remowe

Regional Mobilizing of Sustainable Waste-to-Energy Production

Baltic Sea Region
Programme 2007-2013

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Waste-to-energy and REMOWE project activities in West Lithuania Region

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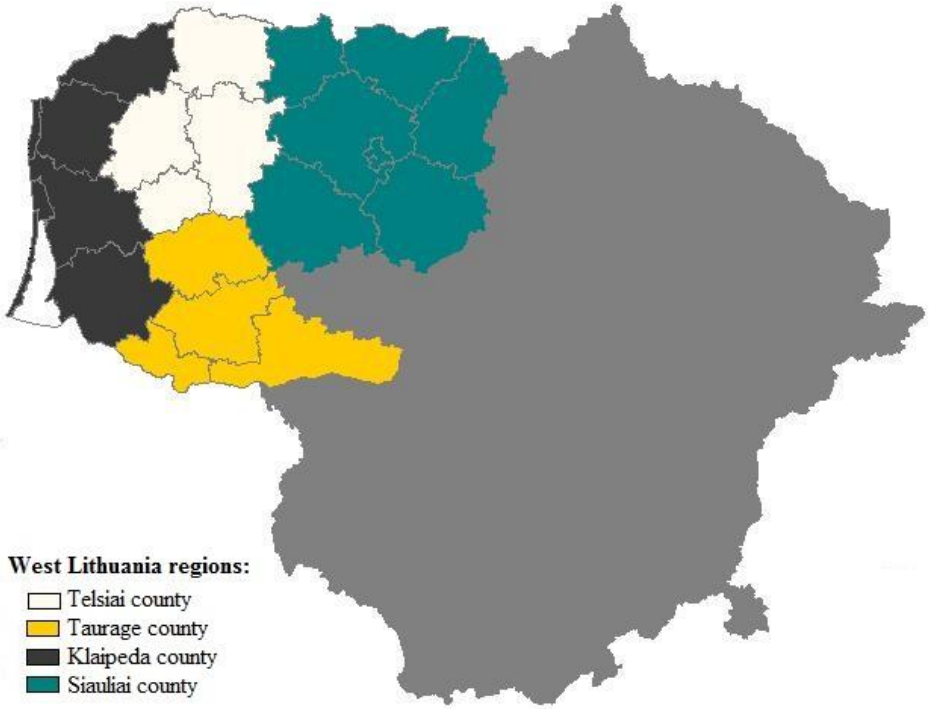
National and regional targets for recovery of energy from waste

