



**STADTREINIGUNG.HAMBURG**

# **The Contribution of Municipal Waste Management**

Connective Cities – 2019 December 3rd

Prof. Dr.-Ing. Rüdiger Siechau



# Agenda



STADTREINIGUNG.HAMBURG



Stadtreinigung Hamburg (SRH) at a Glance

Waste Management at SRH

ZRE (Centre for Resources and Energy)

Circular Economy at SRH



# Stadtreinigung Hamburg at a glance



STADTREINIGUNG.HAMBURG

- Owner: Free and Hanseatic City of Hamburg
- Duties: State-Law since 1994 (SRG)
- Focus: Sustainability / growth in public duties
- Turnover: ~ 400 Mio. €/a
- Financing: Fees, reimbursements, charges
- Employees: 3.400 (paid by tariffs – VERDI Union)
- Locations: 30 incl. Subsidiaries (900 vehicles)
- Disposal: Large scale plants / recycling



## Free and Hanseatic City of Hamburg

Urban area: 755 km<sup>2</sup>

Inhabitants: 1.8 Mio.

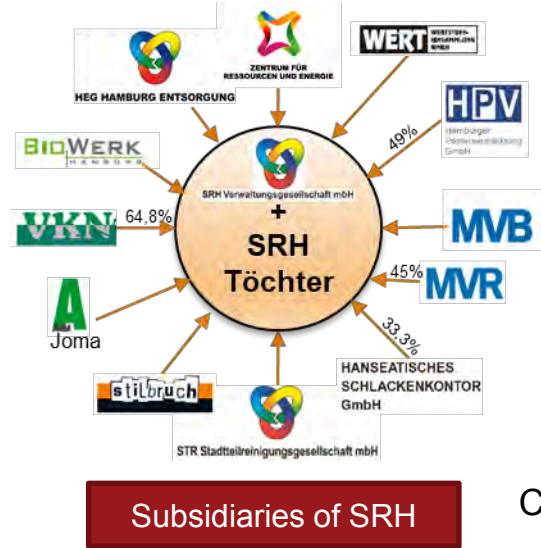
Households: 1.0 Mio.



# Stadtreinigung Hamburg at a glance



STADTREINIGUNG.HAMBURG



Winter service

Public Toilets



Collection/  
Transport



Treatment



Streets &  
Sidewalks  
Cleaning



Recycling centres

Cleansing  
Parks,  
Signs, ...



