

ATHENS 2017

SESSION XXII Recycling & Resource Recovery II

**Is a common EU target for
municipal waste recycling
achievable?**

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Content of presentation

- **What is municipal waste ?**
- **Recycling target**
How municipal waste data collection is done in EU countries
- **Eurostat guidance document**
How to collected municipal waste data
- **Overview of EU countries**
- **Case study of the Czech Republic**

Municipal waste statistics: Regulations 2150/2002/EC, 849/2010

- Municipal waste represents cca. 10 % of total waste (ca. 30 % of non-mineral waste)
 - ⇒ Households – main generators
 - ⇒ Municipalities – main actors for collection and processing
- Data are needed for strategy of waste management planning purposes
 - ⇒ Waste collection and treatment capacities
 - ⇒ Waste prevention

Municipal waste statistics - context

- **Focus on consumption waste**
 - OECD / Eurostat joint questionnaire
 - Municipal waste definition WFD 2008/98/EC on waste
 - Commission Decision 2011/753/EU establishing rules and calculation methods for verifying compliance with the targets set in Article 11(2) of WFD
 - Eurostat Guidance on the reporting (2012, 2016)

Municipal waste – what is it ?

- Municipal waste is defined by the following set of criteria:
 - Waste materials/fractions
 - Origin of waste
 - Type of collection

Municipal waste – OECD/Eurostat JQ definition

Municipal waste includes *household waste and similar waste*

- The definition also includes – if managed as waste:
 - *Bulky waste (e.g. white goods, old furniture, mattresses)*
 - *Yard waste, leaves, grass clippings, street sweepings, the content of litter containers, market cleaning waste*

- It includes waste originating from:
 - *households*
 - *commerce and trade, small businesses, office buildings and institutions (schools, hospitals, government buildings)*
 - *waste from selected municipal services – if managed as waste , i.e. waste from park and garden maintenance, waste from street cleaning services (street sweepings, the content of litter containers, market cleansing waste)*

Municipal waste – OECD/Eurostat JQ definition

It includes waste collected:

- *Door-to-door through traditional collection (mixed household waste)*
 - *Fractions collected separately for recovery operations*
-
- It also includes waste from the same sources and similar in nature and composition which:
 - *are collected directly by the private sector not on behalf of municipalities*
 - *originate from rural areas not served by a regular waste service*
-
- The definition excludes:
 - *Waste from municipal sewage network and treatment*
 - *Waste from municipal construction and demolition waste*

Municipal waste – collection systems / sources



Municipal waste materials

Waste materials	List of Waste code Com. Dec. 2000/532/EC	
	Chap 20	Chap 15
Paper and cardboard	20 01 01	15 01 01
Metals	20 01 40	15 01 04
Plastic	20 01 39	15 01 02
Glass	20 01 02	15 01 07
Wood	20 01 38	15 01 03
Textiles	20 01 10, 20 01 11	15 01 09
Mixed municipal waste / mixed packaging	20 03 01	15 01 06
Waste from markets	20 03 02	
Bulky waste	20 03 07	
Biodegradable kitchen and canteen waste	20 01 08, 20 01 25	
Biodegradable garden and park waste	20 02 01	
Non-biodegradable garden and park waste	20 02 02, 20 02 03	
Batteries	20 01 34, 20 01 33*	
Discarded equipment	20 01 21*, 20 01 23*, 20 01 35* - 36*	
Hazardous household waste	20 01 13* - 23*, 20 01 26* - 27*, 20 01 29*, 20 01 21*, 20 01 37*, 20 01 39*	
Municipal waste not mentioned above	

Municipal waste – waste materials included

Residual waste
(mixed waste from households)

No picture

Bulky waste
(Furniture, large
WEEE [coolers, TVs,
washing machines])



<http://www.all-leer.de/media/custom>

Recyclables
(paper, glass,
plastics, metals
organic waste)



<http://www.br.de/radio/bayern1>

Hazardous
waste
(paints, inks,
oils, resins,
detergents
etc.)

