



# Strategic Waste Management Opportunities within SE Europe waste market

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# Strategic thinking

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**LCA for resource and waste management** provide a decision-making basis for local, regional and national authorities by providing **a basis for comparison of different waste management solutions** such as recycling, biodegradation, incineration, landfilling, and others. **However, the quality of LCA study is not better than the data it uses.**

- It should be noted that LCA for resource and waste management *is different* from LCA product-oriented.
- **Data quality has a major influence on results and proper evaluation of data quality is therefore important step in every LCA. Due to the mixed and variable composition of waste, it can be difficult to determine which are materials in waste that cause a given emission.**

# Strategic thinking

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This paper is focused to present the importance of the **size of the waste streams and market** in providing elements and data for decisions of waste management scenarios to be implemented in practice.

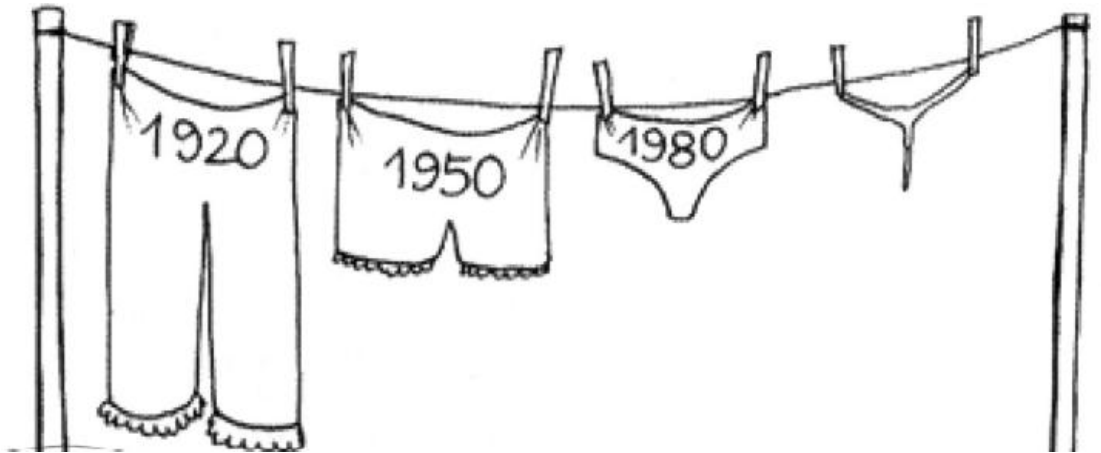
○ For example:

- without a **strong market for recycled materials**, there is no incentive to collect recyclables and manufacture recycled-content products, or
- without **enough (economically feasible) daily waste generation** there is no incentive to propose incineration as the option.
- ***And again....Data quality*** has a major influence on results and *proper evaluation* of data quality is therefore important step in every LCA. Due to the mixed and variable composition of waste, it can be difficult to determine which are materials in waste that cause a given emission.

# What that means: proper boundaries (size) are important

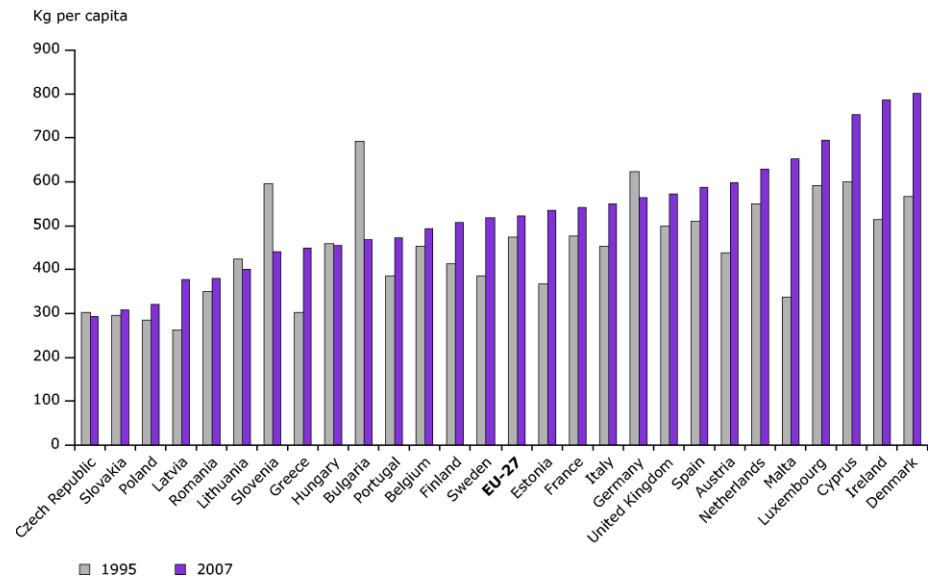
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This illustrate  
Climate Change  
and related  
changes....