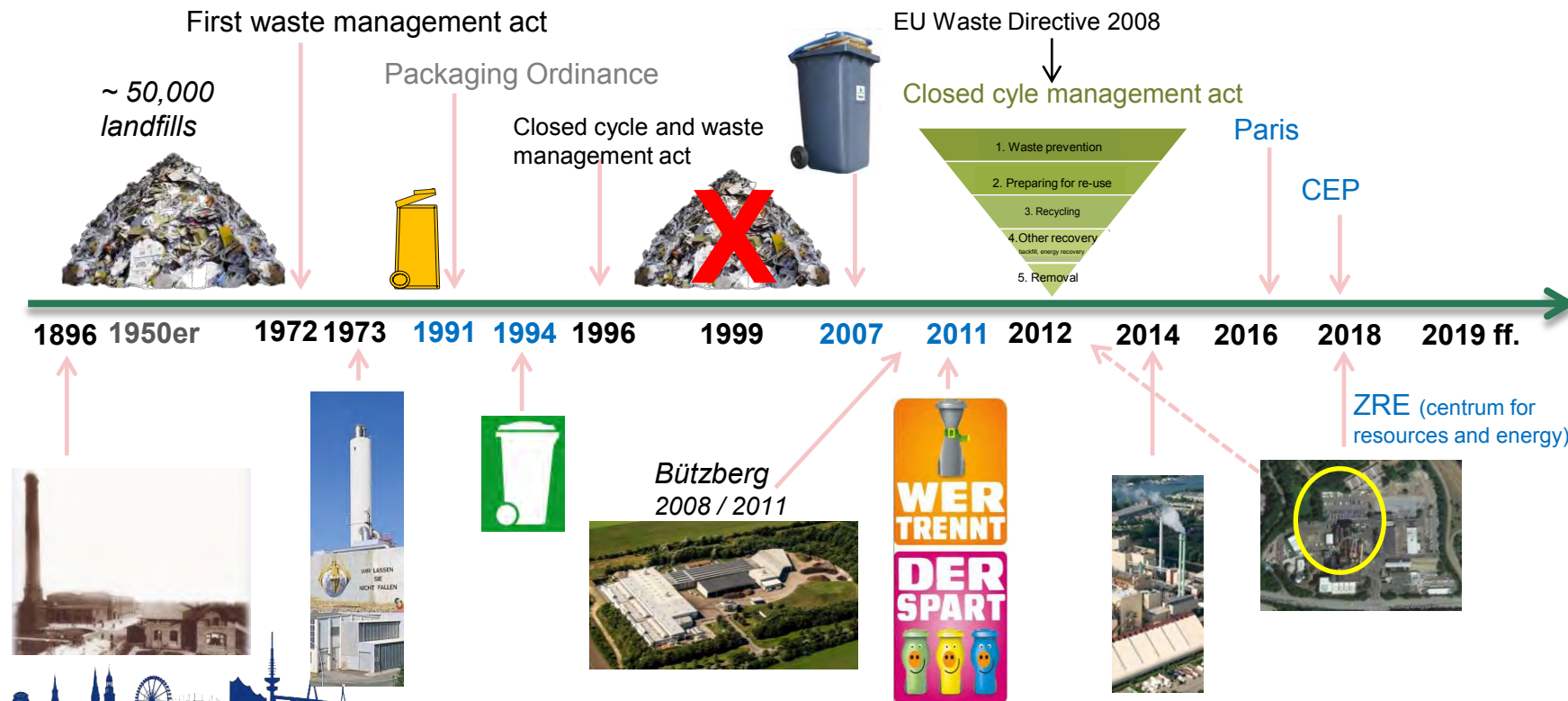
Stilbruch



# Waste management climate and resources protection



STADTREINIGUNG.HAMBURG



# Waste management

## Sustainable safe waste disposal



STADTREINIGUNG.HAMBURG

### FHH – safe waste disposal is based on three solid pillars

1. **Reuse** (brand “Stilbruch”)
2. **Recycling offensive** (separate collection / recovery)
  - 4 bin collection system / bring system (12 RS / 900 DC):  
biowaste, paper, plastics, metals, scrap metals, textiles, ... and marketing structures recyclable material
3. **Treatment plants (thermal / biological)** owned by SRH
  - Waste treatment with storable climate-neutral energy production, usage of compost, slag and residual materials





# Waste management

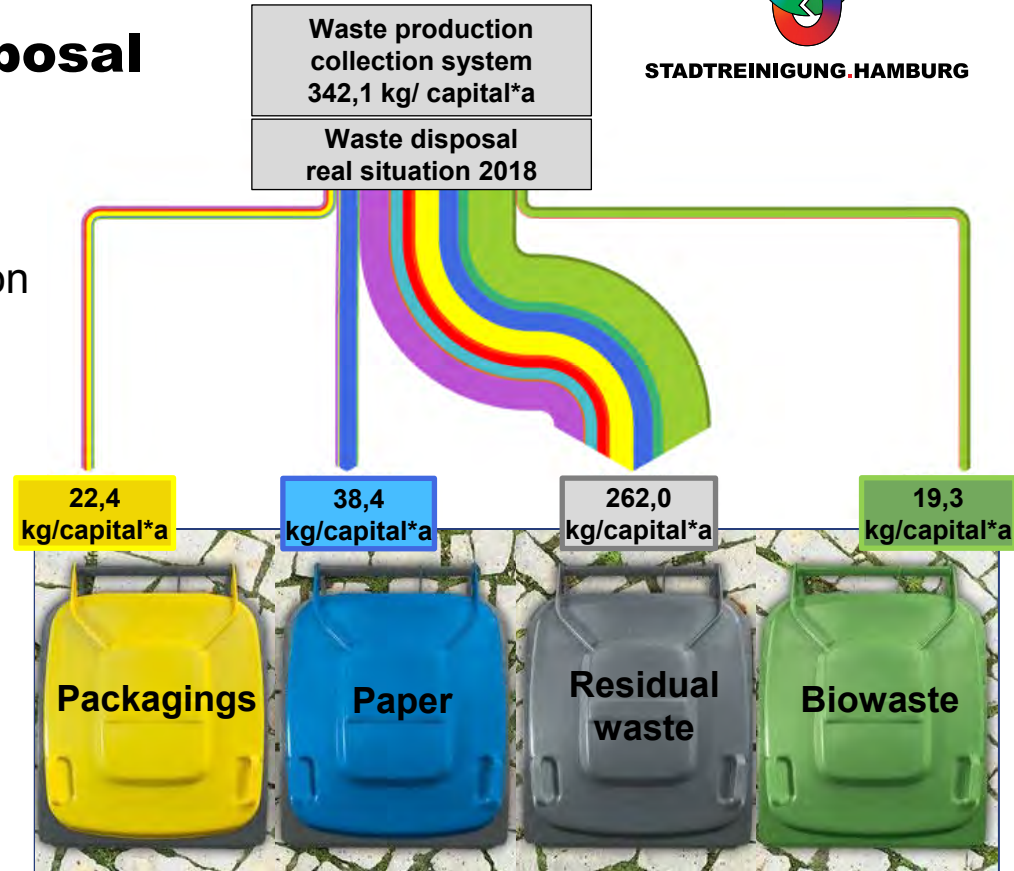
## Sustainable safe waste disposal



STADTREINIGUNG.HAMBURG

- SRH operates following systems:

