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Backgroundinformation

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The cap in Germany's draft NAP for Phase 2 (2008-2012)

1. Background

In assessing the proposal for the total amount of emission certificates for allocation (the so-called "cap"), which is presented in the German National Allocation Plan (NAP) for Phase 2 (2008-2012) of the European Emission Trading Scheme (EU ETS), a distinction has to be made between different sets of figures.

The "National Greenhouse Gas Inventories", which have been drawn up by the German authorities for submission to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), are decisive for the attainment of the Kyoto target. All emissions at a national level are recorded in the inventories. This data provides the basis for the decision on whether Germany has attained or fallen short of the Kyoto target. National greenhouse gas inventories are regularly inspected by international experts.

Emissions of individual plants and installations are decisive both for the allocation of emission certificates and for the contribution of emissions trading towards fulfilment of the Kyoto target. Data from allocation procedures for Phase 1 of the EU ETS was collected and, for the first time, certificated emission data for 2005 was submitted in the emission reports of plant operators falling under the ETS.

Data for the NAP is processed by the Federal Environment Ministry in such a way that a distinction can be made between different "sectors". Emissions of the sectors "energy" and "industry" include those sectors that are falling under the scheme. The emissions of these so-called "emissions trading sectors" also cover, however, carbon dioxide (CO_2) emissions of industrial installations that are not falling under the ETS. Emissions of other sectors, such as households, services and transport, are integrated into "non-trading sectors". In isolated cases however, installations in these sectors can also fall under the ETS.

Greenhouse gases other than CO_2 (methane, nitrous oxide, PFCs, HFCs and sulphur hexafluoride) are not covered by the EU ETS, and are designated as "non-CO_2 greenhouse gases".

The question is: How much are the installations falling under the EU ETS contributing to the attainment of the Kyoto target? At the same time, the varied quality of the data as well as its sectoral coverage has to be considered as well.

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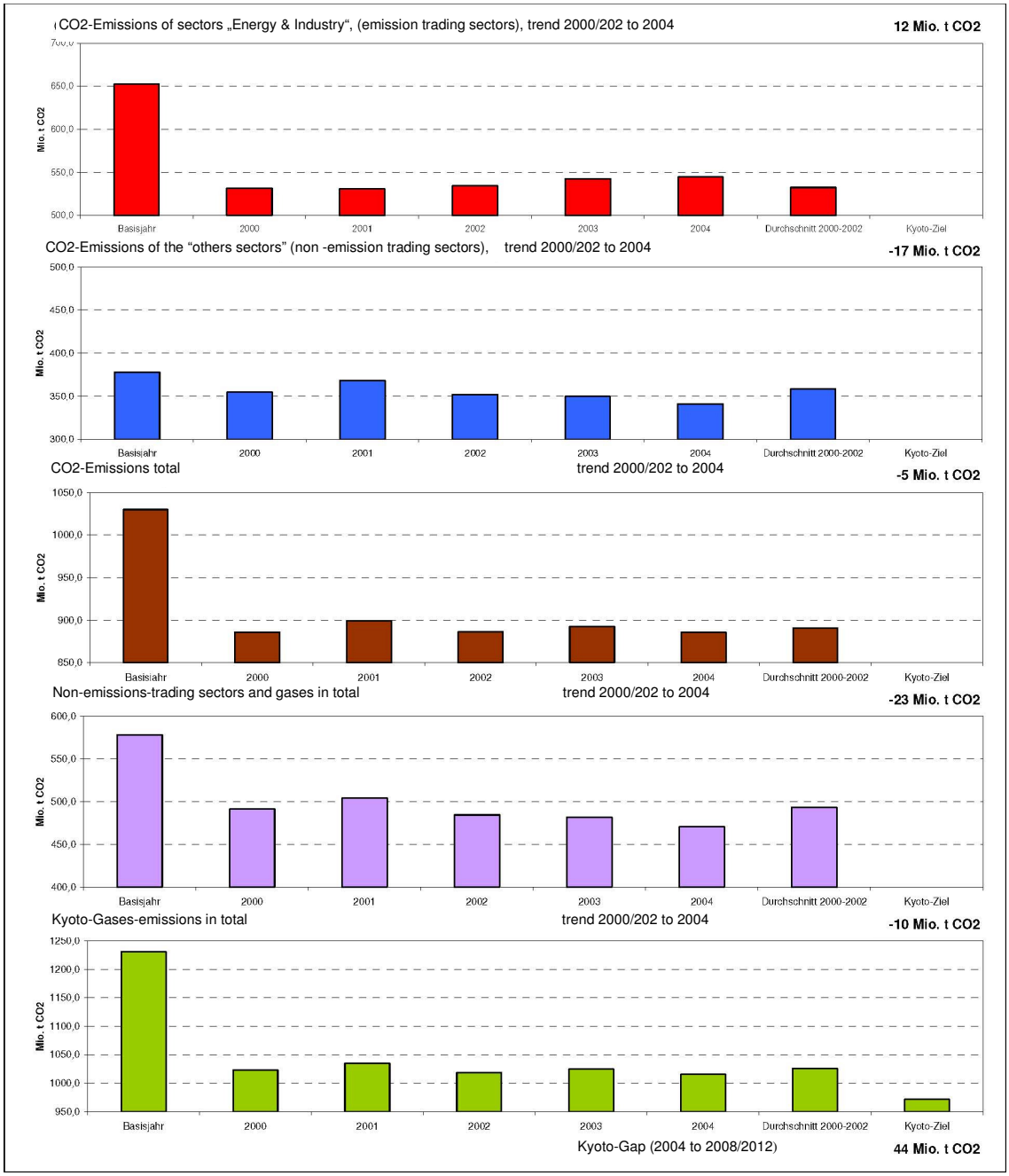
2. Trends in emissions since 2000 at a sectoral level

