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Annex to the

REPORT FROM THE COMMISSION

PROGRESS TOWARDS ACHIEVING THE COMMUNITY'S KYOTO TARGET

(required under Article 3(1) of Decision 280/2004/EC of the European Parliament and of the Council concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol)

{COM(2005) 655 final}

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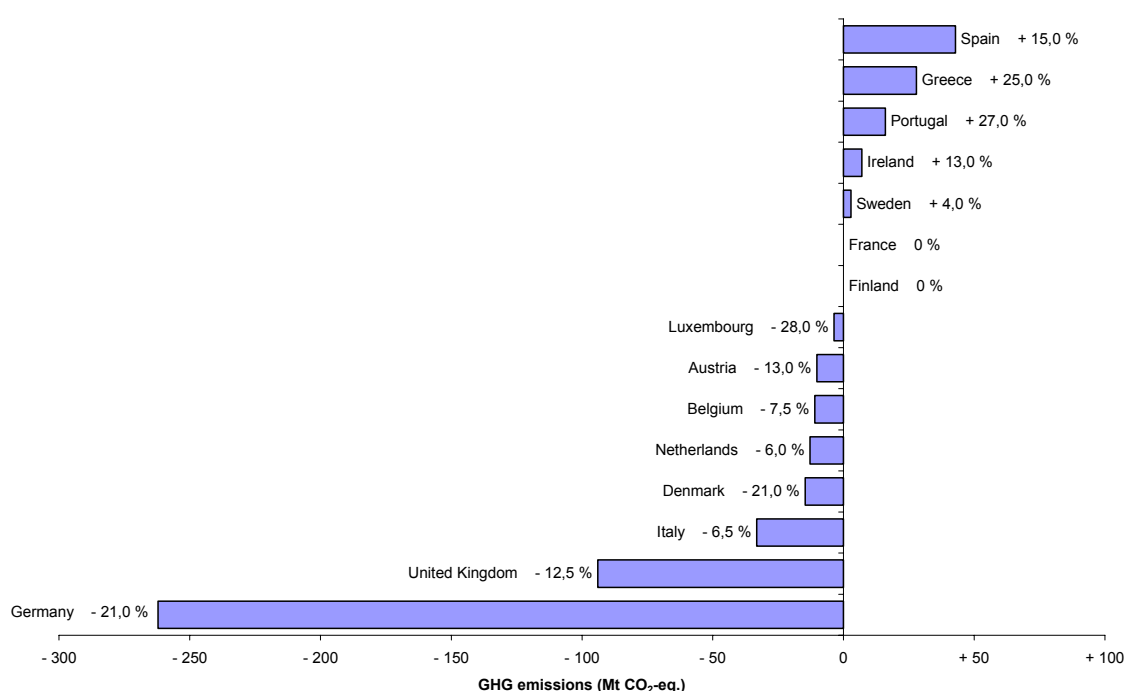
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1. EVALUATION OF ACTUAL PROGRESS

1.1. Actual progress of the EU-25

All 25 Member States have ratified the Kyoto Protocol, 23 have emissions reduction targets under the Kyoto Protocol. Cyprus and Malta are Non-Annex I Parties to the UNFCCC and thus do not have a target under the Kyoto Protocol. In addition, the Community is a Party to the Kyoto Protocol. The Community target includes only the EU-15 Member States. For the EU-15, burden sharing was agreed in Council Decision 2002/358/EC in accordance with Article 4 of the Kyoto Protocol. This agreement assigns a specific reduction target to each of the 15 Member States (Figure A1).

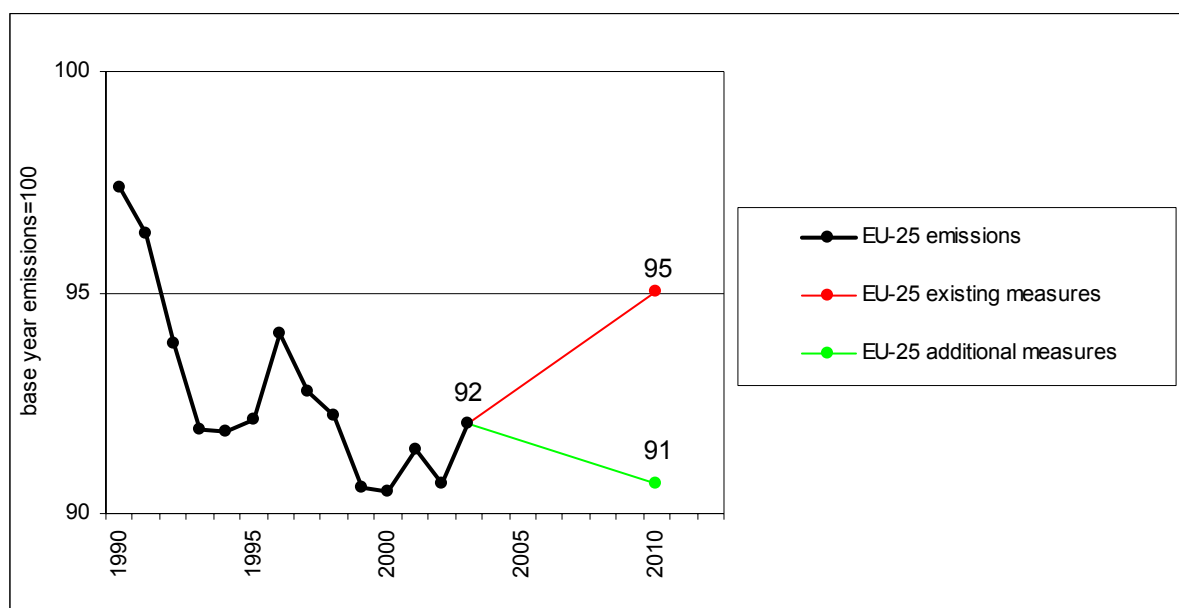
Figure A1: Specific EU-15 reduction targets under the Kyoto Protocol



Most new Member States have committed themselves to reducing their greenhouse gas emissions by 8 % from base year level in the first commitment period 2008–2012 of the Kyoto Protocol. Hungary and Poland have a target to reduce their emissions by 6 %.

EU-25 greenhouse gas (GHG) emissions in 2003 were 8% lower than the base year level (Figure A2) reaching 4913 million tonnes CO₂-equivalent emissions. This reduction was mainly due to the decline in emissions in most of the new Member States in the early 1990s.