- Residual waste bin
  - Paper bin
  - Biowaste bin
  - Packaging bin
- Collection system
- Depot container
  - Recycling centres
- Bring System

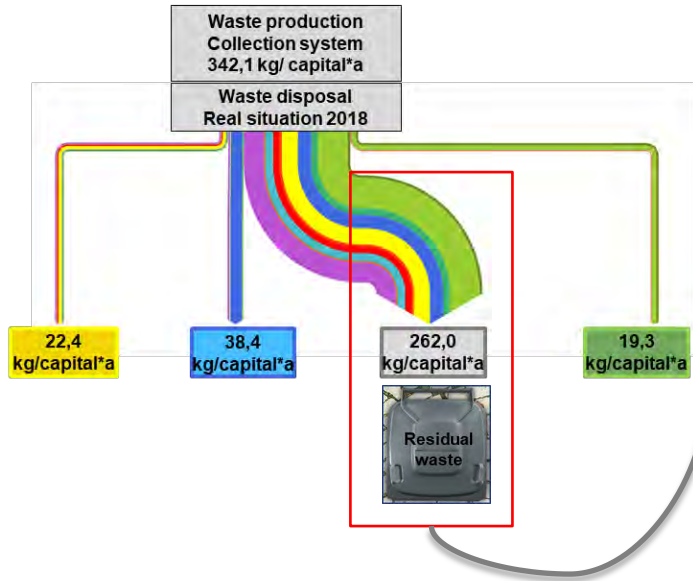


# ZRE (center for resources and energy)



STADTREINIGUNG.HAMBURG

*...What about the recyclable materials in the grey bin?*



## ZRE

mechanic-biological and thermal machinery plant recovers all the valuable materials

- The residual waste contains nearly 26,8% reusable/ valuable materials e.g. plastics, metals, paper...etc.
- RDF Production → thermal treatment
- Green heat and electricity

