



# Energy recovery in the region of western Slovakia

**WASTE TO ENERGY**

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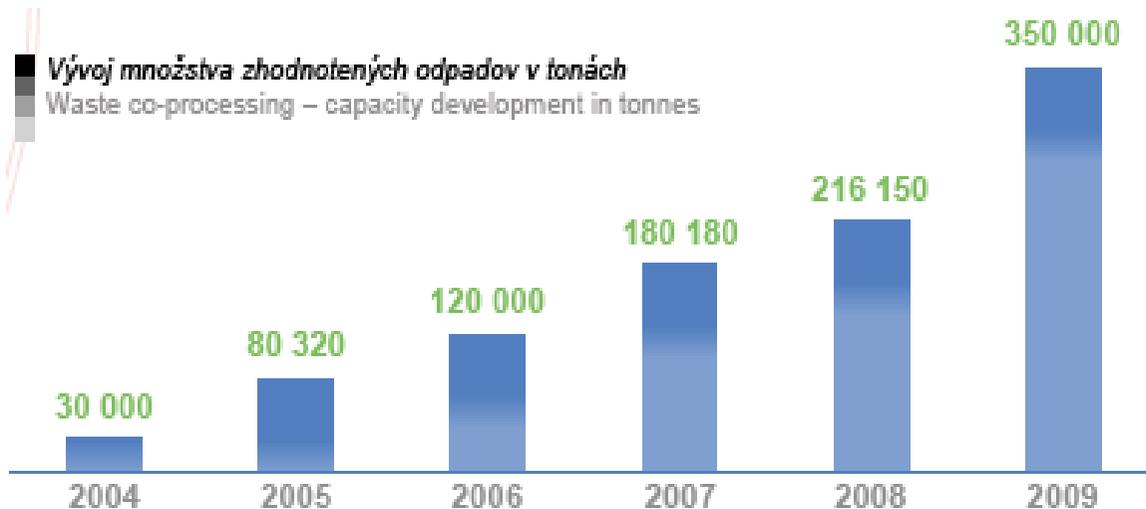
European Union  
ERDF





# 1. Introduction of ecorec

- ecorec produce and supplies solid recovered fuels (SRF) mostly to cement plants of Holcim Group. We operate 5 SRF production plants in 7 countries of Eastern Europe.
- We supply 9 cement plants with annual capacity of 350 000 t of SRF
- In Slovakia we produced 50 kt of SRF in waste pretreatment platform in city of Pezinok





# 1. Introduction of Holcim plant Rohoznik

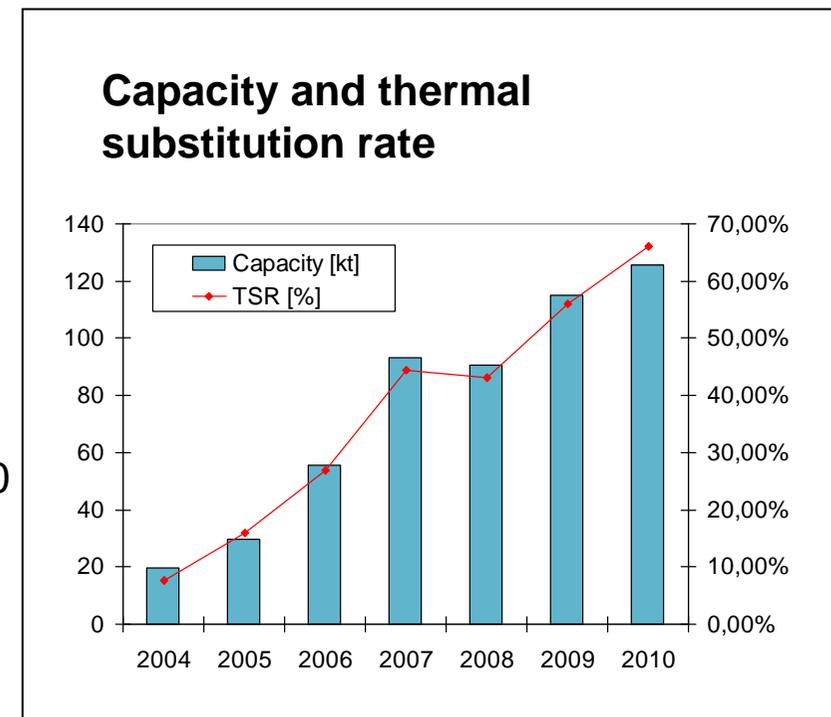
## Investments

- Investment of 83,3 mio € in years 2003 - 2005, helped to improve energy efficiency of cement production and to increase energy recovery of waste derived fuels