Figure A2: Actual Progress of EU-25

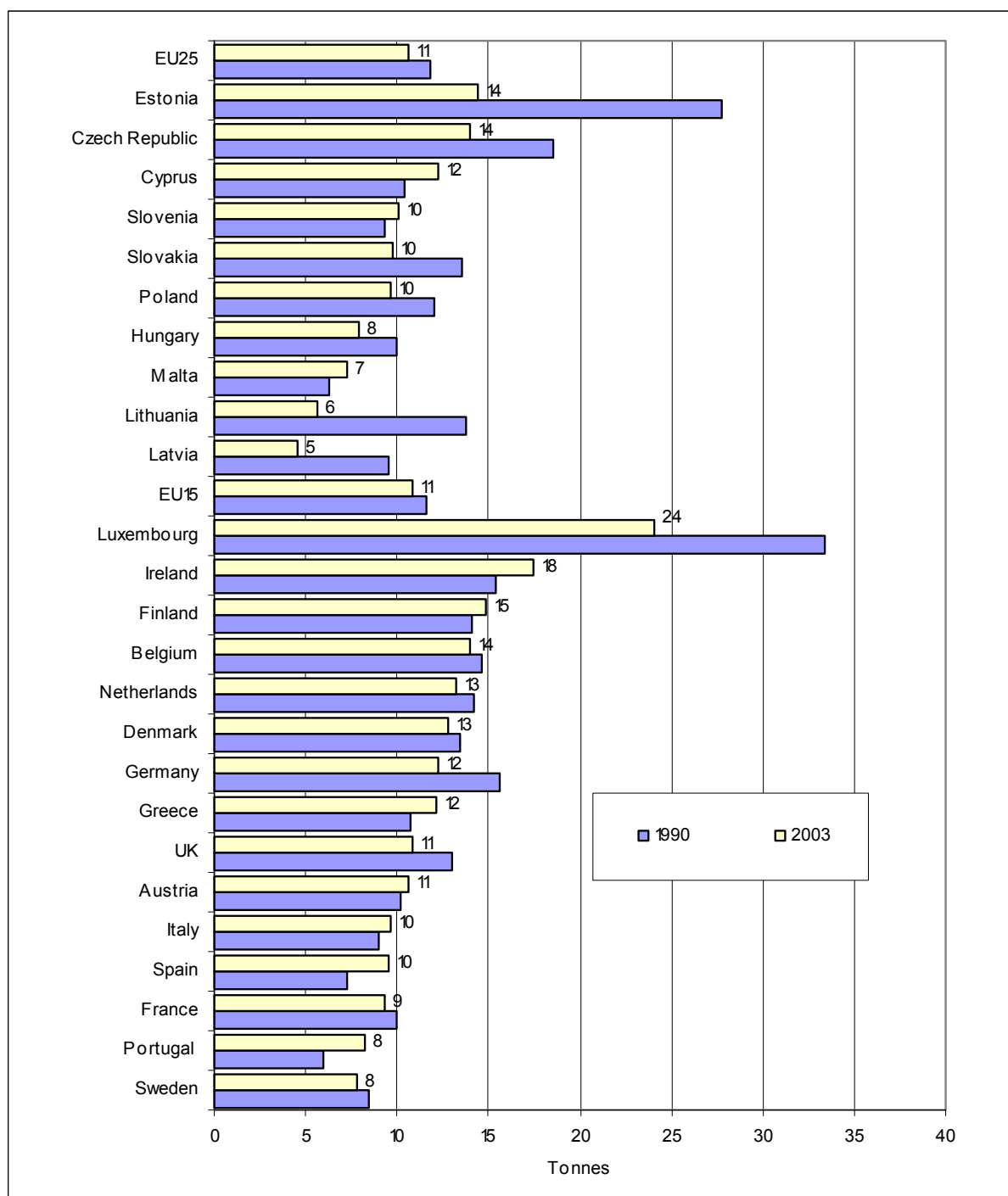


Note: Data exclude emissions and removals from land-use change and forestry. The figure refers to a theoretical EU-25 base-year as 100 in order to allow a consistent analysis of greenhouse gas emission trends and projections. This base-year for EU-25 has no legal status. It is 1990 for most Member States for CO₂, methane (CH₄) and nitrous oxide (N₂O) but 1995 for fluorinated gases, with the following exceptions: The base year for CO₂, CH₄ and N₂O for Hungary is the average of 1985-1987, for Slovenia 1986 and for Poland 1988; the base year for fluorinated gases is 1990 for France and Finland. This means that the value for 1990 is not exactly 100. Cyprus and Malta are not included due to lack of data and because they do not have targets under the Kyoto Protocol.

Source: EEA, 2005

When per capita emissions in 2003 are considered on a Member state basis, the highest emissions occurred in Luxembourg, Ireland and Finland at 24, 18 and 15 tonnes respectively (Figure A3). These were caused mainly by fuel tourism to Luxembourg, by high emissions from the agricultural sector in Ireland, and by the energy industries in Finland. In contrast, per capita GHG emissions in Portugal, Sweden and Hungary stood at 8 tonnes, while in Malta, Lithuania and Latvia they were even lower at 7, 6 and 5 tonnes respectively.

Figure A3: Greenhouse gas emissions per capita of EU-25 Member States for 1990-2003

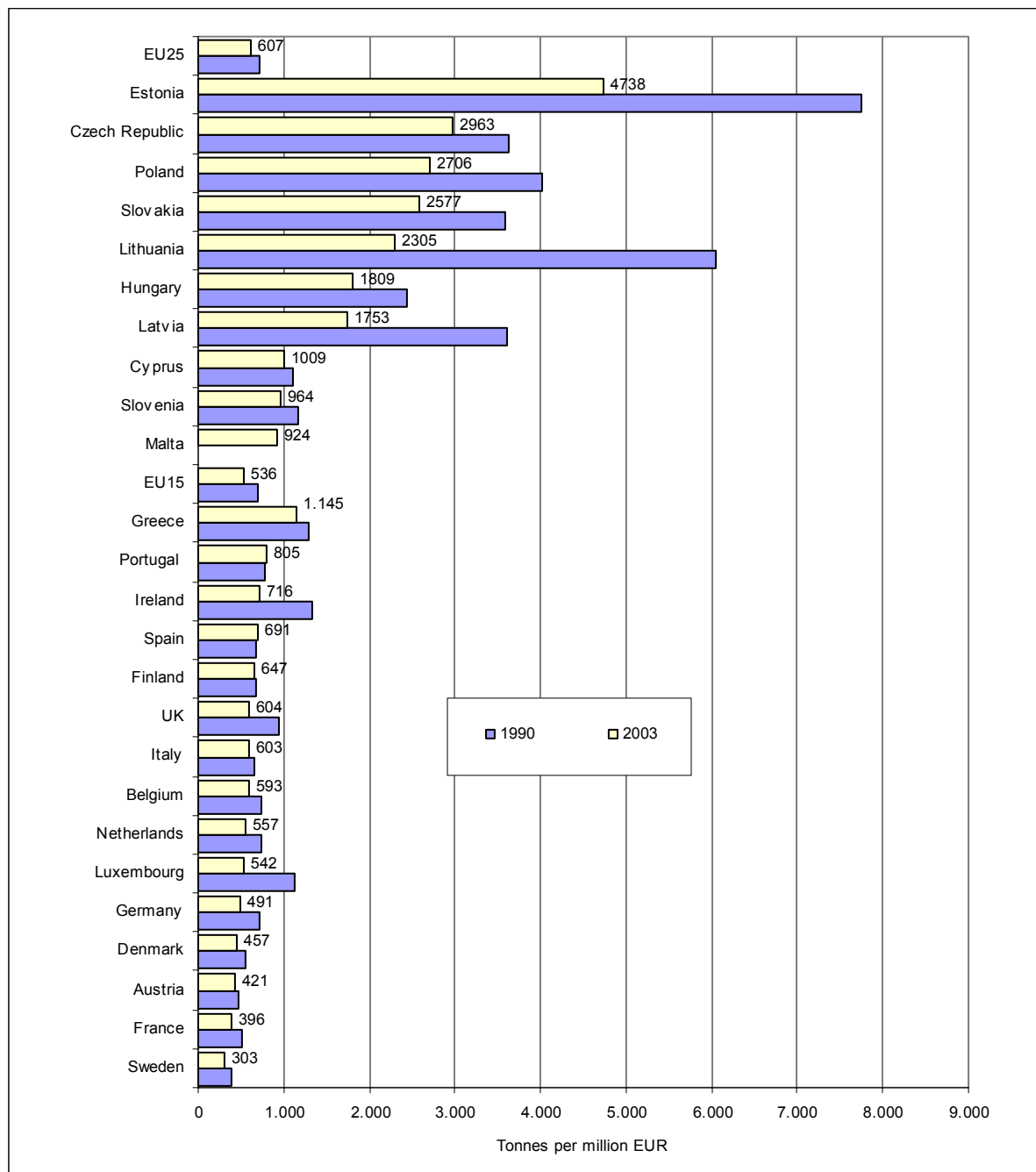


Source: EEA, 2005

For the EU-25, average GHG emissions per unit of GDP stood at 607 tonnes per million euros in 2003 (see Figure A4), which is a slight increase from last year's report. They differed considerably between Member States. While Estonia, the Czech Republic and Poland showed the highest emissions with 4738, 2963 and 2706 tonnes per unit of GDP, the emissions in Austria, France and Sweden were lowest with 421, 396 and 303 tonnes per unit of GDP respectively.

Figure A4 clearly shows the decline of GHG emissions per unit of GDP in almost all Member States (apart from Portugal and Spain) between 1990 and 2003, which provides evidence for the further decoupling of GHG emissions and GDP. Figure A5 demonstrates the decoupling of CO₂ emissions from energy consumption and GDP for the EU-15.

