



Municipal bio-waste: Current situation and trends in the EU and MED countries

FINAL NEWAPP CONFERENCE
*APPLICATION OF HYDROTHERMAL CARBONIZATION
TECHNOLOGY TO BIOMASS WASTE STREAMS*

Françoise Bonnet, ACR+



NEWAPP



Association of Cities and Regions for recycling and sustainable resource management

International network

Non profit international association

90 members
23 countries
1100 local authorities

1994
2014

Multi-stakeholders approach



Publications



Conferences



Webinars



News

To promote a sustainable management of material resources through prevention at source, reuse and recycling



Some of our members



MAIRIE DE PARIS



lipor



WRAP

TOGETHER WE
MAKE TOMORROW
MORE BEAUTIFUL
OVAM



Local and regional authorities are active partners

Production



- Infrastructures
- Business Support Scheme
- Legal and Economic framework

- Strategy
- Planning
- Monitoring

Consumption



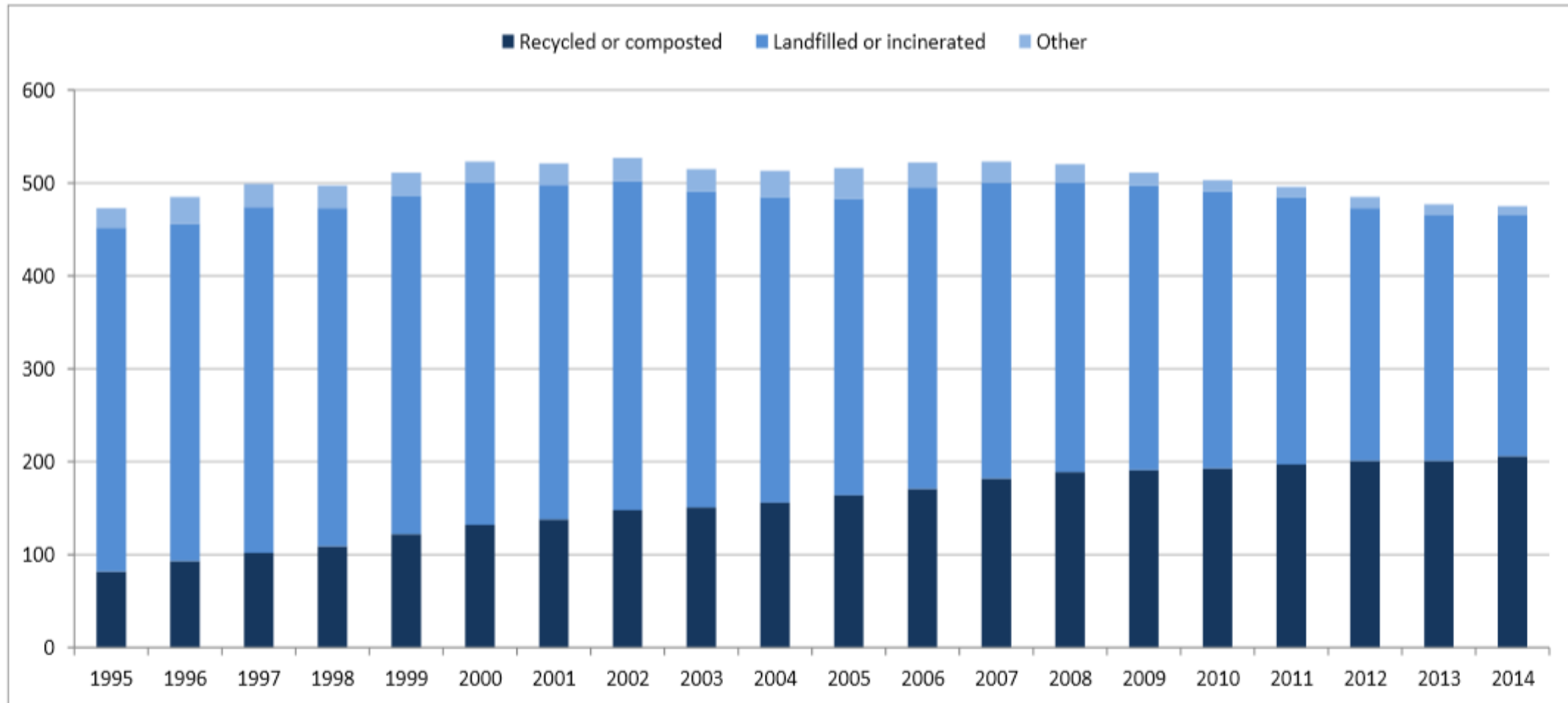
- Behaviour change
- Public procurement
- Legal and economic incentives