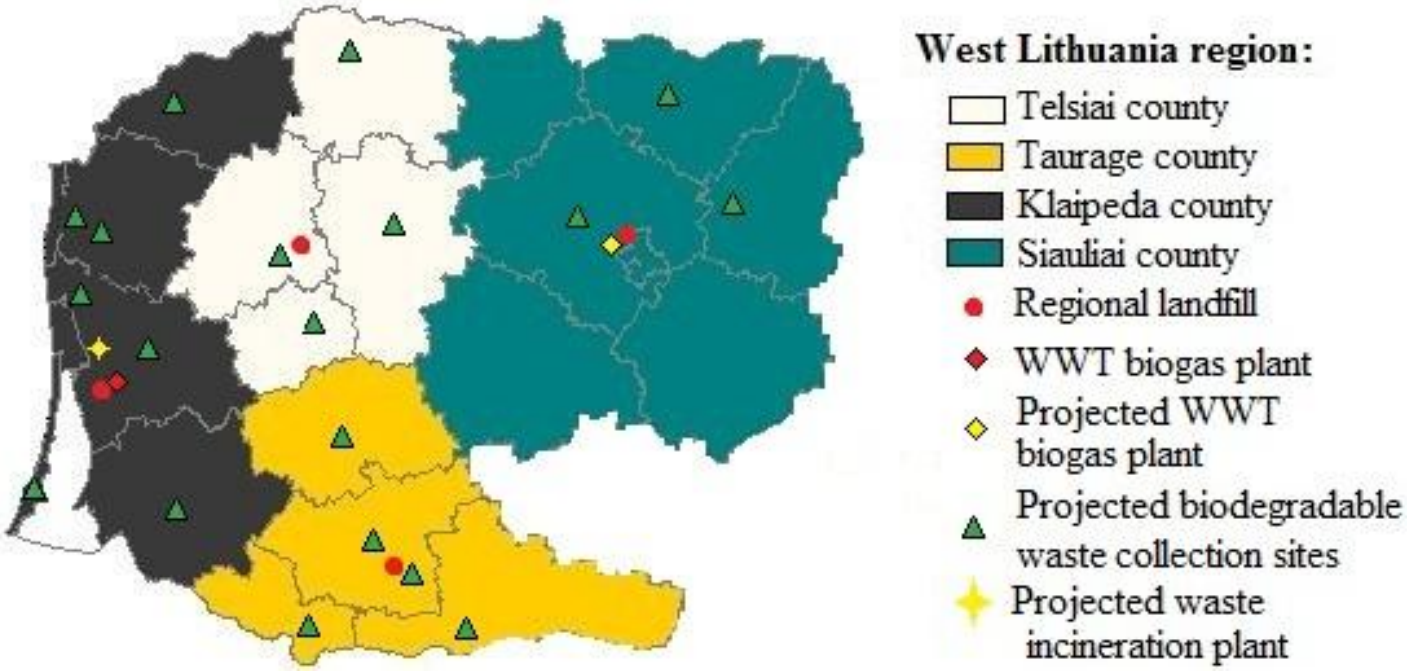
- By 2012 close all municipal waste dumps that does not meet public health requirements and leave 4 regional modern landfills.
- From 2012 start testing the composition of the mixed municipal waste that are land filled.
- More than 50% of total municipal biodegradable waste should be treated in such a way that its not land filled, by 2013.
  - Installation of separate biodegradable waste collection sites;
  - Environmental education of the inhabitants;
  - Giving away composting containers for individual house owners.
- To ensure 23% of energy generation from renewable sources, including energy from waste, by 2020.

Target region

- Population: ~ 1 mln. Inhabitants;
- Area: 22510 km² (34,5 % of country)
- 22 municipalities;
- Annual possible *W-to-E* generation:
  - Municipal: 336350 t/year
  - Industrial: 85203 t/year

