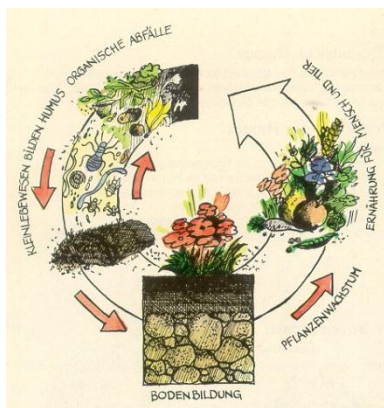


# A Zero Waste Vision for Europe: management of resources and the key role of biowaste



## Enzo Favoino

*Scuola Agraria del Parco di Monza*



*Chair, Scientific Committee,  
Zero Waste Europe*

# Overview



- What is Zero Waste, why it's getting on top of the Agenda
- The EU waste policy and related drivers
- The pivotal role of biowaste in waste management
- The tools: Importance of separate collection



# Rossano Ercolini, president of Zero Waste Europe 2013 wins the Green Nobel award

Posted on 1 hour ago





# Tiny tweets, big steps forward



Janez Potočnik 

@JanezPotocnikEU



Following

Good waste management needs good will and good organisation: "zero waste" is completely possible

#EUDeb8

 Reply  Retweeted  Favorite  More

# The principles of Zero Waste: the 5 “R”s

- *Reduce*
- *Reuse*
- *Recycle*
- *Rot (make compost!)*
- ***Re-design***





***"Zero waste is more the journey,  
than the destination"***

# The regulatory context: drivers from EU env policy



- Revised Waste Framework Directive
  - waste hierarchy
  - Recycling/reuse targets
  - prevention programmes
- Landfill Directive
  - diversion targets for biodeg waste
  - obligation for pretreatment
- EU Climate Change Programme
- EU Soil Strategy



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# Why a “material recycling society”?



- Environmental benefits
- Local economic benefits
- Occupational implications (green jobs)
- Supply of raw materials

# The “resource scarcity crisis”



[http://www.eea.europa.eu/highlights/europe2019s-demand-for-resources-reaching?utm\\_source=EEASubscriptions&utm\\_medium=RSSFeeds&utm\\_campaign=Generic](http://www.eea.europa.eu/highlights/europe2019s-demand-for-resources-reaching?utm_source=EEASubscriptions&utm_medium=RSSFeeds&utm_campaign=Generic)

