

Municipal waste

Municipal waste management across European countries



1. Introduction

Over the last two decades, European countries have increasingly shifted their focus with regard to municipal waste from disposal methods to prevention and recycling. Moving municipal waste management up the 'waste hierarchy'^[1] is essential to extract more value from resources while reducing the pressures on the environment and creating jobs.

Although municipal waste represents only around 10 % of total waste generated in the EU (Eurostat, 2016a and 2016b), it is very visible, and prevention of this waste has the potential to reduce its environmental impact not only during the consumption and the waste phases but also throughout the whole life cycle of the products consumed. Countries that have developed efficient municipal waste management systems generally perform better in overall waste management (EC, 2015).

This briefing is a synthesis of the outcomes of a country-by-country analysis that addressed 32 EEA countries: EU-28 Member States, Iceland, Norway, Switzerland and Turkey (ETC/WMGE, 2016), complemented with some information from the Western Balkan countries.

About the data used for the assessment

The comparability of available country data and indicators is limited in some cases. There are differences in municipal waste definitions, reported waste types and data processing. For example, some countries include only waste from households, whereas others include similar wastes from commercial activities and offices.

Some countries have changed their definition of municipal waste over time, and recycled amounts can also be calculated differently, depending on whether they include the weight of materials collected but discarded during the recycling process. However, the data used in this assessment are currently the best available.

2. EU policies and targets

Waste policies and targets set at the EU level include minimum requirements for managing certain waste types. The most relevant targets for municipal waste are the Landfill Directive's (EC, 1999) landfill diversion targets for biodegradable municipal waste; the Packaging and Packaging Waste Directive's (EC, 1994) recycling targets; and the Waste Framework Directive's (EC, 2008) target on recycling and preparing for reuse (more precisely, the target applies to specific types of household and similar waste). Countries can choose between four different methods to monitor their progress towards the last target (EC, 2011). In this briefing, the calculation of recycling rates follows the most demanding method, i.e. the recycling rate is defined as material from municipal waste recycled divided by municipal waste generated.

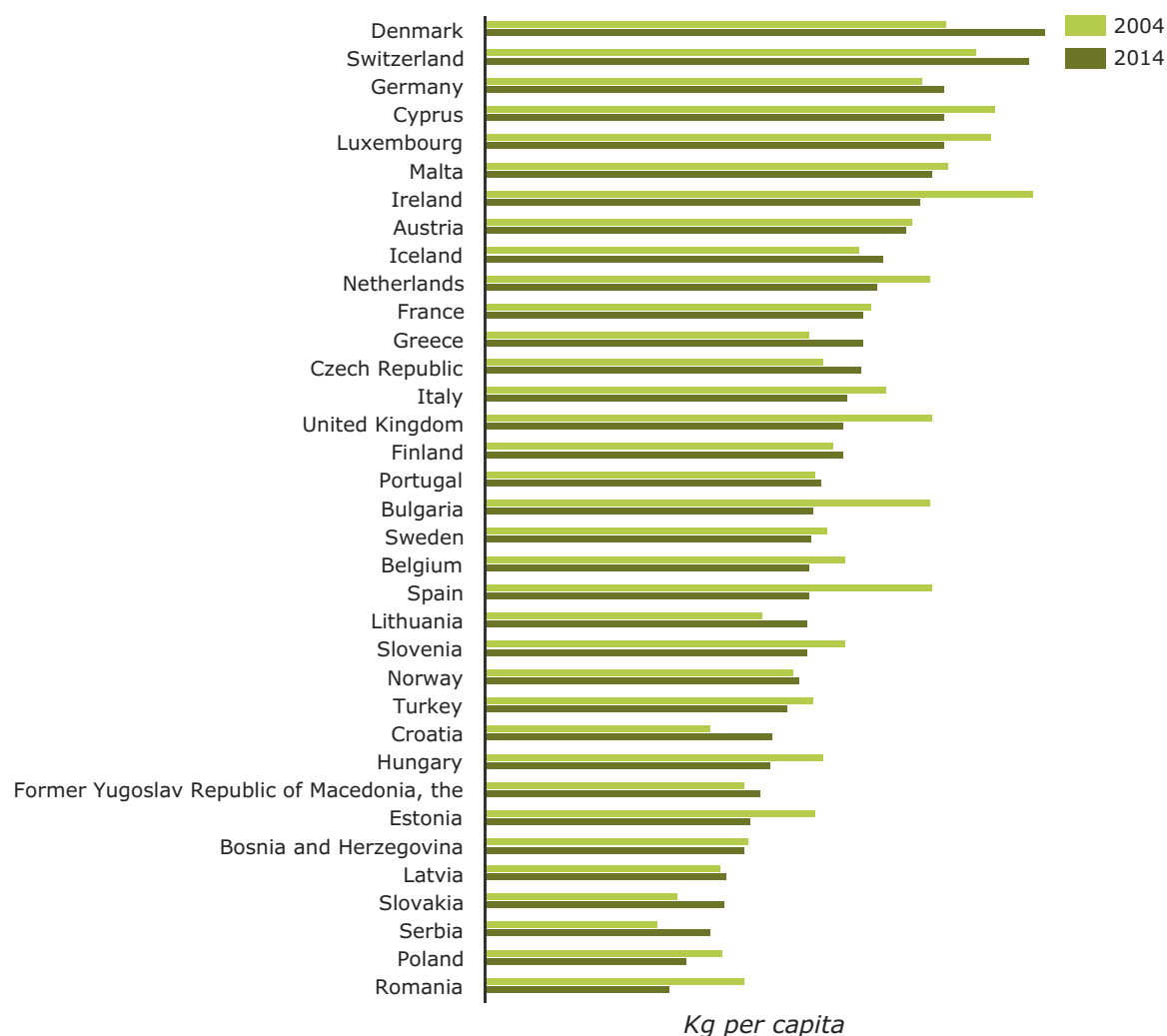
In 2015, the European Commission proposed new targets for municipal waste of 60 % recycling and preparing for reuse by 2025 and 65 % by 2030. These are based on only one calculation method — roughly the one used in this briefing — with the option of time derogations for some countries (EC, 2015). In addition, new targets to reduce municipal waste disposed of in landfill and revised targets for packaging waste have been proposed.

