

Development of Greenhouse Gas Emissions from German Landfills

Mr. Georg Maue, Germany

With the enforcement of the German Act for Promoting Closed Substance Cycle Waste Management and Ensuring Environmentally Compatible Waste Disposal (Kreislaufwirtschafts- und Abfallgesetz) from 1996 and subsequent ordinances, the disposal of untreated organic waste on landfills nearly ceased until 2005 to the effect of direct reductions of greenhouse gases (GHG), mainly CH₄ emission, of far more than 20 million tonnes CO₂-equivalents.

In the same time, the total waste amounts were reduced and techniques for separation and reuse of waste increased significantly. Together with the use of more efficient treatment techniques this has led to substantial savings of greenhouse gas emissions due to combined waste treatment and power and/or heat production, which reduced the need to use fossil fuels in conventional plants.

The recent German energy and climate programme aims at reducing the GHG emissions by 40 % until 2020 compared to the 1990 situation. Studies show that the waste treatment sector has a potential of contributing up to 10 % of the total GHG reduction.

A total reduction of nearly 50 million tonnes CO₂-equivalents until 2020 (compared to 1990) will be achieved by

- Complete implementation of the landfill ordinance (no disposal of untreated waste, capture and high environmental standards for exhaust gases and leaching) leading to nearly zero CH₄ emissions,
- Further enhanced use of MBT (mechanical-biological treatment) plants, leading to further recycling of materials, separation and treatment of organic compounds, separation of high caloric fractions,
- Thermic use of high caloric fractions in incineration plants with combined power and heat production,
- Reuse of (mainly) metals.

The presentation reflects on recent emission trends and technical developments.