure	82,032
Batteries and accumulators wastes	0
Chemical wastes	110
Combustion wastes	0
Common sludges	0
Discarded equipment (excluding discarded vehicles, batteries and accumulators wastes)	0
Discarded vehicles	0
Dredging spoils	0
Glass wastes	0
Health care and biological wastes	3,506
Household and similar wastes	357,972
Industrial effluent sludges	11,271
Metallic wastes, ferrous	0
Metallic wastes, mixed ferrous and non-ferrous	0
Metallic wastes, non-ferrous	0
Mineral waste from construction and demolition	0
Mineral wastes from waste treatment and stabilised wastes	0
Mixed and undifferentiated materials	19
Other mineral wastes	0
Paper and cardboard wastes	0
Plastic wastes	0
Rubber wastes	9,427
Sludges and liquid wastes from waste treatment	2,060
Soils	0
Sorting residues	492,231
Spent solvents	0
Textile wastes	0
Used oils	0
Vegetal wastes	0
Waste containing PCB	0
Wood wastes	442,659
Total	**1,419,256**

Data and Trends

Waste Incinerated in Scotland

In 2022, 1.42 million tonnes of waste were incinerated in Scotland across 16 permitted incineration facilities. This was an increase of 67,000 tonnes (4.9%) from 2021. This increase is consistent with the longer-term incineration trend, with 1.01 million tonnes (246%) more waste incinerated in Scotland in 2022 than in 2011 (see Figure 1 below).

Sorting residues were the largest waste category incinerated in Scotland in 2022 (492,000 tonnes, 34.7% of all waste incinerated), a 42,000 tonne (9.4%) increase from 2021. The incineration of Sorting residues has been increasing since 2019 (Figure 1). This is indicative of an increase in the number of municipal waste incinerators in Scotland over this time. These facilities incinerate, among other wastes, low value waste stream outputs from the sorting of waste.

In 2022 there were 443,000 tonnes of Wood wastes incinerated, comprising 31.2% of all waste incinerated, an increase of 24,000 tonnes (5.8%) from 2021. About one fifth (19.7%, 87,000 tonnes) of the Wood wastes incinerated in 2022 originated in the UK outwith Scotland (data not shown), a 67,000 tonne reduction from the 154,000 tonnes (36.8%) of these wastes originating in the UK outwith Scotland incinerated in 2021.

There were 520 tonnes of hazardous waste incinerated in Scotland in 2022 (see Table 4 below), which amounted to 0.04% of all waste incinerated in Scotland. Most of the hazardous waste incinerated (89.1%, 470 tonnes) were Sludges and liquid wastes from waste treatment (see Figure 3 below).

In 2022, almost forty percent (39.7%) of the waste incinerated in Scotland was incinerated by co-incineration, with 36.4% incinerated by recovery, and 23.9% incinerated by disposal. This is the first time that incineration by recovery is reported[1], to be higher than incineration by disposal and results from two new accreditations in 2022 to give a total of three Scottish municipal waste incinerators now accredited to the R1 energy efficiency standard[2].

[1] This is the first time that incineration by recovery is reported to be higher than incineration by disposal, but 2022 is not the first year in which it has occurred. Historical incineration data has been revised to account for the newly accredited R1 facilities, and subsequently from 2019 onwards incineration by recovery is greater than incineration by disposal. Refer to the Revisions section on page 6 for further details.

[2] All historic data has been amended for the newly accredited R1 incinerators, as the incineration process has not changed during the lifetime of the incinerators.