# And... this illustrate waste generation

(Generation of municipal waste 1995 to 2007 in EU-27)



○waste prevention?

To correctly set up the boundaries of a system requires specialized knowledge of the **size of the waste streams and market**

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- Almost all regions will need to find local tailored solutions to meet combinations of challenges.

# SE Europe countries

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... are in the process of EU integration

- EU waste management goals = SE Europe countries goals

- IT IS **BIG QUESTION**  
how ....



EU with the new Waste Framework Directive 2008/98/EC:

## Waste prevention – a new dimension

Member States to establish **waste prevention programmes** until 2013

- set out prevention objectives,
- **determine qualitative and quantitative benchmarks or targets for waste prevention,**
- describe prevention measures, such as
  - Economic instruments for sustainable resource use
  - Promotion of eco-design for products
  - Campaigns to change consumer behaviour
  - Supporting the reduction of industrial waste (EMAS, ISO 14001)
  - Green public procurement
- Breaking the link between economic growth and waste generation



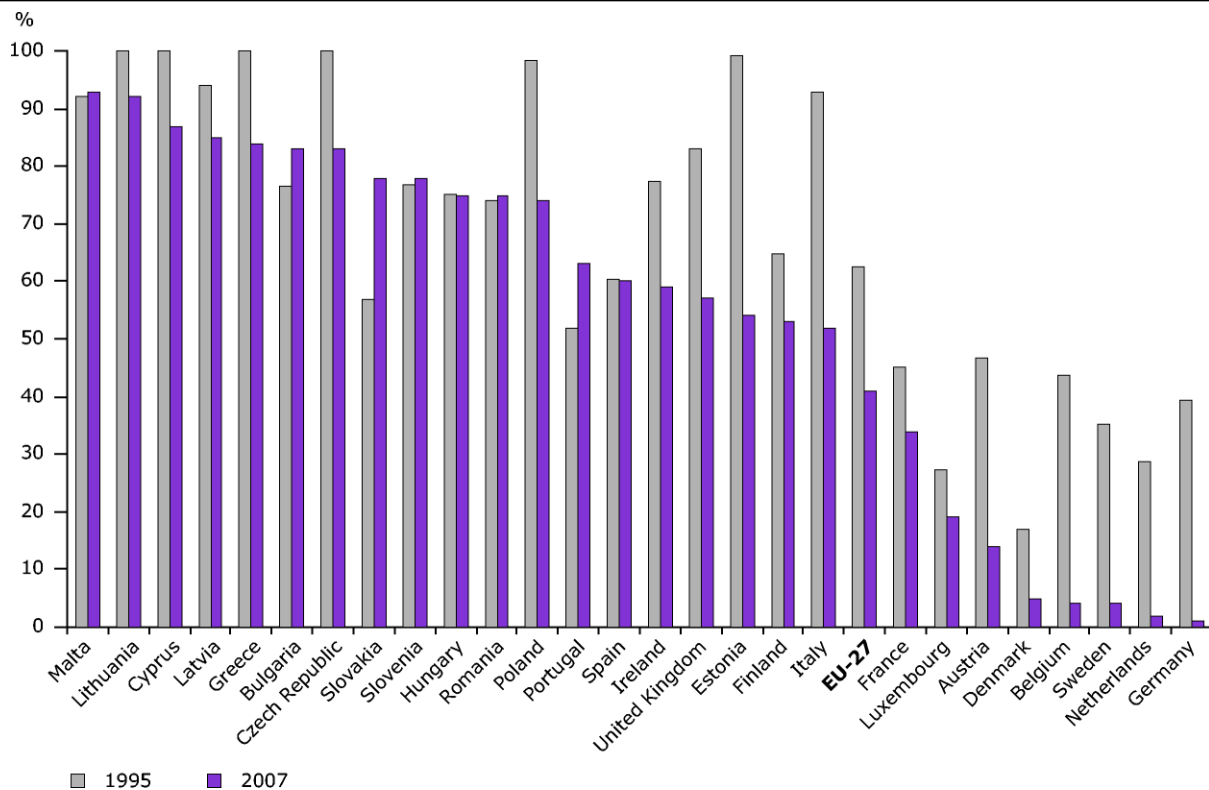


# Waste prevention: framework to be further developed

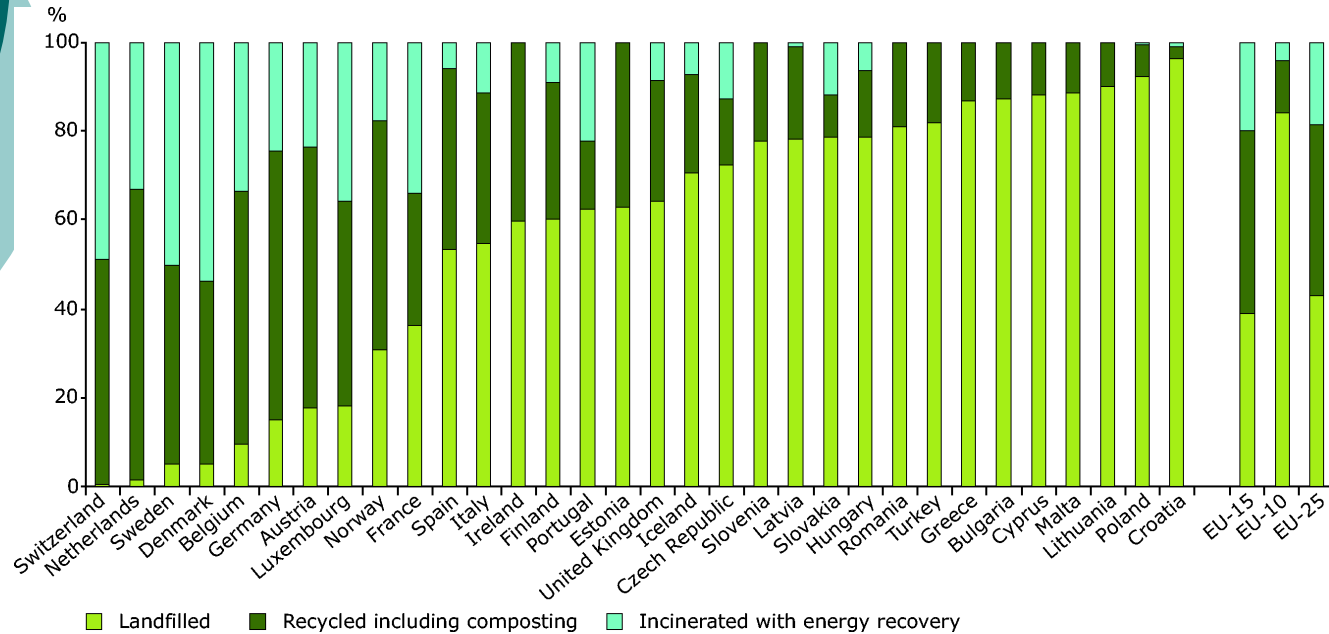
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- European Commission
  - Establishment of a system for sharing information on best practice regarding waste prevention
  - Development of prevention guidelines for Member States
  - Development of waste prevention indicators
- 2011: Commission report on the evolution of waste generation and waste prevention
- 2014: Commission to propose waste prevention and decoupling objectives by 2020, if appropriate

# EU trends: Percentage of municipal waste that is landfilled in the EU-27, 1995 and 2007



# One more illustration: Recycling, incineration and landfilling of municipal solid wastes in Europe



## ○ Seams:

- More landfilling – less reach society
- Reach society – more recycling and incineration type waste to energy

Source: EEA, 2007.