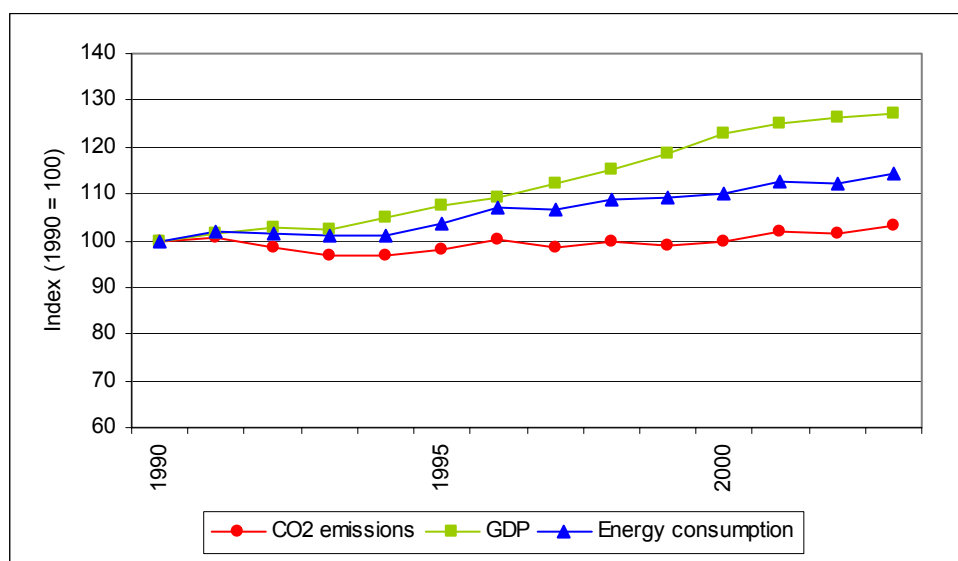
Figure A4: Greenhouse gas emissions per GDP in the EU-25



Note: Due to lack of data, 1990 values refer to 1995 for the Czech Republic, Estonia, Hungary, Poland, Slovakia, and EU-25.

Source: EEA, 2005

Figure A5: CO₂ emissions, GDP and Energy Consumption for the EU-15



Progress towards achieving the Kyoto target: Actual progress is measured by the distance-to-target indicator.¹ The comparison with the target path is a tool to visualise the evolution of GHG emissions from the European Community (EC) and its Member States. However, when assessing the deviations from the target path it has to be kept in mind that:

- the European Climate Change Programme (ECCP) was only launched in 2000 and most policies and measures resulting from that programme are thus only just starting to deliver;
- the emissions and removals from LULUCF are not considered in the distance-to-target index in this report.

The intended use of Kyoto mechanisms, however, is included if Member States have started to set up necessary institutions and allocate funding.

The distance-to-target indicators for the Member States in 2003 are shown in Figure 3. Ten Member States were above their hypothetical linear path from 1990 towards the Kyoto target in 2010 (named ‘target path’), even if Kyoto mechanisms are included. Spain and Finland were above 20 %. Compared to last year’s report, Finland tripled its distance above the target path. However, the three Baltic States (Latvia, Lithuania and Estonia) were with more than 45% furthest below their target path.

In last year’s report, for the development of Member States’ distance to the linear target path the values without the Kyoto mechanisms were used. Compared to last year’s report, seven Member States (Austria, Denmark, Finland, Italy, Luxembourg, the Netherlands and Spain) increased their distance above the target path in 2003, not counting Kyoto mechanisms. This increase was largest in Finland, Austria and Denmark, with about 14.5, 9 and 7 percentage points. The year 2003 was in the Nordic countries exceptional dry, which resulted to high

¹ The distance-to-target indicator shows the difference between the actual GHG emissions of a Member State and a national Kyoto target path for that Member State. The Kyoto target path shows the theoretical linear decrease in GHG emissions up to the Kyoto target from the base year level until 2010, the mid-term year of the first commitment period.

volumes of fossil-based condensing power-export from Finland and Denmark by increasing CO₂-emissions in these countries.

Emission trends by Member State and sectors: Germany and the United Kingdom are the largest emitters of GHG within the EC, together accounting for approximately 34 % of EU-25 GHG emissions in 2003. Compared to the base year level, these two Member States had reduced their GHG emissions by 331 million tonnes CO₂-equivalent by 2003. Since 1990, German CO₂ emissions from energy generating- and manufacturing industries have declined by 12% and 34% respectively. Remarkably, Germany and France are the only EU Member States with decreasing CO₂ emissions in the transport sector between 2002 and 2003. In Germany transport emissions decreased significantly for the fourth consecutive year. The reasons for this decline could include the environmental tax reform and increased fuel prices.

Italy and France are the third and fourth largest emitters with shares of 12% and 11%. In 2003, Italian GHG emissions increased by 2.7% compared to 2002, reversing the previous downward trend. Emissions increased primarily in the manufacturing industries. In France, GHG emissions increased by 0.7 % above 2002, thus reversing the previous downward trend. France is below the linear target path.

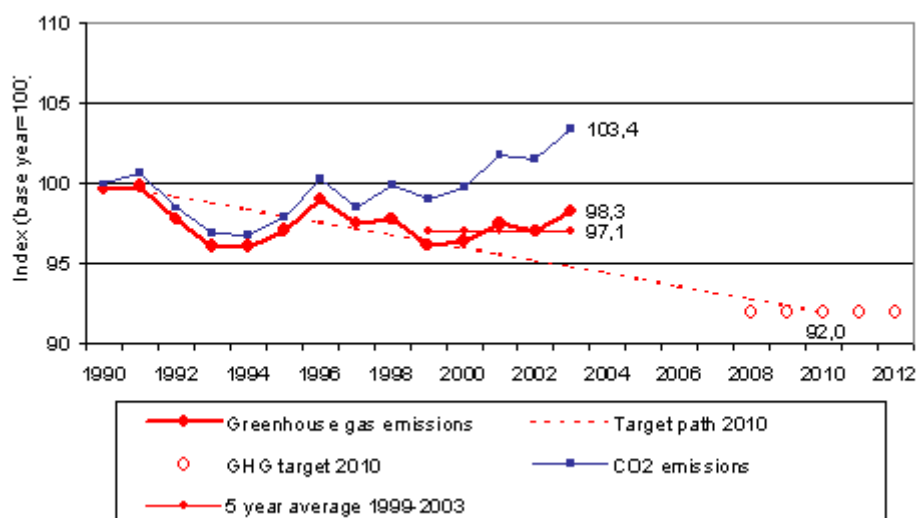
The fifth and sixth largest emitters in the EU are Spain and Poland, each accounting for almost 8% of total EU-25 greenhouse gas emissions. In Spain, 2003 emissions were 40% higher than their base year level. Overall emissions even increased by 0.9% between 2002 and 2003, continuing the upward trend.

In the new Member States, GHG emissions declined across all sectors except the transport sector. For the energy sector excluding transport, the agriculture sector and the waste sector, this decrease was in the range of 25% to 41% compared to 1990. GHG emissions from industrial processes decreased by 12%. In the transport sector, 2003 GHG emissions in the new Member states and in the EU-15 were both 24% above 1990 levels. Compared to last year's reporting these emissions increased by 7% for the new Member states while they increased by 0.7% for the EU-15. New Member States seem to be repeating the experience of Greece, Ireland, Portugal and Spain: high economic growth appears to lead to strong growth in GHG emissions from transport.

1.2. Actual progress of EU-15

Figure A6 demonstrates that by 2003, EU-15 GHG emissions had decreased by 1.7 % from the base year level reaching 4180 million tonnes CO₂-equivalents.

Figure A6: EU-15 greenhouse gas emissions compared with targets for 2010 (excl. LULUCF emissions and removals)



Note: The linear Kyoto target path is used to evaluate EC GHG emissions in 2003 compared to the Kyoto target of the EC, not as an approximation of future EC emission trends.

Source: EEA, 2005

However, further considerable reductions of emissions are needed on top of the implementation of planned Kyoto mechanisms in order to comply with the EU-15 commitment under the Protocol. Those Member States that are above their targets urgently need to take additional measures.

Progress by greenhouse gas and sector: Table A1 reflects the trends in GHG emissions by sector. The trends for the different sectors and greenhouse gases vary considerably. CO₂ is the most important greenhouse gas in the EU-15 as in previous years, accounting for 82 % of total GHG emissions in 2003 as in previous years. From 2002 to 2003, EU-15 CO₂ emissions increased by 1.8%. They were still above 1990 levels in 2003 and also higher than in 2000, at which time the UNFCCC stabilisation target for CO₂ emissions had been achieved. Emissions from all other GHG, except for HFCs, have been reduced since 1996.

