

# The future role of waste-to-energy in the Swedish EPA perspective

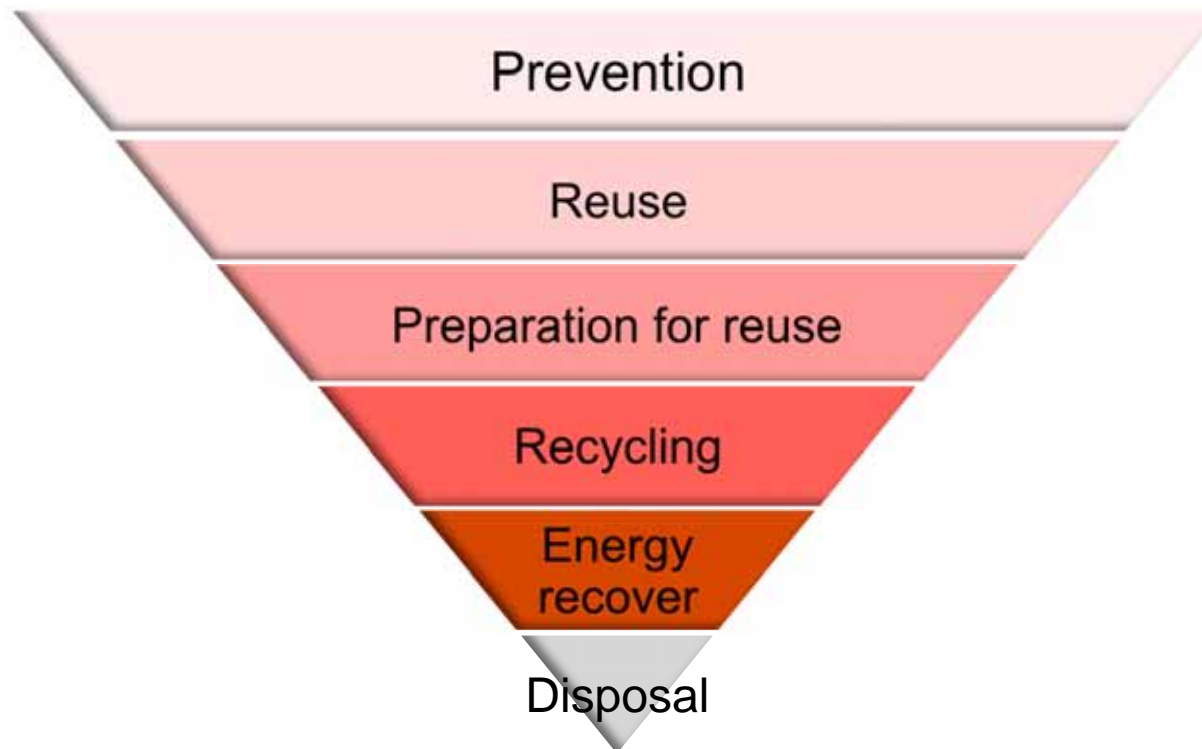


Catarina Östlund  
Waste and Chemicals section  
Swedish Environmental Protection Agency