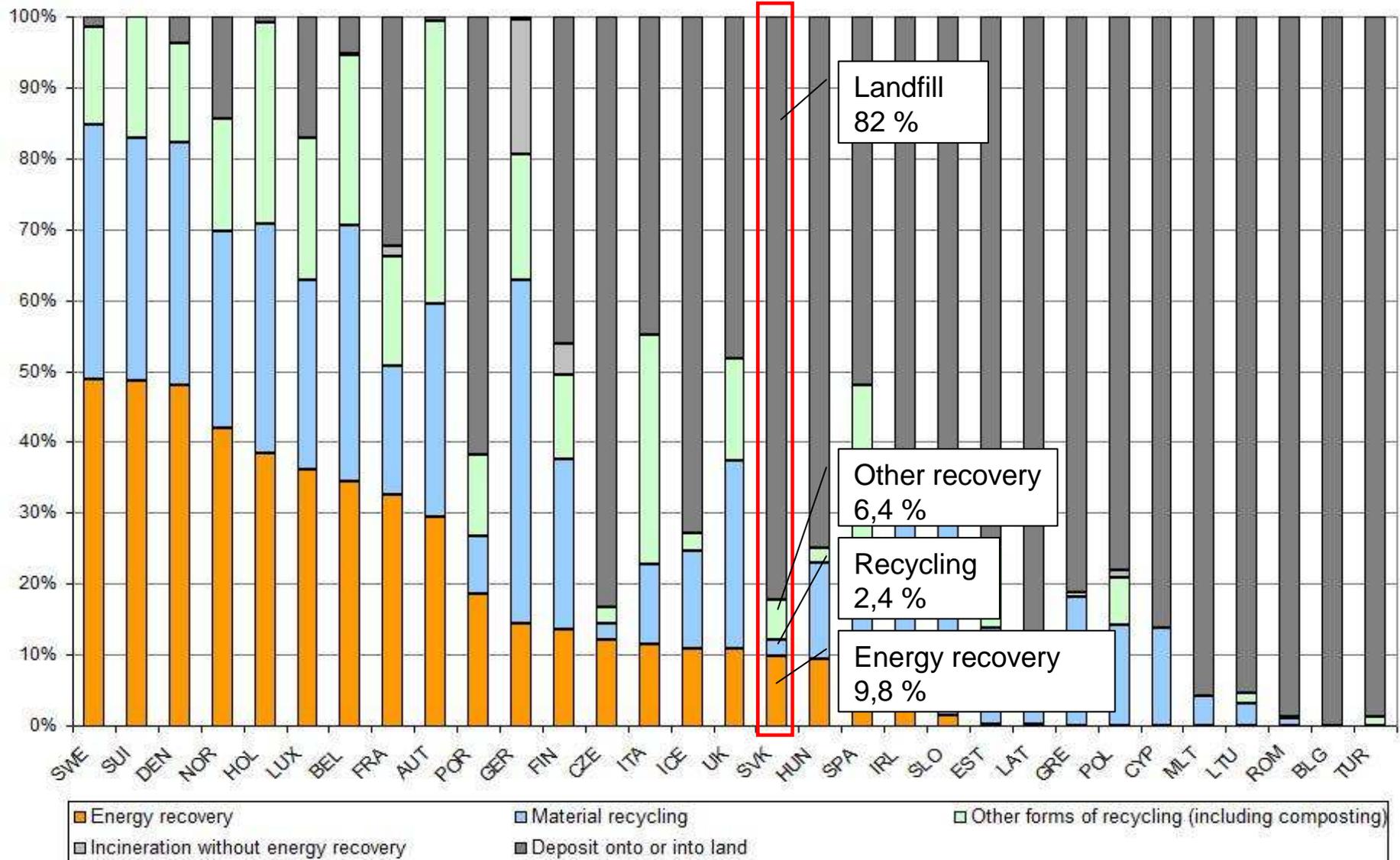


## Results

- 66 % substitution of traditional fuels by waste
- 120.000 tons of recovered waste, savings of 80.000 tons of coal
- Decrease of CO2 emissions per ton of clinker produced by 20% compared to 1990



## 2. Current situation in MSW handling MSW