



**Environmental  
Factsheet No. 15  
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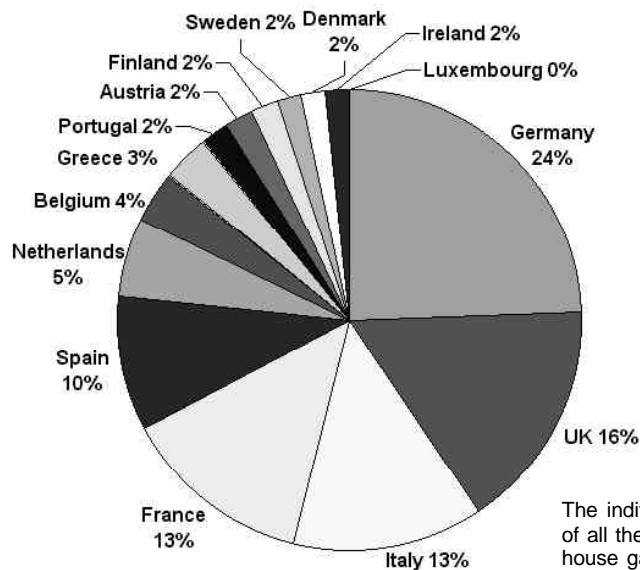
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## EU ON CLIMATE CHANGE: TARGETS, STRATEGIES AND LEGISLATION



A FIRST STRATEGY to limit emissions of carbon dioxide and improve energy efficiency in the EU was proposed by the Commission in 1991 – a year before the UN Framework Convention on Climate Change was signed.

The EU was among the most active in the negotiations leading to the Kyoto protocol to the climate convention, urging the industrialized countries to reduce their emissions of the main greenhouse gases – carbon dioxide, methane and nitrous oxide – by 15 per cent between 1990 and 2010, with an interim target of 7.5 per cent for 2005.

### Commitments under the Kyoto protocol

When the protocol was finally signed in 1997, the EU had committed itself to reducing emissions of the six gases included in it by 8 per cent for the period 1990 to 2008-12. That will amount to a reduction of the annual emissions by 336 million tons of CO<sub>2</sub> equivalents.

EU's ratification of the protocol was agreed by the Council of Ministers in April 2002. The relevant directive (2002/358/EC) also put into law the previously agreed burden sharing among the member states (see Fig. 1). The fact of its now being law means, among other things, that each country must fulfill its commitment – no one country can, for instance, reduce its quota by claiming that another has brought down its emissions more than needed. The directive sets however no limit for member countries to meet their

commitments by buying emission rights from countries outside the EU.

### Short and long-term aims

Combating climate change was one of the items in the **Strategy for Sustainable Development** that was adopted by the European Council<sup>1</sup> in June 2001, but the strategy says little more than that the EU has to fulfill its commitments under the Kyoto protocol, and supports the aims set forth by the Commission in its proposal for Sixth Environment Action Programme, and that the target of the directive for renewable energy – to ensure that 22 per cent of the gross electricity supply shall be coming from renewables by 2010 – shall remain unchanged.

The **Sixth Community Environment Action Programme**, adopted in 2002 (1600/2002/EC), lays the foundation for EU activity in this field during the next ten years, with climate change as one of four priority areas for urgent action. The objective is said to be “to stabilize the atmospheric concentrations of greenhouse gases at a level that will not cause unnatural variations of the earth's climate,” which is just about what it says in Article 2 of the UN climate convention.

While noting that a short-term target for the EU must be to meet its commitments un-

<sup>1</sup> Attended by members' prime ministers and foreign ministers, as well as some heads of state, the European Council rarely passes measures having legal force.

der the Kyoto protocol it adds that according to experts' estimates the global emissions will have to be reduced by 70 per cent to meet the long-term objective. As a medium-term aim those emissions should be brought down, through international agreement, by 20-40 per cent from 1990 to 2020. The need "to move towards a global equitable distribution of greenhouse gas emissions" is also emphasized.

Mentioned, too, are some of the indicative targets included in various directives, such as that 12 per cent of the energy used in 2010 must come from renewables, and that combined heat-and-power shall then constitute 18 per cent of gross electricity generation.

The Council of Environment Ministers had further laid down, in a statement dated October 17, 2002, that "global efforts should be guided by a long-term objective of a [maximum] global temperature increase of 2 degrees Celsius over pre-industrial levels and a stabilization of CO<sub>2</sub> concentrations below 550 ppm."<sup>2</sup>

### European Climate Change Programme

In October 1999 the Council of Environment Ministers requested the Commission to put forward a list giving priority to the actions and policy measures needed for achievement of the EU's Kyoto commitment. The Commission subsequently started on the European Climate Change Programme (ECCP) in June 2000. A year later, following collaboration with groups of representatives of the EU member countries and other interested parties, a report was produced with their findings.