Multistakeholders

Municipal waste generation

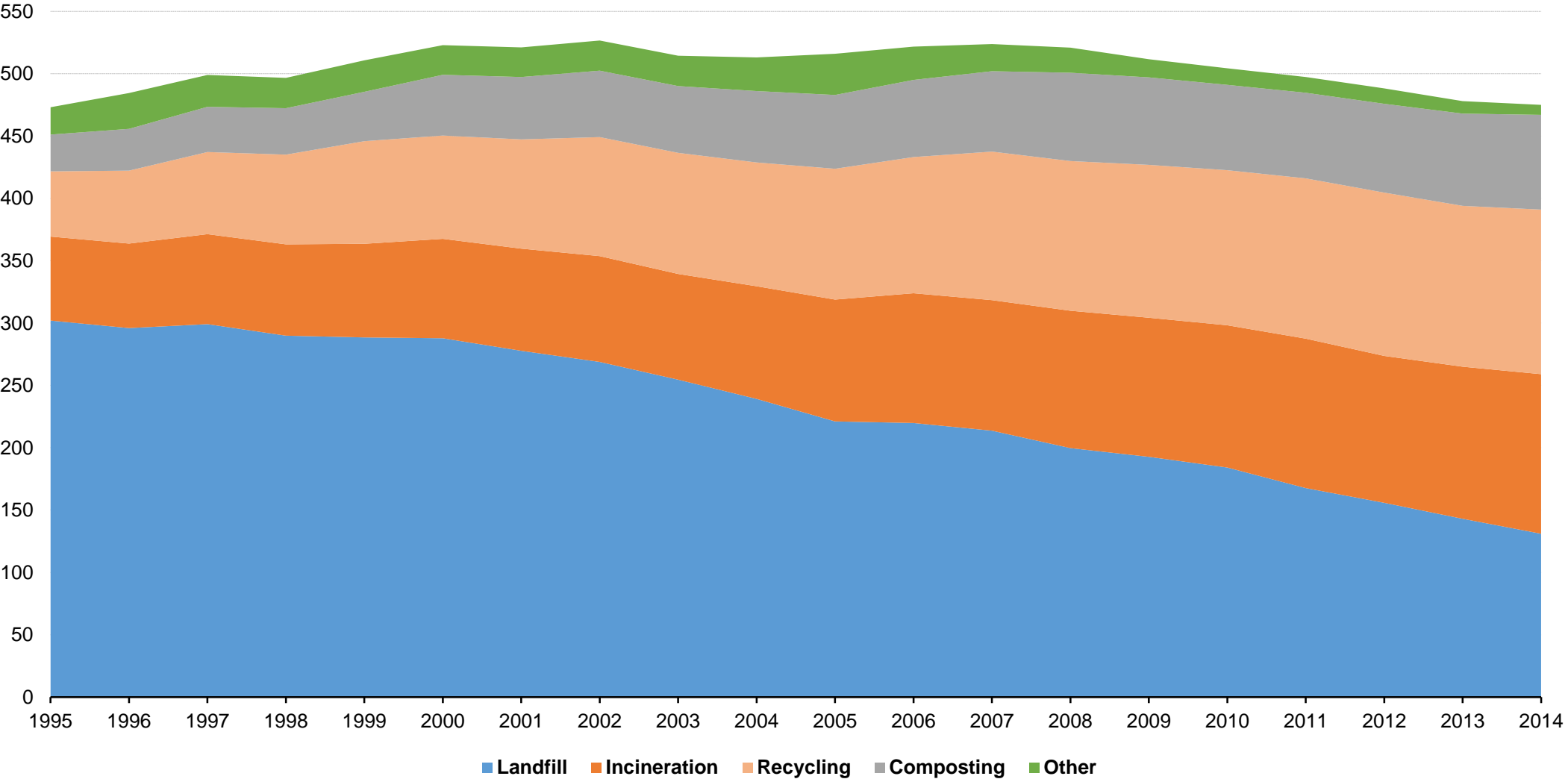
Municipal waste generation and treatment in the EU*
(in kg per person)



