



# Possible development scenarios for Estonian waste management based on EU/Nordic experience

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# Ragn-Sells Group

- A Swedish family owned company, founded in 1966
- Ragn-Sells is established in Sweden, Denmark, Estonia and Norway, Polen and Latvia
- Turn over ~ 4 billion SEK per year (app. 3.9 million EURO)
- ~ 2300 employees
- More than 110 different facilities from landfills to shredders to biogas plants and recycling plants.

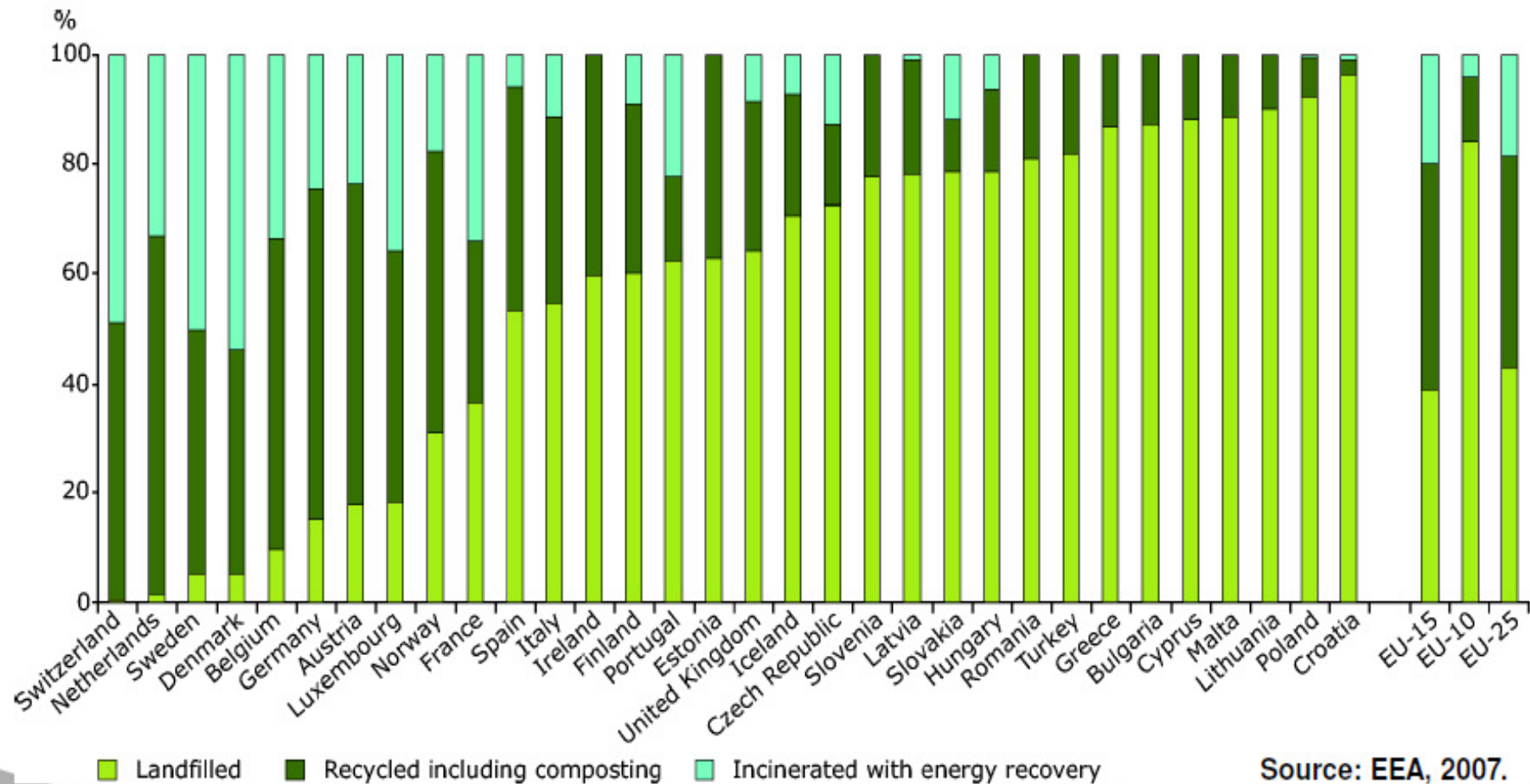


# Trends for the future

The view from the European Commission  
and coming European legislation  
concluding with what is happening in  
Scandinavia