That report identified 42 possible measures that could lead to reducing the emissions of CO<sub>2</sub> equivalents by 664-765 million tons annually at a cost of less than 20 euros per ton – that reduction being about double what is required of the EU for the first period of the Kyoto protocol.

Then in October 2001 the Commission followed up with a plan of action (COM(2001)580) to implement the first phase of the ECCP, outlining the priorities the Commission had set itself to carry out in 2002 and 2003. A proposal for a directive for ratification of the Kyoto protocol was put forward at the same time (see above), and also for a system of trading in emission quotas (see below).

A second ECCP report was published in April 2003, giving an overview of the work done in the various working groups,

<sup>2</sup> According to the researchers' estimate in the IPCC's third assessment report of 2001, the concentrations of CO<sub>2</sub> would however have to be limited to 450 ppm or less if the 2 per cent mark is to be attained.

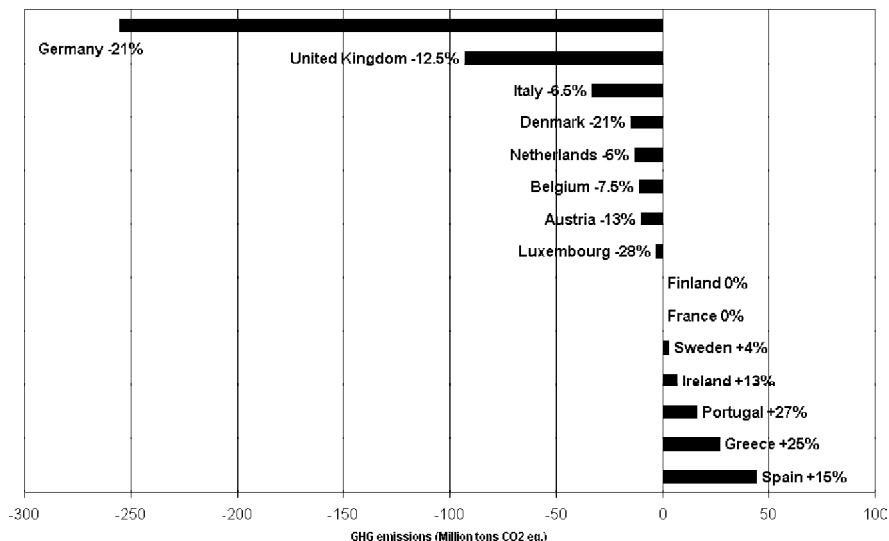


Fig. 1. How the EU commitment under the Kyoto protocol has been allocated among the member countries, showing the reductions or increases in per cent that will be required of each country between the base year and 2008-12. The columns show how the annual emissions of greenhouse gases from each country must be changed during the same period (expressed as million tons of CO<sub>2</sub> eq.). The overall figure of 8 per cent will mean a reduction of 336 million tons.

concerning for instance flexible mechanisms and an investigation of the potential for carbon sequestration in soils and forests. It also gives a general account of the follow-up work for the implementation of measures that were identified in the first phase of the program.

### Trading in emission allowances

When the EU undertook, under the Kyoto protocol, to reduce its emissions as whole by 8 per cent from 1990 levels by 2008-2012, it argued that the target should be met primarily through reductions within the EU itself.

In October 2001 the Commission proposed a system of trading between the member countries (COM(2001)581 Final). After a compromise between the Council of Ministers and the parliament, a directive was agreed in the summer of 2003 (2003/87/EC). It allows limited trading in carbon-dioxide emissions from certain sectors, comprising altogether about 10,000 plants. It is to start in 2005. The intention was to ensure that the private sector would find the most cost-effective ways of reducing its emissions of CO<sub>2</sub>. Each country will have to inform the Commission, at the latest by March 2004, of the way in which it intends to allocate its quotas. Provided the Kyoto protocol has by then entered into force, trading at a global level will start in 2008.

When once the rules for trading within the EU had been adopted, the Commission proposed a way of making the internal trading scheme compatible with the flexible mechanisms of the Kyoto protocol (in COM(2003)403). The aim of this

"linking directive" is to enable an EU company to bring about a reduction of emissions in some other part of the world and count the gain as a credit in the EU scheme. Such projects would however have to fulfill the requirements of the Kyoto protocol. The proposal is now (March 2004) being discussed between the Council of Ministers and the parliament.

