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Municipal waste statistics

Data extracted in June 2019.
Planned article update: January 2020.

Highlights

486 kg of municipal waste per capita were generated in the EU in 2017.

46.3 % of municipal waste in the EU was recycled (material recycling and composting) in 2017.

Municipal waste generated, 2017 (kg per capita)

EU-28DKCYDELUMTATFRNLFIELITPTSIUKESLTSELVBGHRBEEEHUSKZPLRONOCHISkg per capita0100200300400500600700800

- Data for Ireland are not available

This article shows trends in [municipal waste](#) generation and treatment in the [European Union \(EU\)](#) from 1995 to 2017. There is a very distinct trend towards less landfilling as countries move steadily towards alternative ways of treating waste.

Municipal waste accounts for only about 10 % of total waste generated when compared with the data reported according to the Waste Statistics Regulation (tab env_wasgen). However, it has a very high political profile because of its complex character, due to its composition, its distribution among many sources of waste, and its link to consumption patterns.

Full article

Municipal waste generation

Municipal waste generation

Figure 1 and Table 1 show municipal waste generation by country expressed in kilograms per capita.

To illustrate trends, Table 1 shows waste for selected years, covering the period 1995 to 2017. For better readability, Figure 1 covers only the years 2005 and 2017. Both include the [EU-28 aggregates](#) for comparison. In Figure 1, countries are ranked in increasing order by municipal waste generation in 2017.

For 2017, municipal waste generation totals vary considerably, ranging from 272 kg per capita in Romania to 781 kg per capita in Denmark. The variations reflect differences in consumption patterns and economic wealth, but also depend on how municipal waste is collected and managed. There are differences between countries regarding the degree to which waste from commerce, trade and administration is collected and managed together with waste from [households](#).

From 2004 on, methodologies were finalised in most countries, so the waste generation time series of 2004 and later is more accurate and stable than that between 1995 and 2003.

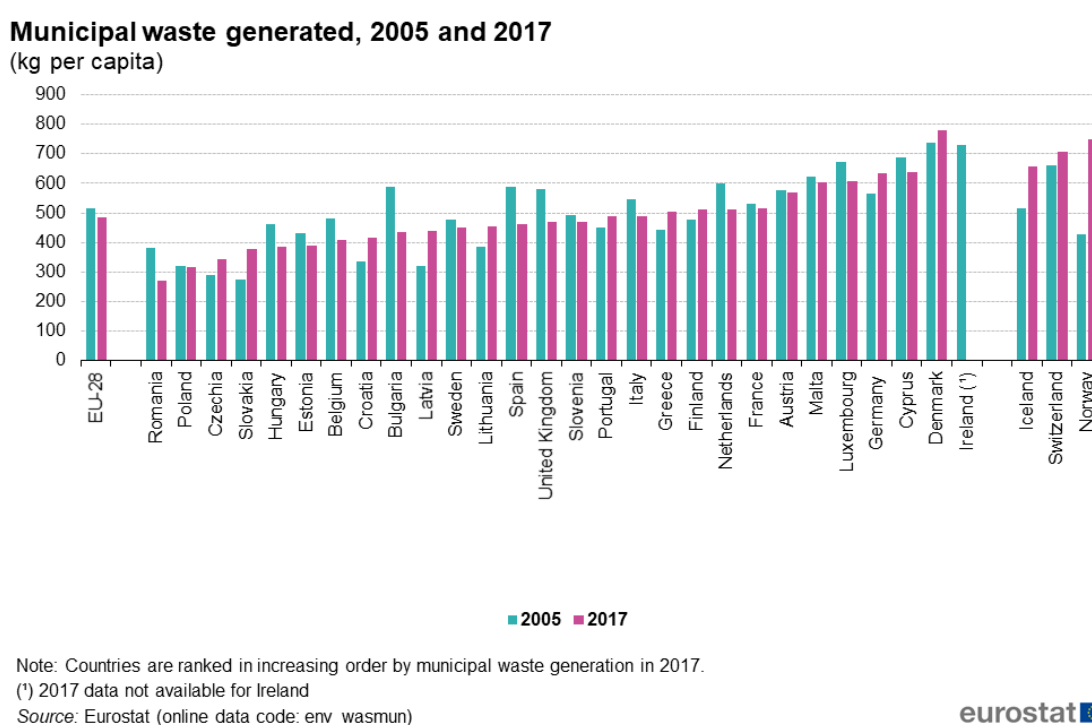


Figure 1: Municipal waste generated, 2005 and 2017

(kg per capita)

