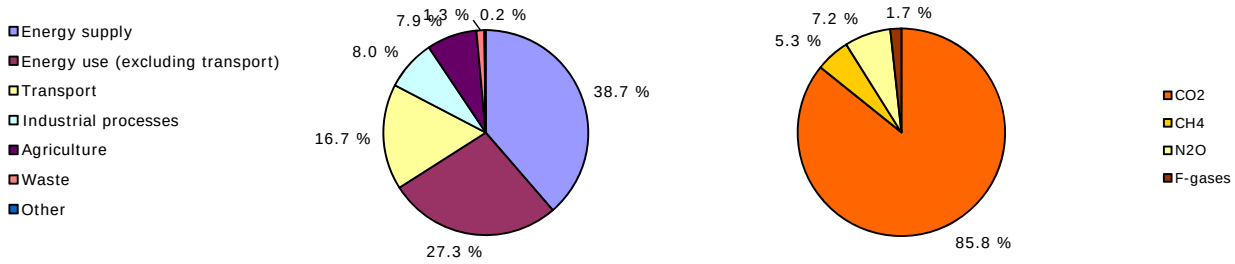
GHG trends and projections in Germany

European Environment Agency

Key GHG data (1)	1990	2008	2009	2010 (2)	Unit	Rank in EU-27 (3)	Rank in EU-15 (3)
Total greenhouse gas emissions (GHG)	1 247.9	981.1	919.7	960.1	Mt CO_2-eq.	1	1
GHG from international bunkers (4)	20.1	35.5	34.0	n.a.	Mt CO_2-eq.	4	4
GHG per capita	15.8	11.9	11.2	11.7	t CO_2-eq. / capita	9	6
GHG per GDP (constant prices) (5)	683	431	424	427	g CO_2-eq. / euro		
Share of GHG in total EU-27 emissions	22.3 %	19.7 %	19.9 %	20.3 %	%		
EU ETS verified emissions - all installations (6)		472.7	428.2	454.7	Mt CO_2-eq.	1	1
EU ETS verified emissions - constant scope (7)		472.3	428.1	454.1	Mt CO_2-eq.		
Share of EU ETS verified emissions (all installations) in total GHG		48.2 %	46.6 %	47.4 %	%		
ETS verified emissions compared to annual allowances (8)		7.9 %	– 1.1 %	3.0 %	%		

Share of GHG emissions (excluding international bunkers) by main source and by gas in 2009 (1) (9)



Key GHG trends	1990–2009		2008–2009		1990–2010 (2)		2009–2010 (2)	
	Mt CO_2-eq.	%	Mt CO_2-eq.	%	Mt CO_2-eq.	%	Mt CO_2-eq.	%
Total GHG	– 328.2	– 26.3 %	– 61.4	– 6.3 %	– 287.8	– 23.1 %	40.4	4.4 %
GHG per capita	– 4.6	– 28.9 %	– 0.7	– 6.0 %	– 4.0	– 25.6 %	0.5	4.6 %
EU ETS verified emissions - all installations (6)			– 44.5	– 9.4 %			26.5	6.2 %
EU ETS verified emissions - constant scope (7)			– 44.2	– 9.4 %			– 44.2	– 9.4 %

Assessment of long-term GHG trend (1990–2009)

Total emissions have been steadily decreasing since 1990. Energy-related emissions decreased by 25 %, which is due to fuel switching, increased energy and technical efficiency and the increased use of emission-free energy sources. In the early 1990s, the economic restructuring and efficiency improvements reflecting the restructuring after the German reunification led to strong emission declines. Remarkably, emissions from road transport have been decreasing since 1999. Emissions from industrial processes closely reflect production intensities (e.g. production of iron and steel, chemical industry, cement industry), but also the implementation of abatement measures (e.g. adipic acid production). The decrease in agricultural emissions is mainly caused by reduced livestock, fewer emissions from agricultural soils and less fertilizer use. The waste sector shows the highest reduction due to increased recycling and the ban concerning the disposal of biodegradable waste on landfills.

Assessment of short-term GHG trend (2008–2009)

Emissions decreased mainly in the production of public electricity and heat, in industry (in particular iron and steel production) and the households and services sectors. Power production in thermal power plants declined considerably, mainly reflecting decreasing final electricity demand. A 30 % drop steel production resulted in a drop of industrial emissions. Despite of a colder winter compared to 2008, the important reduction in liquid fuel consumption (based on fuel sales) resulted in a decrease of emissions from households and services. This suggests a reduced refuelling of tanks in 2009. In addition, the lower consumption of liquid fuels might have been compensated by the increased consumption of low-carbon or renewable energy sources (such as gas, district heat, biomass and solar heat).