### Energy and transportation – general

There are several programs, white papers,<sup>3</sup> directives and so forth that are likely to affect, directly or indirectly, EU emissions of greenhouse gases.

In the Commission's **green paper<sup>4</sup> on a European strategy for the security of energy supply** (COM(2000)769 Final), presented in 2000, it was noted that fossil fuels account for four fifths of total energy use, and that two thirds of the current need has to be imported. Since the EU's sources of energy are limited, more efficient use was urged as a means of reducing dependence on foreign sources in times of crisis – a line that was generally supported in the replies to the Commission (COM(2002)321 Final).

**Integrated pollution prevention and control** (96/61/EC). The IPPC directive applies to large industrial and agricultural installations. To obtain IPPC permits, op-

<sup>3</sup> Commission White Papers are documents containing proposals for EU action in a specific area. In some cases they follow a Green Paper published to launch a consultation process at EU level.

<sup>4</sup> A green paper essentially provides matter for discussion.

erators must demonstrate that they are using the best available techniques (BAT) to control all kinds of pollution. They must also, in principle, be using energy efficiently, although this requirement has been partly overridden by the emissions trading directive. Work on developing a “horizontal” BREF (best available techniques reference document) on energy efficiency was scheduled to start in 2003. Industries covered by the emissions trading directive (most of those requiring IPPC permits), will not be required to reduce their CO<sub>2</sub> emissions in order to receive such a permit. When the emissions trading has been expanded to cover other greenhouse gases as well, the emissions of these gases may also be exempted.

**Liberalization of the electricity and gas markets** (2003/54/EC). The markets are to be opened for non-household users by July 2004, and for all users by July 2007. The directive does not require however any declaration of the energy’s source or of its effects on the environment, as the parliament and others had demanded. An expected effect of the directive is that gas will be favoured at the expense of coal, with a consequent lowering of the emissions of CO<sub>2</sub>. Lower prices for electricity may on the other hand result in an increased use of energy and slower modernization in this sector.

In a **white paper for a common transport policy** (COM(2001)370), the Commission explains how it intends to act, saying that it will be important to break the connection between increased economic growth and increased transportation. One aim will be to bring back the modal split in the transportation sector to its 1998 level by 2010. Some sixty measures are proposed that have either already been put forward by the Commission or will be. These include charging for use of the infrastructure and liberalization of the railways. Environmentalists regard the white paper more as a means of solving

the problem of congestion that creating a sustainable transportation system.

**Public procurement.** After a compromise between the parliament and the Council of Ministers, rules were adopted in December 2003, making it possible to set environmental requirements and make them the criterion for acceptance of bids. It has emerged from work on the Climate Change Programme (ECCP) that a directive on energy-efficient public procurement, aimed at directing the demand from the public sector for energy and energy-using equipment, would enable emissions to be reduced by 25-40 million tons of CO<sub>2</sub> equivalents a year, at a cost for the most part of less than 20 euros per ton.

#### Economic instruments

**Minimum taxation of energy products and electricity** (2003/96/EC). Besides setting new minimum rates for the taxation of mineral oils, this directive adds similar ones for electricity, gas and coal. The still low rates and various exceptions to individual countries will mean however that there will be little effect on the emissions of greenhouse gases. There is to be no revision of the rates before 2012. An amendment to allow the accession countries temporarily to apply excise duty exemptions or lower rates of duty was presented by the Commission in January 2004 (COM(2004)42).

#### Proper prices for transportation.

There are a number of documents and statements emphasizing the need to find methods for better internalization of the external costs of transportation in the EU – in other words to make it pay for the social costs it gives rise to. At the meeting of the European Council in Gothenburg in 2001, it was decided that the costs of all four modes of transportation should be internalized by 2004. The Commission is however only proceeding slowly with the matter, and the communication that is expected to precede a proposal for a

framework directive is still awaited. The framework directive will be succeeded by daughter directives for each mode.

**Charging of heavy goods vehicles for the use of certain infrastructures** (1999/62/EC). The so-called Eurovignette directive permits those member countries that so wish to charge vehicles weighing more than 12 tons for the use of the country’s motorways. The Commission has proposed alterations in the directive (COM(2003)448) so as to make it possible to make the charges dependent on the distance travelled and to include all vehicles of more than 3.5 tons – although still only on the main road network. A controversial part in the proposal is to earmark the accruing income for extension of the infrastructure.