3. Progress

Total municipal waste generation in the EEA countries declined by 3 % in absolute terms and average generation per person by 7 % from 2004 to 2014. However, there has been no uniform trend across countries, with an increase in municipal waste generation per person in 16 and a decrease in 19 countries (Figure 3.1).

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Figure 3.1 Municipal waste generated per person in 35 European countries (2004 and 2014)



Note: 2005 data used instead of 2004 for Poland owing to changes in methodology. Also because of data availability, instead of 2004 data, 2008 data were used for Bosnia and Herzegovina, 2006 data for Serbia, and 2008 data for the Former Yugoslav Republic of Macedonia. On account of missing 2014 data, 2013 data were used for Ireland and Greece. The 2014 data for Cyprus, Germany, Luxembourg, Poland, Spain and Turkey are estimates.

Data sources:
 a. Eurostat. [Municipality waste statistics](#)
 b. Eurostat. [Demography national data population Population on 1 January by age and sex](#)
 c. Czech Ministry of the Environment. [Waste Management Information System](#)
 d. The Environment Agency of Iceland. [Environment Agency of Iceland](#)

Note: 2005 data used instead of 2004 for Poland owing to changes in methodology. Also because of data availability, instead of 2004 data, 2008 data were used for Bosnia and Herzegovina, 2006 data for Serbia, and 2008 data for the Former Yugoslav Republic of Macedonia. On account of missing 2014 data, 2013 data were used for Ireland and Greece. The 2014 data for Cyprus, Germany, Luxembourg, Poland, Spain and Turkey are estimates.

