

Implementation of a European Directive Establishing a Negotiable CO₂ Emissions Trading Scheme

Approved on July 22, 2003, European Directive 87/2003/EC establishes a scheme for the trading of greenhouse gas emissions allowances. Before the market comes into effect on January 1, 2005, industrialists will have to account for a new financial asset in planning development strategy: the CO₂ allowance. Each Member State is currently developing a climate plan that includes the allocation of CO₂ emissions allowances to industrial installations. It will not be possible to exceed these allowances without incurring a financial penalty.

On December 11, 1997, 188 signatories of the UN Framework Convention on Climate Change met in Kyoto to make commitments to reduce their greenhouse gas (GHG) emissions, and thereby the increase in the atmospheric concentrations of GHGs. Among these 188 countries, the 38 so-called “Annex-1” countries⁽¹⁾ undertook to cut their total GHG emissions by 5.2% (base year: 1990) during the commitment period 2008-2012. According to the UNFCCC inventory⁽²⁾, the CO₂ emissions generated by the Annex-1 countries in 1990 amounted to 13,728 million tons. The commitment undertaken by these countries in Kyoto corresponds to a reduction of at least 714 million tons of CO₂ for the period 2008-2012 compared to 1990, or 1.8 times France’s total CO₂ emissions in 1990.

Has the Kyoto Protocol Been Ratified?

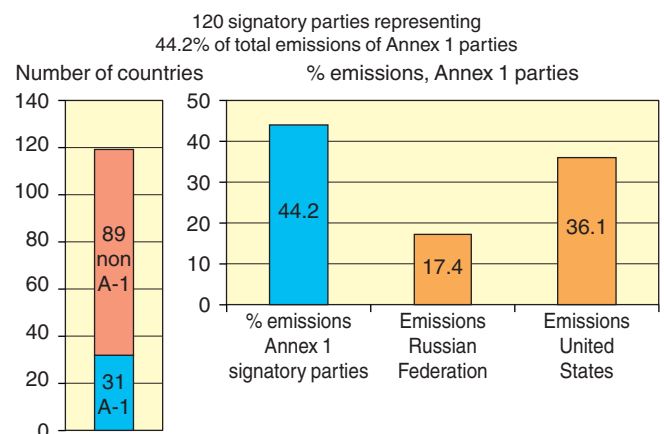
After six years of international negotiations and nine Conferences of the Parties (COP)⁽³⁾, the Kyoto Protocol has yet to be ratified at the international level. Two conditions must be satisfied before it can enter into effect:

- First, at least 55 Parties to the UN Framework Convention on Climate Change (UNFCCC) must ratify the Protocol;
- Secondly, a number of Annex-1 parties whose emissions represent at least 55% of total 1990 emissions must ratify it.

The first condition has been fulfilled: 120 Parties (including 31 Annex-1 countries) have ratified Kyoto. As for Europe and all of its Member States, ratification took place on May 31, 2002.

On the other hand, the second condition has not been met. The number of Annex-1 signatory parties represents only 44.2% of 1990 emissions. Following the withdrawal of the United States, which accounted for 36.1% of CO₂ emissions in 1990, the only country that can still “save” the Kyoto Protocol is the Russian Federation (17.4%) (Figure 1).

Fig. 1 Current status on the ratification of Kyoto: 120 signatories (including 31 Annex-1 Parties) representing 44.2% of 1990 CO₂ emissions



Source: UNFCCC

Three Flexibility Mechanisms to Reach Objectives at Lower Cost

To enable Annex-1 countries to reach their GHG reduction targets at lower cost, three flexibility mechanisms were set up within the framework of the Kyoto Protocol: negotiable emissions permits, Joint Implementation and the Clean Development Mechanism (CDM) (Figure 2).

(1) Annex-1: A total of 38 countries (including both OECD and transition countries)

(2) The UNFCCC inventory of Annex-1 countries, compiled prior to December 11, 1997.