* EU aggregate excluding Croatia for the years 1995 to 2006.

Source: Eurostat (published in March 2016)

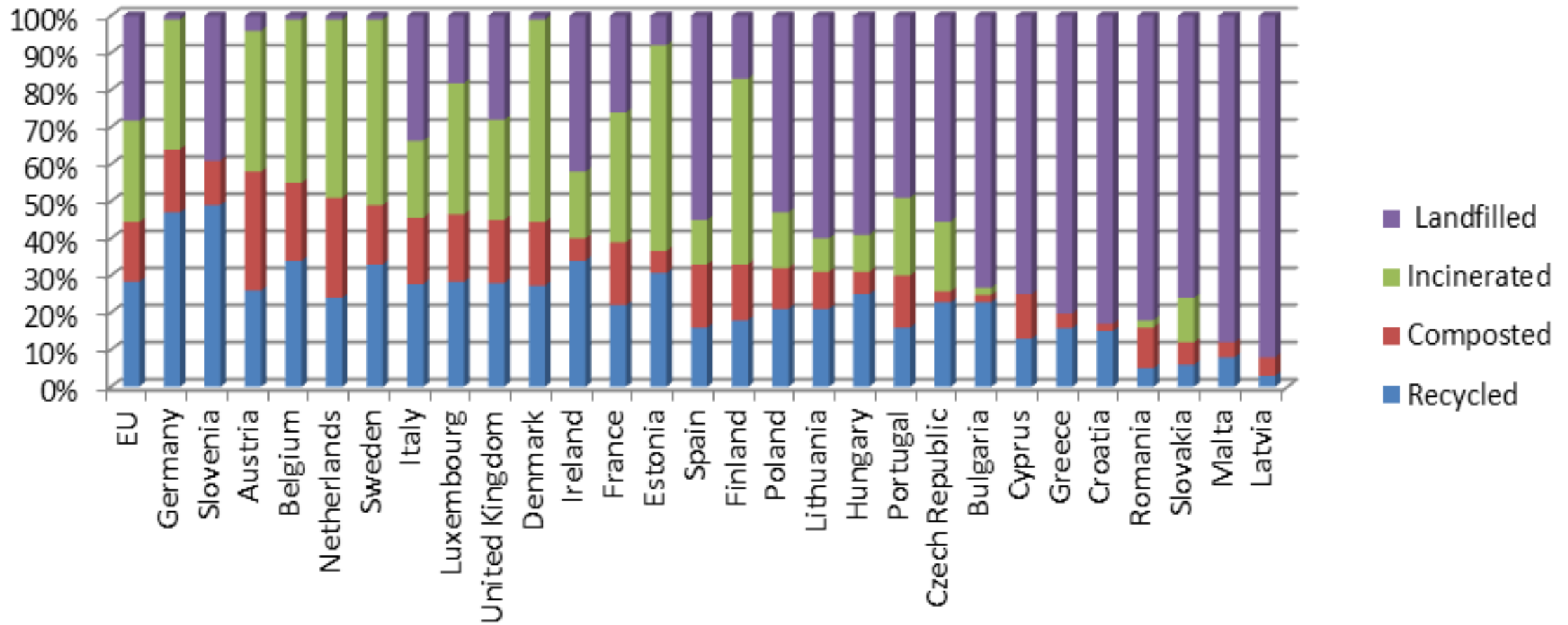
Municipal Waste Treatment



Source: Eurostat (published in March 2016)



