

The principles of waste separation



STADTREINIGUNG HAMBURG

Sven Winterberg

Head of the Department
Customer Service, Disposal and Sales

Stadtreinigung Hamburg

- The implementation of a separate collection system in Hamburg, the process of increasing quantities and some trends for the future

1.1. Institutional setting- Collection systems



STADTREINIGUNG HAMBURG

The aim is to keep as many materials as possible in the loop for as long as possible. Two collection systems in Hamburg:

- Pick-up system: household bins (or underground containers) for residual waste, paper, lightweight packaging and plastics, glass and green/organic waste and bulky waste out of flat
- Bring-it-yourself system:
 - Depot containers for paper, lightweight packaging and plastics, glass, textiles and electronic waste
 - Recycling centres for residual and bulky waste, paper, lightweight packaging and plastics, glass and organic waste as well as smaller fractions such as batteries, tires, wood, ...

1.2. Institutional setting – legal framework



STADTREINIGUNG HAMBURG

European waste directive



German Recycling Cycle and Waste Management Act



Rules and plans of federal states



Rules and plans of municipalities

Sustainability

Economic Responsibility

Corporate Governance
Disposal reliability
Price stability
Supplier relationship

Ecologic Responsibility

Energy efficiency
Climate protection
Resource efficiency
Waste management

Social Responsibility

Job security
Apprenticeship / Training
Health protection
Environmental education

1. Avoiding waste

2. Preparing for Re-use

3. Recycling

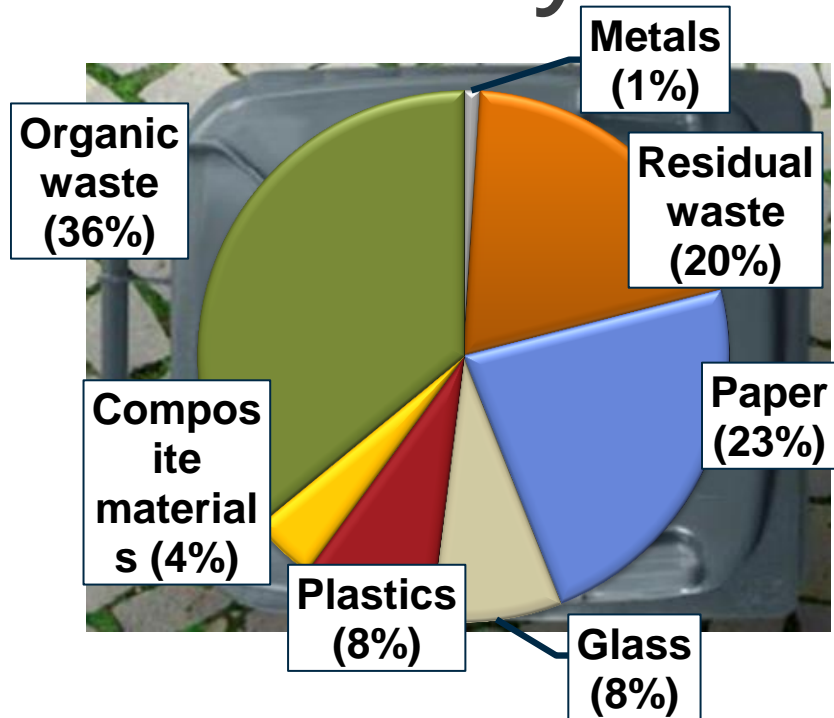
4. Other recycling
f. i. thermal, filling

5. Elimination

2. Starting point – waste analysis 2008



STADTREINIGUNG HAMBURG



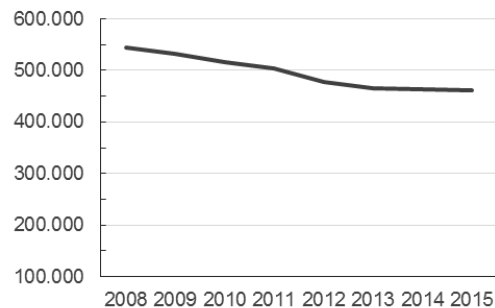
Strong public recycling campaign for waste separation

