

# Plastic in the circular economy – increasing Resource Efficiency

Dr. Martin Engelmann 7<sup>th</sup> CEWEP Waste-to-Energy Congress 25<sup>th</sup> September 2014



#### **Plastics are not one but many materials**





## Landfilling is still the most common waste treatment option for Plastics



Treatment of post-Consumer Plastic Waste in Europe in 2012:





### **Proposed landfill restriction requires** a step change in many countries





#### Treatment of municipal waste in EU 28 + CH & NO in 2012:

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### 80% of Europe's plastic waste is landfilled in only 5 countries



Treatment of Plastic waste in kt (2012):



## Landfilling of plastic waste is still a major option in many countries





#### **Countries with landfill ban generally achieve highest recycling rates**





#### Energy recovery is complementary option for electricity and heat production





### 4 countries with the highest recycling and energy recovery rates





#### Zero Plastics to Landfill is a challenging but worthwhile objective



Post-consumer Plastic waste landfilled in Europe: in Decrease from 2005 - 2012 million Trend-line (extrapolation) tonnes Zero Plastics to Landfill = 60 million tonnes of plastics prevented from landfill,

equivalent to over 750 million barrels of oil or 60 billion €

#### Landfill ban in Germany has triggered recycling & energy recovery of plastic waste Plastics Europe



Source: Consultic, Produktion, Verarbeitung und Verwertung von Kunststoffen in Deutschland 2011

### Plastics recycling is the preferred option – however energy recovery is needed as well





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#### Plastics recycling is the preferred option – for example for PET bottles





PET is the raw material which is used to produce fleece pullovers



20% of the recycled material goes into the production of new bottles

### Life cycle of a plastic bottle

### What to do with Polystyrene foam insulation boards containing HBCD?







#### Energy recovery provides a safe, efficient and cost-effective solution for PS foam



Real-life-test carried out in MSWI Wuerzburg, Germany:



#### The Commission's proposal for a "Circular Economy" needs to be improved

- By 2025, landfill ban for "recyclable waste including plastics" and others & max. 25% landfill rate:
  → include also "other recoverable" waste
- Change of calculation method:
  - Assess impact of new method first before setting new targets based on it
  - → Stick to input based calculation to avoid negative ecological and economic consequences
- Extended Producer Responsibility schemes to cover all waste management costs:

→ Industry can only be held **responsible for what it controls** 

• Member States shall encourage **design of products** in order to reduce environmental impact:

→ Avoid negative consequences for the internal market

- **60% plastic packaging recycling** target by 2025:
  - ➔ 2025 target should only be set once 2020 achievements have been assessed applying life-cycle-methodology