Source: Eurostat ([env_wasmun](#))

Municipal waste generated, in selected years, 1995-2017
(kg per capita)

	1995	2000	2005	2011	2017	Change 2017/1995 (%)
EU-28	470	521	515	497	486	3.4
Belgium	455	471	482	453	410	-9.9
Bulgaria	694	612	588	508	435	-37.3
Czechia	302	335	289	320	344	13.9
Denmark	521	664	736	781	781	49.9
Germany	623	642	565	626	633	1.6
Estonia	371	453	433	301	390	5.1
Ireland	512	599	731	616	:	:
Greece	303	412	442	503	504	66.3
Spain	505	653	588	485	462	-8.5
France	475	514	529	534	514	8.2
Croatia	:	262	336	384	416	:
Italy	454	509	546	529	489	7.7
Cyprus	595	628	688	672	637	7.1
Latvia	264	271	320	350	438	65.9
Lithuania	426	365	387	442	455	6.8
Luxembourg	587	654	672	666	607	3.4
Hungary	460	446	461	382	385	-16.3
Malta	387	533	623	589	604	56.1
Netherlands	539	598	599	568	513	-4.8
Austria	437	580	575	573	570	30.4
Poland	285	320	319	319	315	10.5
Portugal	352	457	452	490	487	38.4
Romania	342	355	383	259	272	-20.5
Slovenia	596	513	494	415	471	-21.0
Slovakia	295	254	273	311	378	28.1
Finland	413	502	478	505	510	23.5
Sweden	386	428	477	449	452	17.1
United Kingdom	498	577	581	491	468	-6.0
Iceland	426	462	516	495	656	54.0
Norway	624	613	426	485	748	19.9
Switzerland	600	656	661	689	706	17.7
Montenegro	:	:	:	524	:	:
North Macedonia	:	:	:	357	344	:
Albania	:	:	:	:	436	:
Serbia	:	:	:	375	306	:
Turkey	441	465	458	416	425	-3.6
Bosnia and Herzegovina	:	:	:	340	352	:
Kosovo*	:	:	:	:	228	:

* This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence

Source: Eurostat (online data code: env_wasmun)

eurostat 



Table 1: Municipal waste generated, in selected years, 1995-2017
(kg per capita)

Source: Eurostat ([env_wasmun](#))

Municipal waste treatment

In this section, differences in the management of municipal waste are shown and treatment strategies are identified based on reported amounts of municipal waste [landfilled](#), [incinerated](#), [recycled](#) and [composted](#). Member States are asked to distinguish between incineration with and without energy recovery⁽¹⁾. In this article only the total amount incinerated is analysed.

Table 2 shows the amount of municipal waste treated in the European Union (EU-28) for the period 1995 to 2017 by treatment method, in million tonnes and in kg per capita. Figure 2 shows the amount of waste generated at EU-28 level and the amount of waste by treatment category (landfill, incineration, material recycling, composting and other).

Municipal waste landfilled, incinerated, recycled and composted, EU-28, 1995-2017

	1 995	1 996	1 997	1 998	1 999	2 000	2 001	2 002	2 003	2 004	2 005	2 006	2 007	2 008	2 009	2 010	2 011	2 012	2 013	2 014	2 015	2 016	2 017	Change 2017/1995 (%)
	million tonnes																							
Landfill	145	143	144	140	140	140	135	131	125	118	110	109	107	101	98	93	86	79	73	68	64	60	58	-60
Incineration	32	32	35	35	36	39	40	41	41	44	48	52	52	54	55	57	60	59	62	64	65	68	70	118
Material Recycling	25	28	32	35	40	40	43	47	48	49	52	54	60	61	62	63	64	66	65	68	71	73	74	195
Composting	14	16	17	18	19	24	24	26	26	28	29	30	32	35	34	34	34	35	36	38	38	41	42	196
Other	10	14	12	12	12	12	12	12	12	13	17	14	11	10	7	6	6	6	6	5	6	6	6	-44
	kg per capita																							
Landfill	302	295	298	289	287	287	277	268	254	239	223	220	214	202	194	185	171	156	145	134	125	117	113	-63
Incineration	67	67	72	73	74	79	81	84	84	90	96	104	105	108	110	114	119	118	122	126	128	134	137	104
Material Recycling	52	58	66	72	82	83	87	95	97	99	105	109	119	121	124	126	128	130	128	133	140	143	144	177
Composting	29	33	36	37	39	48	50	53	53	57	58	61	64	69	68	67	67	70	72	74	75	81	81	179
Other	20	29	24	23	26	24	24	25	25	27	33	27	21	20	15	12	12	12	12	11	12	11	11	-45