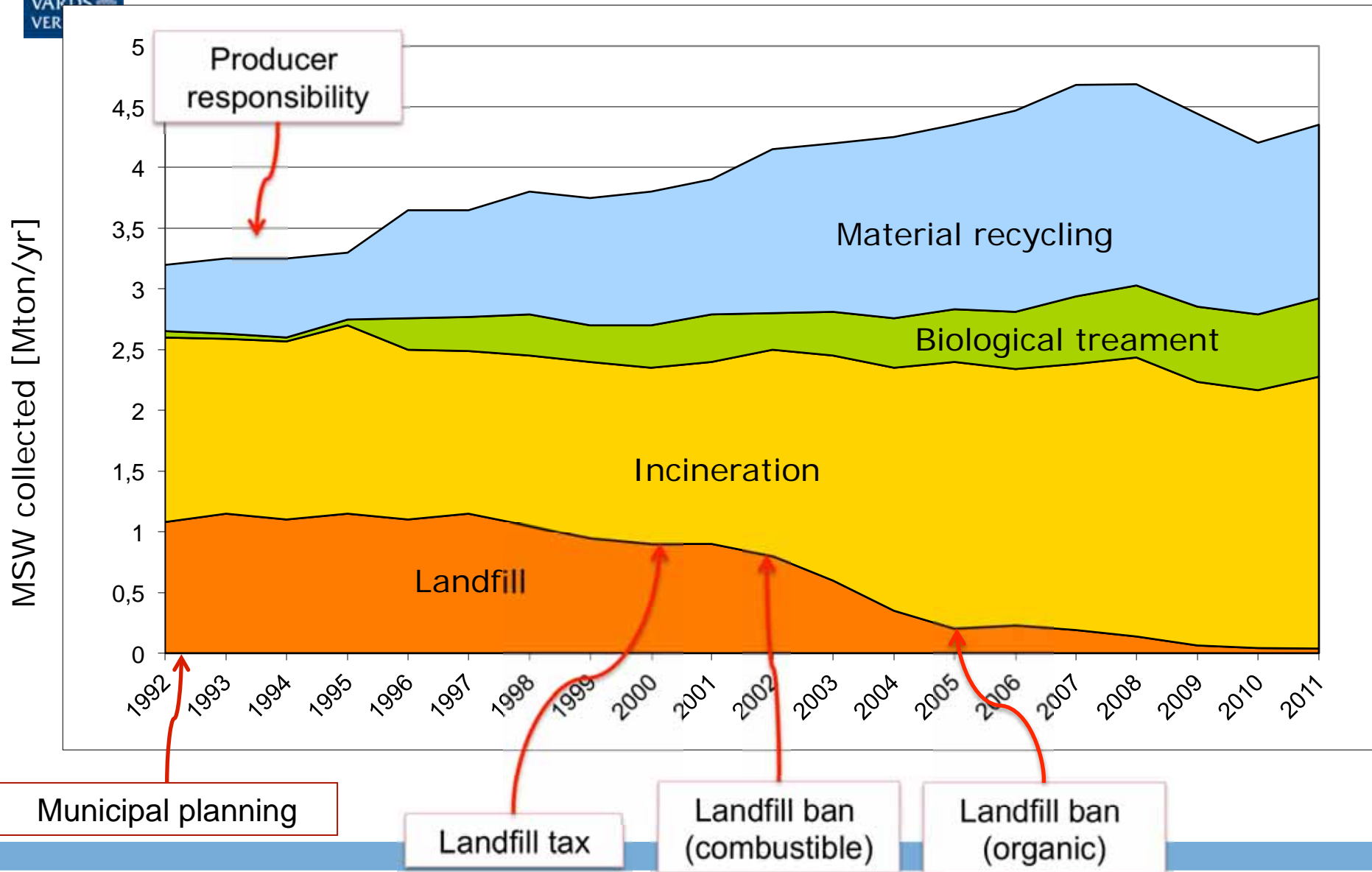
[catarina.ostlund@naturvardsverket.se](mailto:catarina.ostlund@naturvardsverket.se)

[www.naturvardsverket.se](http://www.naturvardsverket.se)

