

Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit

## 3R in Germany

Senior Officials Meeting  
Tokyo, 6-8 March 2006

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German Federal Ministry for the Environment

1.1.2006

Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit

## 3Rs: Sustainable Material Management

- **Reduce**
  - Avoidance of waste
  - Internal recovery in production
  - Efficient use of materials and energy
  - Low waste product design (durable, easy to repair, reusable or recyclable)
- **Reuse**
  - Return systems
  - Use for same purpose
- **Recovery**
  - Recycling
  - Energy recovery

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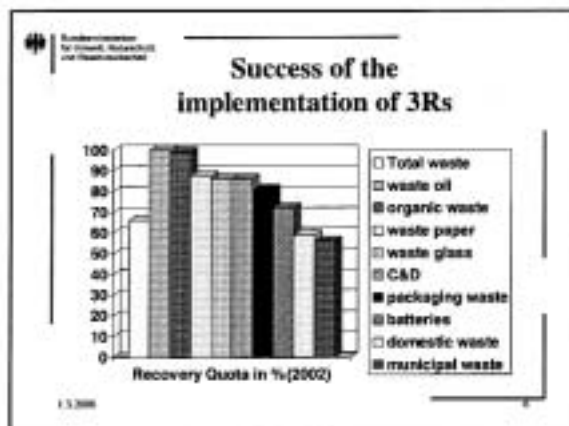
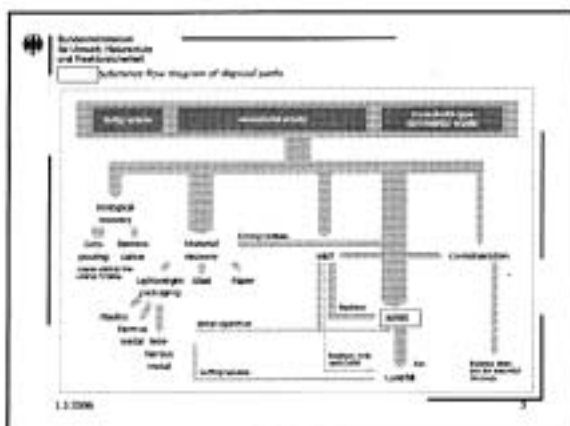


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## Strategies of German Waste Policy

- **Segregation at source and separate collection**
  - Biological waste
  - Waste paper
  - Waste oil
  - Waste wood
  - Commercial waste
- **Producer responsibility**
  - Packaging waste 1992
  - Batteries 1996
  - End of Life Vehicles 1998
  - Waste Electric and Electrical Equipment 2006

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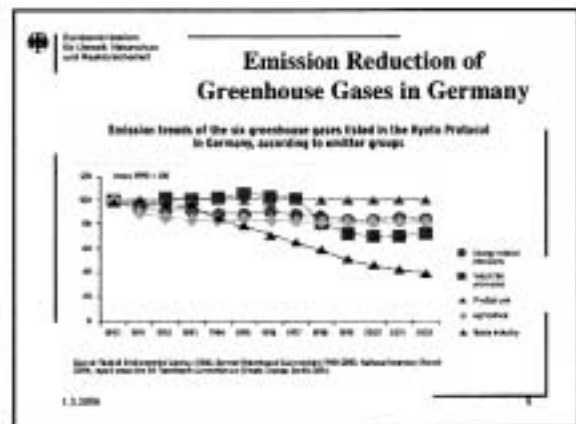
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## Climate protection by Waste management policy

- **Support of recycling:**
  - Producer responsibility, Segregation and separation, Mandatory and voluntary requirements save energy to reduce **CO2 emissions**
- **Landfill ban for untreated waste (1st June 2005)**
  - Combustion or MBT minimize the organic content of landfilled waste to reduce **methane emissions**

Loss by combustion: 0.3 % (20°C = 1 %)  
MBT: Organic content 5-14 %

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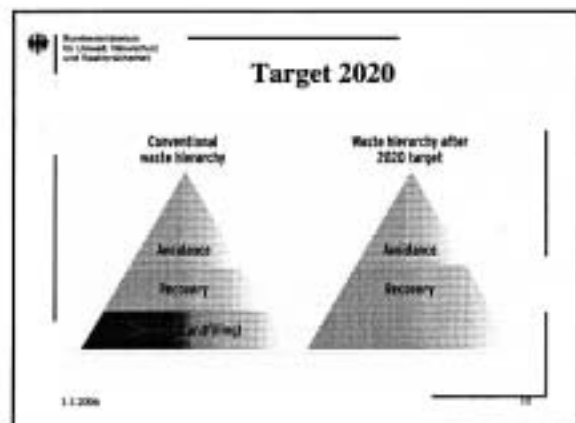


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To this end it is necessary for

- landfill to be permitted solely for inert waste,
- recovery of dry materials and the bio fraction to be a mandatory requirement, and
- the components of municipal waste capable of being used for energy recovery to be consigned to a path that ensures efficient utilisation of energy.

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## Sustainable Materials Management

- ...needs ambitious environmental goals
- ...profits from MFA to get information about the current situation and recent developments
- ...needs information about basic processes (technical potentials)

The biggest potentials are not to be found in single processes but along the overall process chains including secondary material use.

To realize the technical potentials the materials flow systems must be evaluated deeper by collecting information from the involved actors and detailed information about the obstacles!

1.3.2006