Table A1: GHG emissions by sector for 1990 and 2003 (in Million tonnes CO₂ equivalent emissions) for EU-15

Source category	2003	Share of total emissions in 2003 (%)	Change 1990-2003 (%)
Energy excl.transport	2521	61	-3
Transport	872	21	+24
Industrial processes	265	6	-19
Agriculture	414	10	-10
Waste	97	2	-32

The transport sector shows a continuous increase in CO₂ throughout the period for which data are available (since 1990) and is still growing (24% above the 1990 level in 2003 for the EU-15). Energy industries (mainly energy combustion for electricity and heat production, but also in refineries) are the largest contributor to CO₂ emissions. In this sector, emissions are fluctuating around 1100 million tonnes depending on weather conditions and water availability for hydropower. At the same time, the share of combined heat and power generation in gross electricity production decreased from 10% in 2000 to approximately 9 %

in 2002, the latest year for which data are available. The share of electricity produced from renewable energy sources increased slightly from 13.6 % in 2002 to 13.7 % in 2003.

Methane (CH₄) emissions account for 8 % of total EU-15 GHG emissions and decreased by 25% between 1990 and 2003. The main reasons for declining CH₄ emissions were the decline of coal mining, reductions in solid waste disposal on land and technical measures to reduce these emissions, and decreasing number of cattle. Emissions from these sectors have been decreasing constantly since 1990.

Nitrous oxide (N₂O) emissions, responsible for 8 % of total EU-15 GHG emissions, have decreased by 18% between 1990 and 2003. The chemical industry has been the most important contributor to this decline, especially the production of adipic acid where emissions have fallen substantially as a result of technical measures. Emissions from agricultural soils also declined following a reduction in the use of fertilisers.

Fluorinated gas emissions show opposing trends for different gases within this family. Whereas HFC emissions increased by 22% between 1995 and 2003, perfluorocarbons (PFC) emissions declined by 52% and sulphur hexafluoride (SF₆) emissions by 37%. Fluorinated gases accounted for only 1% of total GHG emissions in 2003. However, between 2002 and 2003, HFC emissions were increasing by 10%.

2. EVALUATION OF PROJECTED PROGRESS

This chapter presents the aggregate projections of the GHG emissions of the EU-25 and assesses the EU-15 projections in more detail. The assessed projections are those for the year 2010, the mid-term year of the first commitment period of the Kyoto Protocol. The assessment for the EU-15 is undertaken in two steps:

- (1) Assessment of GHG emissions under the '*with existing measures*' projections, which consider domestic policies and measures already implemented, including Common and Co-ordinated Policies and Measures (CCPMs),
- (2) Assessment of the '*with additional measures*' projections in addition to (1).

The intended use of Kyoto mechanisms is included in both types of projections for countries for which the European Commission raised no objections against the intended use in the national allocation plans. Additional information like the third National communications under UNFCCC and a recent questionnaire under the greenhouse gas monitoring mechanism are taken into account if the intended use is substantiated sufficiently (signed contracts or initiated carbon purchase tenders, operational programme, designated national authority, budgetary resources).

2.1. Projected progress of EU-25

Assessment of the '*with existing measures*' projections: By 2010, EU-25 GHG emissions will increase by roughly 3 % and will thus reach 95% of base year emissions in the '*with existing measures*' projections, excluding Kyoto mechanisms². Annex 4 on '*with existing measures*' projections shows detailed figures of how far existing domestic policies and measures implemented by Member States are expected to contribute to their individual targets and to fill the remaining gaps. These contributions vary significantly across Member States. Only nine Member States (the Czech Republic, Estonia, Latvia, Lithuania, Luxembourg,

² Note that no data are available for Cyprus and Malta. Data also exclude emissions and removals from land-use change and forestry.

Poland, Slovakia, Sweden, and the United Kingdom) are projecting to have lower GHG emissions in 2010 than their respective burden sharing targets (including Kyoto mechanisms), and in the case of Estonia, Latvia and Lithuania by more than 30% (Figure 2).

Assessment of the ‘with additional measures’ projections: In the ‘with additional measures’ projections, aggregated GHG emissions will roughly stay at 2002 levels (91% of base year emissions in 2010; see Figure A1 and the table in Annex 4).

Information on the use of Kyoto mechanisms: Seventeen Member States – Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Slovenia, Spain, Sweden and the United Kingdom – have provided information on their intended use of the Kyoto mechanisms, either through a questionnaire under the EC mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol (Council Decision 280/2004/EC), as part of their 3rd national communication or in their national allocation plans notified under the European emissions trading directive (2003/87/EC).

Three Member States (Germany, Sweden and the United Kingdom) expect to achieve their burden sharing targets through domestic measures only (Figure 2 and Annex 4). Twelve EU-Member States decided on the use of Kyoto mechanisms (Austria, Belgium, Denmark, Finland, France, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Slovenia and Spain), of which Slovenia is the only country of the new Member States. The quantitative estimates on the use of Kyoto mechanisms in Table A2 are based on the national allocation plans for the first trading period as agreed upon by the European Commission. Additionally, Belgium, Denmark, Finland and Sweden provided updated information through the questionnaire in 2005 submitted under the Monitoring Mechanism and together increased the use of the mechanisms by 2.6 million tonnes CO₂-equiv per year.

Table A2: Intended use of Kyoto mechanisms notified in the National Allocation Plans

Member State	Planned use of Kyoto mechanisms	Which Kyoto mechanisms? (ET, CDM, JI)	Achieving the burden-sharing target through domestic action (no use of Kyoto mechanisms)?	Projected emission reduction 2008–12 through the use of Kyoto mechanisms ^a [Million tonnes CO ₂ -equivalents per year]
Austria	Yes	Priority on JI and CDM	No	7.0 ^b
Belgium	Yes	Priority on JI and CDM	No	8.4
Denmark	Yes	CDM, JI	No	4.5
Estonia	No	-	Not applicable (Yes for national Kyoto target)	-
Finland	Yes (Pilot programme to gain experiences implemented)	Not yet decided	Not yet decided	0.6 contracted, total quantity not yet decided
France	Yes	Priority on JI and CDM	Not yet decided	Not yet decided
Germany	Use of Kyoto mechanisms allowed at company level, no acquisition by government planned	ET, JI, CDM	Yes	No projected estimate as the amount will depend on private action
Greece	Not yet decided	Not yet decided	Not yet decided	Not yet decided
Ireland	Yes	ET	No	3.7 ^c
Italy	Yes	ET, CDM, JI	No	39.6
Luxembourg	Yes	ET, CDM, JI	No	3.0
Netherlands	Yes	CDM, JI	No	20.0 ^d (CDM and JI)
Portugal	Yes	ET, CDM, JI	No	No estimate provided ^e Studies on the use of JI/CDM initiated
Slovenia	Yes	ET, CDM, possibly JI	Not applicable (not yet decided for national Kyoto target)	Not yet decided
Spain	Yes	Priority on ET and CDM	No	20.0
Sweden	Not yet decided, under consideration (Pilot programme to gain experiences)	ET, CDM, JI	Yes	Investments made are estimated to amount to 1 Mton/year in emission credits
United Kingdom	Use of Kyoto mechanisms allowed at company level, no acquisition by government planned	ET, CDM, JI	Yes	No projected estimate as the amount will depend on private action

Notes:

^a The projected emission reduction through the use of Kyoto mechanisms for Austria, Ireland and Luxembourg stems from the Commission decisions on the national allocation plans of those countries (COM(2004) 500 final, COM(2004) 681 final). The Commission has based its decision on information provided in the NAPs and/or in further correspondence during the assessment of the NAPs. The figures for Belgium, Denmark, Italy, the Netherlands, Portugal and Spain are derived from the questionnaire, the 3rd national communication or the national allocation plan (for details see below).

^b Austria assumes in the questionnaire a maximum of 50 % of the efforts required for compliance with its burden sharing target to be accomplished by means of JI and CDM.

^c Ireland states in the questionnaire that it intends to purchase 3.7 million tonnes CO₂-equivalents per year from international emissions trading.

^d The Netherlands expect in the questionnaire a contribution of 100 million tonnes CO₂-equivalents from project based activities in 2008-12 (20.0 million tonnes CO₂-equivalents per year). By the end of 2004 99.0 million tonnes CO₂-equivalents have already been contracted, two thirds of which from CDM projects and the remaining third from JI.

^e Portugal assumes in the questionnaire a maximum of 50% of the additional efforts required (described as the difference, for each of the years of the commitment period, between emissions levels considering the effects of policies and measures, and the burden sharing target) will be accomplished by means of JI and CDM.