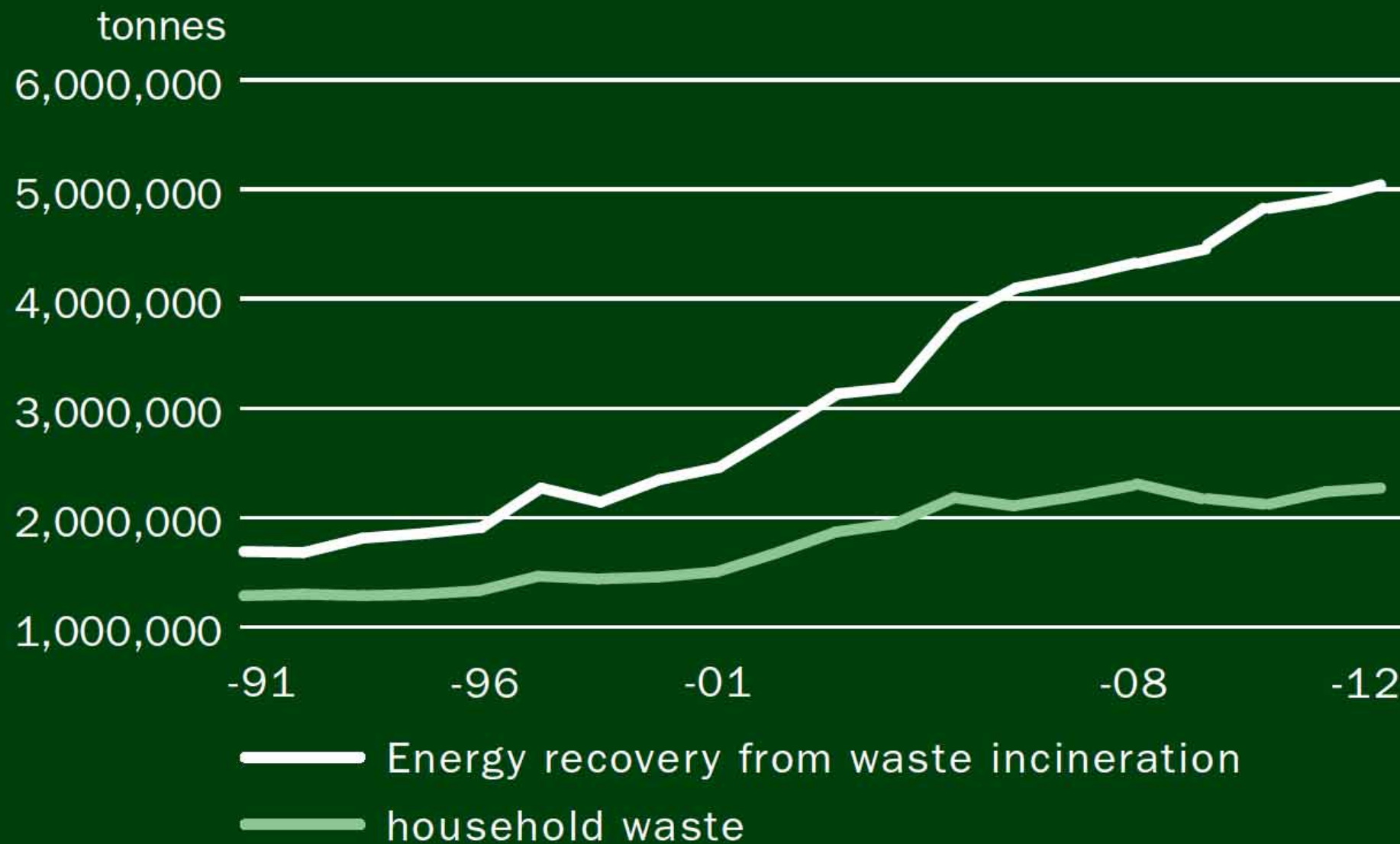
# The waste hierarchy - basic principle for waste management



# Treatment household waste



# WASTE TO ENERGY 1991 – 2012



## Energy and waste from waste incineration 2012

- 14,7 TWh energy
  - 13 TWh heat
  - 1,7 TWh electricity
- Sweden highest rate of energy recovery from waste incineration in Europe
- Slag from the furnace 15–20 percent by weight of the treated waste
- Flue gas treatment residues 3–5 percent by weight