# MSW treatment in Europe



## Current state of waste recovery in the EU *prognos study 2004:*

- **18 selected important waste streams**
- **46% recovered -54% disposed**
- **Highest recovery rates:**
  - rubber & tyres
  - iron & steel, copper, lead
  - paper & cardboard
- **Lowest recovery rates:**
  - bio-waste
  - plastics
  - Textiles
- **Contribution of waste recovery and recycling to climate protection**
  - 2004: CO<sub>2</sub> emission reduction 206 Mt CO<sub>2</sub> equivalent
  - 2020: additional CO<sub>2</sub> emission reduction 146-244 Mt CO<sub>2</sub> equivalent
- = 19-31% of EU 2020 climate gas reduction target of 780 Mt CO<sub>2</sub> equivalent

# A new waste directive

- EU 27 countries a common Directive with a new strategy how to manage waste. **Waste Framework Directive** here called WFD



# Waste Hierarchy - the future

**Basis for priorities and part of legislation**

- **PREVENT**
- **PREPARING FOR REUSE**
- **RECYCLING (COMPOSTING)**
- **RECOVERY (including energy recovery)**
- **DISPOSAL**

# Objectives of European waste policy

- **decoupling economic growth from environmental impacts**
- **prevention of waste**
- **moving towards a recycling society**
- **promoting the use of waste to produce energy**
- **better implementation of waste legislation**



# Waste prevention – a new dimension

- **Member States to establish waste prevention programmes until 2013**
  - set out prevention objectives,
  - determine qualitative and quantitative benchmarks or targets for waste prevention,
  - describe prevention measures, such as
    - Economic instruments for sustainable resource use
    - Promotion of eco-design for products
    - Campaigns to change consumer behaviour
    - Supporting the reduction of industrial waste (EMAS, ISO 14001)
    - Green public procurement
- **Breaking the link between economic growth and waste generation**

# Promoting recycling by setting targets

- **Targets to be achieved by 2020**
  - preparation for re-use, recycling of materials *“such as at least”* **paper, metal, plastic, glass from households**+ option for **similar wastes** to be increased to *“a minimum of overall”***50%**
  - preparation for re-use, recycling and backfilling of **70% construction & demolition waste**
- **reports of Member States every 3 years together with the regular implementation reports**
- **Commission review of the targets in 2014**

# Separate collection of waste

- **Art 11(1) WFD:**
  - separate collection at least for paper, metal, plastic, glass by 2015
  - If appropriate to meet quality standards of recycling industry
  - If technically, environmentally and economically practicable
  - **Art 18 WFD** Ban on mixing of hazardous waste

## Supporting recycling markets by setting end-of-waste criteria

- **End-of-waste criteria should**
  - support recycling markets and
  - improve the implementation of waste management law
- **Commission is currently working on**
  - iron and steel scrap
  - aluminium scrap
  - copper scrap
  - paper
  - glass

# Promoting waste-to-energy

- **energy-efficiency-formula in Annex II as part of the recovery definition:** scope: Incinerators for municipal solid waste
- waste replacing fuels in the plant or in the wider economy
- **incentive to improve energy-use from waste incineration**
- **Commissions intends to prepare guidelines together with an expert working group**
  - **Risk of additional waste shipments:** Extension of proximity principle to recovery of mixed household waste

# Bio-waste & sewage sludge

- **Bio-waste**
  - Waste Framework Directive: impact assessment by Commission
  - Commission's green paper end 2008
    - Impact assessment to be finalised end 2009
    - Separate collection?
    - Recovery/recycling targets?
    - Quality standards for composts?
  - 2010: proposals, if appropriate
- **Sewage sludge**
  - Impact assessment ongoing Stricter requirements?
  - Ban on use of sewage sludge on agricultural land?
  - Repeal the sewage sludge directive?
- Nov/Dec 2009 public consultation

# Focus on environmental impacts of products

- 70-80 % of environmental impacts by products & services
  - Food & drink
  - Housing (buildings, use, equipment)
  - Transport
- Waste policy to be integrated into policy on sustainable production and consumption
- Commission action plan 2008 on sustainable production and consumption