Municipal Waste Treatment



Source: Eurostat 2016, 2014 data

Suitable wet biomass waste streams for HTC

Recommended for further testing with HTC

- Sewage sludge
- Digestate
- Green & vegetable wastes, bio-waste fraction municipal solid waste

Green & food waste, bio-waste fraction municipal solid waste

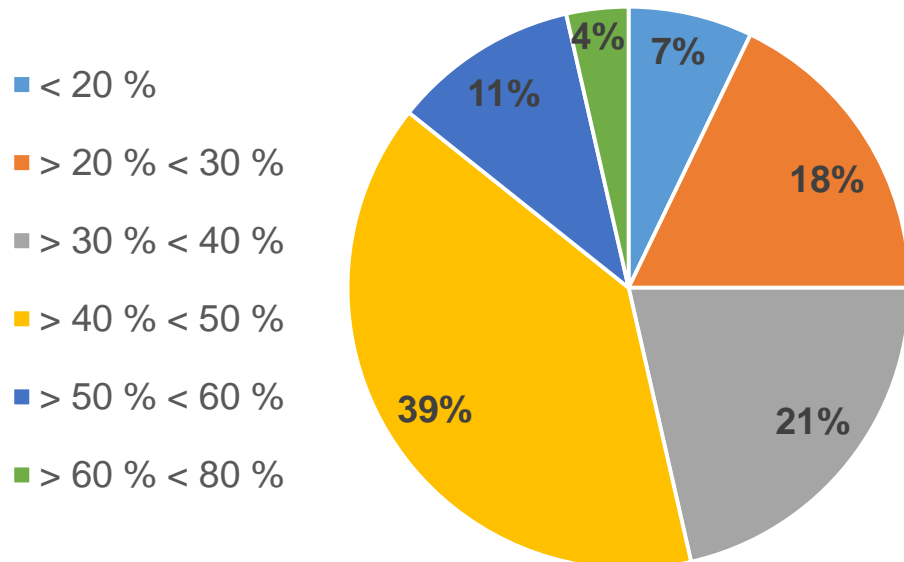
- Meets technical criteria for HTC technology
- Properties and produced amounts fit will
- Dissatisfaction of stakeholders with current treatment options reported:
 - lack of real market for compost
 - high costs compared to quality

Bio-waste fraction in MW (EU)

- 37 % of the municipal waste in Europe (EU-27 excluding Cyprus)
- Proportion differs from country to country, also depending on definitions of municipal waste

< 20 %	> 20 % < 30 %	> 30 % < 40 %	> 40 % < 50 %	> 50 % < 60 %	> 60 % < 80 %
Lithuania Slovenia	Bulgaria Denmark Hungary Ireland Latvia	Cyprus France Germany Italy Sweden United Kingdom	Austria Belgium Croatia Czech Republic Estonia Finland Luxembourg Poland Romania Spain The Netherlands	Greece Portugal Slovakia	Malta