Source: EEA, 2005

Preliminary assessment of accounting for carbon sinks under the Kyoto Protocol: Ten EU Member States listed in Table A3 have provided preliminary quantitative projected annual estimates for net carbon stock changes under Article 3.3 of the Kyoto Protocol. Whereas Finland expects additional emissions, the other Member States listed expect net sequestration. Most of the countries have not yet taken a final decision with regard to accounting of Article 3.4 activities, except for Portugal and Slovenia.

Reported aggregated estimates of the Member States from activities under Articles 3.3 and 3.4 of the Kyoto Protocol would represent a net sequestration of about 33 million tonnes of CO₂ per year. This amount is composed of about 31 million tonnes CO₂-equivalent emissions per year for afforestation, reforestation and deforestation and about 2 million tonnes for forest management.³ No data is available so far regarding the quantitative contribution of other activities under Article 3.4 (cropland management, grazing-land management and re-vegetation).

Research implemented within the 6th RTD Framework Programme, namely the Integrated Project CARBOEUROPE, may contribute to elucidate the role of terrestrial ecosystems as carbon stocks, greenhouse gas sources and sinks and thereof improve the countries inventories in relation to land use management and forestry.

³ no removals under Article 3.4 of the Kyoto Protocol, were accounted for above the cap defined by Decision 12/CP.7, UNFCCC

Table A3: Preliminary projection of sinks from Member States (under Article 3.3)

Member State	Net carbon stock change during 2008–12 (million tonnes CO ₂ per year)	Type of carbon pools included
Austria	-0.7	Not indicated
Belgium	Estimates not yet available	-
Denmark	- 0.283	Forest biomass
Finland	+ 0.9	Not indicated
Ireland	- 13.7	Forest biomass
Italy	- 6.480	-
Netherlands	- 0.11	-
Portugal	- 1.393 to - 1.687	-
Slovenia	- 0.36	Not indicated
Spain	- 6.82	Not indicated
Sweden	Probably small net debit	-
United Kingdom	- 2.2	Above-ground and below-ground biomass, litter and soil organic matter
EU-15 total (9 Member States)	- 30.8 to – 31.1	

Note: Consistent with the reporting of emission inventories a negative sign ‘-’ is used for removals and a positive sign ‘+’ for emissions.

Source: Questionnaires submitted by Member States and 3rd national communications

These activities could help some Member States to meet their Kyoto commitments. Reported contributions by Ireland, Spain and Portugal are 25.4 %, 2%, and 2% of 1990 emissions respectively, and are the largest of the Member States.

2.2. Projected progress of EU-15

Assessment of the ‘with existing measures’ projections: The aggregated current ‘with existing measures’ projections reported by Member States show a decrease of 1.6% in GHG emissions by 2010 relative to the 1990 level without Kyoto mechanisms. This would constitute a shortfall of 6.4 percentage points with regard to the target of minus 8%. This gap of 6.4% represents about 265 million tonnes CO₂-equivalent per annum, it is smaller than last year’s reported gap of 7% as member States take steps to implement policies.

The EU-15 ‘with existing measures’ projections for individual gases suggest that the emissions of CO₂ will increase by 4 % between 1990 and 2010. Again, projections of GHG

emissions from the transport sector are of considerable concern. They indicate under the ‘*with existing measures*’ scenario a rise of about 31 % by 2010, compared to 1990. Road transport is by far the largest source in the transport sector (94 % in 2003) and both passenger and freight transport are projected to continue to increase. In particular, freight transport on roads increased by 51% in 2003 relative to 1990.

For CH₄ and N₂O decreases of 34% and 20% are projected over the period 1990 to 2010 for those countries that reported information on these gases. Ireland and Spain are the EU-15 countries which provided no information. Decreases are larger than those projected last year. On the other hand, for fluorinated gases a significant increase of 46% is projected by 2010 compared to the base year.

Accounting for Kyoto mechanisms: The quantified estimates on the use of Kyoto mechanisms by nine EU-15 Member States contribute about 2.5 % to the EU-15 Kyoto target of –8 %. With this figure, the aggregated current ‘*with existing measures*’ projections indicate a shortfall of some 3.9% with regard to the EU-15 Kyoto target by 2010.

Assessment of the ‘*with additional measures*’ projections: The projections reveal that even with additional policies and measures, the EU-15 will not achieve its Kyoto target. With additional measures alone, the EU-15 will decrease GHG emissions by 6.8%, considerably less than last year’s figure (7.7%). If 2.5% from the use of Kyoto mechanisms by nine Member states is included, this reduces emissions by 9.3% thus reaching the EU-15 collective Kyoto target (Figure 1). Ten EU-15 Member States, i.e. Austria, Belgium, Finland, France, Germany, Greece, Luxembourg, the Netherlands, Sweden and the United Kingdom expect to achieve their burden-sharing target, with additional measures and for some countries with the use of Kyoto mechanisms. Most of the GHG savings of additional policies and measures, in absolute terms, are expected to come from further reductions in CO₂.

Reporting: It should be noted, however, that there is still scope for improving the completeness, quality and timeliness of the projections provided. Overall quality generally suffers from uncertainties related to:

- Information not reported under the Monitoring Mechanism: two EU-15 Member States for whom the ‘*with existing measures*’ projection does not indicate compliance with their Kyoto target (Denmark and Ireland) did not provide a ‘*with additional measures*’ projection, only ten EU-15 Member States reported new complete projections in 2005 (Belgium, Denmark, Finland, Germany, Greece, Italy, the Netherlands, Portugal, Sweden and the United Kingdom);
- the level of implementation of policies and measures;
- the methodologies used for the projections and their reporting.

Table A4: Reporting of new information in 2005 on policies and measures and projections

Country	New policies and measures reported in 2005?	New projections reported in 2005?
Austria	No	Yes(Partial up-date)
Belgium	Yes	Yes
Cyprus	No	No
Czech Republic	No	Yes
Denmark	Yes	Yes
Estonia	Yes	No
Finland	Yes	Yes
France	No	No
Germany	Yes	Yes
Greece	Yes	Yes
Hungary	No	No
Ireland	Yes	NAP 2004
Italy	Yes	Yes
Latvia	Yes	Yes
Lithuania	Yes	Yes
Luxembourg	No	No
Malta	No	No
Netherlands	Yes	Yes
Poland	No	No
Portugal	Yes	Yes
Slovak Republic	Yes	Yes
Slovenia	Yes	Yes
Spain	No	No
Sweden	Yes	Yes
United Kingdom	Yes	Yes

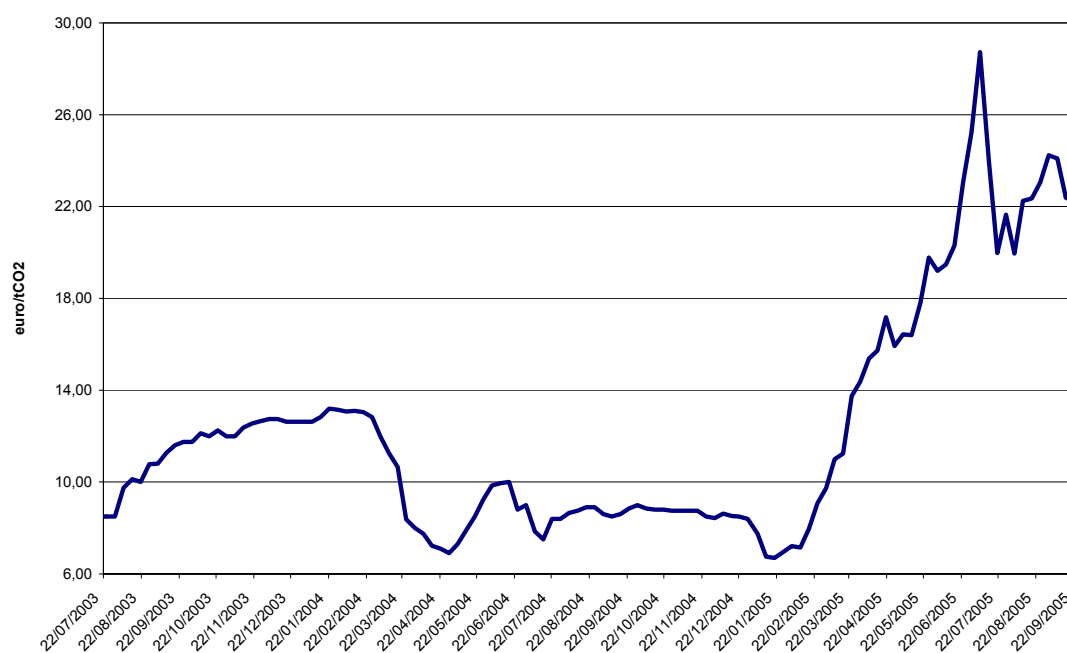
2.3. Common and Co-ordinated Policies and Measures (CCPMs) of the EC and the EU Emissions Trading Scheme (EU-ETS)

Since 2000, the European Climate Change Programme (ECCP) has been the Commission's main instrument to develop, prepare and implement CCPMs at Community level to help Member States and the EU to meet their Kyoto commitments. Since last year's progress report, work has continued in EU institutions on the implementation of CCPMs. A comprehensive overview of the state of play of the relevant climate change CCPMs can be found in Annex 5.

