

# ACR+ / London Remade Waste and Climate Change London 2008

The Contribution of Waste Management to Climate  
Protection in Germany - Review and Forecast

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## Waste Management Targets in Germany

- Promoting closed substance cycles
- Conserving natural resources
- Environmentally sound waste disposal
- Reducing inputs of harmful substances into the treatment cycle
- Removing harmful substances from the recovery process
- Inertisation of harmful substances from the recovery process

## Climate Protection Targets in Germany

- Kyoto Protocol: 21 % reduction of greenhouse gas emissions (256 million tons CO<sub>2</sub> = 70% of EU target) by 2012 compared to the levels of 1990
- Integrated Energy and Climate Programme of the German Government: 40 % reduction of greenhouse gas emissions by 2020 compared to the levels of 1990



# Development of GHG Emissions in EU-15 (1990 -2003)

	Base year*	1990	1995	2003	2000	Absolute change 2003/base year	Change 2003/base year	Emission target under Kyoto Protocol (EU burden sharing by 2008/2012)
	in mill. t CO <sub>2</sub> equivalent					in %		
Belgium	147	146	152	148	148	1	+0.6	-7.5
Denmark	70	69	77	68	74	4	+6.3	-21.0
Germany	1248	1244	1103	1017	1018	-230.8	-18.5	-21.0
Finland	70	70	71	70	86	15	+21.5	0
France	568	568	563	560	557	-10.8	-1.9	0
Greece	112	109	114	132	138	26	+23.2	+25.0
U.K.	751	748	691	652	651	-100.3	-13.3	-12.5
Ireland	54	54	58	69	68	14	+25.2	+13.0
Italy	510	511	528	551	570	60	+11.6	-6.5
Luxembourg	13	13	10	10	11	-1.4	-11.5	-28.0
Netherlands	213	212	224	214	215	2	+0.8	-6.0
Austria	79	79	80	81	92	13	+16.6	-13.0
Portugal	59	59	70	80	81	22	+36.7	+27.0
Sweden	72	72	73	67	71	-1.7	-2.4	+4.0
Spain	286	284	315	380	402	116	+40.6	+15.0
EU-15	4,253	4,238	4,129	4,100	4,180	-72.9	-1.7	-8.0

Source: Annual European greenhouse gas inventory 1990-2003 and inventory report 2005



# Achievements

- **1990-2003: Reduction of greenhouse gas emissions by 231 million tons CO<sub>2</sub> equivalents (18.5 % of the 2012 Kyoto target)**
- **20 million tons can be assigned to the waste sector. This equals around one fifth of the greenhouse gas reduction achieved by industry and energy**





# The Contribution of Waste Management to Climate Protection in Germany

## Review:

**Measures transforming the waste management from a disposal dominated infrastructure towards a system contributing to climate protection**