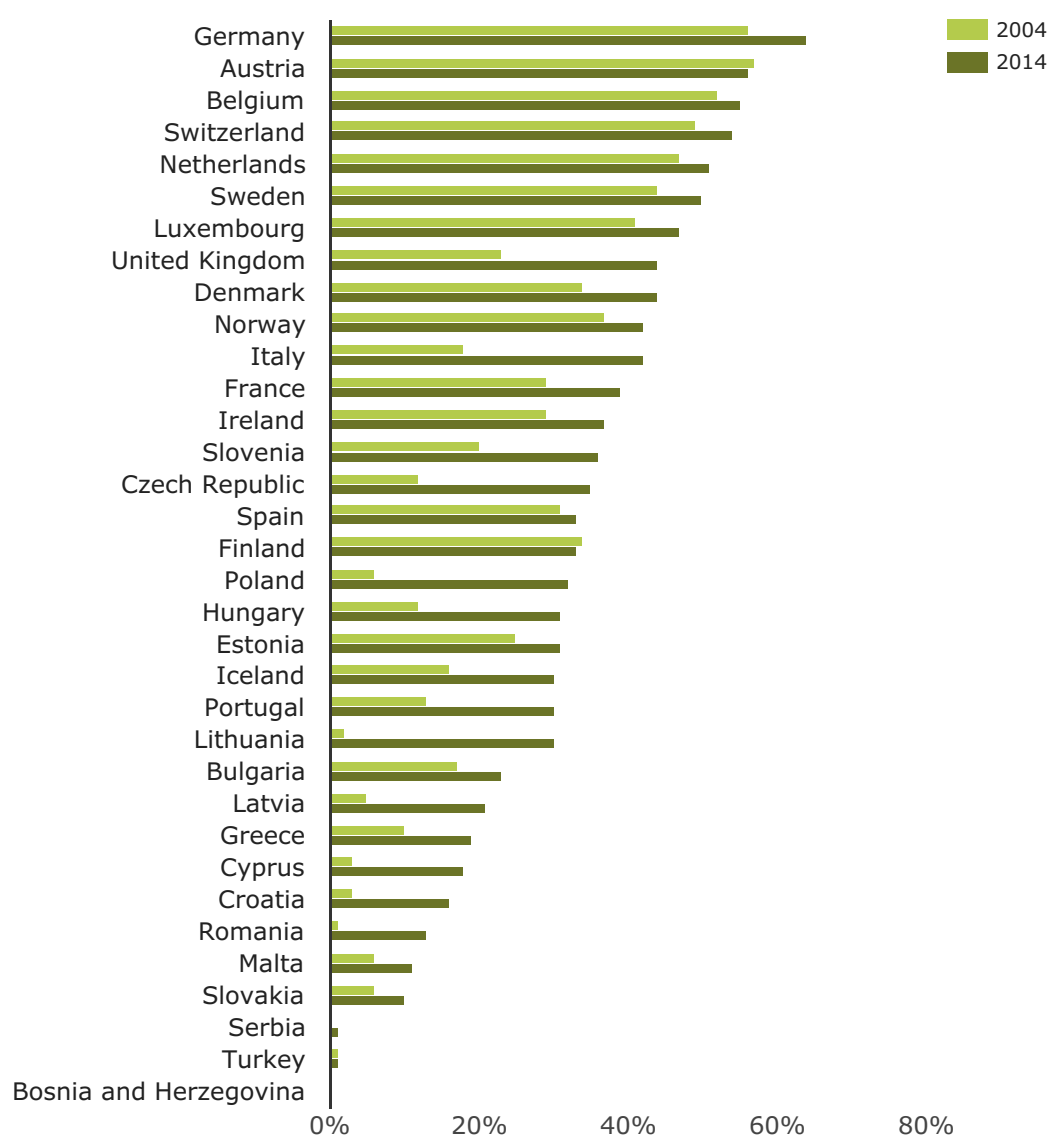
In 2014, municipal waste generation per person was highest in Denmark and Switzerland and lowest in Romania, Poland and Serbia. This reflects the fact that wealthier countries tend to

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generate more municipal waste per person, while tourism contributes to high generation rates in Cyprus and Malta. However, caution is necessary when interpreting the data, because of the different definitions of municipal waste and varying data collection methods.

One of the success stories of environmental policy in Europe is the increase in the rates of municipal waste recycling (covering material recycling, composting and digestion of bio-wastes). EEA countries achieved an average total recycling rate of 33 % in 2014, compared with 23 % in 2004 (EU-27: 31 % to 44 % over the same time period) (Eurostat, 2016a).