(3) The last COP has taken place from December 1 to 12, 2003 in Milan.

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Only the first mechanism (negotiable emissions permits) involves trading GHG emissions rights between Annex-1 countries. The other two (CDM and JI) involve the implementation of projects to receive certified emissions reduction credits in exchange for investing in a low carbon project carried out by a public or private-sector entity in a country other than that of investor. Certified credits are calculated against a baseline scenario corresponding to what would have happened in the absence of the project.

Fig. 2 The three Kyoto mechanisms

Mechanism	Negotiable emissions permits	Joint Implementation	Clean Development Mechanism
Scope	Annex-1 countries only		All countries
Nature of transactions	Emissions rights trading	Project implementation	

These two project mechanisms are differentiated by investment location: Joint Implementation applies to Annex-1 countries and the Clean Development Mechanism to developing countries.

It should be pointed out that the flexibility mechanisms must be complementary to domestic measures taken by Annex-1 countries to reduce GHGs; in no way are they a substitute for said measures. Annex-1 countries must act to reduce GHG emissions at the national level.

The Market for Negotiable Emissions Permits

Under Article 17 of the Kyoto Protocol, the Annex-1 parties may trade emissions units to meet their reduction commitments. Each Annex-1 party will be assigned a quantity of emissions credits for Commitment Period 2008-2012. At the end of this period, each party must surrender a number of GES units equivalent to its emissions during the period. The trading system will enable a country with surplus units—in other words, a country that has reduced its emissions to below the level of its commitment—to sell units to another Annex-1 country that is unable to meet its commitment.

The European Directive for a negotiable emissions permit trading system is entirely based on the Kyoto Protocol flexibility mechanism. A number of adaptations had to be made (starting period, compliance period, GHGs considered, parties concerned, quotas and credits versus allocations) and has therefore been limited for the time being to the European Union of 25 member countries.

Joint Implementation (JI)

Joint implementation makes it possible for all Annex-1 parties to acquire emissions credits by carrying out emissions-reducing projects in other Annex-1 countries. Reductions must be additional to what would have occurred in the absence of these projects. The latter generate emissions credits for the investing country that can be used to cover part of the national commitments, while giving the project host country the benefit of new technology.

Clean Development Mechanism (CDM)

The purpose of the Clean Development Mechanism is to enable Annex-1 countries to meet their GHG reduction commitments at lower cost, and to involve non-Annex-1 countries in the worldwide drive to reduce GHG emissions.

Non-Annex-1 countries benefit from activities carried out as part of projects that translate into certified emissions reductions that Annex-1 countries can use to cover part of their commitments. The certified reductions obtained in the period 2000-2007 can be used to meet commitments for the period 2008-2012. The mechanism is supervised by the Executive Committee for the CDM.

One of the biggest differences between CDM and JI is that CDM credits are created whereas JI credits represent a simple transformation of the initial rights received by Annex-1 countries in the form of JI reduction units.

The European Approach

Despite the uncertainty surrounding the ratification of the Protocol, the European Union and its Member States are preparing to meet their Kyoto commitments with the market for negotiable emissions permits.

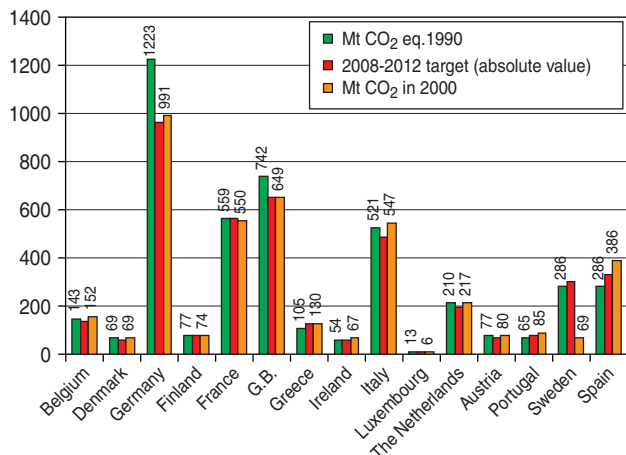
In 1997, the overall objective set by the European Union of Fifteen has adopted a reduction of 8%, each Member State having a different target. France has undertaken to stabilize its GHG emissions, Germany to reduce them by 21%, England by 12% and Italy by 6% while Spain plans to curb growth to 15% during the period 2008-2012 (Figure 3).