Special Legislation in Hamburg makes waste separation mandatory



3. Incineration of residual waste benefits: clean metals, electricity, district heat

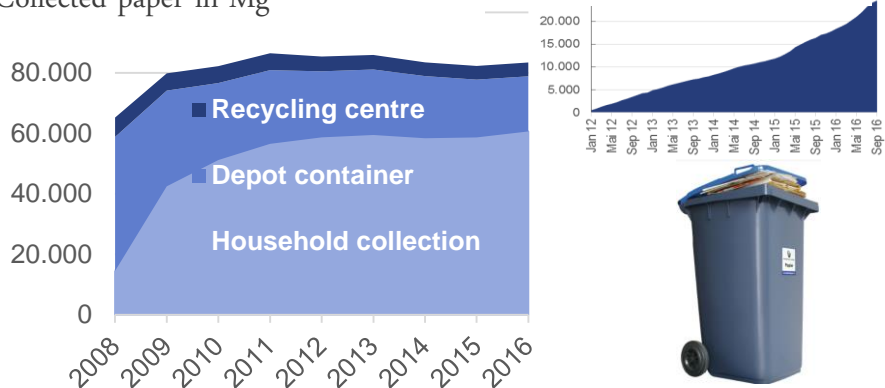
Residual waste collected in Hamburg in Mg/year



Paper can be recycled up to 6 x = recycling quota of 82 %

New bins for household collection

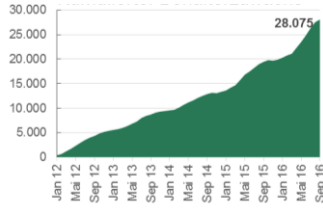
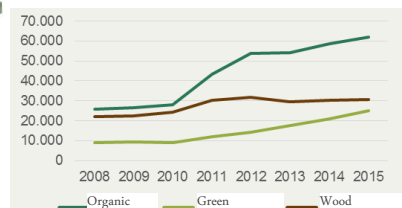
Collected paper in Mg



Triple strategy for organic waste treatment in SRH biomass power plant: **storable biogas** for the grid and **compost** for agricultural use

Amount in Mg

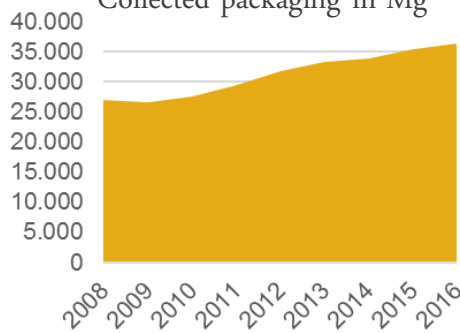
New bins provided by SRH



Recycling materials for a closed loop! But: Plastics can't be recycled very often, quality keeps getting worse