Bio-waste in municipal waste

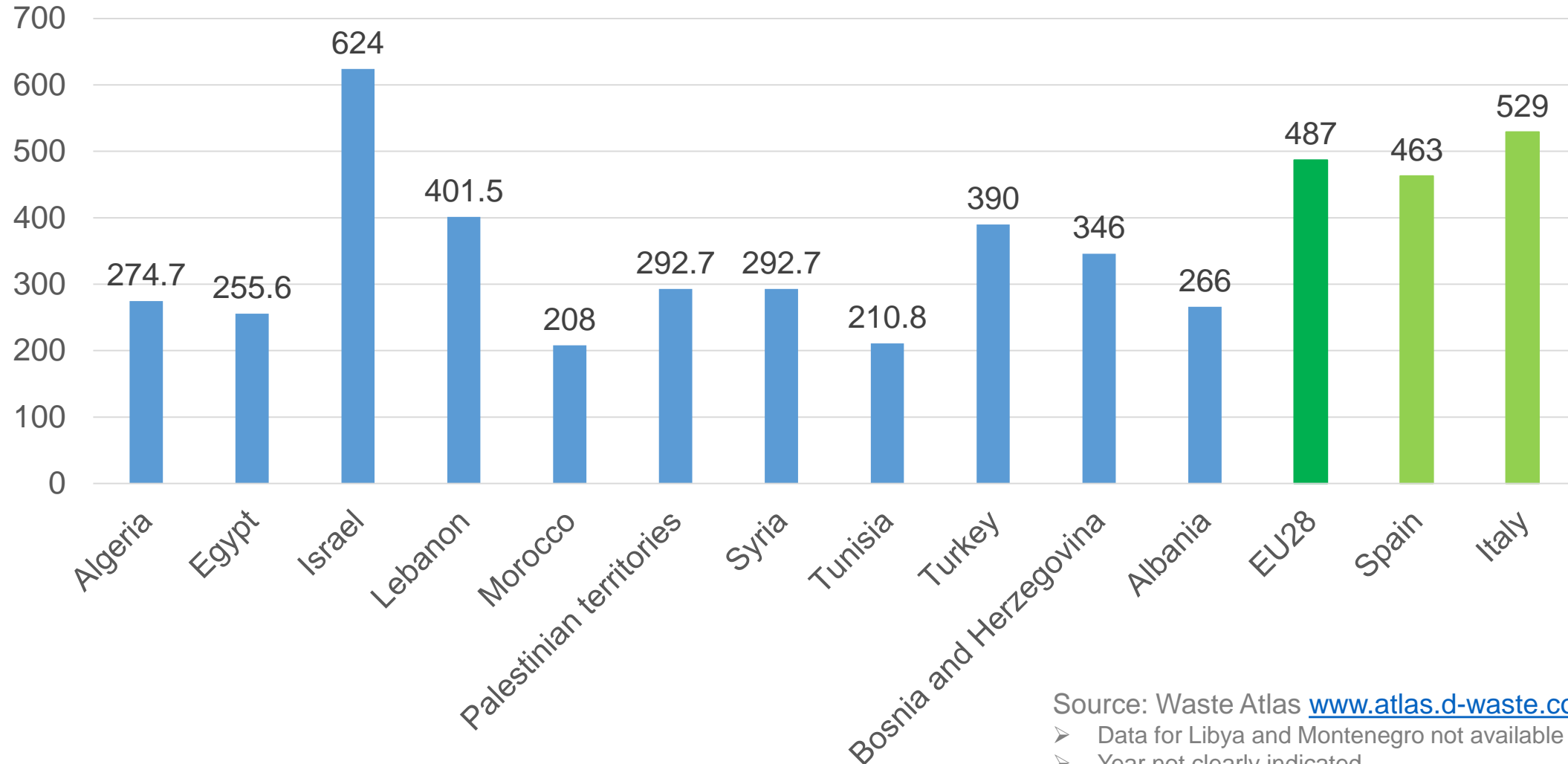


European average: 37 %

Source: Illustration by ACR+ based on data from EEA Report No 2/2013: "Managing municipal solid waste - a review of achievements in 32 European countries ", p. 18.