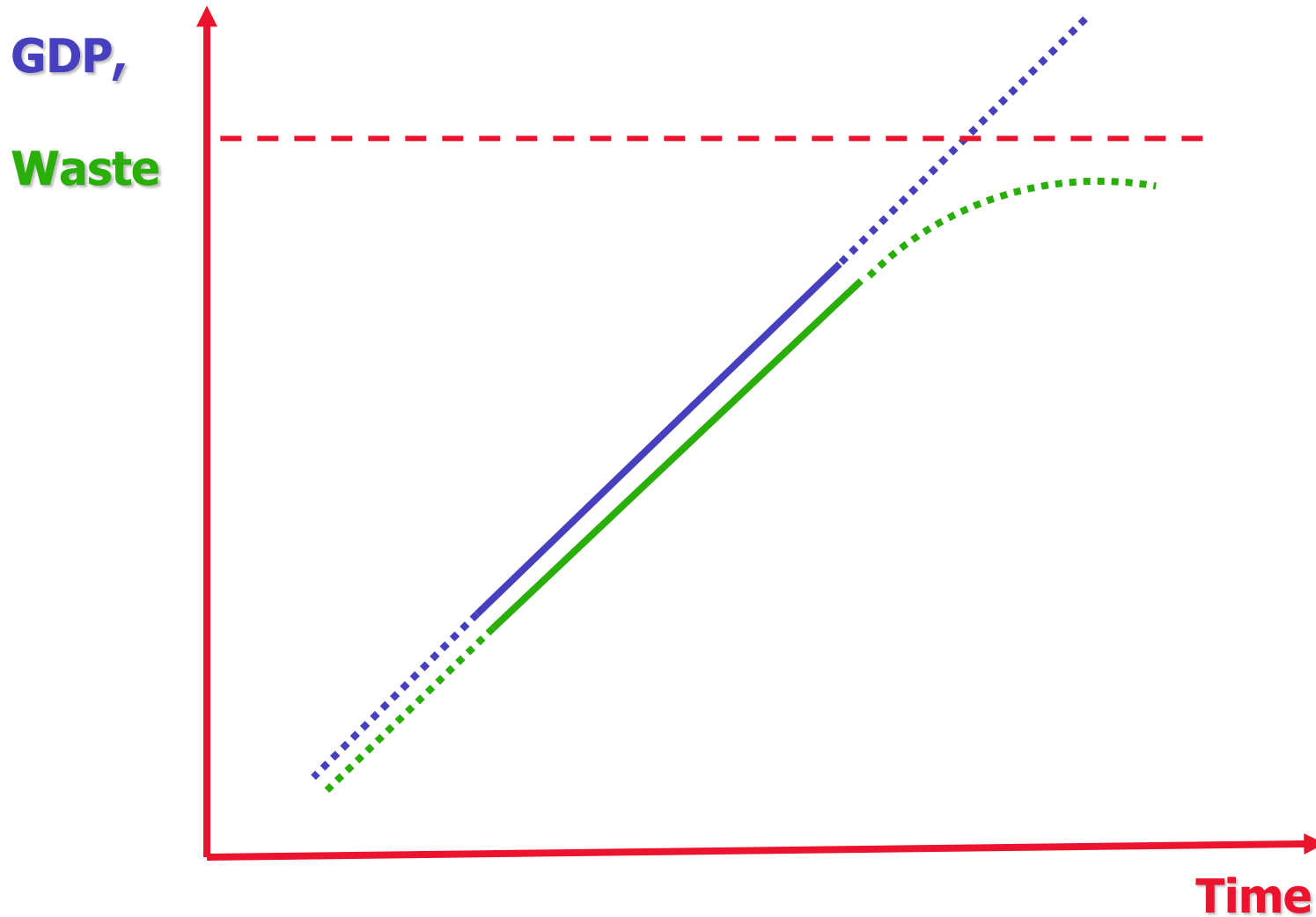
“**With growing demands on the world’s limited stock of resources, it is imperative that Europe makes more efficient use of both virgin materials and waste.**”

EEA Executive Director  
Jacqueline McGlade

'Unsustainable resource use is a truly global problem – Europe’s voracious demand for materials is felt around the world,' EEA Executive Director Jacqueline McGlade said. "With growing demands on the world’s limited stock of resources, it is imperative that Europe makes more efficient use of both virgin materials and waste."

The report, '[Material resources and waste](#)' is an update to the Thematic assessment on material resources and waste within the EEA’s [2010 State and Outlook report](#). It states that Europe is using resources more efficiently, though it has used increasing volumes of raw materials in absolute terms. While this trend has been interrupted by the economic downturn, it is likely that increasing resource consumption will resume with renewed economic growth.

# Decoupling !



# “*ready effect*” actions (Community level)

- Home composting
- Sustainable event management (e.g. no throwaway dishes/cutlery)
- Tap water
- Cloth (washable) or compostable nappies



# The power of compost



# BIOWASTE

## More than just *waste* management!



- Biodegradables represent the vast majority of MSW arisings (above all in S and SE Europe)
- Major contributor to GHGs from inappropriate management of MSW (4 to 11% of total GHGs come from landfills)
- Proper management often driven by strategies to reduced impacts of disposal
  - Landfill diversion targets (EU Landfill Directive)
- Extended benefits: soils, farmlands, the environment
  - Climate Change (UNFCCC)
  - Desertification (UNCCD)
  - Biodiversity, fertility, resilience, prevention of floods, erosion (EU Soil Thematic Strategy)