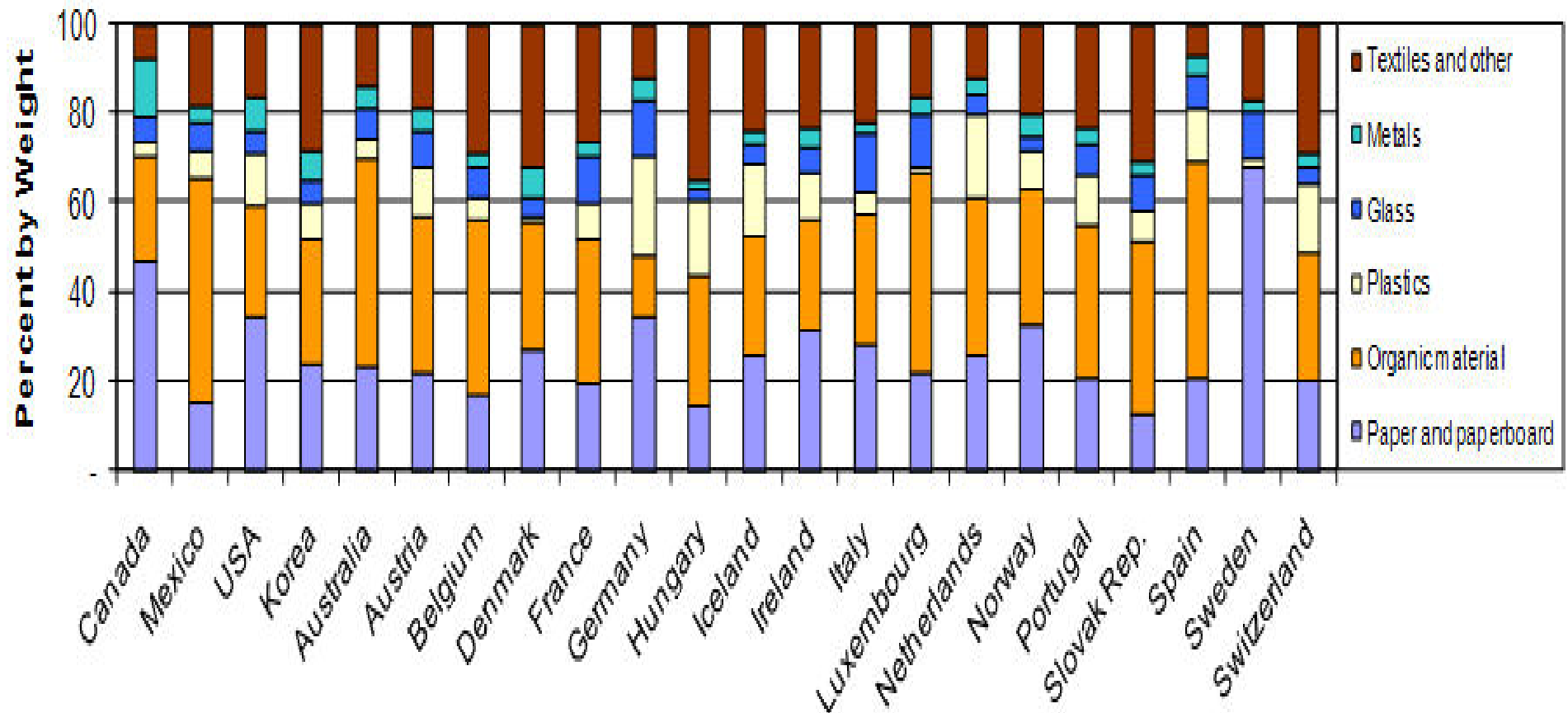


<http://www.stadt-salzburg.at>

Waste generated by households (MMW+BW) in EU countries by year (in EWC-STAT 4 waste categories 10.1) in kilograms per capita and as a percentage of total MW generation

Country	2010		2012		2014	
	kg/ cit.	% of MW	kg/ cit.	% of MW	kg/ cit.	% of MW
EU-28	275	62.9	260	61.2	243	59.1
Belgium	147	26.9	174	31.6	169	33.6
Bulgaria	324	67.9	262	69.5	274	73.9
Czechia	258	81.1	241	78.2	231	74.5
Denmark	334	52.2	336	56.4	316	52.1
Germany	197	44.4	194	42.8	192	42.1
Estonia	122	37.8	128	38.8	153	41.7
Ireland	303	79.9	287	79.5	256	77.6
Greece	413	88.4	377	85.7	363	87.7
Spain	413	82.9	380	83.7	365	84.1
France	278	61.5	270	59.0	252	58.6
Croatia	-	-	246	88.2	238	86.9
Italy	361	65.9	309	61.3	275	56.4
Cyprus	-	-	119	22.8	86	17.7
Latvia	187	56.5	301	50.5	208	58.4
Lithuania	244	60.0	261	66.2	256	64.6
Luxembourg	222	45.0	208	44.3	197	45.1
Hungary	236	82.5	220	81.5	260	87.0
Malta	278	77.0	233	65.4	236	65.4
Netherlands	265	48.4	253	47.8	236	46.7
Austria	180	32.5	196	41.1	198	40.6
Poland	220	94.0	228	93.1	181	83.4
Portugal	470	91.3	413	91.8	410	90.5
Romania	220	86.3	186	82.3	176	91.7
Slovenia	247	69.6	174	55.8	134	49.1
Slovakia	270	84.6	255	83.3	258	80.6
Finland	160	51.1	178	55.6	138	46.9
Sweden	230	53.4	241	54.8	173	40.2
United Kingdom	261	57.2	238	55.3	229	53.4