Municipal waste generation

Municipal waste in MED countries
(kg/inh/y)



Source: Waste Atlas www.atlas.d-waste.com

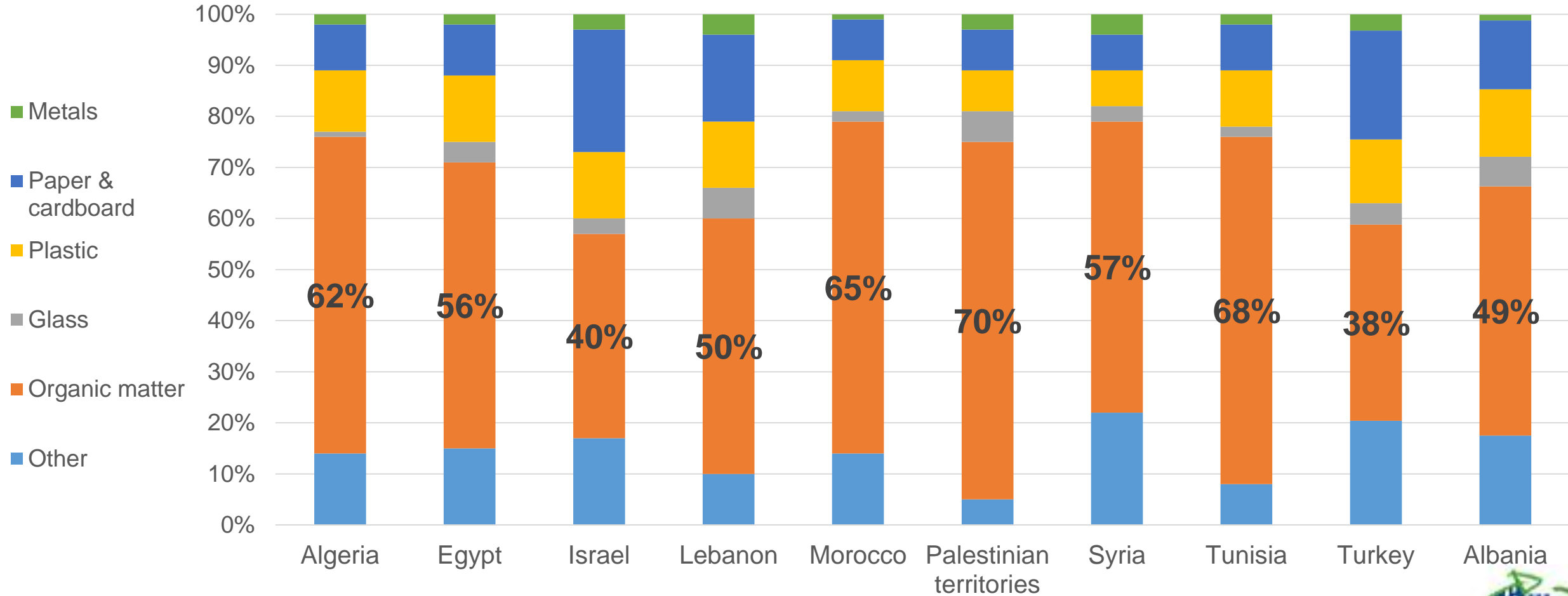
➤ Data for Libya and Montenegro not available

➤ Year not clearly indicated



Bio-waste fraction in MW (MED countries)

Municipal waste composition (in %)



Source: Waste Atlas www.atlas.d-waste.com

➤ Data for Libya, Bosnia and Herzegovina and Montenegro not available

➤ Year not clearly indicated



Bio-waste fraction: treatment

EU28

- Many EEA member countries with a high share of bio-waste in their municipal waste still **recycle only a limited amount of bio-waste**
- Relatively marginal effect of bio-waste recycling on total municipal waste recycling rates
- For many countries, there is **much room for** improving the overall recycling rate of municipal waste through **increasing bio-waste recycling**

Source: EEA Report No 2/2013, p. 18.

MED countries

- Recycling/composting rates for most MED countries < 10 %
- While bio-waste fraction between 38 % and 65 % of municipal waste

→ Potential for application of HTC technology





Thank you!

www.acrplus.org

Contact: ll@acrplus.org

Lisa Labriga, ACR+