Source and additional information

Greenhouse gas emission data and EU ETS data www.eea.europa.eu/themes/climate/data-viewers

(1) Total greenhouse gas emissions (GHG), GHG per capita, GHG per GDP and shares of GHG do not include emissions and removals from LULUCF (carbon sinks) and emissions from international bunkers.

(2) Based on national estimate of 2010 emissions.

(3) Comparison of 2009 values, 1 = highest value among EU countries.

(4) International bunkers: international aviation and international maritime transport.

(5) GDP in constant 2000 prices - not suitable for a ranking or quantitative comparison between countries for the same year. 1990 information not available for some countries, replaced by later years: 1991 (Bulgaria, Germany, Hungary and Malta), 1992 (Slovakia), 1993 (Estonia) and 1995 (Croatia). Source GDP: Eurostat, 2011; Ameco database, 2011.

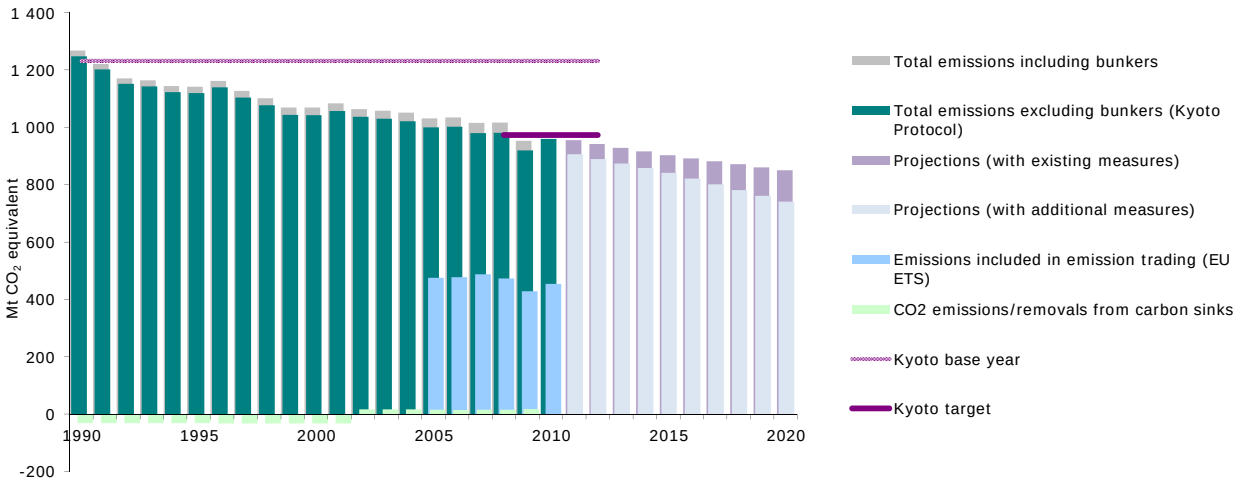
(6) All installations included. This includes new entrants and closures. Data from the community independent transaction log (CITL) as of 29 April 2009 for the reporting years 2005 and 2006, 11 May 2009 for the reporting year 2007, 17 May 2010 for the reporting year 2008 and 23 May for the reporting years 2009 and 2010. The CITL regularly receives new information (including delayed verified emissions data, new entrants and closures) so the figures shown may change over time.

(7) Constant scope: includes only those installations with verified emissions available for 2008, 2009 and 2010.