Composition of mixed municipal waste



Municipal waste – waste materials excluded



Waste from
municipal
sewage network

End-of-life
vehicles

<http://www.mayer-entsorgungstechnik.de>



Construction
and
demolition
waste

<http://www.luchting-gebaudereinigung.de>



<http://www.humor.li/bilder/neu/detail/39226>

Waste materials included in the national definition of MW

Main Material Category	Material Subcategory	Country
Residual waste, bulky waste	Reused products	Finland, Ireland
	Material recyclables (paper and cardboard, textiles, plastics, glass, metals and other recyclables, such as wood waste)	EU-28
	Packaging waste from private sector	EU-28 except for the Czechia, Estonia, Finland, France, Germany, Latvia and Romania
	Biowaste (food waste and garden waste)	EU-28
	Hazardous household waste	EU-28 except for Cyprus
Waste from municipal services comprises the following fractions:	Street sweepings	EU-28
	Biowaste (garden and park waste, maintenance of roadsides, cemetery waste)	EU-28
	Kitchen and canteen waste	EU-28
Waste from commerce and trade, small businesses, office buildings and institutions	Collected with households or by the municipality services	EU-28
	Collected by private sector	EU-28 except for the Latvia, Netherlands and Spain
Other waste from municipal services	C&D waste	Romania
	Waste from municipal sewage	Germany, Romania

Municipal waste – data collection

Reporting on MW generation and management

- Waste generation in 1 000 tonnes
 - Recycling
 - Composting
 - Incineration

Energy recovery (R1)

Incineration (D10)
 - Landfilling
- Coverage of MW collection system - in %

European Comm

Environmental Centre on Waste

Introduction

Policy context

Help/FAQ

News

Data

Legislation

Publications

Links


Waste generation and management

Generation

Management

Key waste streams

Database



The Eurostat dissemination database (**EUROBASE**) contains the full range of publically available data from Eurostat. The data are presented in multi-dimensional tables with multiple selection features and export formats.

EUROBASE is regularly updated with the most recent data on the generation and treatment of waste. It provides statistics collected under the Waste Statistics Regulation as well as data collected for key waste streams under thematic reporting obligations on waste.

Information about database updates can be found on the **News** page.

Data is usually available for the 27 European Union Member States and Croatia, Turkey and Norway. To access the data please

Waste statistics (env_was)

Waste generation and treatment (env_wasgt)

Generation of waste (env_wasgen)

Treatment of waste (env_wastrt)

Treatment of waste by NUTS 1 regions (env_wastrtr)

Number and capacity of recovery and disposal facilities by NUTS 2 regions (env_wasfac)

Non-mineral waste generation (env_wasnmin)

Waste streams (env_wasst)

Packaging waste (env_waspac)

Waste Electrical and Electronic Equipment (WEEE) (env_waselee)

End-of-life vehicles: Detailed data (env_waselv)

End-of-life vehicles: Reuse, recycling and recovery, Totals (env_waselvt)

Municipal waste (env_wasmun)

Hazardous waste generation by economic activity (env_washaz)

Generation and treatment of municipal waste (1 000 t) by NUTS 2 regions (env_rwas_gen)

Coverage rate of municipal waste collection (%) by NUTS 2 regions (env_rwas_cov)

Recently Updated Items (sorted by code)

Updated

Treatment of waste (env_wastrt)

http://appsso.eurostat.ec.europa.eu /nui/submitViewTableAction.do

eurostat

Important legal notice

v3.4.1-20170407-5840-PROD_EUROBASE
DATA-EXPLORER_PRODmanaged13

Explanatory texts (metadata)

Information

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Municipal waste by waste operations

Last update: 06-03-2017

[env_wasmun]

Table Customization [show](#)

TIME	+	GEO	+	Waste operations	Waste generated	+
Unit of measure						
Kilograms per capita						

GEO	TIME	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
European Union (28 countries)		522 ^(s)	524 ^(s)	521 ^(s)	511 ^(s)	504	498 ^(s)	486 ^(s)	479 ^(s)	478 ^(s)	476 ^(s)
European Union (27 countries)		523 ^(s)	525 ^(s)	522 ^(s)	512 ^(s)	505	499 ^(s)	486 ^(s)	479 ^(s)	479 ^(s)	477 ^(s)
Belgium		485	493	479	467	456	456	447	437	427	418
Bulgaria		577	553	599	598	554	508	460	432	442	419
Czech Republic		297	294	306	317	318	320	308	307	310	316
Denmark		740	790	830	762 ^(e)	:	781	791	790	789	789
Germany (until 1990 former t		564	582	589	592	602	626	619	615	631	625 ^(e)
Estonia		398	449	392	339	305	301	280	293	357	359
Ireland		792	772	718	651	624	617	587	:	:	:
Greece		447	453	458	464	532	503	506	:	:	:
Spain		590	578	551	542	510	485	468	454	448	434 ^(e)
France		536	543	541	535	533	538	523	517	510 ^(e)	501 ^(e)
Croatia		384	399	415	405	379	384	391	404	387	393
Italy		559	557	552	543	547	529	504	491	488	486
Cyprus		694	704	728	729	689	672	657	618	615 ^(e)	638 ^(e)
Latvia		343	391	345	352	324	350	301	350	364	433
Lithuania		405	419	428	381	404	442	445	433	433	448
Luxembourg		683	695	697	679	679	666	652	616	626	625 ^(e)
Hungary		468	457	454	430	403	382	402	378	385	377
Malta		624	654	674	649	601	589	588	582	599	624
Netherlands		597	606	600	589	571	568	549	526	527	523
Austria		597	597	600	590	562	573	579	578	566	560
Poland		321 ^(e)	322 ^(e)	320 ^(e)	316 ^(e)	316 ^(e)	319 ^(e)	317 ^(e)	297 ^(e)	272 ^(e)	286 ^(e)