## Measures to improve the sustainability of production and consumption

- **Improve the eco-design of products**
  - Ecodesign-Directive, Ecolabel: extension from energy efficiency to resource efficiency?
  - Recyclability and recycled content?
  - **Increase green public procurement** Increase to 50% by 2010
  - **Greening the supply chain** Commission's retailer forum
- **Supporting recycling markets on the demand side**



# Swedish experience

- Started with landfills
- Moving towards recycling

# Waste Hierarchy - the future

## Basis also for Swedish priorities

- **PREVENT**
- **PREPARING FOR REUSE**
- **RECYCLING (COMPOSTING)**
- **RECOVERY** (including energy recovery)
- **DISPOSAL**

# Legislation to support the priorities

Introduction of a landfill tax the year 2000

- Started at 250 SEK/ton ~375 EEK/ton
- Today 435 SEK/ton ~ 655 EEK/ton
- 1994 to deposit 1 ton mixed waste cost between 100-300 SEK (~ 175-515 EEK/ton)
- 2004 the same amount costs 800-2000 SEK (~ 1375-3440 EEK/ton)

# Legislation to support the priorities

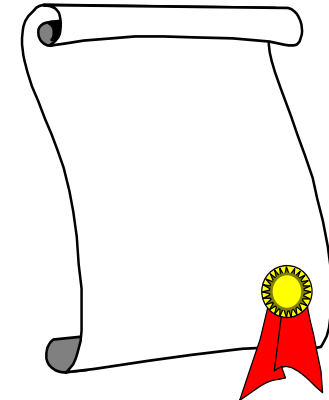
## Tax on incineration of MSW

- In 2006 the government introduced a tax on household waste destined for incineration between 94-444 SEK/tonne (140-625 EEK/tonne)
- The aim is to increase recycling of waste streams more suitable for recycling

# Complementary legislation to the tax

## 1 January 2002

- Combustible waste must be kept/stored and transported separate from other types of waste
- Deposition of separated combustible waste is not allowed in landfills



## 1 January 2005

- Deposition of organic waste is not allowed in landfills

# Market development in Sweden

- **Household waste (municipal solid waste)**

Dealt with by municipalities. They call for tender to engage private entrepreneurs