For the EU-15, total emissions amounted to 4,432 Mt CO₂e. in 1990. In 2000, they showed an 8% decrease to 4,077.4 Mt CO₂e.

By approving a European Directive establishing a CO₂ emissions trading market, the EU-25 have taken a leading position, because they are the first countries to undertake commitments involving legal and economic constraints.

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Fig. 3 EU 15: CO₂e. emissions in 1990, 2008-2012 targets for individual Member States and emissions observed in 2000



Source: UNFCCC

A European Directive Establishing a Scheme for Trading GHG Emissions⁽³⁾ Allowances⁽⁴⁾

The sixth European action plan for the environment calls for the implementation of a Community system for trading GHG emissions rights, effective January 1, 2005. The first commitment period will last for three years (2005-2007), the second five years (2008-2012). Starting in 2013, there will be five-year cycles.

Scope of the Directive

This European Directive applies to the CO₂ emitted in five sectors:

- **Energy activities:** any combustion installation rated over 20 MW, oil refineries, coke plants;
- **Ferrous metals:** production and processing;
- **Minerals:** any installation for the production of cement clinker or glass with a melting capacity of over 20 t/day;
- **Ceramics fired in kilns:** production installations whose capacity exceeds 75 t/day;
- **Wood pulp:** any installation whose capacity exceeds 20 t/day.

During the first commitment period (2005-2007), the Directive will not apply to the aluminum, chemicals and transport sectors. Furthermore, account will only be taken of CO₂ emissions. Starting in 2008, the scope of this Directive

(3) Emissions: GHGs emitted into the atmosphere from sources located at an installation.
 (4) Allowance: entitlement to emit one ton of carbon dioxide equivalent during a specified period of time.

will probably be extended to other GHGs (methane, nitrogen oxide) and other sectors (chemicals).

System Operation and Entitlement to Emit

From January 1, 2005, each Member State must verify that all installations covered by the Directive are in possession of an emissions permit and can monitor and report their GHG emissions.

An emissions allowance, based on one ton of CO₂ equivalent, will be allocated to each installation covered by the Directive.

For each calendar year, the total amount of CO₂ emitted by the operator is calculated and verified. Before April 30 of the following year, each installation must surrender a quantity of allowances commensurate with its emissions during the year. If an installation finds itself under its allowance, then it can sell the surplus credit on the market. Conversely, if an installation is over its allowance, then it must purchase credits on the market.

At any time, an installation can trade credits. At the end of each calendar year, it has four months to carry out the trades that will enable it to surrender its allowances for the previous year. Credits can be held in reserve for future use, as long as they are used during the same commitment period (2005-07 or 2008-12).

Fig. 4 Key dates for emissions permit trading

Year	Date	Stage for the operator
n	Jan. 01	Start of calendar year
n	Feb. 28	Allowance allocation
n	Dec. 31	End of calendar year
n+1	March 31	Emissions verification deadline for year n
n+1	April 30	Surrender of allowances for year n

National Allocation Plan

For each commitment period, each Member State must develop a national plan specifying the total amount of allowances that it intends to allocate and how they are to be allocated. The first plan should be published at the European Commission and communicated to other Member States by March 31, 2004 at the latest. The French plan for the allocation of allowances should be published by the beginning of the year 2004.

Subsequently, this plan will have to be published at least eighteen months before the relevant period. For the three-year

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period starting January 1, 2005, the Member States must determine the total amount of allowances to be allocated. The allocation for each operator must be disclosed before October 1, 2004.