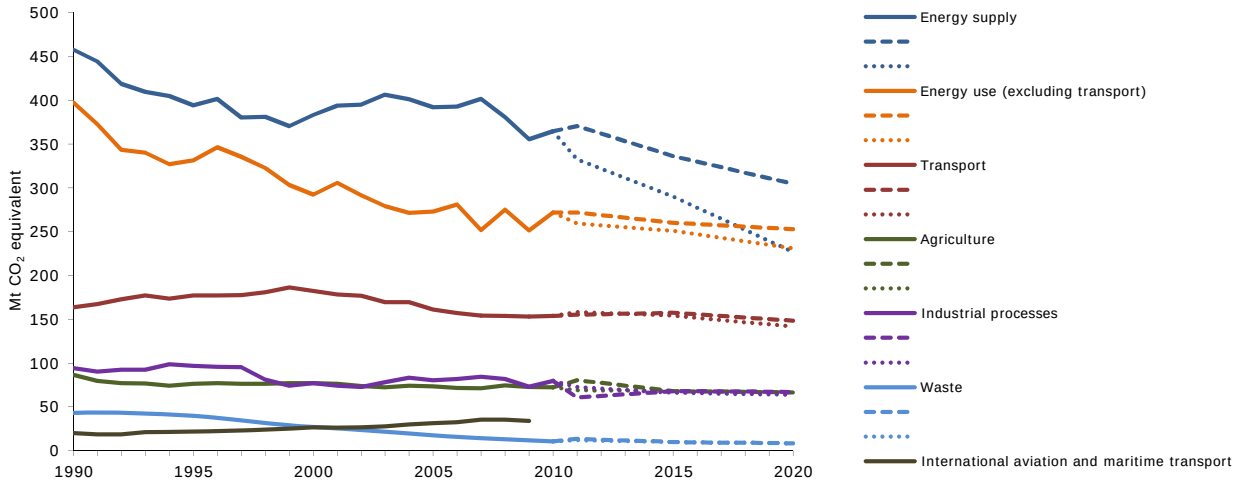
(8) "+" and "-" mean that verified emissions exceeded allowances or were below allowances, respectively. Annual allowances include allocated allowances and allowances auctioned during the same year.

(9) LULUCF sector and emissions from international bunkers excluded. Due to independent rounding the sums may not necessarily add up.

GHG trends and projections 1990–2020 — total emissions



GHG trends and projections 1990–2020 — emissions by sector

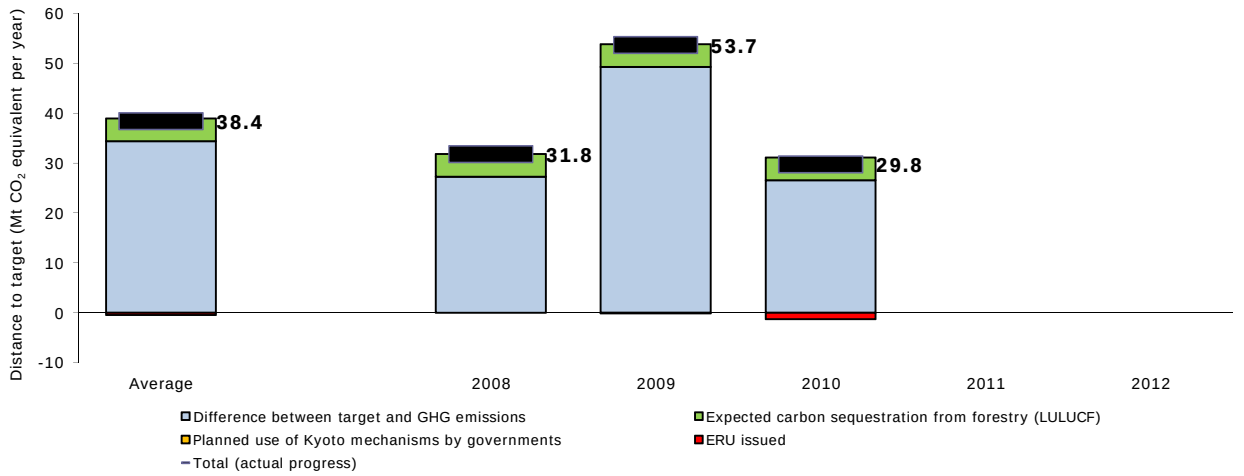


Note: GHG emission projections are represent either through dashed lines (with existing measures) or dotted lines (additional measures).

Source: National inventory, 2011; EEA proxy estimate; 2011; national projection data.

Progress towards Kyoto target

Average 2008–2010 emissions in Germany were 22.6 % lower than the base-year level, below the burden-sharing target of -21 % for the period 2008–2012. In the sectors not covered by the EU ETS, emissions were lower than their respective target, by an amount equivalent to 2.8 % the country's base-year emissions. LULUCF activities are expected to decrease net emissions by an annual amount equivalent to 0.4 % of base-year level emissions. Taking all these effects in to account, average emissions in the sectors not covered by the EU ETS in Germany were standing below their target level, by a gap representing 3.1 % of the base-year emissions. Germany was therefore on track towards its burden-sharing target by the end of 2010.



Note: The difference between target and GHG emissions concerns the sectors not covered by the EU ETS. A positive value indicates emissions lower than the average target.