# MSW composition (EC, 2001)

	AU	BE	DK	FIN	FRA	GER	GRE	IRL	ITA
<b>YEAR (quantities)</b>	1998	1997	1998	1997	1998	1998	1997	1998	1998
<b>Total MSW (million tonnes)</b>	4.85	4.69	2.93	2.51	44.4 (38)	49.1	3.9	2.06	26.9
<b>Total (OECD) (1997 data, or latest year)</b>	4.1	4.85	2.95	2.1	28.8	40.0	3.9	2.03	26.6
<b>Kitchen and Yard Waste</b>	29.2	34.9	37	40	29	29.9	47	27	33.6
<i>Yard Waste</i>		13.4							5.0
<i>Kitchen Waste</i>		21.6							28.5
<b>Paper and card</b>	24	18.9		36.8		16	20	32.5	22.8
<i>Paper</i>									
<i>Cardboard</i>									
<b>Timber</b>	1.4	1.9 <sup>1</sup>							
<b>Textiles</b>	2.8	2.6		0.8		2		2.1	5.1
<b>Nappies</b>						2.8			2.0
<b>Plastics</b>	8.2	6.8		4.5		5.4	4.5	11.4	10.3
<b>Glass</b>	9.4	5.1		2.3		9.2	4.5	4.8	7.2
<b>Metals</b>	7.2	3.7		3.2		3.2	4.5	2.6	3.0
<i>Ferrous metals</i>								1.7	
<i>Non-ferrous metals</i>								0.9	
<b>Other</b>	17.8	26.0		12.4	37.3	31.5	15.5	19.2	15.9

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# Some savings – just to give a touch



- Replacement of mineral fertilisers → 30-50 kg CO<sub>2</sub>-eq/tonne
- Biogas Production → 100-150 kg CO<sub>2</sub>-eq/tonne
- Peat replacement → 300-400 kg CO<sub>2</sub>-eq/tonne
- C sequestration → 11 to 326 kg CO<sub>2</sub>-eq/tonne
  - EC Report *“Soils and climate change”*
- Reduced N<sub>2</sub>O release + Improved Workability + Water retention + Replacement of pesticides.....

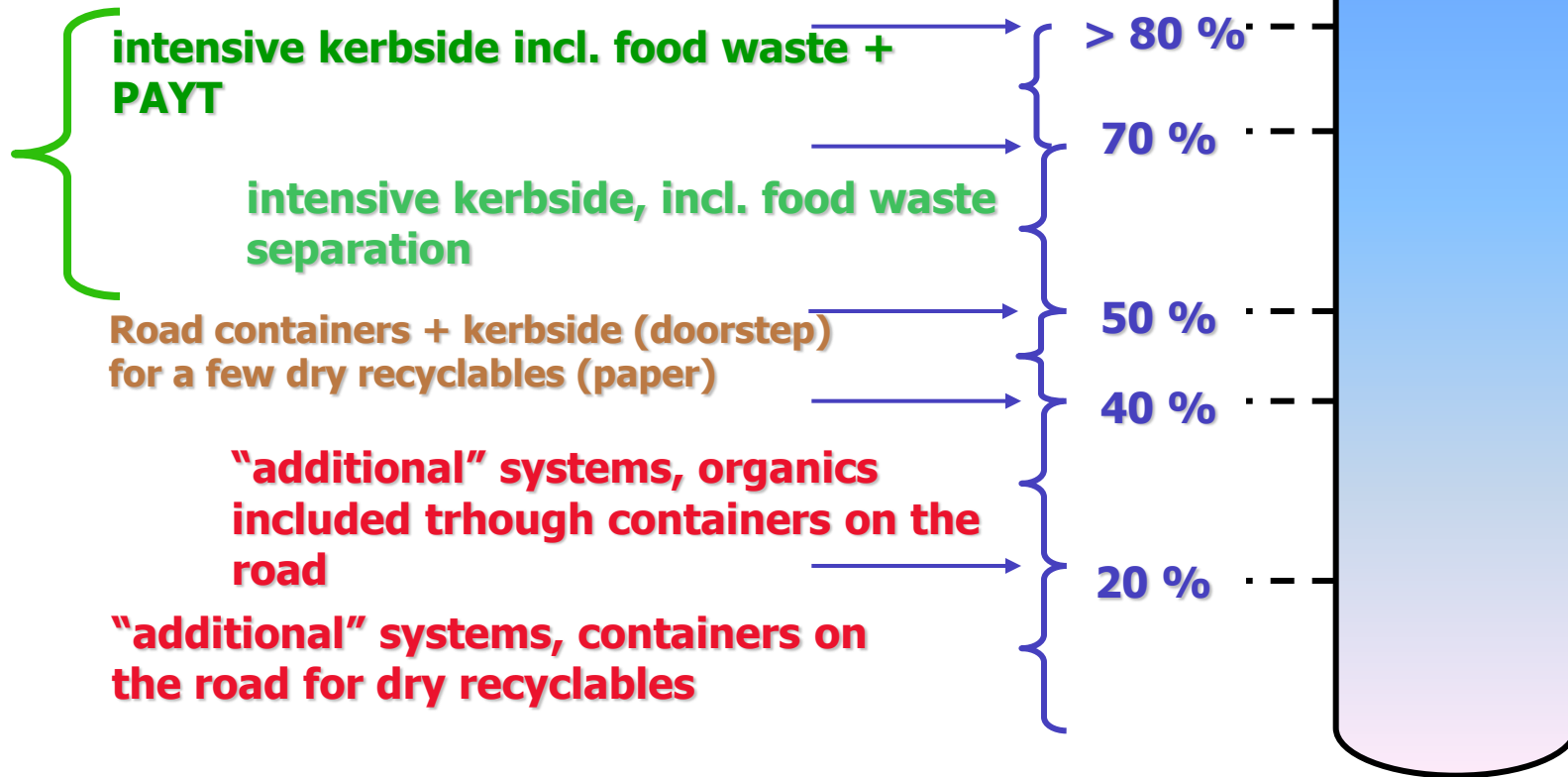
# “Climsoil” Report, EC 2009.