Available flags:

b break in time series

c confidential

d definition differs, see metadata

e estimated

f forecast

i see metadata (phased out)

n not significant

p provisional

r revised

s Eurostat estimate (phased out)

u low reliability

z not applicable

Special value:

: not available

Available flags:

b break in time series c confidential d definition differs, see metadata
e estimated f forecast i see metadata (phased out)
n not significant p provisional r revised
s Eurostat estimate (phased out) u low reliability z not applicable

Special value:
: not available

Municipal waste – calculation of recycling rate

For the purposes of verifying compliance with the MW target set in Article 11(2)(a) of the WFD [1], Member States of the European Union shall apply the target to one of the following methods:

1. the preparation for reuse and recycling of paper, metal, plastic and glass household waste;
2. the preparation for reuse and recycling of paper, metal, plastic, glass household waste and other single types of household waste or similar waste from other origins;
3. the preparation for reuse and recycling of household waste;
4. the preparation for reuse and recycling of municipal waste.

Municipal waste – calculation of recycling rate

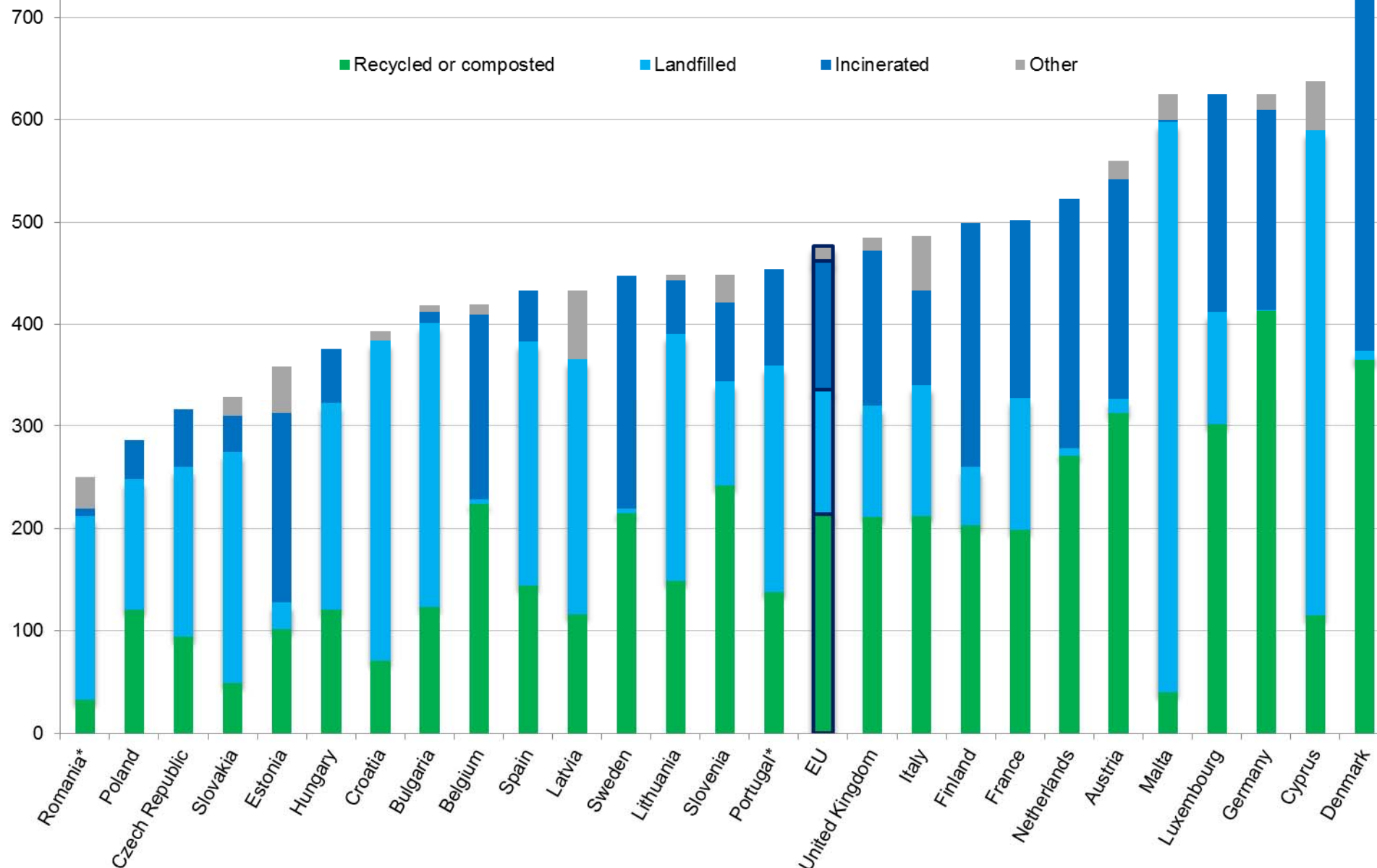
Method 1	Method 2	Method 3	Method 4	Method
Recycling rate of paper; metal; plastic and glass household waste [%]	Recycling rate of household and similar waste [%]	Recycling rate of household waste [%]	Recycling of municipal waste [%]	Currently not signed up to one of the four methods
Ireland	Austria	Bulgaria	Belgium	Norway
Malta	Croatia	Luxembourg	Denmark	Switzerland
	Cyprus	United Kingdom	Finland	Turkey
	Czech Republic		Germany	
	Estonia		Latvia	
	France		Netherlands	
	Greece		Slovenia	
	Hungary		Spain	
	Italy			
	Lithuania			
	Poland			
	Portugal			
	Romania			
	Slovakia			
	Sweden			
2	15	3	8	3