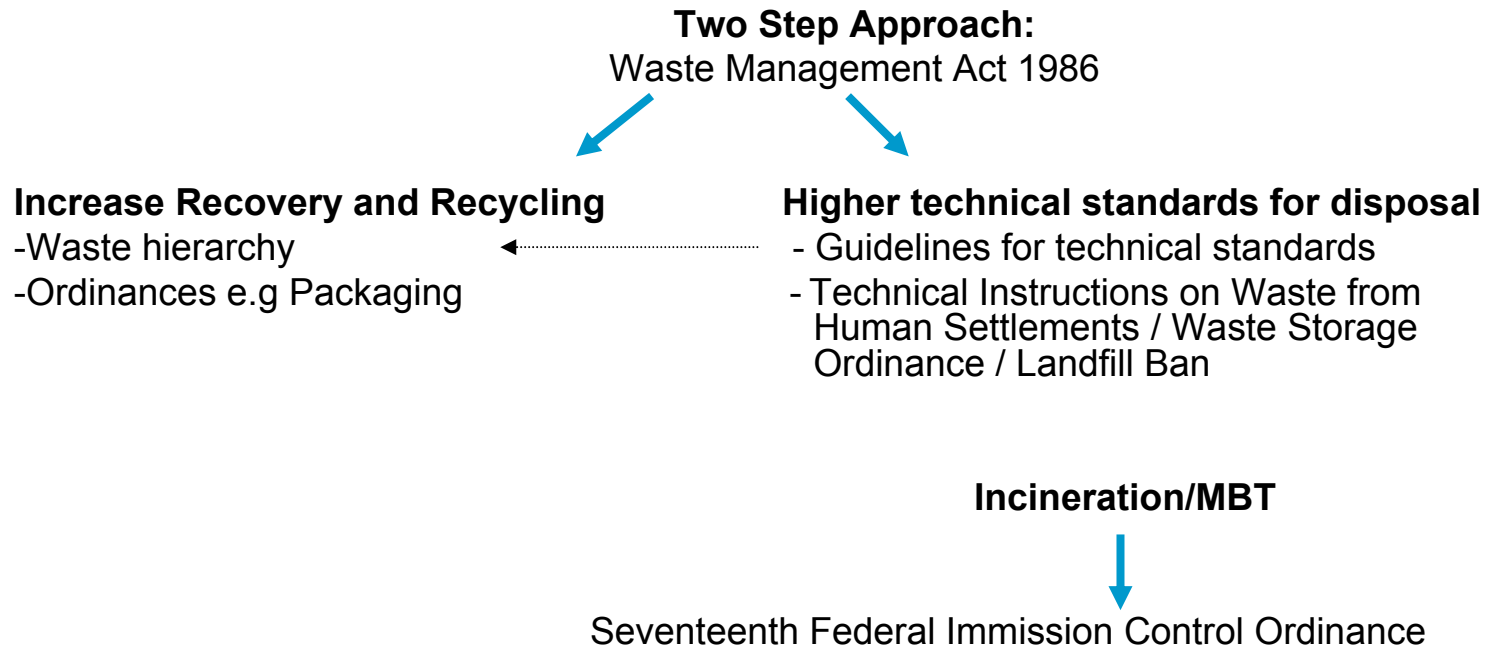
## Forecast

**Future potential of the contribution of waste management to climate protection**



# Review of The Management of Residual Waste in Germany

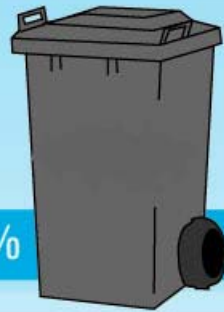
- **Problems:**
  - Qualitative: soil, surface and groundwater contamination; methane emissions due to landfill
  - Quantitative: volume increased
  - Little public acceptance for establishing new waste management facilities