The legislative measures currently in force or already proposed by the Commission would - according to the ex-ante ECCP estimates - result in potential emissions reductions of about 420-490 million tonnes CO₂-equivalents in the EU-15. This figure does not include the proposed eco-design of products framework directive, which has a maximum technical potential ex-ante estimate of around 180 MtCO₂. However, the actual reductions will depend upon the strength of subsequent daughter directives. In order to better evaluate the EU's ability to meet its Kyoto targets, the Commission intends to intensify its efforts to evaluate the effects of EU and national policies and measures.

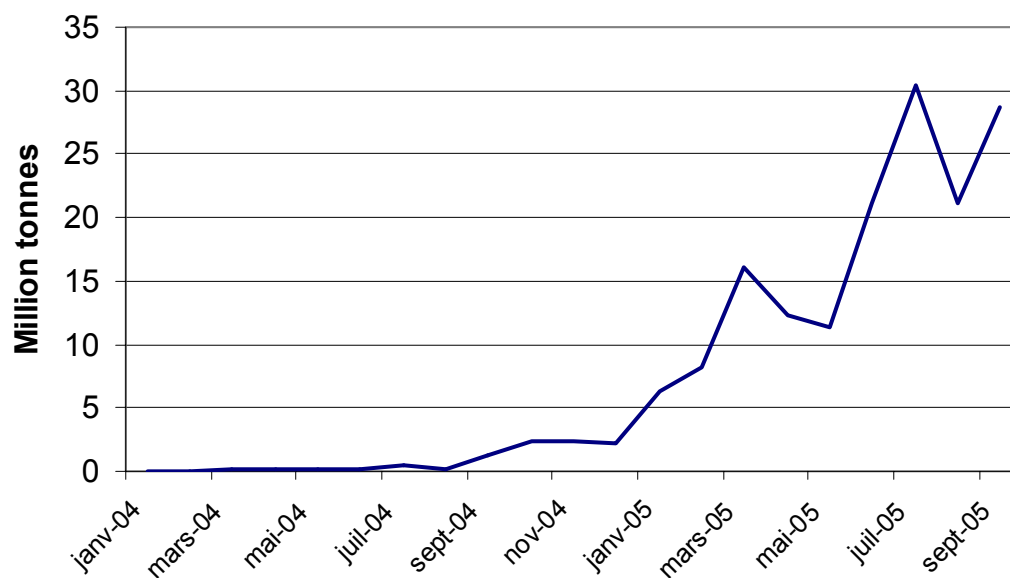
The latest achievement within the EU has been the adoption of directives that culminated in the start of the EU-wide Emissions Trading Scheme in January 2005. The EU-ETS is the largest company-level trading system for CO₂ emissions in the world. The scheme covers installations representing close to half of the CO₂ emissions from the EU-25. These installations covered by the system are allocated permits by governments that allow them to emit a certain tonnage of CO₂ each year. Those that emit less than their allocation can sell the surplus allowances. Those that expect to emit more than their allowance have the option of either investing in ways to reduce their emissions or of buying additional allowances on the market. Companies can use credits from Kyoto flexible mechanisms to help comply with their obligation. This means the system will not only provide a cost-effective means for EU-based industries to cut their emissions but will also create additional incentives for businesses to invest in emission-reduction projects outside the EU. This investment will contribute to the transfer of technologies to developing nations. The first trading period is from 2005 to 2007, with a second trading period covering 2008 to 2012. The price of carbon allowances and the monthly volume of allowances traded are shown below in Figure A7 and Figure A8 respectively indicating a dynamic market in particular since the beginning of 2005. The allowances allocated in the first period of the EU ETS represent 44.5% of the total emissions for 2003. Europe now has a real «Carbon Market», which puts a price on greenhouse gas emissions and requires companies to take the costs of these emissions into account in their activities.

Figure A7: Price of emission allowances under the EU Emissions Trading Scheme



www.pointcarbon.com

Figure A8: Monthly volumes of traded emission allowances under the EU Emissions Trading Scheme



www.pointcarbon.com

3. GREENHOUSE GAS EMISSIONS IN CANDIDATE COUNTRIES

Table A5 shows the emissions, trends and projections of GHG emissions in the Candidate Countries Bulgaria, Croatia and Romania. No data are yet available for Turkey, no projections are available for Croatia. Bulgaria and Romania are on track to reach their reduction targets under the Kyoto Protocol even though emissions increased relative to last year in all three countries. Romania could even reduce its GHG emissions by more than 40 % since the base year.

Table A5: GHG emissions in the base year and projections in Candidate Countries

	GHG emissions for base year (Mt CO ₂)	Reduction target (in %)	GHG emissions 2003 (Mt CO ₂)	Change 2003 relative to base year (in %)	Change 2003 relative to 2002 (in %)	Distance-to target indicator 2003 (index points)	Gap between projections and target (in % of base year) with measures	Gap between projections and target (in % of base year), with additional measures
Bulgaria	138	-8.0	69.2	-50.0	+8.9	-44.8	-36	-40
Croatia	32	-5.0	29.9	-6.0	+5.2	-2.7	n.a.	n.a.
Romania	265	-8.0	142.9	-46.1	+5.1	-40.9	-26	-28

Annex 1: Data Basis

EU-25 compliance with UNFCCC and Kyoto Protocol reporting obligations and the evaluation of actual progress depends upon the timely availability of the relevant national inventories and projections. The inventories from the EU-15 Member States are of special importance because the inventory of the EC as a Party to the Kyoto Protocol is compiled from these data only. The EU-15 Member States were required to submit 2003 inventory data by 15 January 2005 according to the new Council Decision concerning a mechanism for monitoring Community GHG emissions and for implementing the Kyoto Protocol (280/2004/EC), which entered into force in March 2004.

Data completeness has not improved compared to the previous year. Gaps still exist as shown in the following table.

Table A6: Gaps in reporting for EU Member States

Country	Years	Gas	Sectors
Cyprus	1990-2003	HFC, PFC, SF ₆	Industrial processes
Czech Republic	1991, 1993	All	All
Czech Republic	1990-94	HFC, PFC, SF ₆	Industrial processes
Estonia	1990-2003	HFC, PFC	Industrial processes
Greece	1990-2003	SF ₆	Industrial processes
Ireland	1990-94	SF ₆	Industrial processes
Lithuania	1991-97, 1999-2000	CO ₂ , CH ₄ , N ₂ O	All
Lithuania	1990-2000	HFC	Industrial processes
Lithuania	1990-2003	PFC, SF ₆	Industrial processes
Luxembourg	1991-93	CO ₂ , CH ₄ , N ₂ O	All (sub-categories)
Luxembourg	1990-97; 1999	HFC, PFC, SF ₆	Industrial processes
Malta	2001-03	All	All
Poland	2003	CO ₂ , CH ₄ , N ₂ O	All
Poland	1990-94; 2003	HFC, PFC, SF ₆	Industrial processes

The future effects of both implemented and proposed policies and measures are used to assess the projected progress towards fulfilling commitments under the Kyoto Protocol. Reporting of projections for total GHG emissions for 2010 and new or updated policies and measures is shown in Table A4. The quality of reporting on projections varied considerably between different Member States and had hardly improved compared with last year's reporting. In the EU-15, Germany, Italy, Luxembourg and Spain did not deliver projections for all gases, nor for all sectors. Ireland did not give projections for all gases, Luxembourg did not give projections for all sectors. Therefore, for the EU-15, an analysis of the effects of policies and measures is only possible to a limited extent.