Municipal waste – data collection for MW recycling – EU LoW and EWC-Stat codes

Waste materials	LoW code according to (EC, 2011)	EWC-Stat codes according to (EC, 2002, 2010)
Paper and cardboard	20 01 01, 15 01 01	07.2
Metals	20 01 40, 15 01 04	06
Plastic	20 01 39, 15 01 02	07.4
Glass	20 01 02, 15 01 07	07.1
Biodegradable kitchen and canteen waste	20 01 08	09 (excl. 9.11, 9.3)
Biodegradable garden and park waste	20 02 01	09 (excl. 9.11, 9.3)
Non-biodegradable garden and park waste	20 02 02, 20 02 03	12 (excl. 12.4, 12.6)
Wood	20 01 38, 15 01 03	07.5
Textiles	20 01 10, 20 01 11, 15 01 09	07.6
Batteries	20 01 34, 20 01 33*	08.41
Discarded equipment	20 01 21*, 20 01 23*, 20 01 35*, 20 01 36	08 (excl. 08.1, 08.41)
Other municipal waste	20 03 01, 20 03 02, 20 03 07, 15 01 06	10.1, 09 (excl. 9.11, 9.3)

Municipal waste generation and treatment in the EU Member States, 2015

(in kg per person)



* 2014 data instead of 2015

Ireland and Greece: data not available

**Material and organic recycling of MW of EFTA countries in kilograms per capita
[kg/citizen] and as a percentage of total MW [%] (method 4) in 2010-2015**