- **Industrial waste**

Free market business to business solutions

- **Hazardous waste**

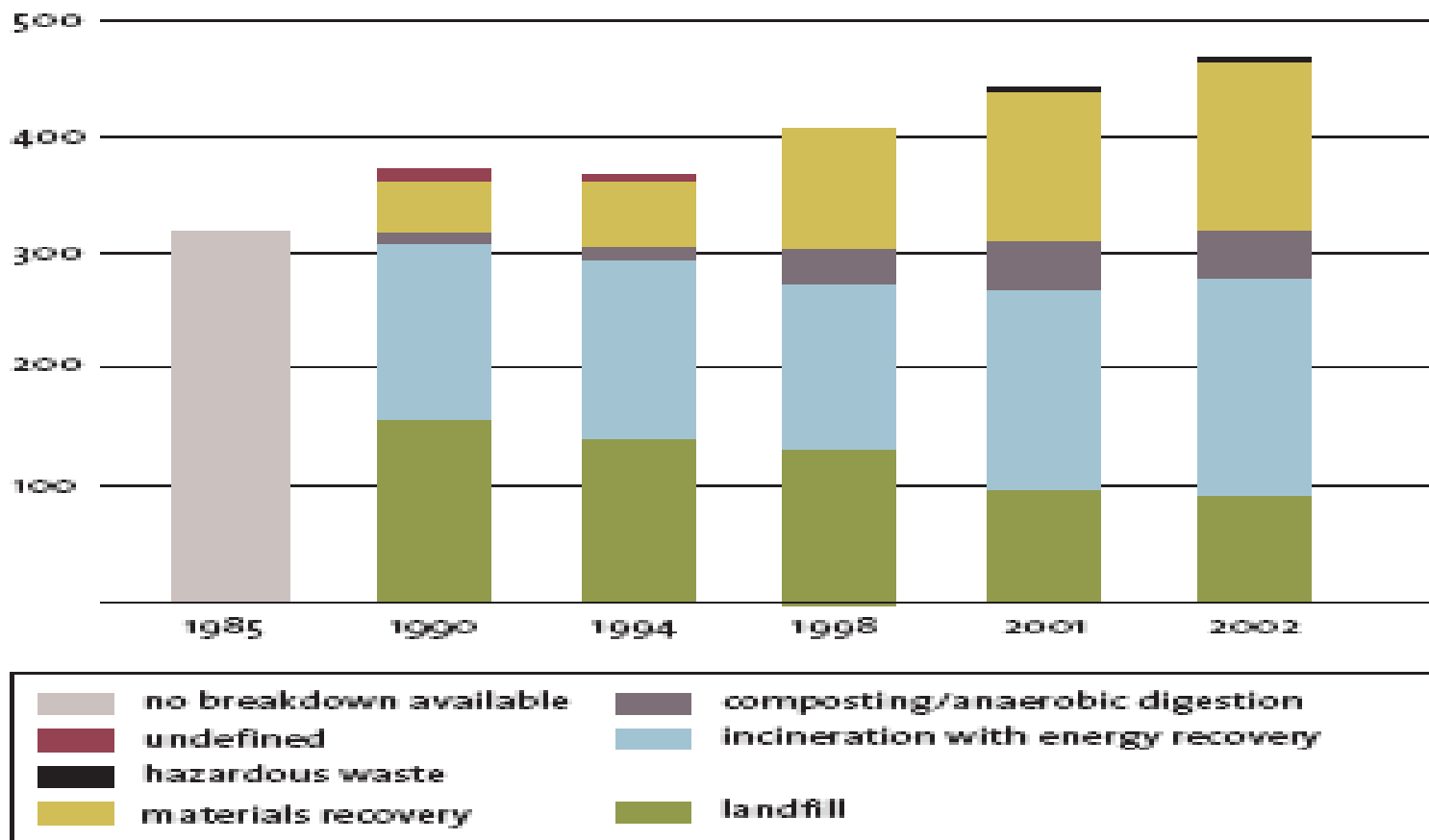
Free market for hazardous waste

Permits required to handle hazardous waste and regular waste. Strict rules to evaluate competence and economic situation of the companies which work in the waste business.

# Quantities of household waste 1985-2002

FIG. 15.4 Quantities of household waste 1985–2002, by treatment/disposal route

kg per capita



SOURCE: SWEDISH ASSOCIATION OF WASTE MANAGEMENT

# Clear trends in the Nordic Countries

- Separating at source an important tool
- Increased demand on recycling materials as it has a great climate effect
- Debate regarding incineration if waste that can be recycled are used as fuel
- An increasing demand on making biogas from biowaste contributing to our energy demand.
- An increased separation at source of organic waste to be a basis for biogasproduction





# Jäätmete käitlus Eestis 5 aasta pärast (aastal 2014)

Agu Remmelg  
Ragn-Sells AS ärijuht

# Jututeemad

- Jäätmekogused täna ja 2014
- Olemasolevad ja planeeritavad käitlusvõimsused
- Kas jäätmed muutuvad defitsiidiks?
- Kas masspõletus vabastab liigiti kogumisest?
- Ragn-Sells MBT projekt