Figure 1. Waste incinerated in Scotland by waste category 2011 - 2022

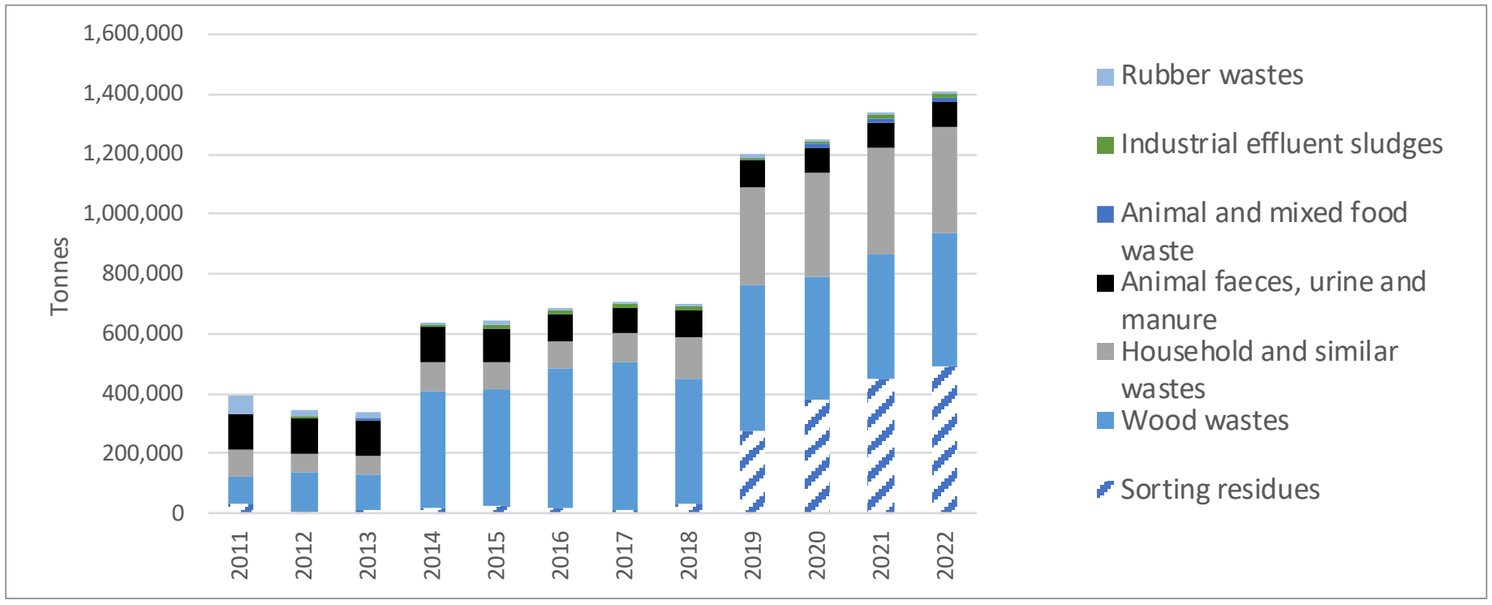
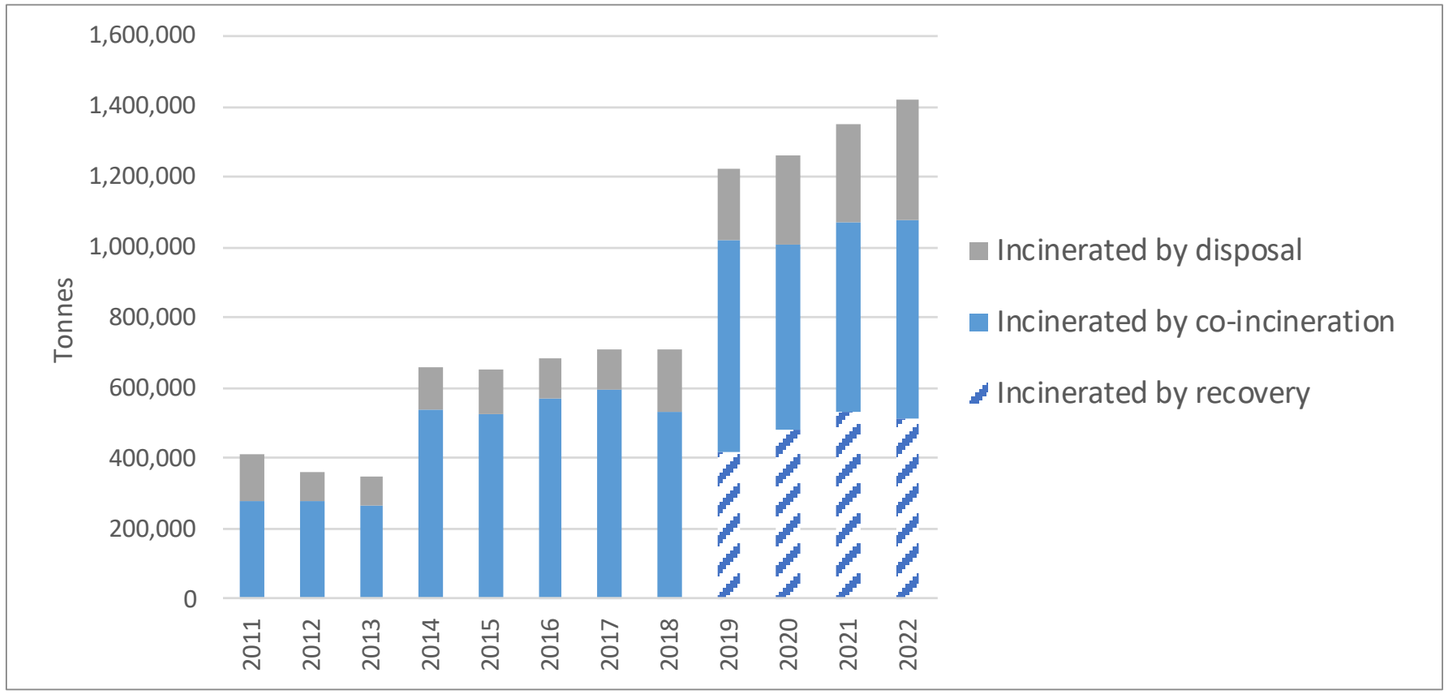