➤ **Contribution to Circular Economy**

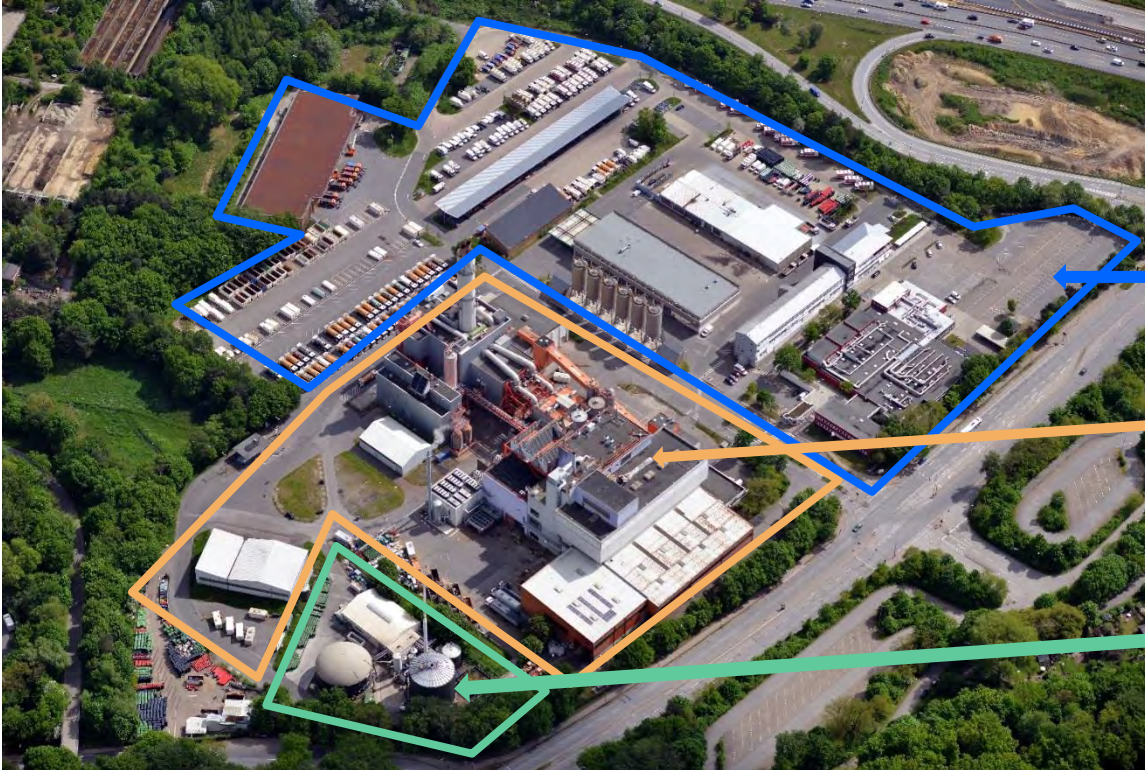




# ZRE (center for resources and energy) rearrangement of location Stellingen in RNW



STADTREINIGUNG.HAMBURG



**RNW**

(District North-West)

**MVA**

(ZRE center for  
resources and energy)

**Biowerk**

(Anaerobic digestion  
plant)



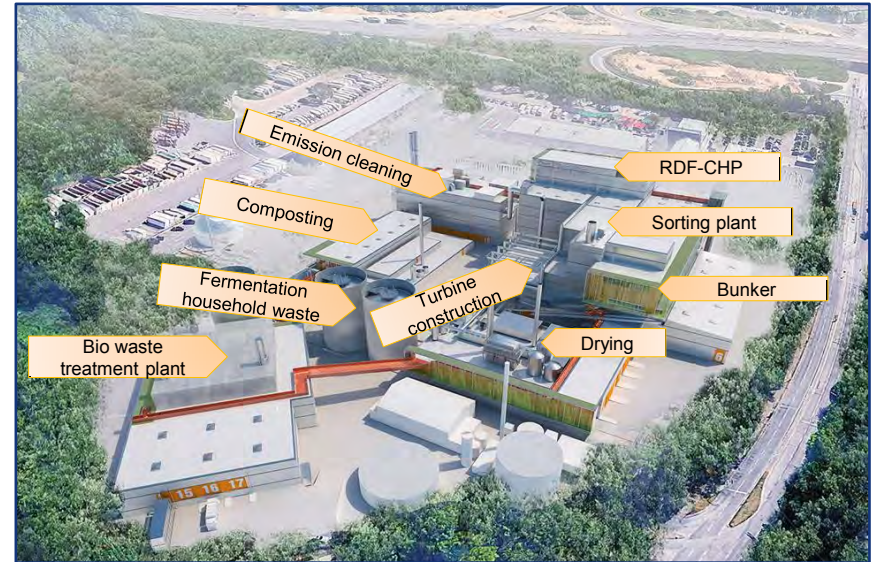
# ZRE (center for resources and energy)

## ZRE key data



STADTREINIGUNG.HAMBURG

Procedures:	sorting, drying, fermentation, composting
Areal:	approx. 40,000 m <sup>2</sup>
Waste input, total:	approx. 320,000 t/a
Investment volume:	EUR 380 Mio. (net)
New jobs:	approx. 100
Initial operation:	starting in 2023
Operational life:	over 40 years
Energy production:	60 MW heat/ 15 MW electricity
Realization:	ZRE GmbH (SRH 100%)