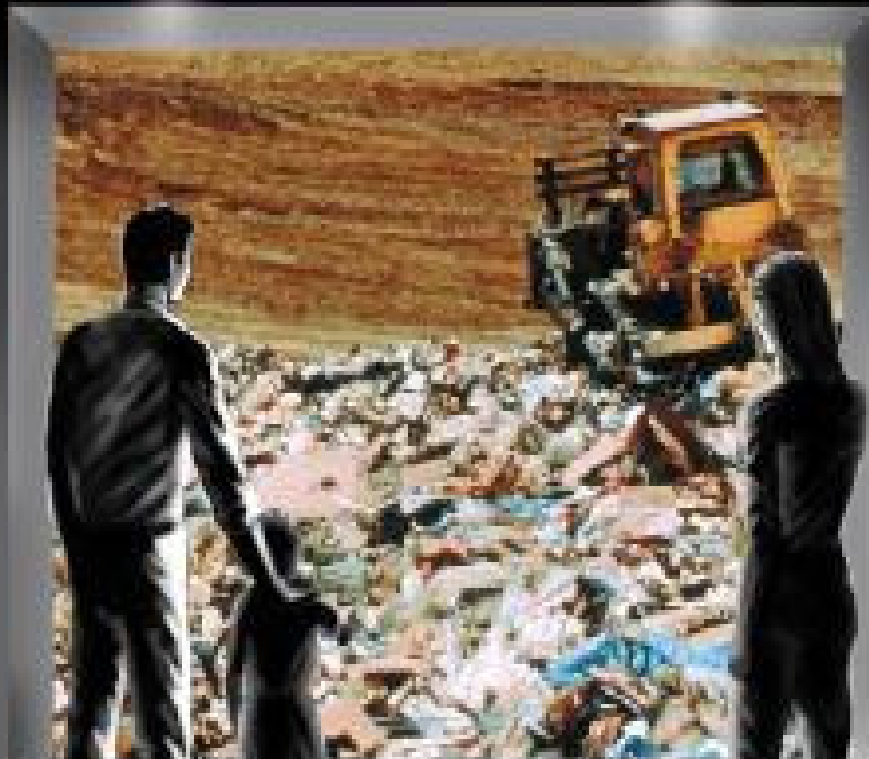
# Olmejäätmete lõppkäitlus Eestis 2009 vs 2014

- EJKL andmetel jäätmete ladestuskogus:
  - 2008 → 396 TT jäätmeid
  - 2009 → 290 TT jäätmeid, sh 251 TT olmejäätmeid
- Majanduskasv on seotud jäätmemahdade kasvuga
- Aastaks 2014 on ladestamiseks (või energiakasutuseks) sobivate olmejäätmete maht hinnanguliselt 320-340 TT aastas

# Käitlusvõimsused Eestis 2014

- Peamiselt riiklike rahadega on rajatud 5 nõuetele vastavat prügilat kuni 340 TT aastas
- Kui riik otsustab Polli Prügila rajamist toetada, siis koguvõimsus kuni 410 TT
- Riik Eesti Energia näol plaanib 220 TT olmejäätmete põletustehast
- Olmejäätmetest jäätmekütuse tootmise projektid – 100-160 TT aastas
- Alternatiivsed tehnoloogiad võimaldavad aastaks 2014 käidelda kõik muidu ladestatavad olmejäätmed