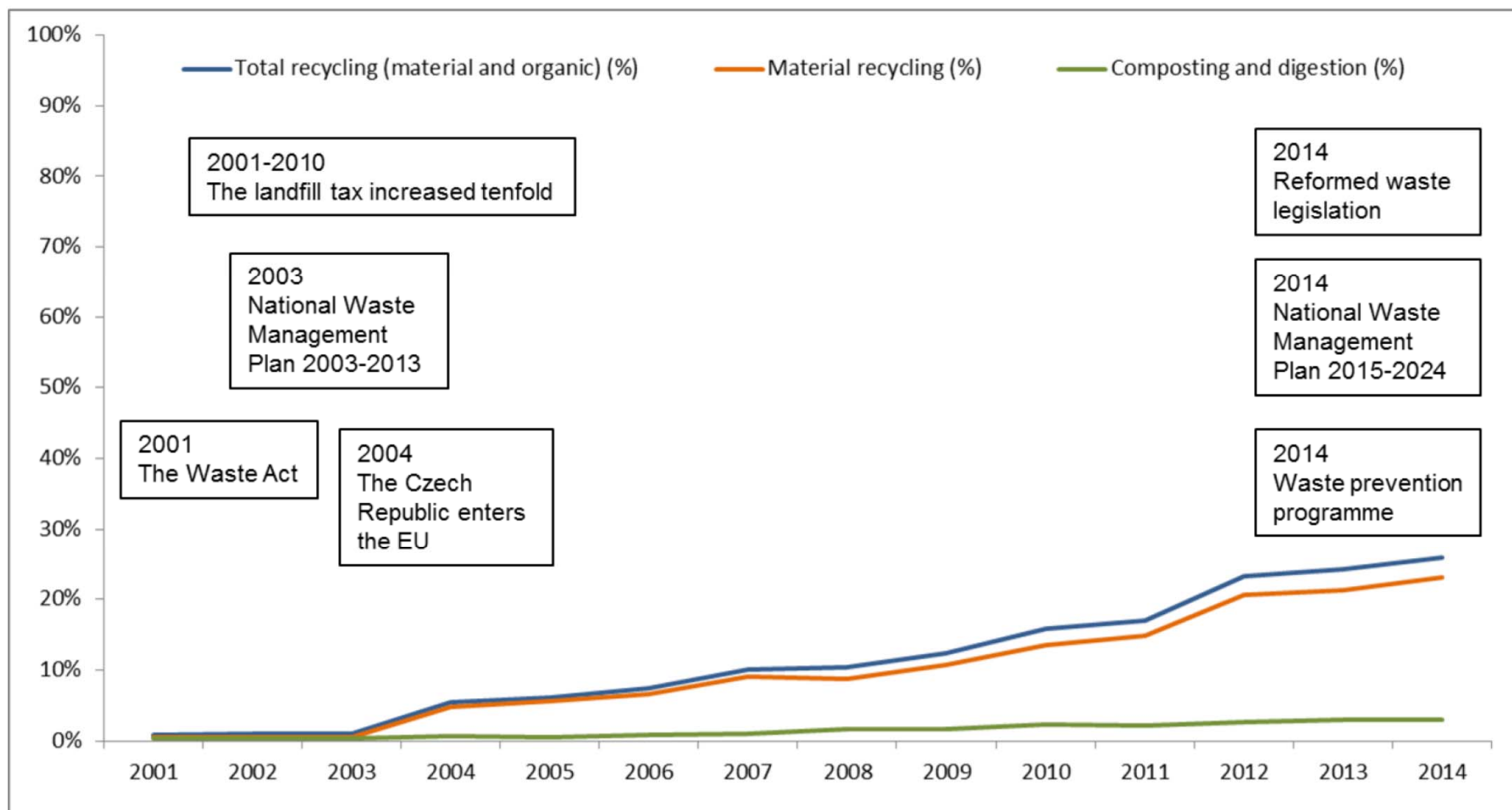
Country	2010		2011		2012		2013		2014		2015	
	kg/ cit.	%	kg/ cit.	%	kg/ cit.	%	kg/ cit.	%	kg/ cit.	%	kg/ cit.	%
EU-28	193	38.3	197	39.6	202	41.5	202	42.2	209	43.7	215	45.0
EU-27	194	38.5	198	39.8	203	41.7	203	42.4	211	43.9	216	45.2
Belgium	250	54.9	248	54.3	237	53.1	230	52.7	228	53.2	223	53.4
Bulgaria	136	24.5	133	26.2	116	25.0	123	28.5	102	23.1	123	29.4
Czech Republic	50	15.8	54	17.0	71	23.2	74	24.2	79	25.4	94	29.7
Denmark	-	-	324	41.5	333	42.1	341	43.2	356	45.1	365	46.3
Germany	376	62.5	394	63.0	403	65.2	392	63.8	414	65.6	413	66.1
Estonia	55	18.2	71	23.3	54	19.1	52	17.9	112	31.3	102	28.3
Ireland	223	35.7	222	36.1	215	36.6	-	-	-	-	-	-
Greece	91	17.1	91	18.0	98	19.3	100	19.7	-	-	-	-
Spain	149	29.2	130	26.7	139	29.8	147	32.5	138	30.8	144	33.3
France	186	34.9	199	36.9	197	37.8	199	38.6	199	39.2	199	39.5
Croatia	15	4.0	32	8.3	57	14.7	61	14.9	64	16.5	71	18.0
Italy	170	31.0	187	35.5	194	38.4	194	39.4	207	42.5	212	43.5
Cyprus	74	10.7	85	12.6	89	13.6	90	14.6	104	17.0	115	17.9
Latvia	30	9.4	34	9.7	47	15.8	91	25.9	98	27.0	116	26.7
Lithuania	20	4.9	89	19.9	104	23.5	120	27.8	132	30.5	149	33.1
Luxembourg	316	46.5	308	46.4	310	47.4	285	46.6	299	47.7	302	48.0
Hungary	79	19.6	84	22.0	102	25.5	100	26.4	118	30.5	121	32.2
Malta	32	5.2	53	9.0	57	9.7	48	8.1	45	7.4	42	6.7
Netherlands	281	49.2	278	49.1	271	49.4	263	49.8	268	50.9	271	51.7
Austria	334	59.4	325	56.7	335	57.7	334	57.7	319	56.3	319	56.9
Poland	68	21.4	56	17.5	63	19.6	71	24.2	87	32.3	121	42.5
Portugal	97	18.7	98	20.1	118	26.1	114	25.8	138	30.4	-	-
Romania	40	12.8	31	11.7	37	14.8	34	13.2	33	13.1	32	13.1
Slovenia	110	22.4	148	35.6	152	41.9	144	34.8	156	36.0	242	54.1
Slovakia	29	9.1	32	10.3	41	13.3	33	10.8	33	10.3	49	14.9
Finland	154	32.0	177	34.0	160	32.0	161	32.5	157	32.5	200	40.7

Case study Czech Republic

Generation of MW and other types of waste is reported to two autonomous systems in the Czech Republic:

- One is operated by the Ministry of Environment (MoE) and is based on the collection of administrative data from waste producers and waste processors according to national waste legislation
- The other system, operated by the Czech Statistical Office (CZSO) and reported to Eurostat, is based on data collected by selected reporting units. The output data are produced using statistical imputation methods.