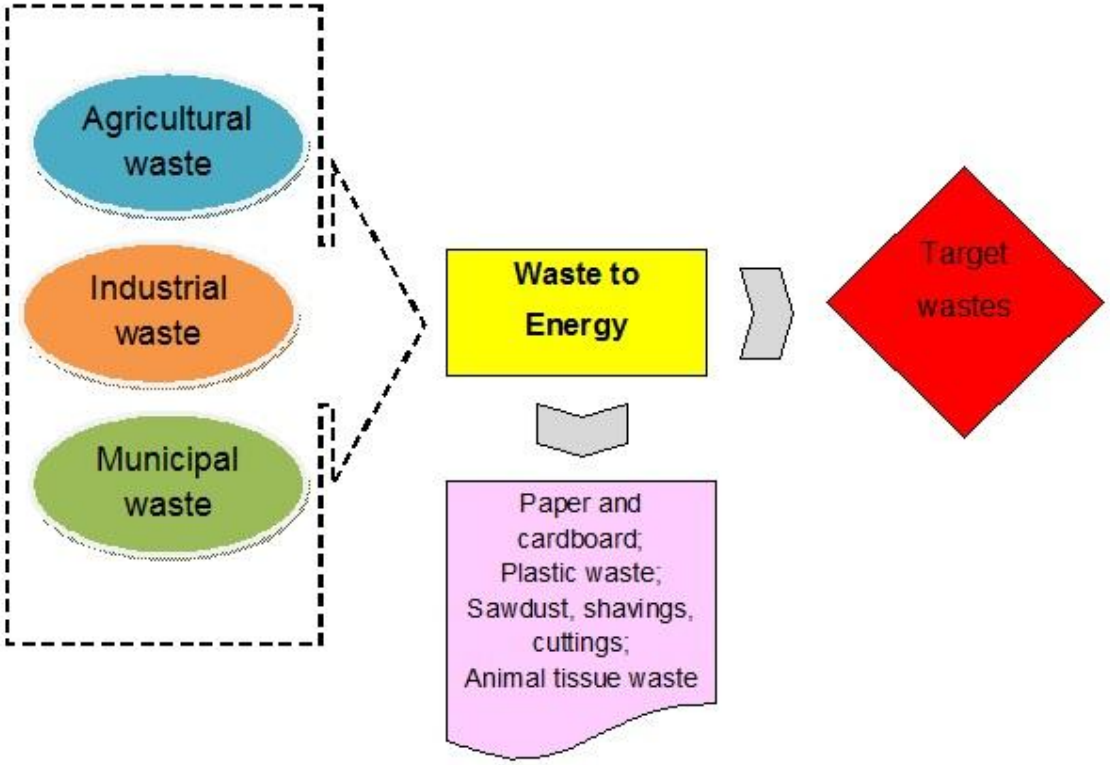


Waste to Energy infrastructure



- West Lithuania's waste management system:
  - 4 regional landfills and 264 waste management companies;
  - 19 target biodegradable waste treatment/collection sites;
  - Projected waste incineration plant in Klaipeda county. (Projected capacity: 130 000 t/year municipal and 50 000 t/year not hazardous industrial waste. Will produce 40 % of required heating needs of Klaipeda city)

Waste generation and its flows analysis



- Analysis consisted of:
  - visual inspections;
  - database analysis;
  - laboratory tests.

Mostly generated types of waste

No	EWC code	Name of the waste
1	02 01 06	Cattle manure
2	20 03 01	Mixed municipal waste
Industrial waste in target region		
3	02 07 02	Spirits distillation waste
4	03 01 05	Sawdust, shavings, cuttings, wood, particle board and veneer
5	15 01 01	paper and cardboard packaging
6	19 08 05	sludge from treatment of urban waste water