## Development of Household Waste in Germany

1990



87 %

34 million tons



13 %

5 million tons

2001



48 %

19 million tons

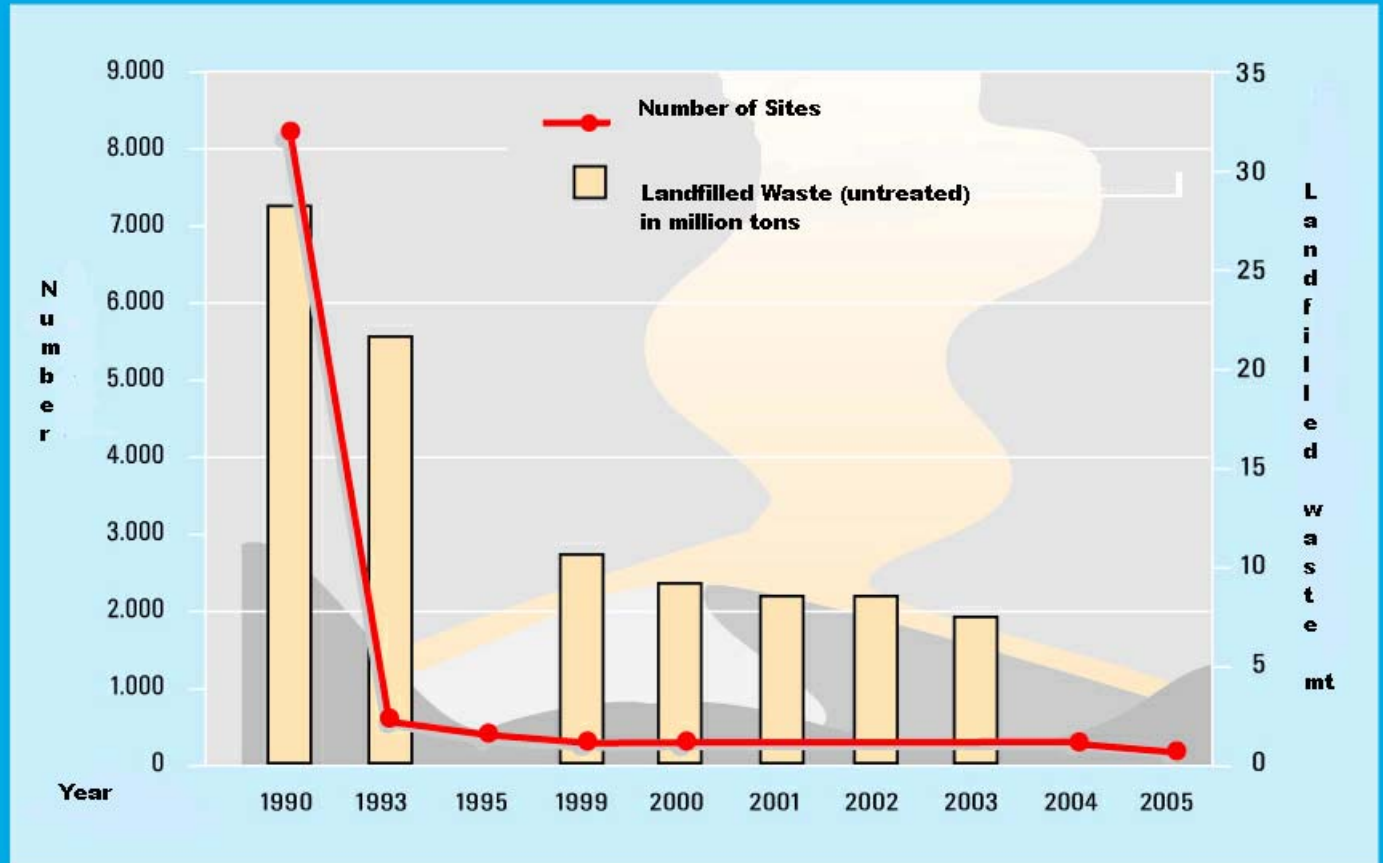


52 %

20.5 million tons

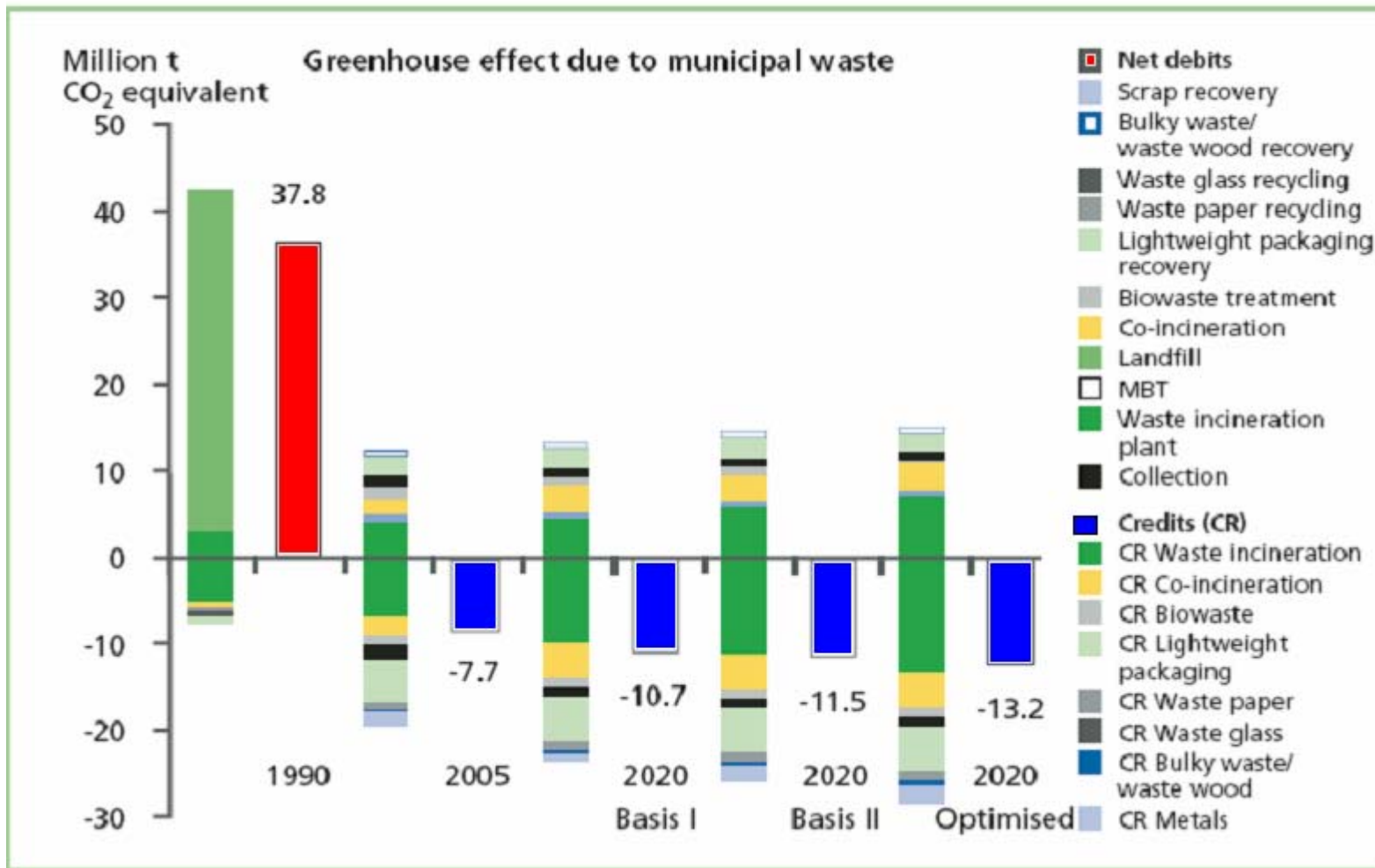


## Closing of Landfill Sites





# Greenhouse Effect due to Municipal Waste



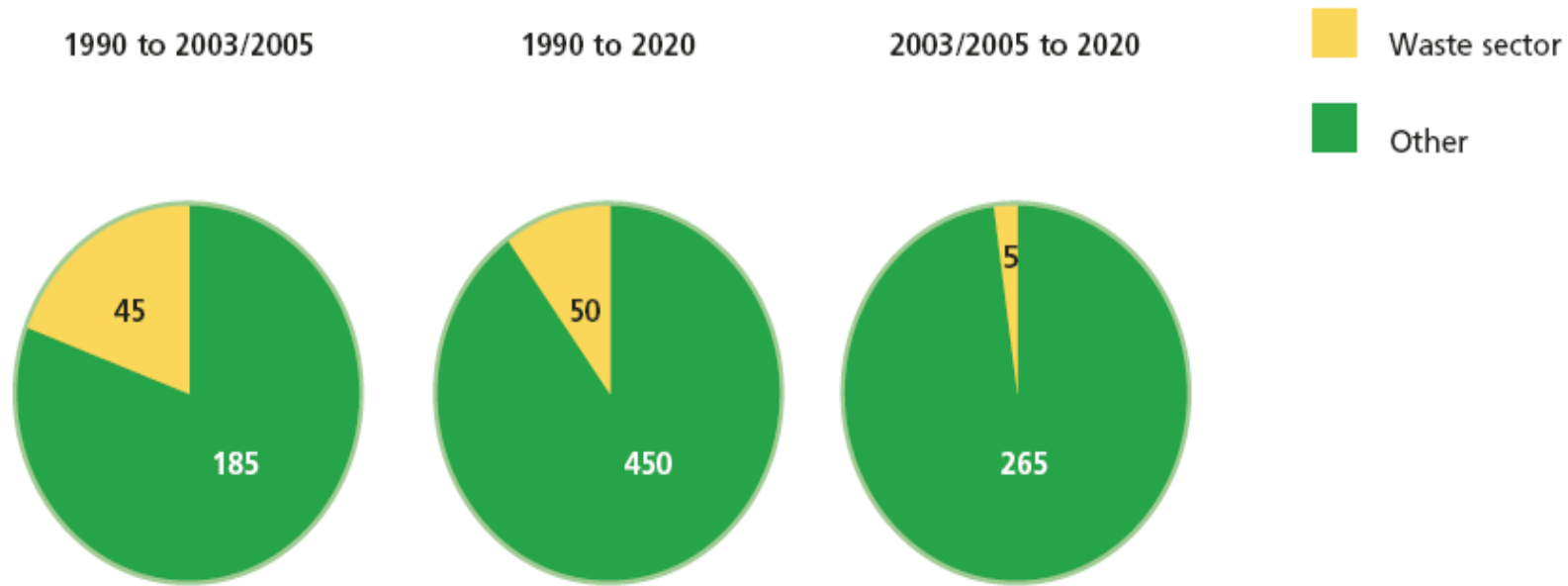
# Climate Protection through Optimisation of Waste Management

It is estimated that by 2020 a further 5 million tons CO<sub>2</sub> equivalent can be saved by considering the following measures:

- Increasing material recycling of paper, glass, plastic and metal
- Increasing the co-incineration and thermal recovery of waste
- Increasing the co-generation of heat and power in incineration plants
- Increasing separate biowaste collection and recovery



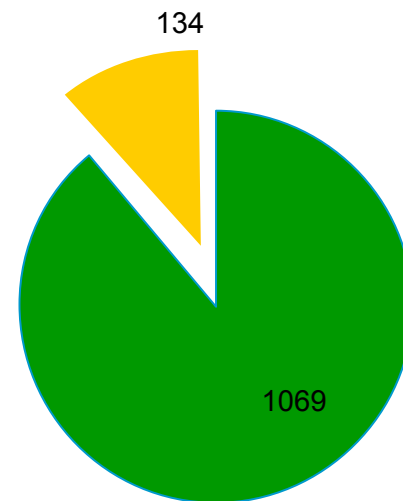
# Waste Sector's Contribution to the Envisaged 40 % Reduction of Greenhouse Gases in Germany (1990-2020)



# Potential of the Waste Sector to contribute to Climate Protection in EU 15

- **Ban of landfilling un-pretreated waste in EU -15 could avoid 134 million tons of CO<sub>2</sub> equivalents. This is represents 11 % of the post Kyoto maximum target of a 30 % emission reduction by 2020.**
- **A rigorous implementation of the EU-Landfill Directive could reduce the emissions by 74 million tons of CO<sub>2</sub> equivalents**

2003 bis 2020



**It is in our hands !**



Bundesministerium  
für Umwelt, Naturschutz  
und Reaktorsicherheit