statistics v EU27 / 2009



## 2. Current situation in MSW handling

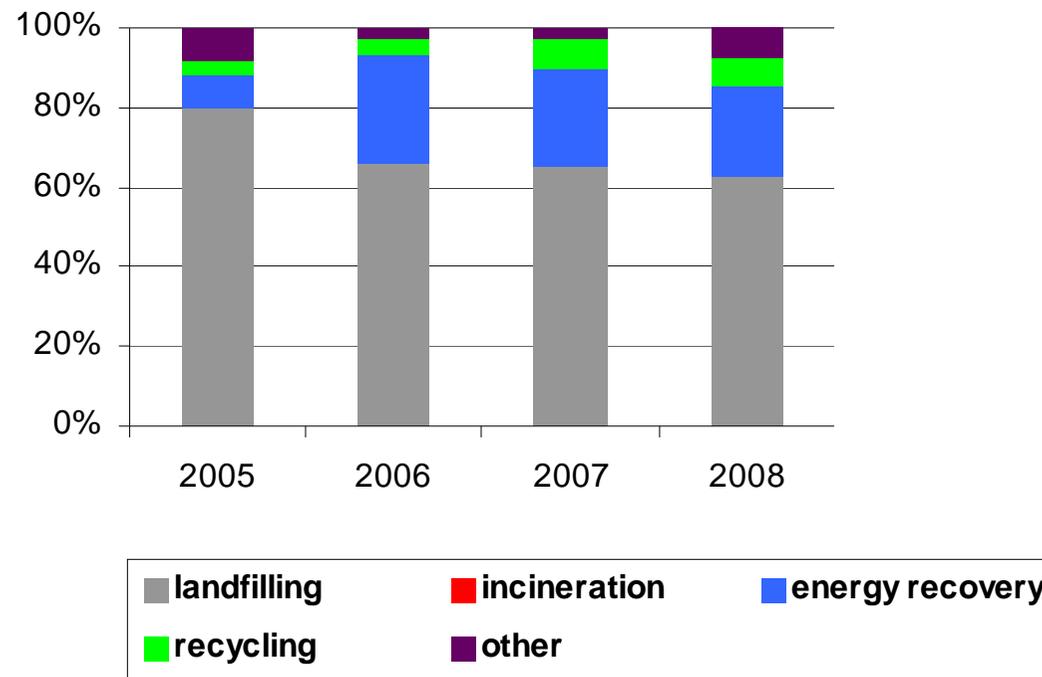
### *MSW handling in Bratislava & Trnava region*



- 1 MSW incinerator in Bratislava
- 1 MBT line treating MSW - SRF
- 1 cement plant coprocessing waste
- 1 SRF production plant
- 13 landfills