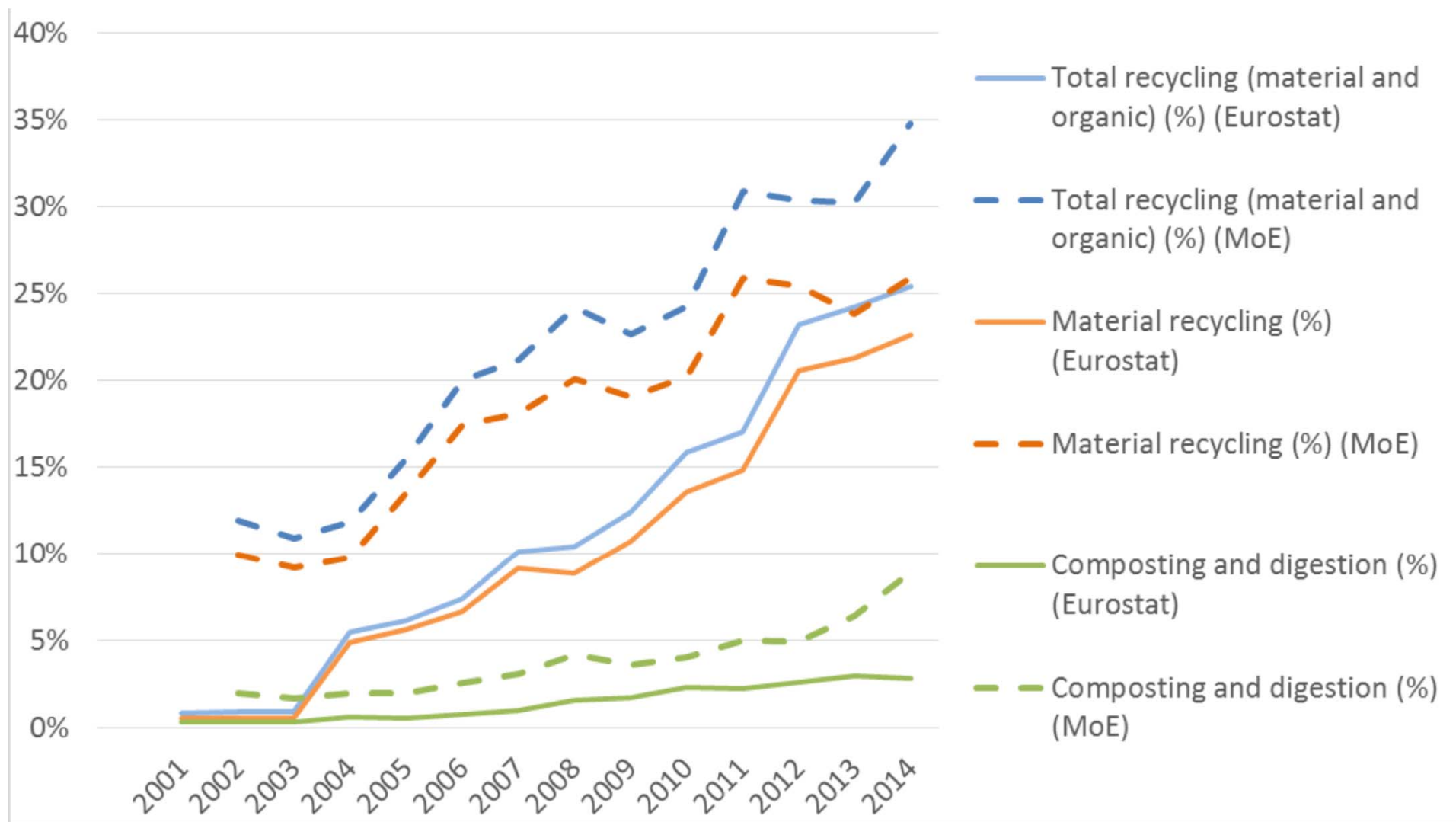
Recycling of municipal waste in per cent and important waste policy initiatives, 2001–2014 (Eurostat, method 4)