Collected packaging in Mg

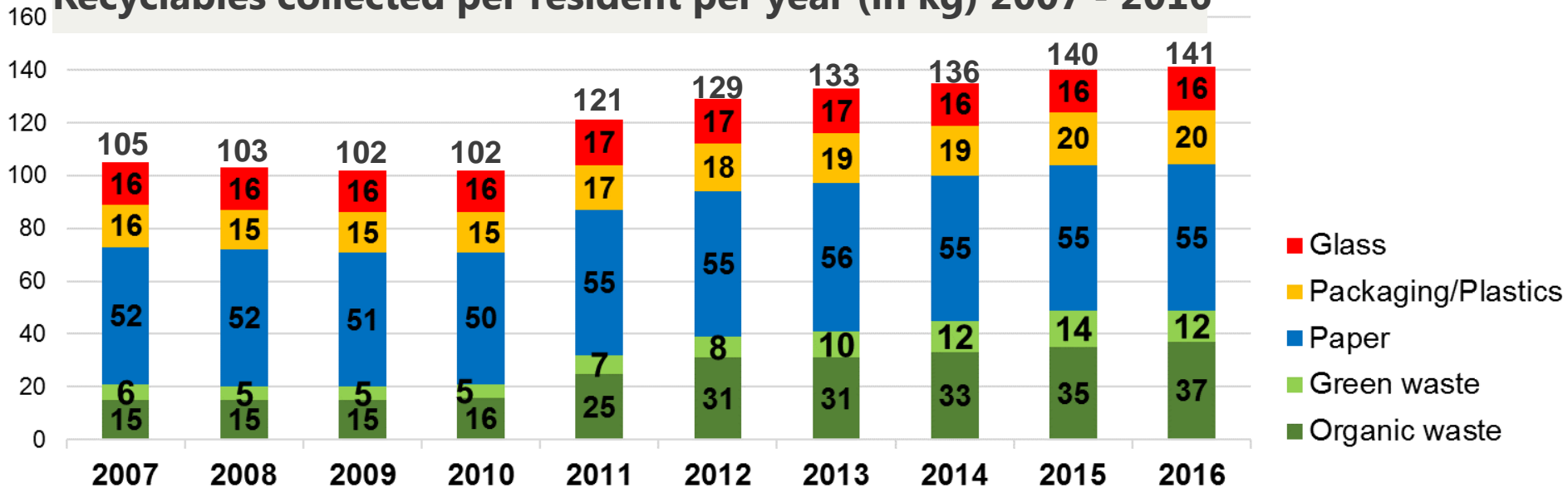


4. Outputs

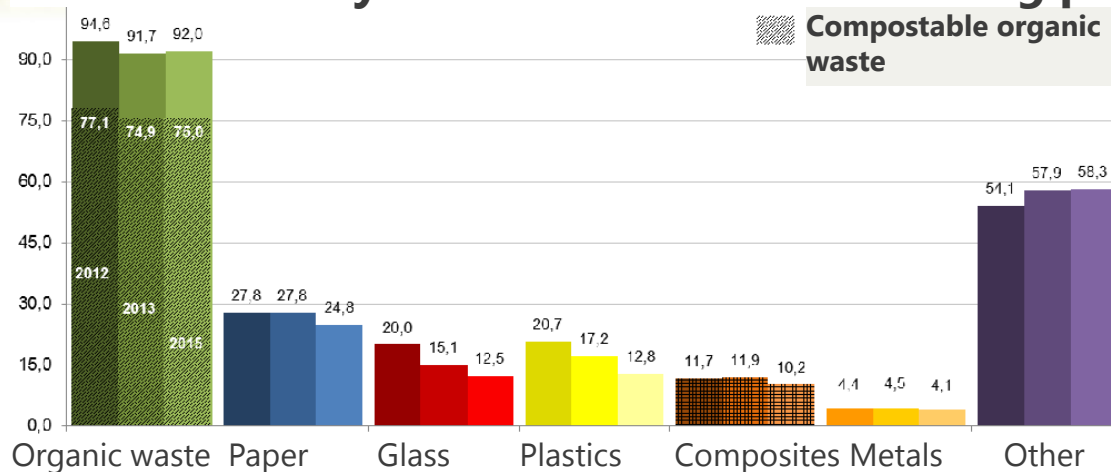


STADTREINIGUNG HAMBURG

Recyclables collected per resident per year (in kg) 2007 - 2016



Decrease of recyclables in residual waste in kg per resident



Decrease of residual waste:

2012: 233.3 kg/resident
 2013: 226.1 kg/resident
 2015: 214.7 kg/resident

5. Lessons



STADTREINIGUNG HAMBURG

Regional analysis:

- Which fractions can be recycled?
- Priority List:
 1. Controlled / regulated waste disposal
 2. Collection of problematic substances to avoid pollution
 3. Separate collection of mass flows that generate revenue
 4. Comfortable collecting systems, digital processes
- Which form of financing (Fee or tax)?



6. Follow up



STADTREINIGUNG HAMBURG

The first step is to build a functional collection and disposal system for residual waste

When that groundwork is established, further steps to educate citizens and implement a separate collection could be started:

- Paper (could be exported as well as used locally)
- Metals (high value for export as well as local use)
- Glass (there need to be facilities that can actually use it nearby)
- Organic waste (biogas and / or compost plant)
- Small fractions such as batteries, textiles, hazardous waste, electronic waste