***"The report underlines the need to sequester carbon in soils. The technique is cost competitive and immediately available, requires no new or unproven technologies, and has a mitigation potential comparable to that of any other sector of the economy."***

[http://ec.europa.eu/environment/soil/review\\_en.htm](http://ec.europa.eu/environment/soil/review_en.htm)

# What does it take to get there ?



# Article 22

## *bio-waste*



- Member States shall take measures, as appropriate, (...) to **encourage:**
  - (a) **the separate collection** of bio-waste with a view to the composting and digestion of bio-waste;
  - (b) **the treatment of bio-waste** in a way that fulfils a high level of environmental protection;
  - (c) **the use of environmentally safe materials** produced from bio-waste.
- The Commission shall carry out an assessment on the management of bio-waste with a view to submitting a proposal, if appropriate. The assessment shall examine the opportunity of
  - setting minimum requirements for bio-waste management and
  - quality criteria for compost and digestate (...) in order to guarantee a high level of protection for human health and the environment.

# The pivotal role of separate collection



- A tendency to reduce “avoidable” contamination through separately collected inputs
  - Conservation of the “natural asset” of soils (EU Soil Strategy)
  - Increasing concerns on healthy food production
- Biowaste compost remarkably better, on the average, than mixed MSW compost
  - Not just “glass and plastics”
  - Heavy metals
  - Organic pollutants