The diagram below gives an impression of emission trends for different sectors and greenhouse gases based on data in the draft NAP

Figure: Emission trends and fulfilment of the Kyoto target



An important reference point for the deduction of emission targets in the NAP are the emission levels of the period 2000 to 2002, as they provide the departure point for many inferences in the NAP. Data for 2004, on the other hand, provides an impression of current developments. Emissions of the so-called emissions-trading sectors ("energy" and "industry") have continually grown since 2000. A comparison of the emissions in 2004 (latest available data) with the average emissions for the years 2000 to 2002 indicates an increase in emissions of around 12 million tonnes of CO_2 for the emission trading sectors.

In the same period, however, CO_2 emissions of sectors not covered by ETS (e.g. households, transport) declined by around 17 million tonnes. The reasons for this are to be found in climate policy measures, but above all most likely in greatly increased energy prices and appropriate reactions by consumers (e.g. active energy savings or increased "petrol-station tourism"). In total, CO_2 emissions were thus reduced by around 5 million tonnes, if you compare 2004 with the period 2000 to 2002.

Such a downward trend is shown, however, not only for CO_2 emissions from non-trading sectors, but also for non-CO_2 gases. Here we find additional emission reductions of about 6 million tonnes of CO_2 equivalent in the period 2000 to 2002.

All in all the comparison between 2004 and the period 2000 to 2002 results in a reduction in greenhouse gas emissions covered by the Kyoto Protocol of around 10 million tonnes of CO_2 equivalent - partly attributable to special influences like high energy prices whose lasting quality is at least questionable.

In order to attain the targets laid down in the Kyoto Protocol, German greenhouse gas emissions have to be reduced by a further 44 million tonnes of CO_2 equivalent (this is the so-called "Kyoto gap", based in figures from the current NAP). Initial rough estimates of developments in CO_2 emissions in 2005 show that from 2004 to 2005 emissions declined by around 15 Million tonnes, of which about 5 millions tonnes were attributable to the traded sectors.[1] On the basis of this sectoral data, an analysis can be made as to the contribution from different sectors to closing the Kyoto gap (planned contributions from installations covered by emissions trading – according to the draft NAP – compared to the more extensively documented emission trading sectors).

3. Emissions of installations covered by emissions trading

In contrast to data from greenhouse gas inventories, the installation data presented in the NAP is not particularly transparent. Installations covered by the scheme have provided (certificated) emission reports for 2005, according to which they emitted a total of 474 million tonnes of CO_2. Taking into account the above-mentioned decline in CO_2 emissions of about 5 million tonnes

[1] Hans-Joachim Ziesing, CO_2 emissions in Germany in the year 2005 have fallen considerably, DIW *Wochenbericht* No. 12/2006.

between 2004 and 2005, an emissions volume of 66 million tonnes of CO_2 results from installations that would have to be attributed to emissions-trading sectors; but in reality – on the grounds of plant size – they are not covered by emissions trading.