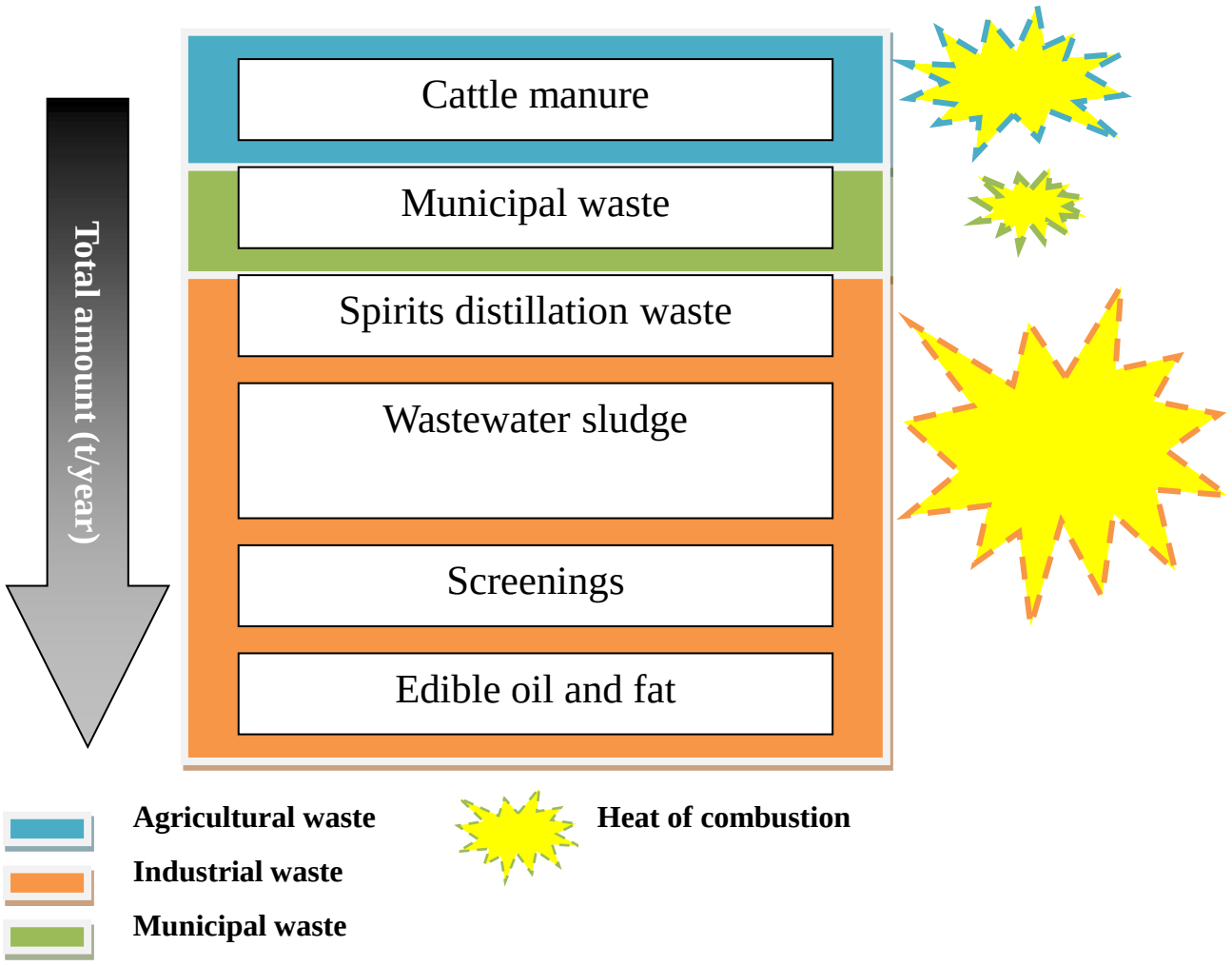
Sampling process

- Sample taking locations
  - Regional landfills
  - Cattle farm
  - Industrial companies:
    - Wastewater treatment plant
    - Bio-ethanol production company
    - Cafeterias and restaurants
- Sampling method:
  - For solid waste
  - For liquid waste

Laboratory tests

Parameters for samples analysis

Parameter	Sources of waste		
	Municipal waste from landfills	Agricultural waste	Industrial wastes
Water content	+	+	For selective type of waste
Organic matter	+	+	For selective type of waste
Total Organic Carbon (TOC)	+	+	For selective type of waste
Nitrogen	+	+	+
Phosphorus	+	+	+
Heat of combustion	+	+	+
Cadmium	+	+	+
Chromium	+	+	+
Copper	+	+	+
Lead	+	+	+
Mercury	+	+	+
Nickel	+	+	+
Zinc	+	+	+


Cattle manure
Municipal waste
Spirits distillation waste
Wastewater sludge
Screenings
Edible oil and fat
Total amount (t/year)
Agricultural waste
Industrial waste
Municipal waste
Heat of combustion

Conclusions

1. Current Waste-to-Energy policy in Lithuania is directed towards improving waste management system and diverting recyclable waste from municipal waste source.
2. Projected waste incineration plant and possibilities of adding sorted biodegradable waste to biogas production from waste water are current practices of Waste-to-Energy production in investigated region.
3. A cattle manure is the most part of waste generated in the West Lithuania region.
4. After the waste quantitative and qualitative analysis waste of cattle manure, municipal waste and wastewater treatment sludge are the most suitable for waste-to-energy purposes in West Lithuania.

Thank you for your attention