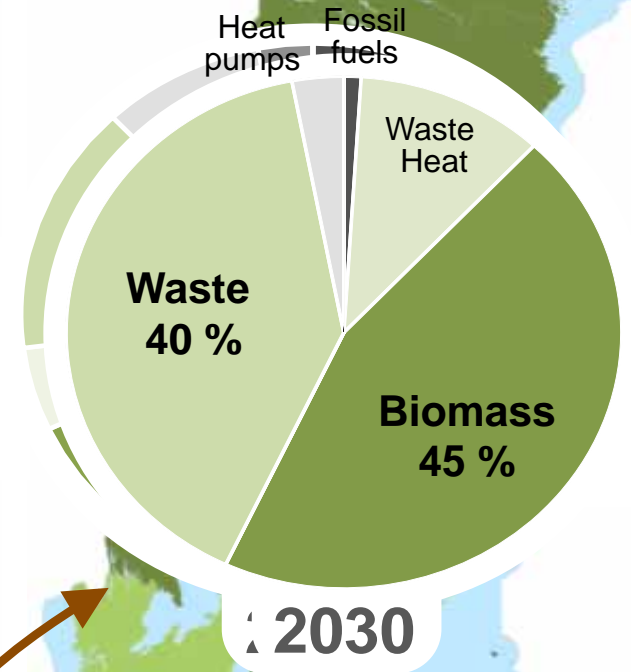
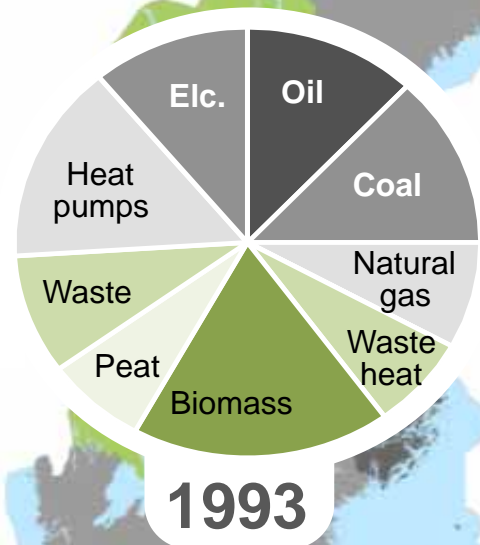
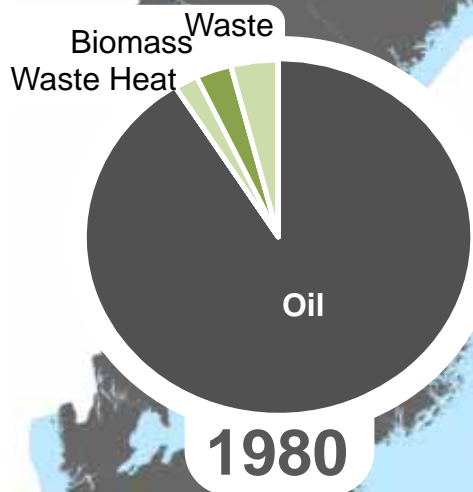