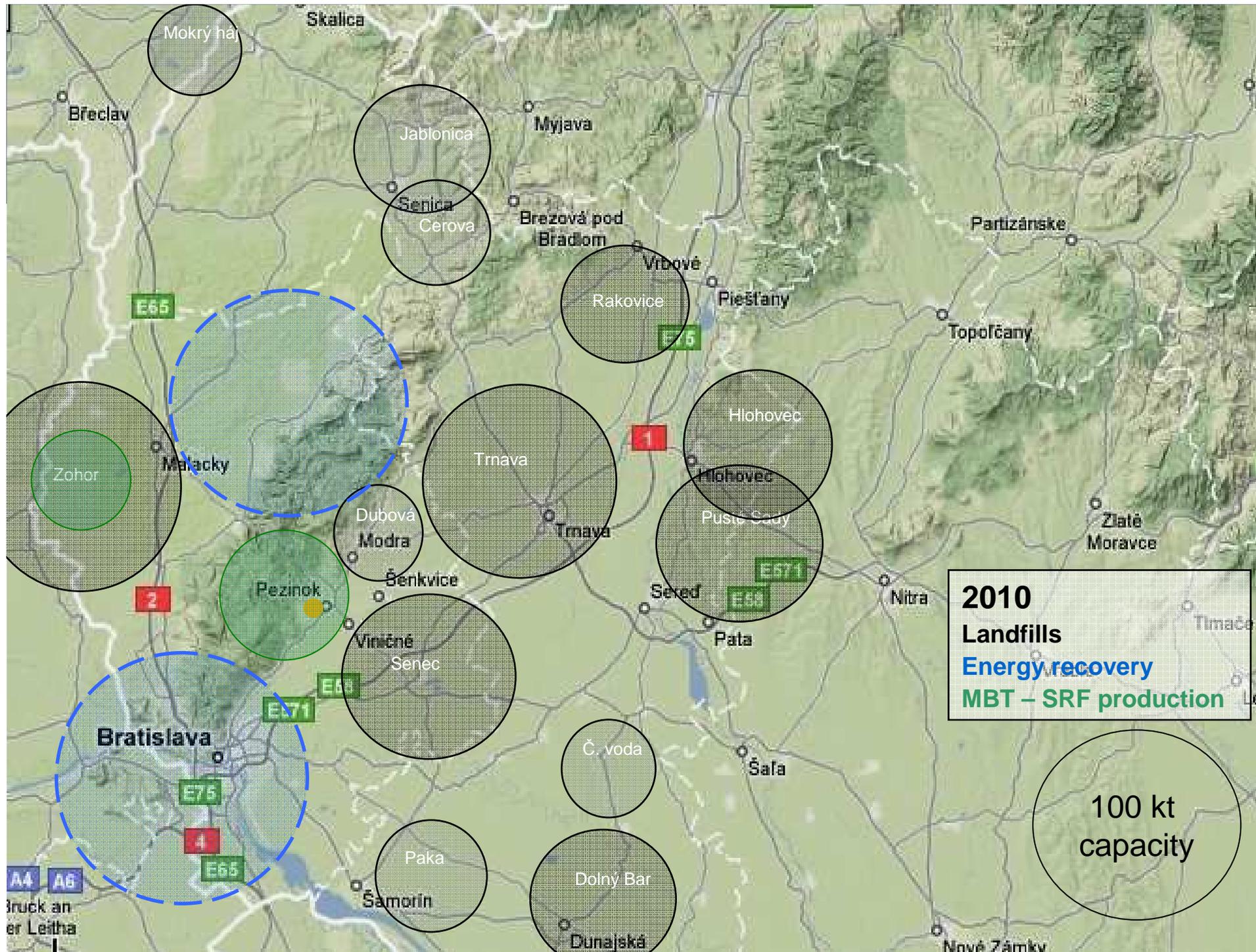
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500 kt / y of MSW produced

### MSW handling in Bratislava & Trnava regions



Source : Waste management plan  
2006-2010 - evaluation





### 3. Legislative targets for MSW recovery

*Binding targets of the EC directives*



- ▶ Targets of Directive EC 1999/31 on landfilling – to decrease landfilling volume of biodegradable waste:
  - ▶ 75 % (-25%) from total volume until 2010
  - ▶ 50 % (-50%) from total volume until 2013
  - ▶ 35 % (-65%) from total volume until 2020
  
- ▶ Targets of Waste framework directive EC 2008/98:
  - ▶ Recovery of min. 50% MSW until 2020
  
- ▶ Directive 2009/28/EC on the promotion of the use of energy from renewable sources:
  - ▶ Binding national target - 14% of the energy shall be produced from renewable sources until 2020