Figure 3.2 Municipal waste recycling in 34 European countries (2004 and 2014)



Data sources:
 a. Eurostat. [Municipality waste statistics \(env_wasmun\)](#)
 b. Czech Ministry of the Environment. [Waste Management Information System](#)
 c. The Environment Agency of Iceland. [Waste Management Information System](#)
 d. EEA – Indicator WST005

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Note: The recycling rate is calculated as the percentage of municipal waste generated that is recycled and composted. Changes in reporting methodology mean that 2014 data are not fully comparable with 2004 data for Austria, Cyprus, Malta, Slovakia and Spain. 2005 data were used instead of 2004 data for Poland because of changes in methodology. On account of data availability, instead of 2004 data, 2003 data were used for Iceland, 2007 data for Croatia, and 2006 data for Serbia; and instead of 2014 data, 2013 data were used for Greece and Ireland, and 2012 data for Turkey. Data for Cyprus, Germany, Luxembourg, Poland and Spain are estimates.

The data suggest large differences in performance among countries (Figure 3.2):

- Germany, Austria, Belgium, Switzerland, the Netherlands and Sweden recycled at least half of their municipal waste in 2014.
- The highest increase in recycling rates between 2004 and 2014 was reported in Lithuania, Poland, Italy, the United Kingdom and the Czech Republic (increase of 20–29 percentage points).
- Overall, in 15 out of 32 countries, the increase in recycling rates was at least 10 percentage points over this period.
- However, in seven countries, the proportion of recycled municipal waste barely changed and in two countries it even decreased slightly.

Increasing recycling rates and declining rates of landfilling are clearly linked. Usually, landfilling declines much faster than the growth in recycling, as waste management strategies mostly move from landfill towards a combination of recycling and incineration, and in some cases also mechanical–biological treatment (EEA, 2013).

The rate of municipal waste landfilling for the 32 EEA member countries fell from 49 % in 2004 to 34 % in 2014. The performance of individual countries varied. In Austria, Belgium, Denmark, Germany, the Netherlands, Norway, Sweden and Switzerland, virtually no municipal waste is sent to landfill. On the other hand Cyprus, Croatia, Greece, Latvia, Malta and Turkey still landfill more than three quarters of their municipal waste.

Overall, the rates of landfilling decreased in 27 out of 32 countries. Between 2004 and 2014, the largest decreases occurred in Estonia (57 percentage points), Finland (41 percentage points), Slovenia (41 percentage points) and the United Kingdom (41 percentage points).

The amount of municipal waste landfilled and incinerated in 2014 ranged from 102 kg/person in Slovenia to 480 kg/person in Malta, with an average of 270 kg/person in Europe (32 European countries).

Overview of policy instruments

Countries use a variety of policy instruments for diverting waste from landfill and moving towards more recycling. Table 3.1 gives an overview of such instruments for the period from 2001 to 2015. More details and additional policy instruments and strategies can be found in the

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EEA's country profiles on municipal waste management, the country profiles on resource efficiency, and the recent EEA report on waste prevention policies. The same policy instrument can be designed and implemented in many different ways, thereby influencing its effectiveness. Table 3.1 therefore lists the policies used, but also reflects how the instruments are implemented. For example, both the absolute landfill tax level in 2015 (or the latest available year) and the increase in landfill tax are used as criteria, as the latter shows a dynamic use of the instrument. While the list of instruments is not exhaustive, some messages emerge:

1. Countries using many of the instruments listed in the table have a higher municipal waste recycling rate than countries using few or no instruments. However, the way in which policy instruments are combined may be more relevant than the total number of instruments.
2. Most countries have developed more than two national waste management plans over the period but their recycling performance differs greatly. There is no systematic difference in performance between countries with national plans and countries with only regional plans.
3. Many countries use 'pay-as-you-throw' schemes (i.e. fees based on the weight or volume of the waste as an economic incentive for households to recycle their waste). Their level of implementation varies greatly by country and within countries. However, all countries with recycling rates above 45 % employ a similar system of sorts, while most countries with recycling rates below 20 % do not use them, indicating that pay-as-you-throw schemes are an effective instrument that drives recycling up.
4. All the countries that show landfill rates well below the EU-28 average of 28 % have either banned landfill of biodegradable or mixed municipal waste, or implemented a ban combined with a landfill tax of at least EUR 30/tonne.

Although not analysed here, other factors can be expected to contribute to high recycling rates, such as the level of wealth (there is a correlation factor of 0.65 between gross domestic product per person and the recycling rate), environmental awareness in the country, waste management tariffs and stringent implementation of waste management legislation. All countries with recycling rates below 30 % (with one exception) entered the EU in 2004 or later, indicating that these countries started to implement recycling policies later.