# ZRE (center for resources and energy)



STADTREINIGUNG.HAMBURG



ZENTRUM FÜR  
RESSOURCEN UND ENERGIE



Quelle: Gottlieb Paludan Architects

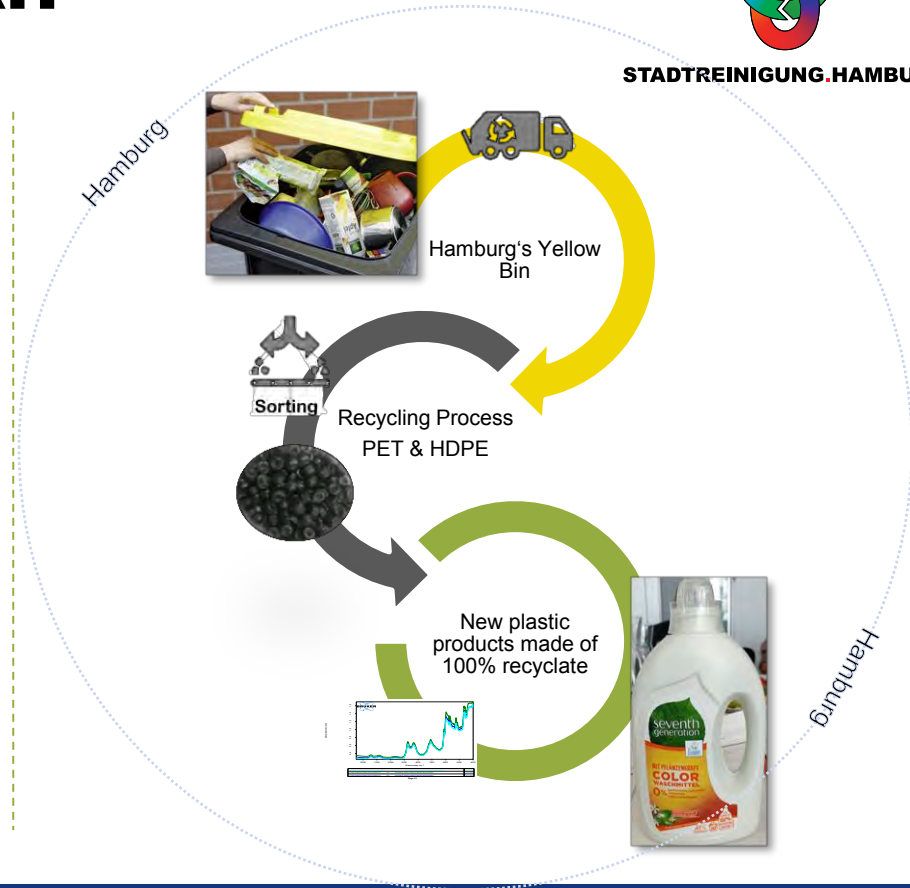


# Circular Economy at SRH Plastic Workshop

- The idea:
  - To bring all players of a process chain together
  - To create a packaging made of plastic waste coming from Hamburg's yellow bin
- Project team is consisting of top-ranking players:
  - Collection yellow bin
  - Packaging Design
  - Recycling Process
  - Calculations and lab tests
  - Marketing & Sale



STADTREINIGUNG.HAMBURG



# Circular Economy at SRH

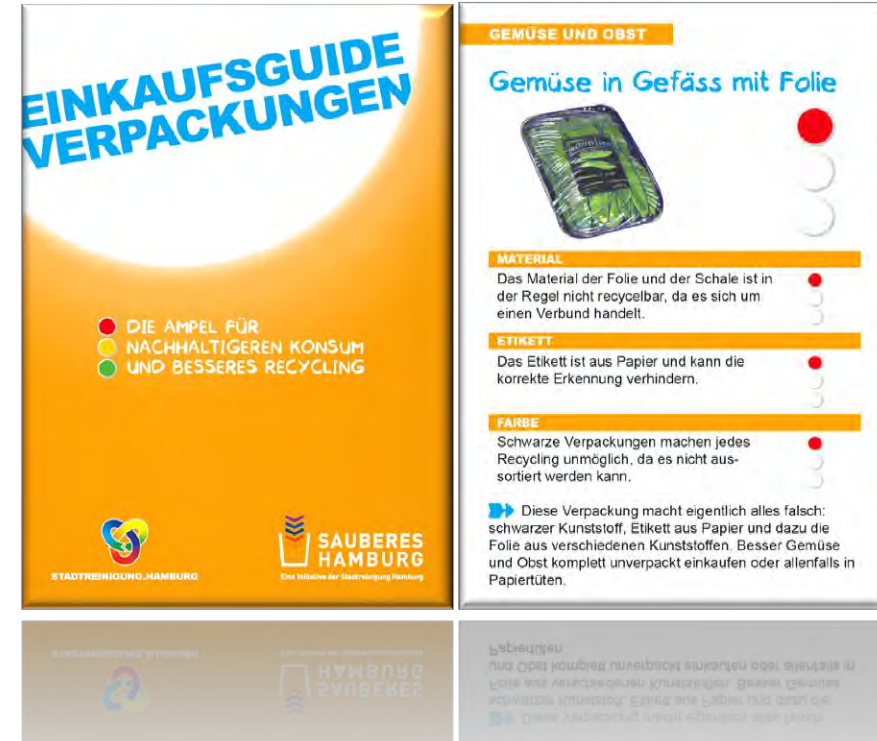
## Idea of a Shopping Guide for Packaging



STADTREINIGUNG.HAMBURG

*How can consumers support the plastic recycling processes?*

- Traffic light system helps to distinguish between „good“ and „bad“ plastic packagings
- Criteria: Material, Label, Colour







**STADTREINIGUNG.HAMBURG**

*And what is your  
daily contribution  
for a better  
environment?*