Table 2. Waste incinerated in Scotland by waste category 2011 – 2022 (tonnes)

WASTE CATEGORY	Year											
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Sorting residues	29,648	6,270	7,578	17,836	22,912	16,582	12,043	31,858	271,993	376,407	449,954	492,231
Wood wastes	94,477	130,449	123,121	388,394	394,199	464,310	493,081	416,272	490,292	415,318	418,364	442,659
Household and similar wastes	87,693	58,759	59,034	98,041	90,837	90,646	94,636	142,946	330,368	350,230	355,440	357,972
Animal faeces, urine and manure	119,309	120,509	123,748	117,431	108,194	94,685	89,009	85,320	87,080	80,072	84,291	82,032
Animal and mixed food waste	344	198	260	159	473	365	259	398	410	11,431	12,324	17,969
Industrial effluent sludges	2,404	8,243	5,191	5,295	11,542	9,991	9,266	13,430	10,410	10,653	15,519	11,271
Rubber wastes	15,235	14,539	15,025	16,183	8,594	2,940	8,039	17,511	16,424	12,904	11,429	9,427
Health care and biological wastes	1,366	1,240	1,335	1,372	1,701	1,443	1,360	1,314	8,918	7,819	5,365	3,506
Other	59,583	19,926	15,853	13,794	16,345	2,263	471	2,455	10,613	342	5	2,189
Total	**410,059**	**360,132**	**351,145**	**658,506**	**654,797**	**683,225**	**708,164**	**711,504**	**1,226,507**	**1,265,176**	**1,352,691**	**1,419,256**

Figure 2. Waste incinerated in Scotland by incineration method 2011 - 2022



Note: Incinerators accredited to R1 status in 2022 have historical incineration revised to incinerated by recovery.