#### Increased use of renewables

An all-inclusive document is the Commission’s **White paper for a Community Strategy and Action Plan on renewable sources of energy** (COM(97) 599 Final), proposing a doubling of renewable sources in the EU’s gross internal energy consumption, from 6 per cent in 1995 to 12 per cent in 2010. If necessary for achievement of the targets, the Commission should submit proposals that may include mandatory targets. A communication on implementation of the white paper was presented in 2001 (COM(2001) 69(01)).

**Electricity Production from Renewable Energy Sources** (2001/77/EC). Directive aiming at making 22 per cent of the electricity production come from such sources, as against 14 per cent in 1997. Sets indicative targets for each member country. The Commission calculates that if these targets should be attained, they will have the potential for reducing emissions by 100-125 million tons of CO<sub>2</sub> eq. per annum. The Commission is to report, before October 2005, on the extent to which national schemes in support of the directive have been applied, and on their effectiveness. If it appears appropriate, that report should be accompanied by a proposal for an EU framework for such schemes.

**Promotion of the use of biofuels or other renewable fuels for transport** (2003/30/EC). Each country is asked to bring about a 2-per-cent penetration of biofuels in petrol and diesel by December 2005, and further to 5.75 per cent by December 2010. Exception may be granted if there is little potential in the country for the production of biofuels, or if the biomass is being used for other purposes. Attainment of the indicative target will, in the Commission’s estimate, bring an

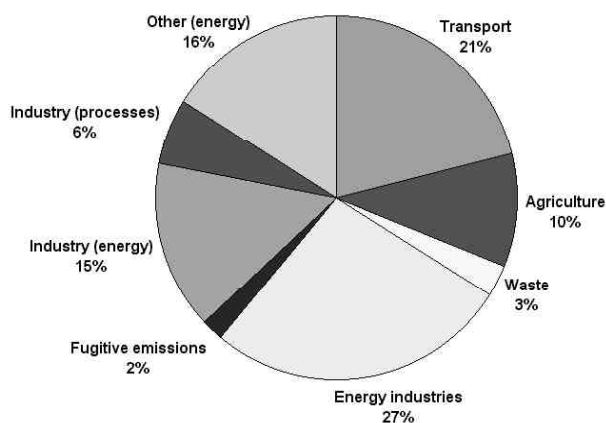


Fig. 2. The EU countries’ emissions of greenhouse gases in 2000, by sector.

Note. The distribution by sector has been made in accordance with the guidelines of the climate convention. The “Other (energy)” sector includes the use of energy by households, small commercial businesses, and services.

annual saving of 35-40 million tons of CO<sub>2</sub> equivalents, although at a relatively high cost of 100 euros per ton.

### More efficient use of energy

**Energy performance of buildings** (2002/91/EC). Since they account for as much as 40 per cent of the energy use in the EU, buildings mean much for the emissions of CO<sub>2</sub>. The directive contains a general framework for calculation of their energy performance and sets minimum requirements for new buildings as well as for existing ones of more than 1000 sq.m. when subject to major renovation. As from 2006 it will also require certification of buildings and regular inspection of boilers and air conditioning equipment. Besides bringing down the use of energy, many of the proposed measures are estimated to be profitable.

**Framework directive on the energy labelling of household equipment** (92/75/EC). This one has been followed by a series of daughter directives requiring energy labelling of refrigerators, freezers, washing machines, tumble dryers, dishwashers, lamps and air conditioners.

**A proposal for a directive on establishing a framework for the setting of eco-design requirements for energy-using products** (COM(2003)453). Aims at integrating environmental considerations as early as possible into the product development process. The proposal does not introduce directly binding requirements for specific products, but does define conditions and criteria for setting them.

**Reduced emissions of carbon dioxide from new cars.** After being threatened with legislation, the carmakers' three trade associations gave way to an agreement in 1998, stipulating that the average emission of CO<sub>2</sub> from new cars sold in the EU shall have been reduced to 140 grams per kilometre, or by 25 per cent from 1995 to 2008-09 (COM(98)495 and COM(99)446).

The aim for the EU is however to get the emissions from new cars down to 120 grams per kilometre, by 2010 at the latest (COM(95)689 Final). To meet the difference of 20 g/km, there is also a directive on the compulsory labelling of new cars for fuel economy and CO<sub>2</sub> emissions (1999/94/EC). Economic instruments to influence consumers' choice are also envisaged. The Commission has issued a communication (COM(2002)431) on the taxation of passenger cars proposing that the member countries differentiate vehicle taxing on the basis of the CO<sub>2</sub> emissions. It met with a positive reception from parliament, but still remains to be dealt with in the Council of Ministers.