The new Member States were, for the first time this year, required to submit yearly inventories and projections under Decision 280/2004/EC. Reporting was not complete. No projections were available for Cyprus and Malta. Estonia, Hungary, Lithuania and Poland did not report projections for all gases, the Czech Republic, Estonia, Hungary and Poland did not report projections for all sectors - in particular, projections for the transport sector were missing.

Annex 2: Greenhouse gas emissions in CO₂-equivalents (excl.LULUCF emissions and removals) and Kyoto Protocol targets for 2008-2012⁴

	Base year (Mt CO ₂)	GHG emissions 2003 (Mt CO ₂)	Change 2002 - 2003 (in %)	Change 2003 relative to base year (in %)	EU burden- sharing and Kyoto targets (in %)	Distance to target indicator (index points)
Austria	78,5	91,6	+5,9 %	+16,6 %	-13,0 %	+25,0 (+19,2)
Belgium	146,8	147,7	+1,6 %	+0,6 %	-7,5 %	+5,5 (+1,8)
Cyprus	6,0	9,2	+5,3 %	+52,8 %	no target	no target
Czech Republik	192,1	145,4	+1,8 %	-24,3 %	-8,0 %	-19,1
Denmark	69,6	74,0	+7,3 %	+6,3 %	-21,0 %	+20,0 (+15,8)
Estonia	43,5	21,4	+9,7 %	-50,8 %	-8,0 %	-45,6
Finland	70,4	85,5	+10,8 %	+21,5 %	0,0 %	+21,5 (+21,0)
France	568,0	557,2	+0,7 %	-1,9 %	0,0 %	-1,9
Germany	1248,3	1017,5	+0,2 %	-18,5 %	-21,0 %	-4,8
Greece	111,7	137,6	+3,1 %	+23,2 %	+25,0 %	+7,0
Hungary	122,2	83,2	+3,0 %	-31,9 %	-6,0 %	-28,0
Ireland	54,0	67,6	-2,6 %	+25,2 %	+13,0 %	+16,7 (+12,3)
Italy	510,3	569,8	+2,7 %	+11,6 %	-6,5 %	+15,9 (+10,8)
Latvia	25,4	10,5	-0,9 %	-58,5 %	-8,0 %	-53,3
Lithuania	50,9	17,2	-12,1 %	-66,2 %	-8,0 %	-61,0
Luxembourg	12,7	11,3	+4,3 %	-11,5 %	-28,0 %	+6,7 (-8,6)
Malta	2,2	2,9	-0,5 %	+29,1 %	no target	no target
The Netherlands	213,1	214,8	+0,6 %	+0,8 %	-6,0 %	+4,7 (-1,4)
Poland	565,3	384,0	+3,7 %	-32,1 %	-6,0 %	-28,2
Portugal	59,4	81,2	-5,3 %	+36,7 %	+27,0 %	+19,1
Slovakia	72,0	51,7	-1,3 %	-28,2 %	-8,0 %	-23,0
Slovenia	20,2	19,8	-1,2 %	-1,9 %	-8,0 %	+3,3
Spain	286,1	402,3	+0,9 %	+40,6 %	+15,0 %	+30,9 (+26,3)
Sweden	72,3	70,6	+1,5 %	-2,4 %	+4,0 %	-5,0
The United Kingdom	751,4	651,1	+1,1 %	-13,3 %	-12,5 %	-5,2
EU-15	4252,4	4179,6	+1,3 %	-1,7 %	-8,0 %	+3,5 (+1,9)
EU-10	1099,8	745,5	+2,7 %	-32,2 %	-6,7 %	-28,4
EU-25	5352,2	4925,1	+1,5 %	-8,0 %	-7,7 %	-2,9 (-4,2)

Source: EEA, 2005

⁴

In the Council decision on the approval by the EC of the Kyoto Protocol the different commitments of the Member States are expressed as percentage change from the base year. In 2006 the respective emission level shall be expressed in terms of tonnes of carbon dioxide equivalent. In this connection, the Council of Environment Ministers and the Commission have a joint statement to take the agreed total into account, i.a. the assumptions in Denmark's statement to the Council Conclusion from June 16-17 1998 relating to the base year emissions.

Annex 3: Targets for 2008-12, compared with projected GHG emissions (excluding use of Kyoto Mechanisms)

	GHG emissions for base year (Mt CO ₂) (used for projections assessment)	EC burden sharing and Kyoto target		With existing policies and measures				With additional policies and measures			
		Commitment (in % of base year)	Emissions limit (Mt CO ₂) (derived from base year)	Projections for 2010		Gap between projections and target		Projections for 2010		Gap between projections and target	
				(Mt CO ₂)	(in % of base year)	(Mt CO ₂)	(in % of base year)	(Mt CO ₂)	(in % of base year)	(Mt CO ₂)	(in % of base year)
Austria	77,6	-13,0 %	67,5	84,4	+8,7 %	+16,9	+21,7 %	70,5	-9,2 %	3,0	+3,8 %
Belgium	144,0	-7,5 %	133,2	148,4	+3,1 %	+15,2	+10,6 %	140,9	-2,2 %	7,7	+5,3 %
Czech Republik	192,1	-8,0 %	176,8	143,6	-25,3 %	-33,2	-17,3 %	141,2	-26,5 %	-35,6	-18,5 %
Denmark	69,6	-21,0 %	55,0	72,5	+4,2 %	+17,5	+25,2 %	no data	no data	no data	no data
Estonia	43,5	-8,0 %	40,0	18,9	-56,6 %	-21,1	-48,6 %	17,4	-60,0 %	-22,6	-52,0 %
Finland	70,5	0,0 %	70,5	79,7	+13,2 %	+9,3	+13,2 %	71,1	+0,9 %	0,6	+0,9 %
France	545,0	0,0 %	545,0	594,3	+9,0 %	+49,3	+9,0 %	536,0	-1,7 %	-9,0	-1,7 %
Germany	1248,3	-21,0 %	986,2	1000,9	-19,8 %	+14,7	+1,2 %	985,7	-21,0 %	-0,5	-0,0 %
Greece	111,7	+25,0 %	139,6	150,4	+34,7 %	+10,8	+9,7 %	139,5	+24,9 %	-0,1	-0,1 %
Hungary	101,7	-6,0 %	95,6	95,6	-6,0 %	+0,0	+0,0 %	95,6	-6,0 %	0,0	+0,0 %
Ireland	53,4	+13,0 %	60,4	71,3	+33,4 %	+10,9	+20,4 %	no data	no data	no data	no data
Italy	509,4	-6,5 %	476,3	580,4	+13,9 %	+104,1	+20,4 %	530,1	+4,1 %	53,8	+10,6 %
Latvia	25,3	-8,0 %	23,3	13,7	-46,1 %	-9,7	-38,1 %	13,0	-48,6 %	-10,3	-40,6 %
Lithuania	51,0	-8,0 %	46,9	25,2	-50,6 %	-21,7	-42,6 %	no data	no data	no data	no data
Luxembourg	12,7	-28,0 %	9,2	9,9	-22,4 %	+0,7	+5,6 %	no data	no data	no data	no data
The Netherlands	212,9	-6,0 %	200,1	220,3	+3,5 %	+20,2	+9,5 %	214,8	+0,9 %	14,6	+6,9 %
Poland	498,5	-6,0 %	468,6	438,4	-12,1 %	-30,2	-6,1 %	438,4	-12,1 %	-30,2	-6,1 %
Portugal	59,4	+27,0 %	75,5	90,4	+52,1 %	+14,9	+25,1 %	84,5	+42,2 %	9,0	+15,2 %
Slovakia	72,1	-8,0 %	66,3	57,9	-19,7 %	-8,4	-11,7 %	56,8	-21,3 %	-9,6	-13,3 %
Slovenia	20,2	-8,0 %	18,6	21,2	+4,9 %	+2,6	+12,9 %	20,3	+0,3 %	1,7	+8,3 %
Spain	207,0	+15,0 %	238,1	307,0	+48,3 %	+69,0	+33,3 %	265,0	+28,0 %	27,0	+13,0 %
Sweden	72,2	+4,0 %	75,1	71,5	-1,0 %	-3,6	-5,0 %	no data	no data	no data	no data
The United Kingdom	751,7	-12,5 %	657,7	598,8	-20,3 %	-58,9	-7,8 %	no data	no data	no data	no data
EU15	4145,4	-8,0 %	3813,8	4080,2	-1,6 %	+266,5	+6,4 %	3862,0	-6,8 %	48,2	+1,2 %
EU8	1004,4	-6,8 %	936,1	814,3	-18,9 %	-121,7	-12,1 %	807,8	-19,6 %	-128,3	-12,8 %
EU23	5149,8	-7,8 %	4749,8	4894,6	-5,0 %	144,8	2,8 %	4669,8	-9,3 %	-80,1	-1,6 %

Source: EEA, 2005

Notes: For projected emissions gaps, plus figures signify that the target is not met, while minus figures mean a projected over-delivery of emissions. Base year emissions used for projections assessment differ from base year emissions from the emission inventories for some countries. Gaps for total EC in terms of Mt CO₂-equivalents are not equal to the sum of MS' gaps due to a slight inconsistency between the MS's burden sharing targets and the EC's Kyoto target. Existing policies and measures are those for which one or more of the following applies: (a) national legislation is in force; (b) one or more voluntary agreements have been established; (c) financial resources have been allocated; (d) human resources have been mobilised; (e) an official government decision has been made and there is a clear commitment to proceed with implementation. Additional (planned) policies and measures are options under discussion with a realistic chance of being adopted and implemented in future. For countries not providing scenarios with additional policies and measures the scenarios for existing measures are taken for the overall figures for projections (EU-15, EU-8 or EU-25).