# EU trend: Diversion of waste from landfills

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- Directive 1999/31/EC on landfills
- Since July 2009 all existing landfills in the EU have to comply with the directive
- Reduction of landfilling biodegradable waste compared to amount of biodegradable waste produced in 1995
  - 2006: reduction to 75%
  - 2009: reduction to 50%
  - 2016: reduction to 35%
- Derogation: prolongation up to 4 years for Member States which in 1995 landfilled more than 80% of municipal waste

# SOME TARGETS IN EU WASTE LEGISLATION

		min recovery	min recycling	collection rate
Packaging	2008	60%	55%	
Cars	2015	95%	85%	100%
Electronics	2006	70%	50%	min 4 kg per inhabitant per year
Batteries	2011		50% to 75% (efficiency)	
	2012			25%
	2016			45%
Tyres	2006	0 landfill of tyres		
Biowaste diverted from landfills	2006	reduction to 75% of the 1995 level		
	2009	reduction to 50% of the 1995 level		
	2016	reduction to 35% of the 1995 level		
New targets (WFD)	2015	Separate collection: at least paper/metal/plastic/glass		
	2020	50% household waste		
	2025	70% household waste		



## Measures to improve the sustainability of production and consumption

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- Improve the eco-design of products
  - Ecodesign-Directive and Ecolabel:
  - Increase green public procurement
  - Increase to 50% by 2010
- Greening the supply chain
  - Commission's retailer forum
- Supporting recycling markets on the demand side



## On the EU horizon ...

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- 2010: Review of Commission's waste and resource strategies
- 2011: report on waste generation and prevention
- 2014:
  - review of the targets of the Waste Framework Directive
  - Report on waste prevention and decoupling objectives for 2014

# SE Europe waste market diagnosis?

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- **No proper input data on quantities**
- **Almost no landfills (dumpsites are NOT landfills)**
- and
- **The situation with no appropriate input parameters wrong waste management option could be offered, leading to false business and environmental outputs.**



# SE Europe regional waste management profile

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- For SEE waste market there is too much:
  - uncertainty,
  - to little reliable measurement and data,
  - and no incentive in prices or in regulation to ensure that the sustainable long-term is given appropriate consideration in modern market procedures.