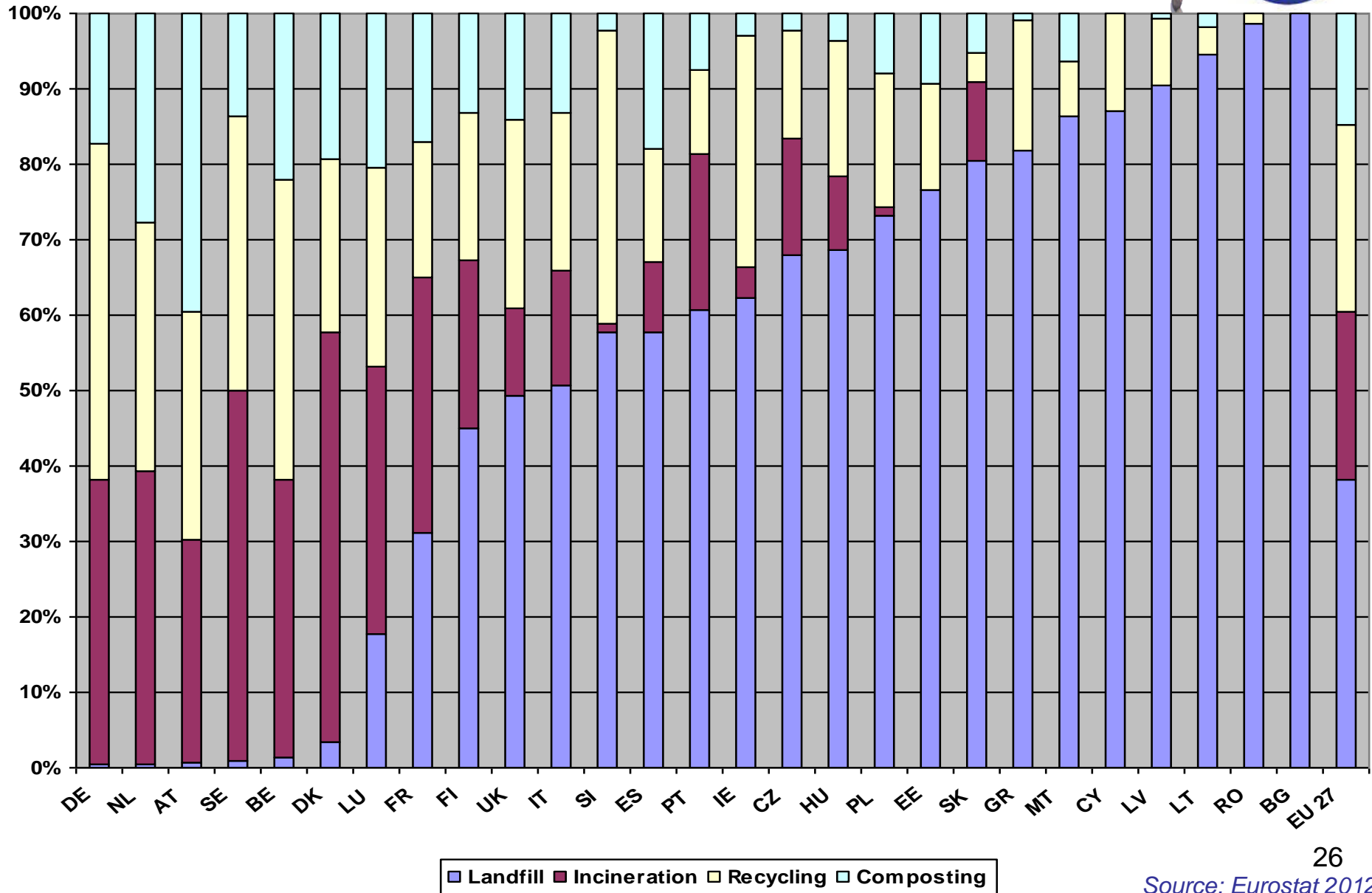
# Food waste in residual waste



Municipality	% Food waste
Altivole	7,82
Arcade	8,24
Breda di Piave	7,61
Casale sul Sile	9,42
Castello di Godego	8,05
Cessalto	6,30
Conegliano	9,40
Cornuda	7,19
Giavera del Montello	6,88

**10% in residual waste (30%) = 3% of MSW**

**Starting from 35-40% organics in MSW → 90%+ diversion!**



	Municipal waste generated, kg per person	Total municipal waste treated, kg per person	Municipal waste treated, %			
			Landfilled	Incinerated	Recycled	Composted
EU27	503	486	37	23	25	15
Belgium	465	460	1	42	36	20
Bulgaria	375	371	94	0	3	3
Czech Republic	320	319	65	18	15	2
Denmark	718	718	3	54	31	12
Germany	597	597	1	37	45	17
Estonia	298	257	70	0	20	10
Ireland	623	560	55	5	37	4
Greece	496	496	82	0	15	3
Spain	531	531	58	9	15	18
France	526	526	28	35	19	18
Italy	535	505	49	17	21	13
Cyprus	658	658	80	0	11	9
Latvia	350	292	88	0	10	1
Lithuania	442	432	79	1	19	2
Luxembourg	687	687	15	38	27	20
Hungary	382	382	67	11	17	5
Malta	584	536	92	1	7	0
Netherlands	596	502	1	38	32	28
Austria	552	528	3	35	28	34
Poland	315	255	71	1	11	17
Portugal	487	487	59	21	12	8
Romania	365	293	99	0	1	0
Slovenia	411	351	58	2	34	6
Slovakia	327	312	78	11	5	6
Finland	505	505	40	25	22	13
Sweden	460	460	1	51	33	15
United Kingdom	518	514	49	12	25	14