Annex 4: Progress with common and co-ordinated policies and measures

Proposed measure	Status of implementation	Entry into force	Starting to deliver (estimate)
Cross-cutting issues			
Directive establishing a scheme of GHG emission trading within the Community	Adopted by Council and Parliament ⁵	2003	2005
Directive Linking project based mechanisms to GHG emissions trading	Adopted ⁶	2004	2005
Decision for monitoring Community GHG emissions and for implementing the Kyoto Protocol	Adopted by Council and Parliament ⁷	2004	2005
Review of the IPPC (Integrated Pollution Prevention and Control Directive)	Review launched in 2004 aimed at streamlining IPPC implementation in light of other legislation such as the Large Combustion Plant and Waste Incineration Directives. It is expected to be completed by 2007.	-	
Intelligent Energy Europe Programme	Incorporates previous SAVE and ALTENER programmes. First phase of funding from 2003-2006. Second phase of programme from 2007-2013	-	
Environmental Technologies Action Plan	Adopted in 2004 ⁸		
Energy			
Various Directives aimed at developing the internal market for gas and electricity	Various directives adopted by Council and Parliament from 2002-2004 to continue liberalisation the EU's energy markets ^{9,10,11,12,13}	2002-2004	ongoing
Directive on taxation of energy products	Adopted by the Council ¹⁴ .	2003	2005
Directive on energy performance of buildings	Adopted by Council and Parliament ¹⁵	2003	2006
Directive on the promotion of electricity from renewable energy sources	Adopted by Council and Parliament ¹⁶	2001	2003
Directive establishing a framework for the setting of ecodesign requirements for energy using products	Adopted by Council and Parliament ¹⁷	2005	2007

⁵ 2003/87/EC from 13/10/03, OJ L275, 25/10/2003, p.32-46

⁶ Directive 2004/101/EC of 27/10/2004 amending Directive 2003/87/EC
⁷ 280/2004/EC, OJ L 49 of 11/02/2004, p.1-8

⁸ COM(2004) 38 final - of 28/1/2004

⁹ Decision No 1229/2003/EC repealing Decision No 1254/96/EC
¹⁰ Regulation (EC) No 807/2004 of 21/4/2004 amending Council Regulation (EC) No 2236/95
¹¹ Directive 2003/54/EC of 26/6/2003 repealing Directive 96/92/EC
¹² Directive 2003/55/EC of 26/06/2003 repealing Directive 98/30/EC
¹³ Regulation (EC) No 1228/2003 of 26/06/2003

¹⁴ 2003/96/EC, OJ L 283 of 31/10/2003

¹⁵ 2002/91/EC, OJ L 001 of 04/01/2003, p.65-71

¹⁶ 2001/77/EC, OJ L 283 of 27/10/2001, p.33-40

¹⁷ Directive 2005/32/EC, 6th of July 2005

Proposed measure	Status of implementation	Entry into force	Starting to deliver (estimate)
Proposal for a Directive on energy end-use efficiency and energy services	Proposal adopted by the Commission ¹⁸	-	
Directive on the promotion of cogeneration (CHP)	Adopted by Council and Parliament ¹⁹	2004	2006
Campaign for sustainable energy	Started in 2004, and incorporates previous campaign for take-off. Due to run until 2007	-	
Research Fund for Coal and Steel	Following expiration of the European Coal and Steel Community treaty in 2002 remaining funds have been transferred into dedicated RTD programme with ongoing calls for proposals.	-	
Action plan for energy from biomass	Completion of plan expected by end of 2005	-	
Transport			
Voluntary commitment of the car manufacturers from EU, Japan and Korea to reduce fleet average CO ₂ emissions to 140g/km by 2008/2009 (pre ECCP)	Monitored through yearly report 4 th Review in 2003 ²⁰	1998	1999
Shifting the balance between modes of transport, in particular towards rail transport	Rail infrastructure Package ²¹ , the second railway package ²² and the proposal for the third railway package ²³ , in accordance with the White Paper on a Common Transport Policy adopted	2001 - 2006	2003 - 2008
Proposal for improvements in infrastructure use and charging	Proposal to amend the current "Eurovignette" directive adopted by the Commission ²⁴		
Directive on the promotion of the use of bio-fuels for transport	Adopted by Council and Parliament ²⁵	2003	2005
Proposal on a regulation on the granting of Community financial assistance to improve the environmental performance of the freight transport system (Marco Polo I and II program)	Proposal adopted by the Commission ²⁶		
Agriculture			
Common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers (Cross-compliance, single payment scheme, carbon	Adopted ²⁷ and implemented 2005	2003	2005

¹⁸ COM(2003)739 final

¹⁹ 2004/8/EC, OJ L 52 of 21/02/2004, p.50-60

²⁰ COM(2004) 78 final of 11/02/2004

²¹ 2001/12/EC, 2001/13/EC and 2001/14/EC, OJ L 75 of 15/3/2001, p.1-25, 26-28 and 29-46

²² Regulation 881/2004 of 29/04/2004, OJ L 164 of 30/04/2004, p.1-43, Corrigendum OJ L 220 of 21/6/2004, p.3-15; 2001/49/EC of 29/04/2004, OJ L 164 of 30/4/2004, p.44-113, Corrigendum OJ L 220 of 21/6/2004, p.16-39, 001/50/EC, OJ L 164 of 30/04/2004, p.114-163, Corrigendum OJ L 220 of 21/6/2004, p.40-57; 2001/51/EC, OJ L 164 of 30/04/2004, p.164-172, Corrigendum OJ L 220 of 21/6/2004, p.58-60

²³ http://europa.eu.int/comm/transport/rail/package2003/new_en.htm

²⁴ COM(2003)448 of 23.07.2003

²⁵ 2003/30/EC, OJ L 123 E of 17/05/2003, p.42-46

²⁶ Regulation EC No.1382/2003, OJ L 196 of 02.08.2003, p.1-6

²⁷ Regulation 1782/2003, OJ L 270 of 21.10.2003, p.1

Proposed measure	Status of implementation	Entry into force	Starting to deliver (estimate)
credit for energy crops)			
Support for rural development from the European Agricultural Guidance and Guarantee Fund (EAGGF):Up to 31 st December 2006	Adopted ²⁸	2003	2005
Support for rural development from the European Agricultural Fund for Rural Development (EAFRD) : period 2007-2013	Adopted ²⁹	2005	
Forestry			
EU Forest Strategy	Adopted in 1999 ³⁰ and implementation has been ongoing since	-	
Industry			
Proposal for legislative action on fluorinated gasses	Proposal adopted by the Commission ³¹ -in co-decision	-	
Waste			
Landfill Directive	Adopted ³²	1999	2000
Waste Incineration Directive	Adopted ³³	2002	2005

²⁸ Regulation 1783/2003, OJ L 270 of 21.10.2003, p.70

²⁹ Regulation 1698/2005, OJ L 277 of 21.10.2005, p. 1

³⁰ "Council Resolution of 15th December 1998 on a forest strategy for the European Union (1999/C 56/01", Dec 98.

³¹ COM (2003) 492 of 11/08/2003

³² 1999/31/EC, OJ L 182 of 16/07/99, p.1-19

³³ Directive 2000/76/EC – 4/12/2000