Table 3. Waste incinerated in Scotland by incineration method 2011 - 2022 (tonnes)

YEAR	INCINERATED BY RECOVERY	INCINERATED BY CO-INCINERATION	INCINERATED BY DISPOSAL	TOTAL
2011	0	276,869	133,190	410,059
2012	0	276,899	83,234	360,132
2013	0	268,295	82,850	351,145
2014	0	537,817	120,689	658,506
2015	0	529,303	125,494	654,797
2016	0	572,008	111,217	683,225
2017	0	598,944	109,220	708,164
2018	0	534,357	177,147	711,504
2019	416,262	602,672	207,574	1,226,507
2020	481,416	528,081	255,679	1,265,176
2021	531,073	539,833	281,785	1,352,691
2022	517,113	563,275	338,868	1,419,256

Note: Incinerators accredited to R1 status in 2022 have historical incineration revised to incinerated by recovery.

Figure 3. Hazardous waste incinerated in Scotland 2011 – 2022

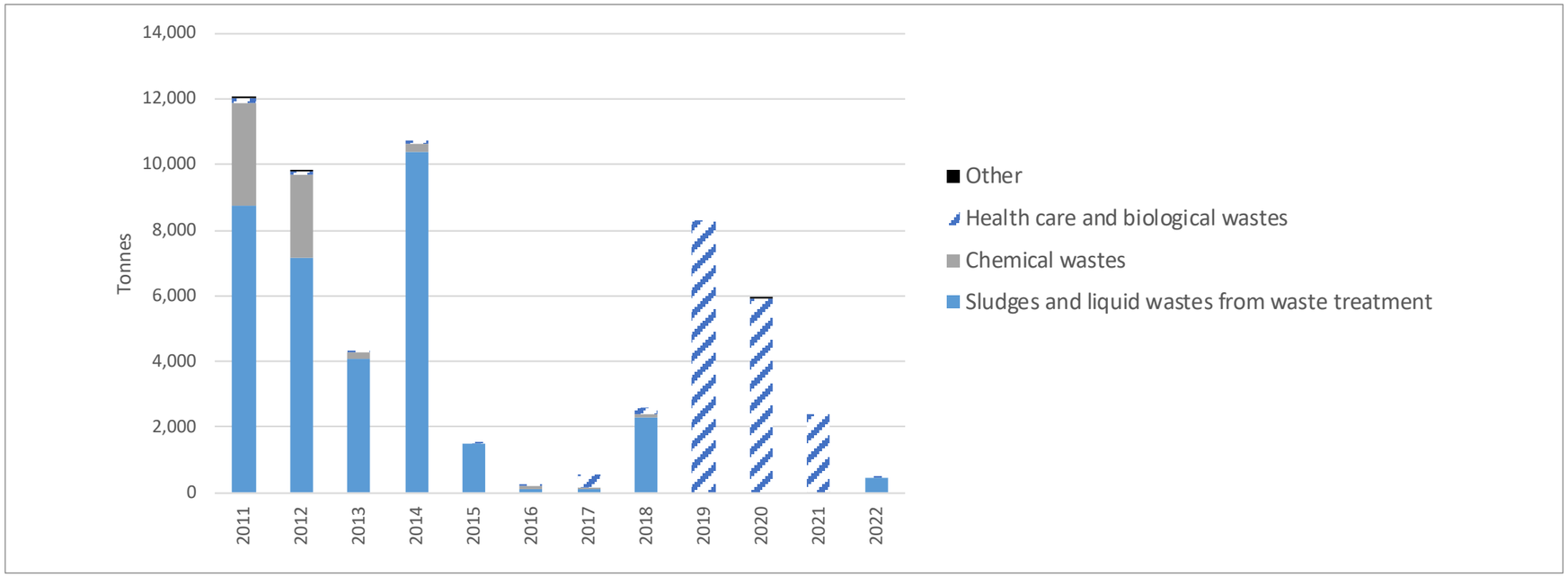


Table 4. Hazardous waste incinerated in Scotland 2011 – 2022 (tonnes)