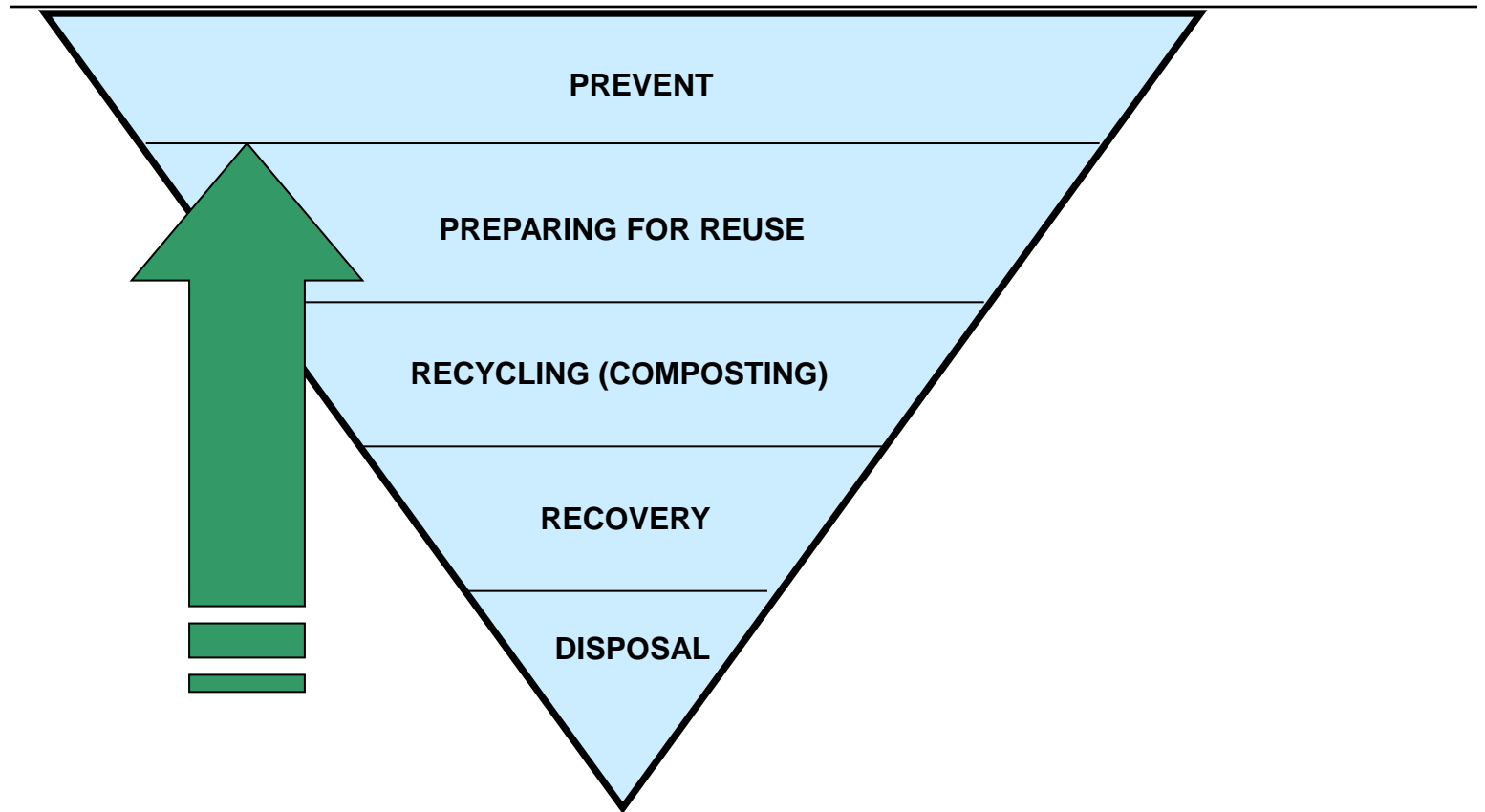


The SEE waste market is a multi-million euro industry - SEE waste market is still unconsolidated and growing (in volume).

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- Waste management in countries in region is facing a period of rapid and radical change. Driven by the need for improved environmental protection and public expectation, as well as harmonization with EU legislation, countries are trying to find ways to reduce current number of inadequate waste disposal sites, increase solid waste recovery rates and **move toward more sustainable methods of managing waste and resources.**

# Waste Hierarchy - the future



Waste Strategic Approach for SE Europe - first to develop proper size infrastructure to be able to accommodate EU principles (in few decades)

Recycling market is functioning only with unpolluted known quantities of waste streams

- **SE Europe have to start from landfilling and further to reduce the volume and regulate the source**
- **Incineration-waste to energy is expensive and not certain option when waste quantities and quality is uncertain**

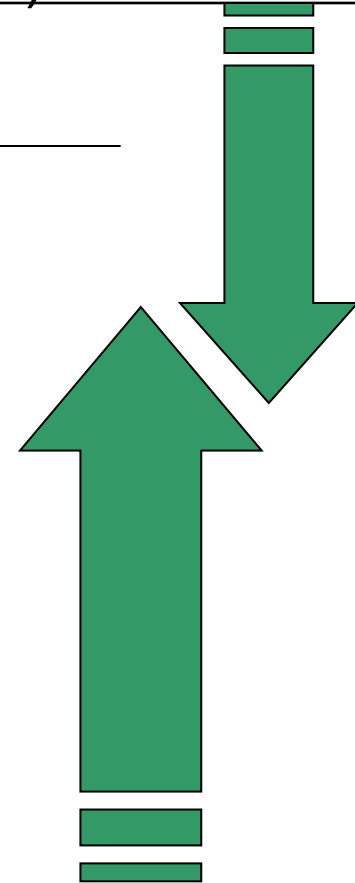
**PREVENT**

PREPARING FOR REUSE

RECYCLING (COMPOSTING)

RECOVERY

**DISPOSAL**





Wrapping up analysis provided in this paper.....

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- **it is important to understand that “copy (system, facility, technology)-paste” solutions are not guarantee the sustainable solutions of waste management (and effects, including financial ones) in SE Europe countries.**