# EP resolution of 20 April 2012 - priorities for 7th EAP



- *(the EP)* Takes the view that the 7th EAP should provide for full implementation of waste legislation, including compliance with the waste treatment hierarchy while ensuring coherence with other EU policies; considers that it should set more ambitious prevention, re-use and recycling targets, including a net decrease in waste generation

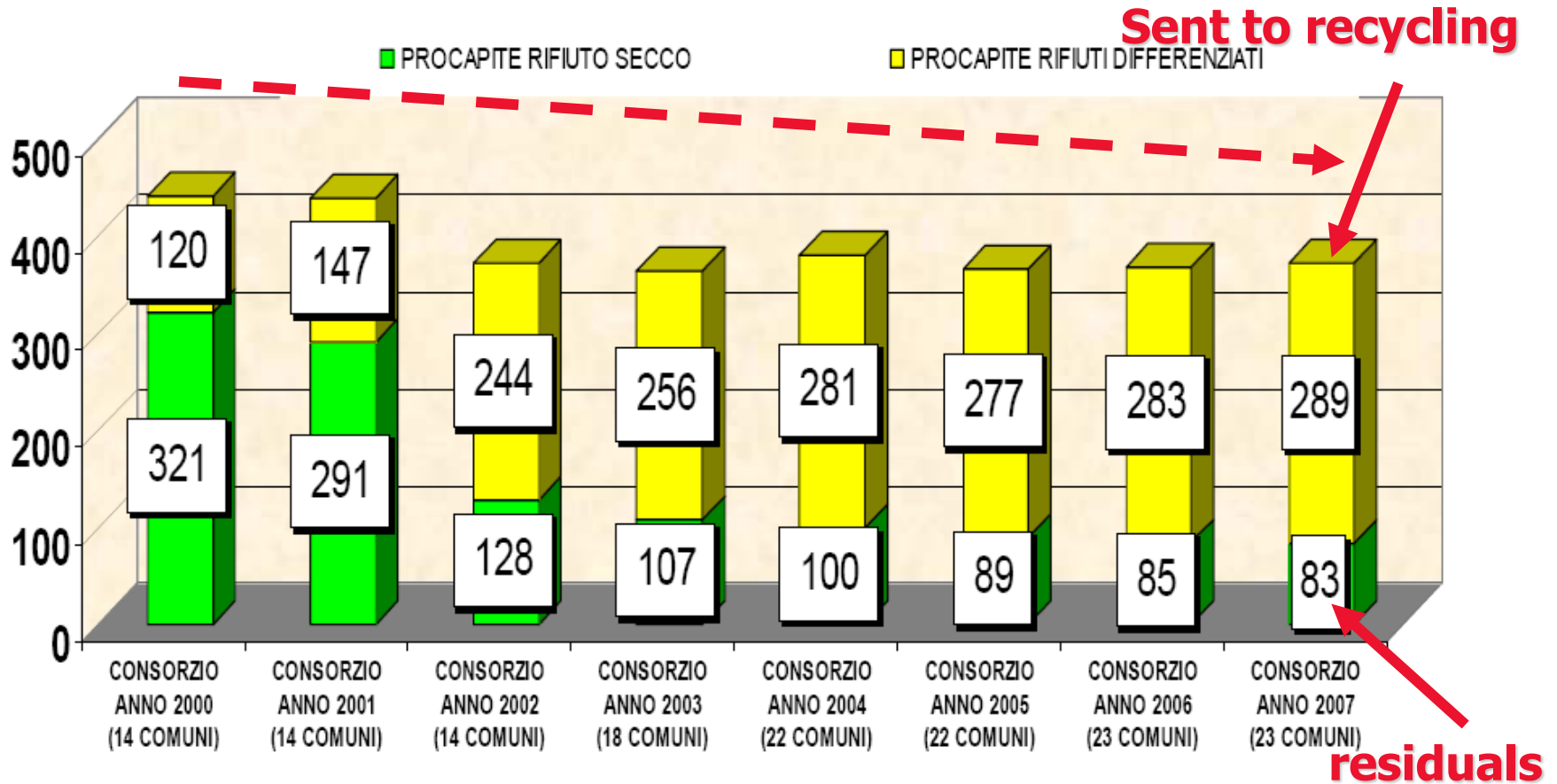
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# A new way of assessing performances!





# Thanks for your attention

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