The Member States must ascertain that the declarations submitted by operators are subject to independent verification. Verification must focus on the reliability, credibility and accuracy of the monitoring systems and the data reported.

Any operator that does not, by April 30 of each year, surrender a quantity of allowances commensurate with its emissions of the previous year, must pay a fine on excess emissions: 40 euros per surplus ton of CO₂e. emitted by an installation. From 2008 onwards, the penalty will be 100 euros per ton of CO₂e. Even after paying the fine, the operator is still responsible for bringing that facility into conformity the following year.

To make all transactions at the European level as transparent as possible, each Member State must establish and keep a register in the form of an electronic database for monitoring the issue, holding, transfer and cancellation of allowances at end of period. Each allowance will have its own identification number, so that it can be followed if traded in EU countries during the validation period.

The CO₂ Allowance as Financial Asset

Similarly, business enterprises will have to keep records concerning their GHG emissions. These data must be exact, reliable and available; they must be given the same close attention as financial data.

According to an initial estimate, allowances amounting to 1.5 million tons of CO₂e. will be put on the European market. Assuming an average price of 10 euros per ton of CO₂e., this would generate 15 billion euros in new financial assets as of January 1, 2005. This would translate into an equal amount of liabilities on the corporate balance sheet.

These financial assets will have the particularity of being totally intangible:

- They will only exist as registry entries;
- Not being physical property, they will be easy to trade;
- They can be kept on the books (in reserve) for one, two or three years without risk of depreciation.

France: Allowance Allocation and Commitments Made by Industry (AERES⁽⁵⁾)

AERES was founded on September 27, 2002 under the auspices of prominent industrial organizations (AFEP-

AGREF, EpE, MEDEF⁽⁶⁾). Instigated by 23 founding members from various industrial sectors, this move showed a desire to voluntarily curb GHG emissions during the periods 2003-2004 and 2005-2007.

At September 30, 2003 AERES members have undertaken 24 voluntary commitments, representing 56% of the GHG emissions generated by French industry in 2001. All in all, these commitments correspond to a reduction of 20 million tons of CO₂e., or a decrease of 14% compared to 1990 emissions. They will be useful in developing a national allocation plan.

Fig. 5 AERES results for the 1st half-year of 2003

Sector represented	Forecast for 1990-2007
Steel	-11%
Chemicals	-40%
Cement	-28%
Wood pulp	-7%
Glass	+1%
Refining	+28%*
Energy production	-2.5%
TOTAL (24 commitments)	-14% or -20 Mt CO₂e.

* Impacted by rising demand for diesel fuel and increasingly stringent limits on sulfur content.

Step by Step...

The European Directive establishing a GHG emissions trading scheme is being implemented, step by step. Industry and the appropriate bodies/agencies at European or national level must prepare to use this financial instrument to further an international environmental goal.

The establishment of an international market for CO₂ allowances by 2008, which would help globalize the effort to reduce atmospheric GHG concentrations in a cost-effective manner, is gradually materializing. Regional and national markets for negotiable CO₂ allowances already exist: there is the Chicago Climate Exchange in the United States, the Emission Trading Scheme in England, one CO₂ allowance market in Denmark and another in Australia. Markets will soon be operational in Japan (2005) and Canada (2008), which have both announced plans to interconnect with the future European market to form the first platform for international CO₂e. trading.

(5) AERES: an association of business enterprises for the reduction of the greenhouse effect.

(6) AFEP: French association of state-controlled companies;

AGREF: association of major French corporations;

EpE: enterprise for the environment; MEDEF: national employers federation.

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At any rate, one of the most important consequences of creating such a market would be to put a price on the ton of CO₂e., whose initial price is expected to range between 10 and 20 euros. It will be necessary to reconsider the financial valuation of companies receiving allowances. Furthermore, at these companies, decision-making relative to

strategic development (short-, medium- and long-term) will be affected.

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