WASTE CATEGORY	YEAR											
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Health care and biological wastes	172	90	94	107	82	49	387	207	8,304	5,911	2,362	57
Sludges and liquid wastes from waste treatment	8,745	7,150	4,082	10,410	1,476	82	112	2,307	0	0	0	467
Chemical wastes	3,134	2,567	172	244	0	114	33	58	0	0	4	0
Other	52	3	0	0	0	0	0	0	0	1	0	0
Total	**12,103**	**9,811**	**4,348**	**10,761**	**1,558**	**245**	**532**	**2,572**	**8,304**	**5,912**	**2,366**	**524**

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

User Statement

Data on 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 and to support policy development. 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: waste.data@sepa.org.uk

Revisions Policy

SEPA will provide information about any revisions made to this release and any 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 release.

Revisions to 2021 waste incinerated in Scotland data since the last statistical publication are shown in Table 5 below. The changes for Incineration by recovery and Incinerated by disposal are primarily due to re-categorisation, following the accreditation of an additional two incinerators to the R1 incineration efficiency standard. Changes in the total for 2020 are due to revised waste returns.

Table 5. Revisions to the 2011 - 2021 waste incinerated in Scotland

YEAR	INCINERATED BY RECOVERY		INCINERATED BY CO-INCINERATION		INCINERATED BY DISPOSAL		TOTAL	
	ORIGINAL	REVISED	ORIGINAL	REVISED	ORIGINAL	REVISED	ORIGINAL	REVISED
2011	0	0	276,869	276,869	133,190	133,190	410,059	410,059
2012	0	0	276,899	276,899	83,234	83,234	360,133	360,132
2013	0	0	268,295	268,295	82,850	82,850	351,145	351,145
2014	0	0	537,817	537,817	120,689	120,689	658,506	658,506
2015	0	0	529,303	529,303	125,494	125,494	654,797	654,797
2016	0	0	572,008	572,008	111,217	111,217	683,225	683,225
2017	0	0	598,944	598,944	109,220	109,220	708,164	708,164
2018	41,284	0	534,357	534,357	135,862	177,147	711,502	711,504
2019	277,240	416,262	602,672	602,672	346,595	207,574	1,226,507	1,226,507
2020	318,878	481,416	528,082	528,081	412,311	255,679	1,259,270	1,265,176
2021	320,374	531,073	539,833	539,833	492,484	281,785	1,352,691	1,352,691

Note: shaded cells represent a revision of more than 50 tonnes

Methodology

Data is taken from licensed/permitted site returns or reports submitted to SEPA. Further details on the methodology used to produce the figures are provided in the annual Waste Data Quality Reports on SEPA's web site.

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

EWC Code – European Waste Catalogue waste code

Hazardous Waste – waste with hazardous properties which may render it harmful to human health or the environment. Hazardous waste is also called Special Waste in Scotland as defined in the Special Waste Regulations 1996 [Latest Available (Revised) version]

WFAS – waste from all sources. This includes waste from commercial and industrial sources, construction and demolition sources as well as from household sources.

Waste incinerated by co-incineration – wastes used principally as a fuel and incinerated at an incineration facility in which the main purpose is the generation of energy or production of material products (e.g. cement) and which uses waste as an additional fuel.

Waste incinerated by disposal - wastes incinerated at an incineration facility where the energy efficiency has not been demonstrated to meet the R1 criteria specified in the EU Waste Framework Directive (Directive 2008/98/EC).

Waste incinerated by recovery - wastes used principally as a fuel to generate energy and incinerated at an incineration facility where the energy efficiency has been demonstrated to meet the R1 energy efficiency criteria specified in the EU Waste Framework Directive (Directive 2008/98/EC).

Waste recovered by incineration - wastes incinerated by co-incineration and waste incinerated by recovery.

Waste incinerated - WFAS that is incinerated in Scotland including waste incineration by disposal and waste incineration by recovery.

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