# District Heating

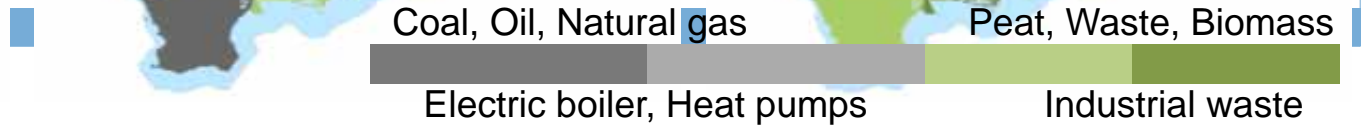
1980

1993

2008



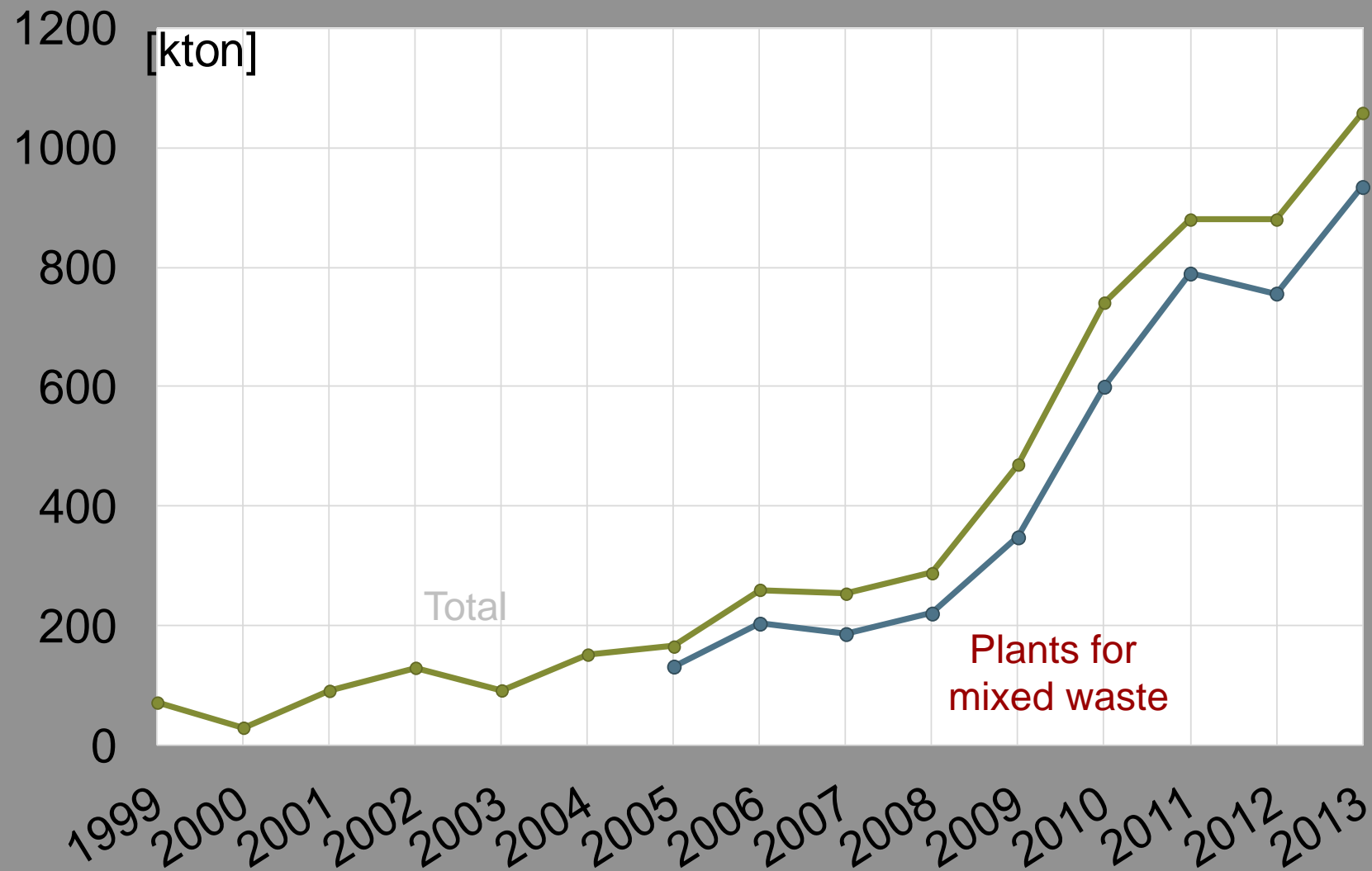
**Lower demand due to energy savings. Increased market share!**



## Why such an increase in Swedish waste incineration?

- Powerful instruments steering from landfilling to recycling (landfill tax, landfill ban)
- Need of heat, district heating system in all big cities
- High technology
  - high energy efficiency
  - low emissions
- Today "public trust", problems in the 1980's
- Import of waste

# Waste import for energy recovery (1999-2013)





140 Mtonnes of waste  
was landfilled in EU27  
in 2011

Year 2011  
ca 90 Mtonnes MSW  
ca 50 Mtonnes of industrial waste

## The future role of waste-to-energy in Europe - Roadmap to a Resource Efficient Europe

”Milestone: By 2020 waste is managed as a resource.....Energy recovery limited to non recyclabel materials, landfilling is virtually eliminated and high quality recycling is ensured”



# From waste management to resource efficiency - Sweden's national waste plan 2012-2017



## Towards greater resource efficiency

- Find new instruments for fulfilling waste hierarchy
- Manufacturing of sustainable products
- **Increase recycling of good quality**
- Use of material stored in society (urban mining, landfill mining)



## Increase recycling of good quality

- improve product design → possible to recycle
- deviation waste hierarchy → incinerate/landfill if hazardous substances
- need of instrument to increase recycling



## Areas of priority



- Reuse and recycle of construction and demolition waste
- Reuse and recycle of household waste
- Improve the resource efficiency in the food chain
- **Less hazardous substances from waste treatment**
- Stop the illegal export of waste



## Less hazardous substances from waste treatment – measures incineration

- Continuously sample emissions of dioxins
- Storage of waste in such a way fires do not occur