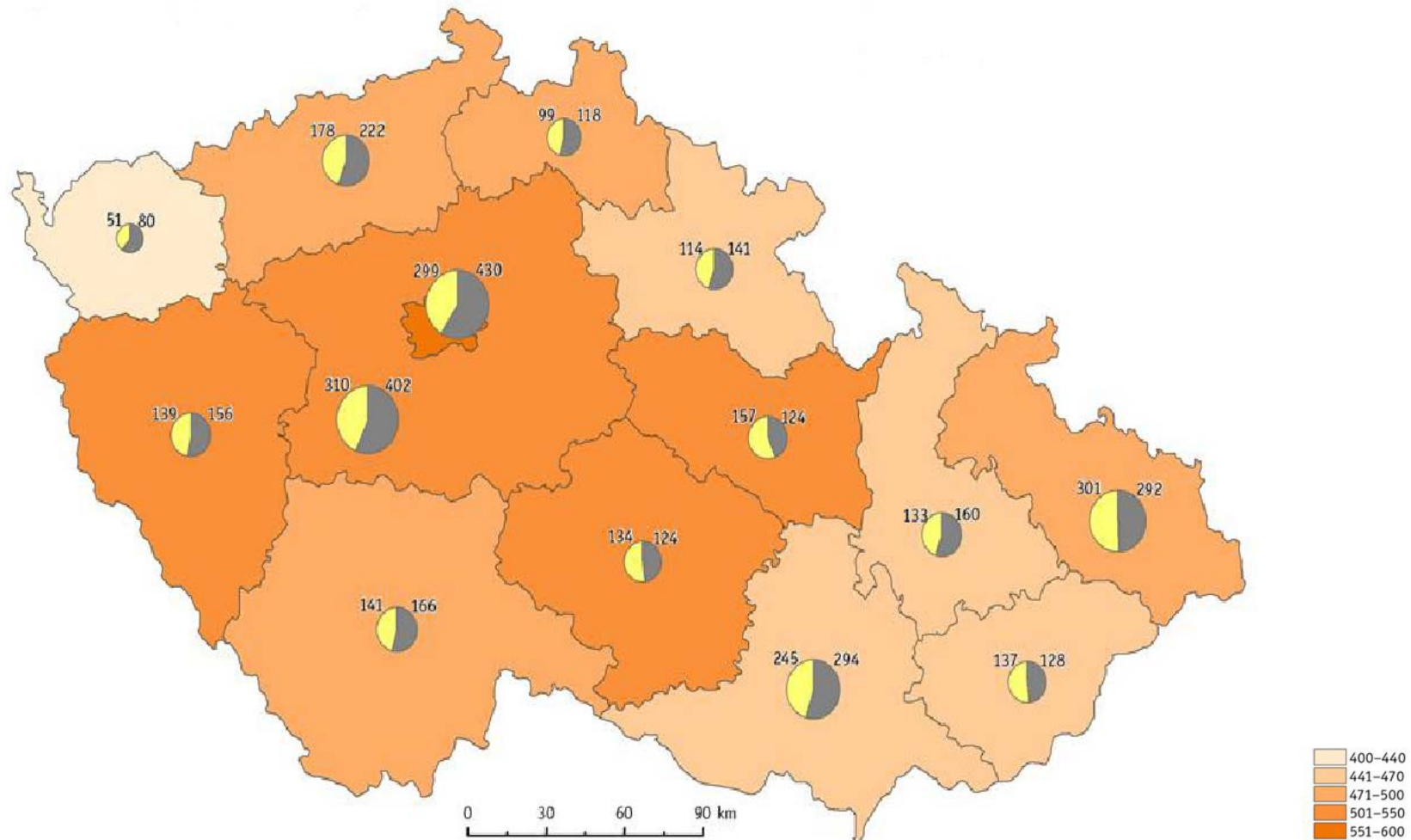
MW, MMW generated by year in tonnes [t] and kilograms per capita [kg/citizen] and recycled MW in tonnes [t] and percentages [%] of total generated MW (method 4) of MoE

year	Number of inhabitants	Total generation of municipal waste [t]	Total generation of municipal waste per capita [kg/cit.]	Total generation of mixed municipal waste [t]	Total generation of mixed municipal waste per capita [kg/cit.]	Recycled municipal waste [t]	Recycling rate of municipal waste [%]
2010	10 517 247	5 361 883	510	3 142 929	299	1 302 476	24.3%
2011	10 495 430	5 388 058	513	3 067 683	292	1 661 703	30.8%
2012	10 509 286	5 192 784	494	2 932 787	279	1 576 519	30.4%
2013	10 510 719	5 167 805	492	2 859 659	272	1 561 729	30.2%
2014	10 524 783	5 323 947	506	2 936 012	279	1 849 864	34,7%
2015	10 542 942	5 274 126	500	2 836 836	269	1 877 447	35.6%

Recycling of MW, 2001–2014. Comparison Eurostat (CZSO) and MoE (method 4)



Total production of MW (yellow+shadow) and MMW (shadow) in kg per capita in regions of the Czech Republic, 2015.



Recycling target for MW

- The Czech Republic reports data about compliance with the target according to Article 11 of the WFD and uses method 2.
- According to the reported data of MoE, the recycling rate of MSW in 2014 was **48.3%** (with method 2) or **35.6%** (with method 4), and **it is anticipated that the obligatory target of 50 % in 2020 will be reached.**

Conclusion

- Large differences exist between EU MSs with respect to their waste management performance, particularly as regards the recycling of MW.
- The EP proposed on March 14, 2017 that in order to take account of those differences, **those MSs which recycled less than 20% of their MW in 2013 and which were not considered at risk of failing to achieve the target of preparing for the reuse and recycling of at least 50% of their MW by 2025, should be given additional time to comply with the preparations for the reuse and recycling targets established for 2025.**
- These are following countries with less 20% material and organic recycling of MW in 2013: ***Estonia, Greece, Cyprus, Malta, Romania, Slovakia***

Conclusion

- These are following countries with less 20% material recycling MW in 2013: ***Estonia, Spain, Greece, Croatia, Cyprus, Malta, Poland, Portugal, Romania, Slovakia, Finland***
- Those same MSs could also be given additional time to comply with the preparations for the reuse and recycling targets established for 2030 if they are not considered at risk of failing to achieve the target of reusing and recycling at least 60 % of their MW by 2030.

Conclusion

- In the light of average annual progression rates observed in MSs over the past fifteen years, those MSs would need to increase their recycling capacity to levels that are well above past averages to meet those targets.
- In order to ensure that steady progress towards the targets is made and that implementation gaps are tackled in due time, MSs that are given additional time should meet interim targets and establish implementation plans, the effectiveness of which should be assessed by the EC on the basis of defined criteria.

Thank you for your attention

Questions?

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