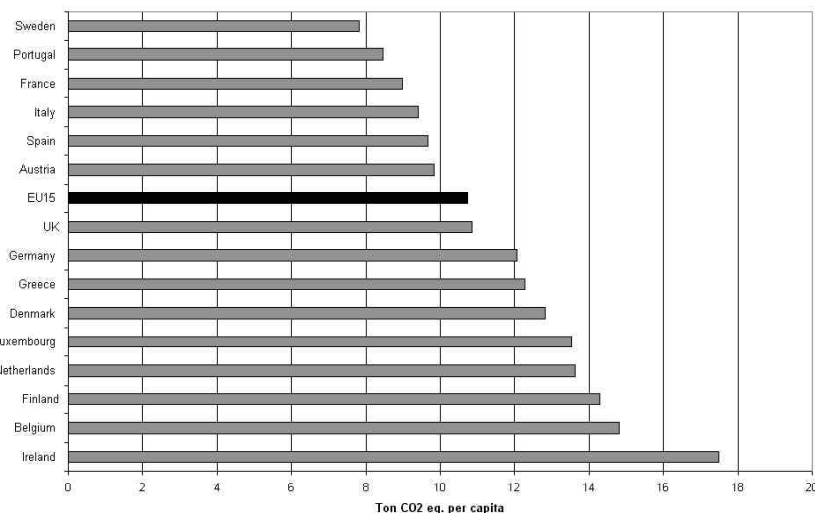


Fig. 3. Per capita emissions of the member countries, expressed as tons of CO<sub>2</sub> equivalents per annum (emissions data from the EEA, with population figures from IEA/OECD).

**Cogeneration directive** (2004/8/EC). The aim of the Commission's cogeneration strategy of 1997 (COM(97)514) was to have increased the EU proportion of electricity from combined heat-and-power from its 1994 level of 9 per cent to 18 per cent in 2010. The new directive to promote cogeneration was accepted in January 2004. Although it sets no binding targets for the member countries, it does contain concrete measures in favour of cogeneration and provides a framework for national policies to increase its use.

**A proposal for a directive on energy end-use efficiency and energy services** (COM(2003)739 Final), presented in December 2003. Aims at promoting energy efficiency and the market for energy services<sup>5</sup> in the EU. Contains a general energy end-use savings target of 1 per cent per year. Member state public sectors would be making a particular contribution as they will need to save at least 1.5 per cent energy a year, notably through energy efficient public procurement. The draft directive sets up a harmonized framework through common definitions, tools and methodology.

### Emissions of non-CO<sub>2</sub> gases

Some 80 per cent of EU's greenhouse gas emissions consists of CO<sub>2</sub>. Methane, nitrous oxide and fluorinated gases contribute to the remaining 20 per cent.

The emissions of greenhouse gases other than CO<sub>2</sub> from large industrial and agricultural sources are dealt with to some extent in the IPPC directive (see above).

**A proposal for a directive to curb the emissions of fluorinated gases**, aimed especially at the use of HFC 134a in cars'

<sup>5</sup> Energy services are defined as integrated packages of energy and the energy-efficient technology needed to deliver these services.

air conditioning equipment, was sent out in 2003 (COM(2003) 492 Final).

There are considerable emissions of methane, mounting to 4 per cent of the EU total emissions of greenhouse gases, from waste dumps. During the nineties they fell off by 22 per cent and are expected to fall still further as a result of the **landfill directive** (99/31/EC), stipulating the amount of organic waste that may be deposited, and decreeing that all new landfill sites must have gas recovery systems, and existing ones at the latest by 2009. Taken in combination with national measures, the directive is expected to cause the emissions of methane from landfills to fall away by 80 per cent between 1990 and 2020, bringing a yearly reduction of 199 million tons of CO<sub>2</sub> equivalents.

### For further information

**The EU Commission**, [europa.eu.int/com/environment/climat](http://europa.eu.int/com/environment/climat), gives information on decisions made, current proposals from the Commission, and work in progress within the European Climate Change Programme, amongst other matters.

**European Environment Agency**, [europa.eea.int](http://europa.eea.int). Regular reports on emissions in relation to set aims, especially of the Kyoto protocol.

**Climate Network Europe**, [www.climnet.org](http://www.climnet.org). Umbrella organization for environmentalist groups. Describes and comments on current EU climate policy.

### How to obtain EU documents

Every communication and directive has a number, by which the text can be found by using the search function at [www.europa.eu.int/prelex](http://www.europa.eu.int/prelex). Alternately one can visit the above sites, where there often links to the relevant texts. Hard copies can also be ordered from national distributors of EU documents.