Source: Eurostat (online data code: env_wasmun)

eurostat 



Table 2: Municipal waste landfilled, incinerated, recycled and composted, EU-28, 1995-2017

Source: Eurostat ([env_wasmun](#))

The 'other treatment' category was calculated as the difference between the sum of the amounts treated and the amounts of waste generated. This difference arises in countries that have to estimate waste generation in areas not covered by a municipal waste collection scheme and thus report more waste generated than treated. In addition, the 'other treatment' category reflects the effects of import and export, weight losses, double-counting of secondary waste (e.g. landfilling and recycling of residues from incineration), differences due to time lags, temporary storage and, increasingly, the use of pre-treatment, such as [mechanical biological treatment \(MBT\)](#). This may even lead to a rise in 'other treatment' for a given year. At EU-28 level, these effects contribute only marginally and tend to cancel each other out. However, at country level, the effects can be considerable.

Even though more waste is being generated in the EU-28, the total amount of municipal waste landfilled has diminished. In the reference period, the total municipal waste landfilled in the EU-28 fell by 88 million tonnes, or 60 % - from 145 million tonnes (302 kg per capita) in 1995 to 58 million tonnes (113 kg per capita) in 2017. This corresponds to an average annual decline of 4.1 %. For the shorter period 2005-2017 landfilling has fallen by as much as 5.6 % per year on average.

As a result, the landfilling rate (landfilled waste as share of generated waste) compared with municipal waste generation in the EU-28 dropped from 64 % in 1995 to 23 % in 2017.

This reduction can partly be attributed to the implementation of European legislation, for instance [Directive 62/1994](#) on packaging and packaging waste. By 2001, Member States had to recover a minimum of 50 % of all packaging put on the market. With the revised recovery target of 60 % to be achieved by 31 December 2008, there was a further rise in the amount of packaging waste collected separately.

Furthermore, [Directive 31/1999](#) on landfill stipulated that Member States were obliged to reduce the amount of biodegradable municipal waste going to landfills to 75 % by 16 July 2006, to 50 % by 16 July 2009 and to 35 % by 16 July 2016. The reduction was calculated on the basis of the total amount of biodegradable municipal waste produced in 1995. The Directive has led to countries adopting different strategies to avoid sending the organic fraction of municipal waste to landfill, namely composting (including fermentation), incineration and pre-treatment, such as mechanical-biological treatment (including physical stabilisation).

As a result, the amount of waste recycled (material recycling and composting) rose from 39 million tonnes (81 kg per capita) in 1995 to 116 million tonnes (215 kg per capita) in 2017 at an average annual rate of 5.0 %. The share of municipal waste recycled overall rose from 17 % to 46 %.

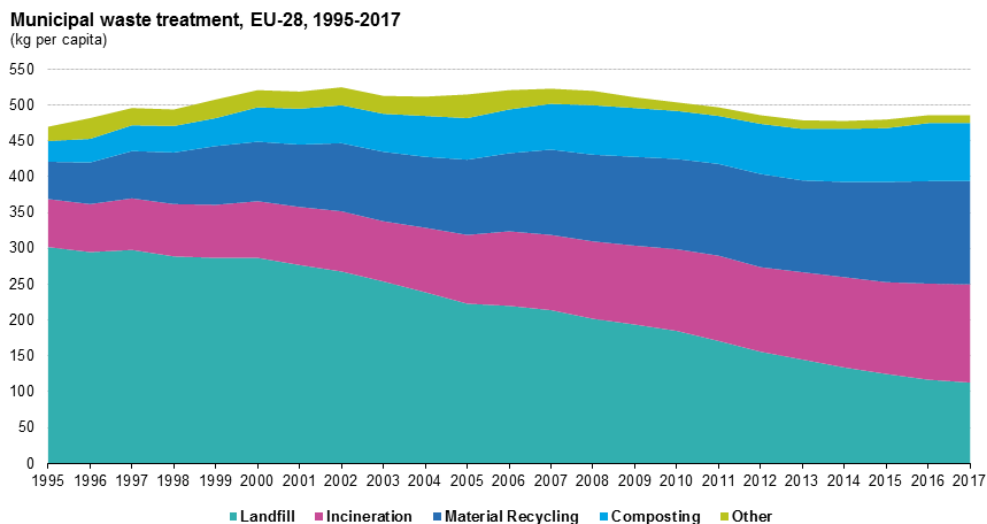
The European Commission adopted an ambitious [Circular Economy Package](#), which includes revised legislative proposals on waste with a higher common target for the recycling of municipal and packaging waste and lower limits for landfill of municipal waste.