# The World of Yesterday



**LANDFILL**  
CIRCA 1999

## **LANDFILL**

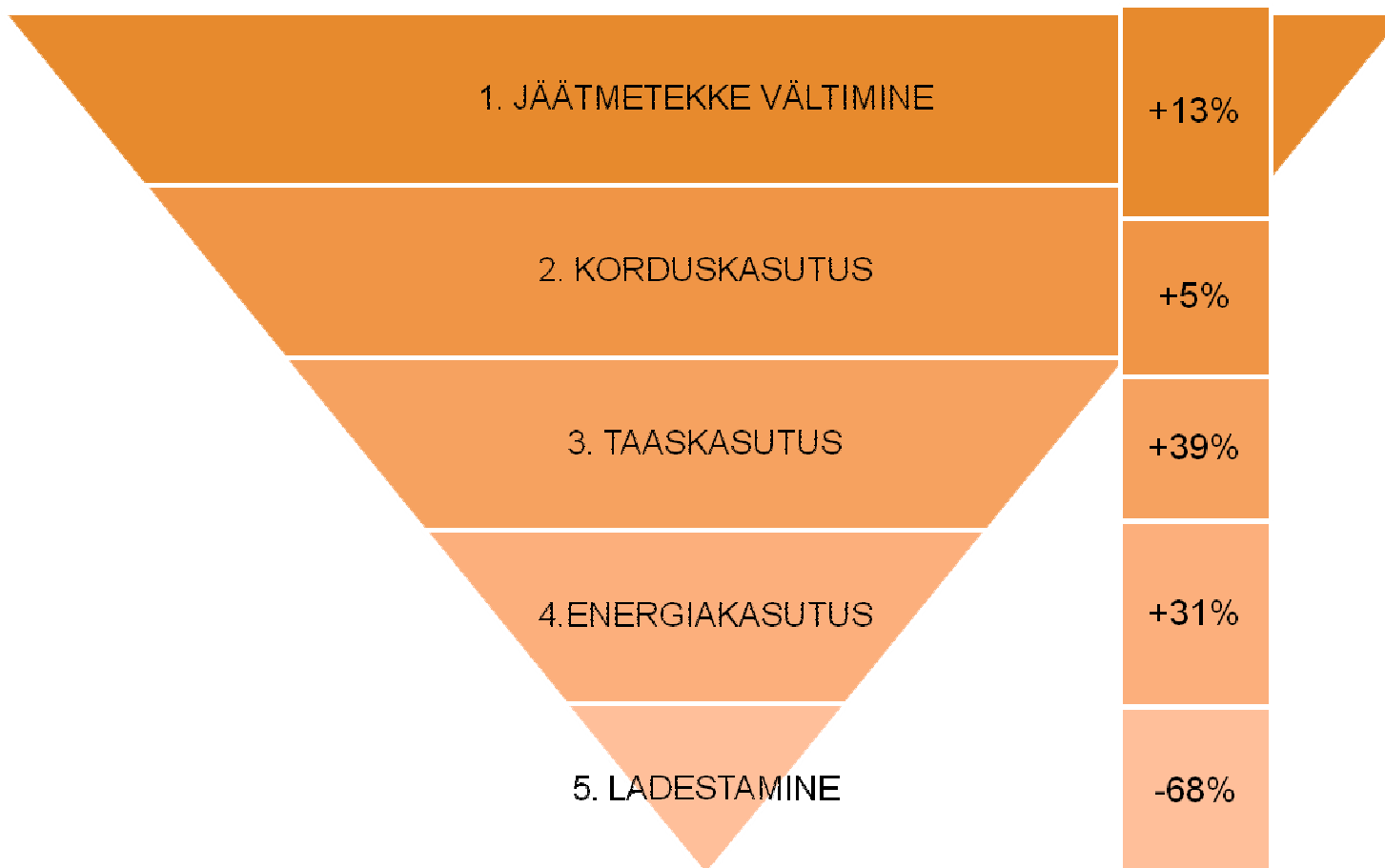
**CIRCA 2009**

**A hole in the ground  
where valuable resources  
were needlessly buried.**

**This practice was  
ended in the early  
2014**

# Milline saab olema Eesti jäätmekäitlus 2014?

## Jäätmehierarhia ja jäätmekäitlus EL-s 2000-2008



# Kui põletame, kas taaskasutama ei pea?

- KOV ametniku arvamus:  
“Masspõletus säästaks meid jäätmete liigiti kogumise süsteemi ülesehitamisest,” (EPL 02.02.2010)
- Olles EL liige peame jätkuvalt eelistama taaskasutust energiakasutusele ja energiakasutust ladestamisele
- Masspõletus ei vähenda mingil moel liigiti kogumise ja taaskasutuse vajadust

# Ragn-Sells MBT projekt

- Investeeringud: 200 MEEK
- Tehnoloogia: eel- ja järelpurustid, sõelad, metallieemaldajad (must ja värviline metall), infrapunasortijad (plastid ja muu väärtuslik), konveierid, biojätmete töötlus
- Sisend → 80 000 tonni olmejäätmeid + tööstusj-d
- Väljundid → energia- ja taaskasutus:
  - RDF jäätmekütus kuni 60% (sellest 15% taaskasutus)
  - Biojääde (taas- või energiakasutus)
  - Mustad ja värvilised metallid (Cu, Al) – 5% (kõik taaskasutus)
  - Plastid jms – 5% (kõik taaskasutus)
  - Bioloogilise protsessiga eemaldatav niiskus 20%
  - Inertne jääde (ladestus või taaskasutus) – ülejäänud %



# Kokkuvõtteks

- EL rakendab jõuliselt jäätmekäitlushierarhiat
- Jäätmeid Eestis otseselt puudu ei jää, küll aga võivad vahetuda käitlusviisid
- Praegu ladestatavad olmejäätmed liiguvad taas- ja energiakasutusse
- Masspõletus ei vabasta meid liigiti kogumise ja taaskastutamise nõuetest