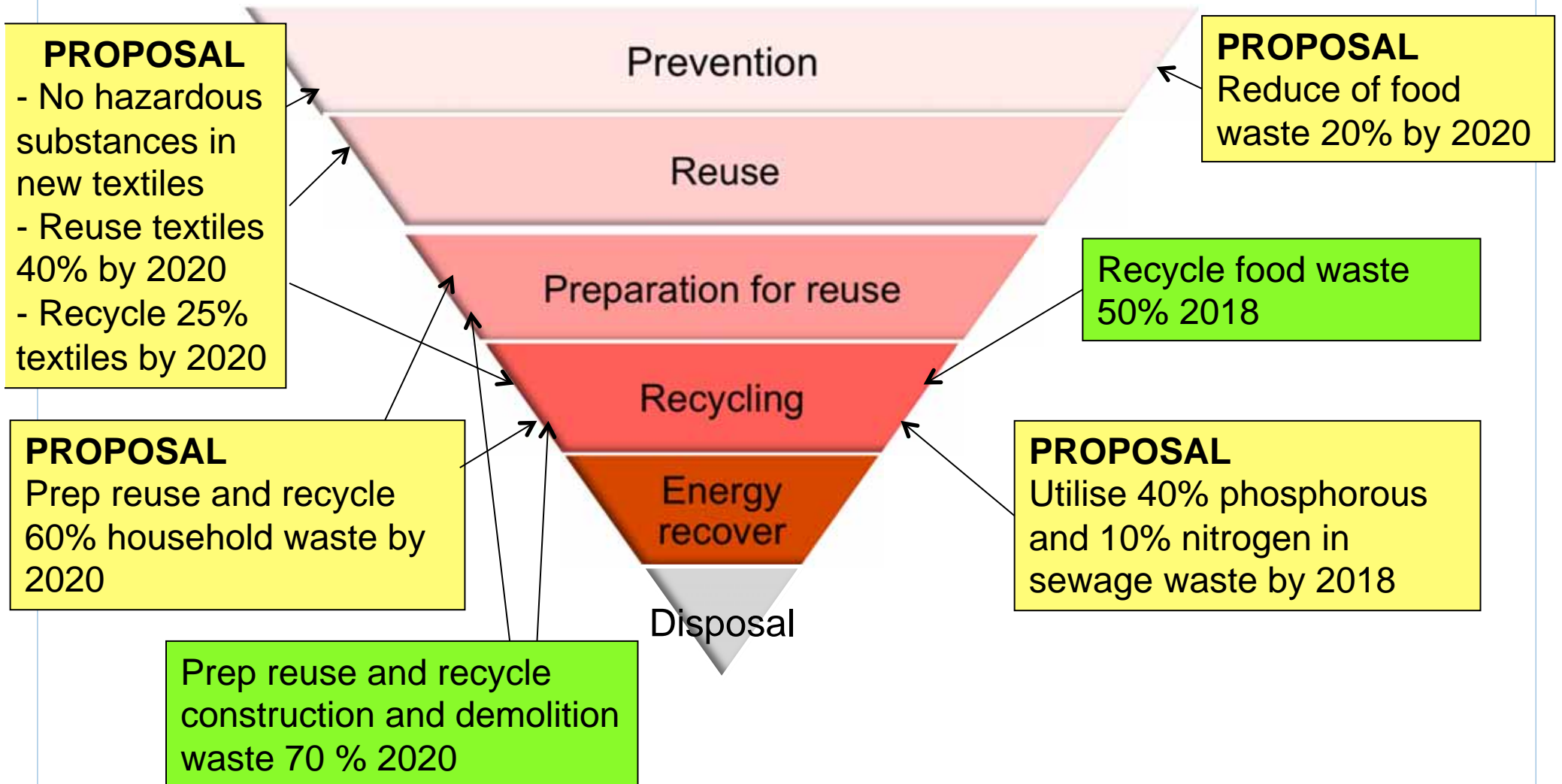
## Milestone targets

- 2018 at least 50 % biological recycling of food waste
- 2020 at least 70 % preparation for reuse and recycle of construction and demolition waste





# Milestone targets – decided and proposed



**Thank you for your  
attention!**

**Catarina Östlund**  
**[catarina.ostlund@naturvardsverket.se](mailto:catarina.ostlund@naturvardsverket.se)**