The recovery of organic material by composting has grown with an average annual rate of 5.2 % from 1995 to 2017. Recycling and composting together accounted for 46 % in 2017 relative to waste generation.

Waste incineration has also grown steadily in the reference period, though not as much as recycling and composting. Since 1995, the amount of municipal waste incinerated in the EU-28 has risen by 38 million tonnes or 118 % and accounted for 70 million tonnes in 2017. Municipal waste incinerated has thus risen from 67 kg per capita to 137 kg per capita.

Mechanical biological treatment (MBT) and sorting of waste are not covered directly as categories in the reporting of municipal waste treatment. These types of pre-treatment require an additional final treatment. In practice, the amounts delivered to mechanical biological treatment or sorting should be reported on the basis of the subsequent final treatment steps. However, the way these amounts are allocated to the four treatment categories (incineration, landfilling, recycling and composting) varies significantly, and some countries report only on the first (pre-)treatment step.

As a consequence, reporting on the current set of variables often requires additional information to relate the amounts of municipal waste landfilled, incinerated, recycled and composted to the amounts generated at country level.



Source: Eurostat (online data code: env_wasmun)



Figure 2: Municipal waste treatment, EU-28, 1995-2017

(kg per capita),

Source: Eurostat ([env_wasmun](#))

Source data for tables and graphs

-  [Municipal waste - tables and figures](#)

Data sources

The data were extracted from the Eurostat database on 17 June 2019. They cover the period from 1995 to 2017 for the 28 EU Member States (Croatia only has complete sets since 2006). For the [candidate countries](#), coverage is as follows: North Macedonia (since 2008), Albania, Serbia (since 2006) and Turkey. For the [EFTA](#) countries, Iceland, Norway and Switzerland, and the potential EU candidate country Kosovo and Bosnia and Herzegovina (since 2008), data are given to the extent possible.

Definitions

The municipal waste classification is based on the definitions for the section on waste in the OECD/Eurostat Joint Questionnaire. Further information is available in the

- [ESMS metadata sheet on municipal waste](#) (ESMS metadata file — env_wasmun_esms)

MW generated / MW collected: The data refer to the amount of municipal waste generated. In countries with complete (national) coverage of their municipal waste collection scheme the total of municipal waste generated is equal to the total of municipal waste collected. Some countries do not cover their whole territory with a collection scheme. These countries have added an estimate of the waste generated in areas not covered. For some countries data prior to 2008 refer to municipal waste collected, as it was not possible to make an estimate for the population not covered.

Data for France include the overseas departments (département d'outre-mer or DOM) Martinique, Guadeloupe, Réunion and French Guiana.

Data for Cyprus refer only to the area under the effective control of the Government of the Republic of Cyprus.

Data for Liechtenstein are included in Switzerland.

Context

[Eurostat](#) has collected and published data on municipal waste since 1995. Eurostat has conducted surveys on European waste data using the OECD/Eurostat-Joint Questionnaire as the main source. After the introduction of the [Regulation \(EC\) No 2150/2002](#) of 25 November 2002 on waste statistics the data collection on municipal waste based on the joint Questionnaire was continued to maintain the time series and to offer consistent data in an international context outside the EU (OECD, UN).

Notes

1. [Jump up](#)↑ The Waste Framework Directive offers in Annex II an energy efficiency criterion that helps to objectify the classification of incineration facilities and to improve data comparability. The criterion came into force by 12 December 2010.