

Climate Change 01/01

ENVIRONMENTAL RESEARCH OF THE FEDERAL MINISTRY OF THE
ENVIRONMENT, NATURE CONSERVATION AND NUCLEAR SAFETY

Research Report 201 41 133
UBA-FB 000193

Greenhouse gas reductions in Germany and the UK - Coincidence or policy induced?

An analysis for international climate policy

**Wolfgang Eichhammer, Ulla Boede, Frank Gagelmann, Eberhard Jochem,
Nicola Kling, Joachim Schleich, Barbara Schlomann**

Fraunhofer Institut für Systemtechnik und Innovationsforschung (ISI)

John Chesshire

Science Policy and Technology Policy Research (SPRU)

Hans-Joachim Ziesing

Deutsches Institut für Wirtschaftsforschung (DIW)

Executive Summary

Between 1990 and 2000 greenhouse gas emissions in Germany and the UK decreased by more than 18 % and about 12 %, respectively. Thus, Germany and the UK appear to be among the few industrialised countries which are on track to meet the emission reduction targets they have committed themselves to under the Kyoto Protocol and the subsequent European Union's Burden Sharing Agreement. Accordingly, Germany has to reduce greenhouse gas emissions by 21 % from 1990 to 2008-12, and the UK by 12.5 %. In terms of CO₂ emissions both countries have pledged to meet even stricter domestic policy targets: in Germany, the government has set the goal to reduce CO₂ emissions by 25 % between 1990 and 2005, and in the UK the objective is to reduce CO₂ emissions by 20 % between 1990 and 2010. These achieved emission reductions may appear less remarkable if one takes into account that Germany benefited from so-called "wall-fall profits", i.e. the breakdown and restructuring of the East German economy after reunification in 1990. Similarly, in the UK liberalisation of the energy markets in the early 1990s resulted in a fuel switch from carbon-intensive coal to natural gas, combined with higher nuclear

output. At the same time, however, various policies at national, regional, and local levels were introduced in the 1990s in both countries, which also resulted in a reduction of CO₂ and other greenhouse gases.

In this report the underlying factors for greenhouse gas emission trends in Germany and the UK in the 1990s are examined. In particular, it is assessed whether the observed emission reductions are coincidental and could be attributed to rather special circumstances, or whether they are the result of specific policy measures.

The findings indicate that for both countries, special circumstances accounted for about 50 % of the reduction of all six greenhouse gases. This share increases to 60 % if only energy-related CO₂ emissions are considered. At the same time, a diverse set of policies affecting energy-related CO₂ emissions accounted for about 40 % of the reduction of these emissions. Likewise, environmental policies directed towards non-CO₂ gases (in particular waste management and the reduction of N₂O from adipic acid production) had almost as strong an impact as policies addressing CO₂ emissions. Considering all six greenhouse gases, the policy-contribution was slightly higher than the impact of unification in Germany or liberalisation in the UK, respectively.

Although Germany and the UK are on a reduction path to meet their Kyoto targets, both countries, and perhaps the UK even more than Germany, might miss their national targets unless additional policies are implemented in the near future.