Table 3.1 Municipal solid waste (MSW) management and selected policy instruments in European countries, 2001–2015

Country	Percentage of MSW recycled per MSW generated, 2014	Percentage of MSW landfilled per MSW generated, 2014	Two or more national waste management plans developed between 2001 and 2015 or latest available year	Only regional waste management plans	Landfill tax increased by more than 50 % from 2001 to latest available year	Landfill tax at least EUR 30/tonne MSW, latest available year	Incineration tax	Landfill ban on organic waste or non-pretreated MSW	Mandatory separate collection of bio-waste fractions	Pay-as-you-throw or other economic incentives for recycling MSW
Austria	56	4	x		x Tax on reactive waste in compliant landfills until 2009	x Tax on reactive waste in compliant landfills until 2009	x	x	x	x
Belgium	55	1		x	(x) In Wallonia increase more than 50 %	x	x	x		(x) (Only in Flanders and Wallonia)
Bulgaria	23	69	x		x				x (Ordinance of 2013)	
Croatia	16	80	x		(No tax)	(No tax)				
Cyprus	18	76	x							
Czech Republic	25	56	x		x				x	(x)
Denmark	44	1	x			x	x	x		(x)
Estonia	31	6	x		x	x		x		x
Finland	33	17	Two plans in the period 1998–2008		x	x		x	x	x
France	39	26		x	x	x	x	x		(x)
Germany	64	1		x	(No tax)	(No tax)		x	x	x
Greece	19	81	x		(No tax)	(No tax)				(x)
Hungary	31	57	x		x			x	(x) Green waste collection mandatory since 2015	(x)
Iceland	30	66	x		(No tax)	(No tax)				

Ireland	37	38		x	x	x		(x)	x	x
									(Food waste collection as of 2016)	(Regulation of 2015)
Italy	42	31		x					(x)	(x)
									Only in some regions	
Latvia	21	79		x			x			
Lithuania	30	59		x			Tax will be introduced in 2016	(x)		x
									Ban on landfilling biodegradable waste from gardens and parks	
Luxembourg	47	18	Two plans from 2000 to 2010			(No tax)	(No tax)	x	x	x
Malta	11	80		x		(No tax)	(No tax)			
Netherlands	51	1		x			x		x	x
							(Tax abolished in 2012)			40 % of municipalities
Norway	42	3	(x) (White Paper covering waste 2006–2007 and Waste Strategy 2013)				x	(x)	x	
							Tax abolished in 2015	Tax abolished in 2010		
Poland	32	53		x			x		x	
									(Biodegradable waste collected separately)	
Portugal	30	49		x			x		x	
Romania	13	72				(No tax)	(No tax)			
Slovakia	10	66		x					x	x
										Coverage unknown
Slovenia	36	23							x	x
Spain	33	55		x			(Tax only in regions of Catalonia and Castile and León)	(x)	(x)	(x)
								(Only in the region of Catalonia)	Ban on the disposal of recyclable materials	In the region of Catalonia and some other municipalities of other regions
Sweden	50	1		x			x	x	Tax abolished in 2010	x

Switzerland	54	0	x		x	x
Turkey	0.4	83	x	(No tax)	(No tax)	
United Kingdom	44	28		x	x	x

Sources: Eurostat, 2016a; Environment Agency of Iceland, 2016 (recycling and landfill rates); ETC/WMGE, 2016.

Notes: (x) means that the instrument in the country is not mandatory or is implemented only in some regions or municipalities. On account of a lack of data: for Ireland and Greece 2013 instead of 2014 data are used; for Turkey 2012 instead of 2014 data are used.

4. Prospects

The outlook for reaching the 50 % recycling target for municipal waste by 2020 is mixed. This level of recycling has already been achieved by six countries according to the most demanding calculation method. However, several countries will have to step up their efforts in order to reach the target, particularly the five countries that currently recycle less than one fifth of generated municipal waste.

Improvements in waste data and harmonisation of national reporting methodologies are required, as uncertainties relating to the comparability of national data are a barrier to assessment of progress and the effectiveness of policy measures. The legislative proposal to amend the Waste Framework Directive, which also includes a review of targets for municipal and packaging waste and revision of definitions and calculation methods (EC, 2015), will assist in this regard.

Notes

[1] The waste hierarchy prioritises waste prevention, followed by preparing for reuse, recycling, other recovery and finally disposal as the least desirable option.

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