### 3. Legislative targets for MSW recovery

*Targets set by the Waste Management Plan*



Evaluation of the targets of the Waste management plan of Slovakia for years 2006 – 2010



- ▶ Targets related to MSW
  - ▶ Reach until 2010 40 % material recovery and 20 % energetical recovery of MSW produced in Slovakia
  - ▶ Reality in 2010: material recovery 3 %, energy recovery 9 %
  - ▶ Landfill max. 40 % of MSW in 2010 produced in Slovakia
  - ▶ Reality 2010: landfilling 82 %



## 4. Potential and alternatives of development



Successful waste management model for the region shall have following complementary pillars :

- ▶ Separate collection and subsequent recycling
- ▶ Energy recovery – efficient waste to energy (R1)
- ▶ M(B)T – production of high calorific fraction for coprocessing in energy demanding industries (cement, power plants, ...)
- ▶ Landfills



Potential to

- ▶ Increase efficiency of separate collection (esp. Bio waste)
- ▶ Build up of more 2 M(B)T lines with capacity of 140 kt
- ▶ Ensure efficient R1 incineration in Bratislava incinerator with heat and energy production heat

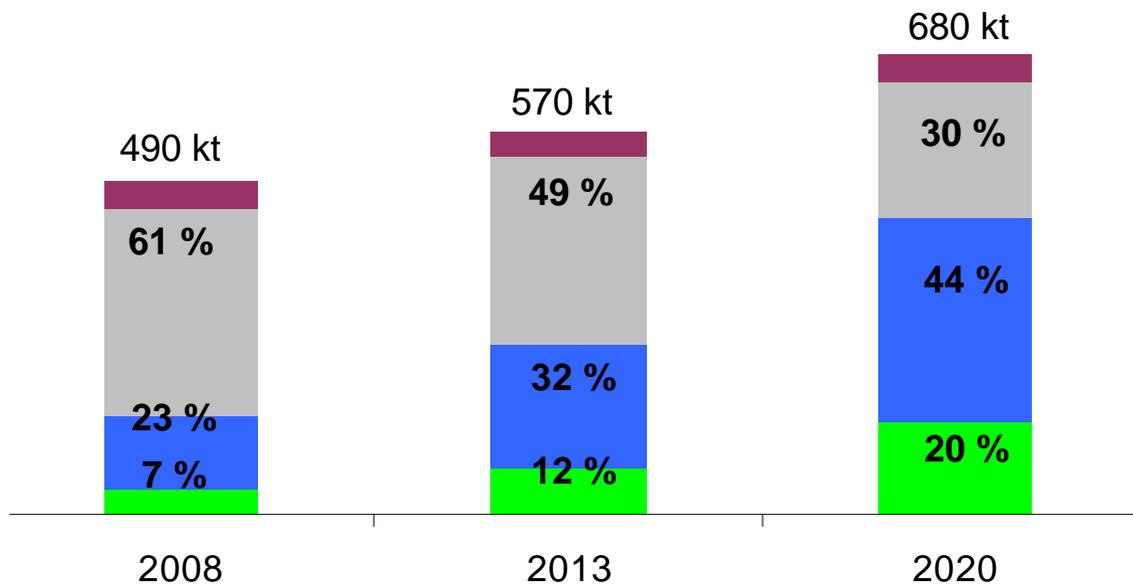


# 4. Potential and alternatives of development

## *Development model for the region until 2020*



**Model - MSW handling in the region until 2020**



Increase of energy recovery to 44 % shall not limit the material recovery – 20 % and shall lead to decrease of landfilling to 30%

**Total MSW recovery = 66%**



3% growth rate of MSW production



## 5. Recommendations



**In order to increase MSW recovery following recommendation shall be taken into account:**



- develop new waste management plan considering binding targets of Slovakia for waste recovery
- investments into waste management infrastructure shall be aligned with country waste management plan
- increase of the landfilling tax
- utilize incineration capacities in incinerator – secure its R1 status with full energy utilization
- utilize existing co-incineration capacities by MSW pretreatment on the MBT lines