For the period 2000 to 2002 the draft NAP shows an emissions volume of installations covered by the scheme of 482.4 millions tonnes of CO_2. According to this draft NAP, installations with an emissions volume of around 50 million tonnes of CO_2 would theoretically have to be attributed to the emissions-trading sector for 2000 to 2002, but those installations were actually not covered by emissions trading. Such an increase in emissions volume not covered by emissions trading is astounding.[2]

According to these figures, CO_2 emissions of installations covered by the scheme declined between the period 2000/2002 and 2005 by around 9 million tonnes, while for the emissions trading sectors there was an increase of around 12 millions tonnes of CO_2 up to 2004, followed by a decline of about 5 millions tonnes (see above). Altogether, therefore, there was an increase of about 7 millions tonnes of CO_2 emissions for the period 2000/2002 to 2005.

It has also to be taken into account that in the commitment period 2008 to 2012 a number of additional installations (e.g. in the chemical and steel industries) will fall under the ETS, whose emissions are not included in the above emissions data on the basis of plants covered by the ETS but, on the other hand, are covered by data for emissions trading sectors. The emissions volume of these installations is generally given in the draft NAP at 11 million tonnes of CO_2. Total CO_2 emissions for the year 2005 of installations covered by emissions trading therefore amount to around 485 million tonnes (474 mln. tonnes plus 11 mln. tonnes), and for the period 2002/2004 – bearing in mind the above-mentioned uncertainties concerning this figure – to 493.4 million tonnes.

4. Comparison with the proposed cap and assessment

Based on official emission figures for 2004, attainment of the Kyoto target in the period 2008 to 2012 requires further emission reductions of around 44 millions tonnes of CO_2 equivalent.

Taking account of initial rough estimates for the year 2005, there remains – irrespective of perhaps important special influences for 2005 (see above) – a gap of approximately 30 million tonnes of CO_2-equivalent. This has to be closed through measures in the area of both CO_2 emissions and non- CO_2 greenhouse gases.

Comparing the cap of 482 million tonnes of CO_2 for installations covered by the ETS and an emissions volume for these installations of 485 million tonnes of CO_2 (including installations that will additionally be covered in Phase 2, 2008 to 2012), the contribution to the required emission

[2] One explanation for this difference could be that the emissions volume of installations covered in the period 2000/2002 is over-estimated, resulting perhaps from double counting, since in the total of 482.4 million tonnes of CO_2 installations have obviously been included, which came into operation in the years 2003 and 2004, and corresponding emission reductions in existing installations was not considered. Long base periods thus lead inevitably to inflated emission figures.

reductions from installations covered by the scheme is only 3 million tonnes of CO_2 equivalent (about 10% of the remaining Kyoto gap of 30 million tonnes of CO_2- equivalent).

Assuming that the reduction of about 5 million tonnes of CO_2 between 2004 and 2005 observed at the sectoral level is fully attributed to installations covered by ETS, the contribution to closing the Kyoto gap amounts to around 18% (3 plus 5 of 44 million tonnes of CO_2 equivalent)[3]. Hence, according to the draft NAP, 60 to 90% of the emission reductions still required to fulfil the Kyoto commitment will have to be furnished by installations and sectors not covered by the EU ETS (including greenhouse gases other than CO_2). Necessary emission reductions in sectors not covered by ETS (households, transport and services), in installations not covered by emissions trading but from emissions trading sectors as well as for greenhouse gases other than CO_2 amount in this case – depending on the chosen base year – to 27 to 38 million tonnes of CO_2. On the basis of trends currently observed, together with a glance at existing measures described in the NAP, realization of such extensive emission reductions by 2012 is hardly conceivable.
The only alternative way to fulfil the Kyoto commitment is purchasing emission certificates on the open market through the flexible mechanisms of the Kyoto Protocol, payable from the national budget. The purchase of 10 million certificates at a price of 15 Euros would involve annual costs of around 150 million Euros. With larger purchases the cost would be correspondingly higher.
With the laying down the cap for the period 2008 to 2012, the emission reduction contribution of installations covered by the EU ETS is finally determined. Should larger emission reductions be achieved, these reductions will flow out of the country with the corresponding certificates and will be unavailable for German compliance with its Kyoto commitment under international law.

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[3] This data would be based on the more reliable emission data for 2004 though