



ECRN Joint Position

Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

www.ecrn.net



**PROJECT PART-FINANCED
BY THE EUROPEAN UNION**

North East South West
INTERREG IIIC



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

Introduction

Climate policy has a major impact on the competitiveness and sustainability of the chemical industry. Since the European Union is preparing for setting up the Emission Trading System to start on the 1st of January 2005 the Presidium of the European Chemical Regions network asked at the last meeting in Berlin the Permanent Working Group to prepare a comprehensive report about the design and potential economic impact of Emissions trading on Chemical regions. This draft report is based on a consultation with the chemical regions and on a comprehensive Web-research over the past months and it will be discussed at the next meetings of the Permanent Working Group of the ECRN Network on the 16th of September in Huelva Spain and in November in the UK.

For any further comment please send them by e-mail to:

Wobben@vb-bruessel.stk.lsa-net.de



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

The Kyoto-Protocol

The Kyoto Protocol is an international agreement in which 38 developed countries agreed to reduce their emissions of six greenhouse gases by a total of 5.2% between 2008 and 2012, from the 1990 levels. The six gases include carbon dioxide (CO₂), methane, nitrous oxide, and three ozone-damaging fluorocarbons. To an extent, this obligation to reduce greenhouse gas (GHG) emissions could be met via emissions trading from 2008 onwards. 'Emissions trading' is the collective term for the three flexible mechanisms of the Kyoto Protocol, which help countries fulfil their commitments in a market based approach:

- International Emissions Trading (IET)
- Joint Implementation (JI)
- Clean Development Mechanism (CDM)

Emissions trading or, more generally, tradable permit systems, have already been used to deal with various environmental or resource problems since the 1970s, notably air pollution, fisheries, water management, waste management and land-use. Emissions trading has been considered as a possible tool for mitigating greenhouse gas emissions since the early 1990s. Although the Protocol has not yet entered into force, there are a great number of initiatives that aim at instituting emissions trading for greenhouse gas sources, at various levels. GHG emission trading systems now exist in a wide range of forms, with systems covering individual countries or groups of countries (e.g. the European Union) to large multinational companies such as Shell and BP to various states or local authorities in various countries.



**Joint Report on the Implementation of
the Emission Trading System in
Chemical Regions**
13.09.2004

The European Union and the Kyoto Protocol

The European Union has committed itself to reduce its 1990 levels of greenhouse gas emissions by 8% between the years 2008-2012 under the Kyoto Protocol on climate change. The Member States have agreed to meet their obligations for reducing greenhouse gas in a joint effort. The obligation for reducing the emissions were however divided between the 15 Member states in the so-called burden sharing (Tab 1).

Table 1: Burden Sharing Amongst EU Member States

	% Reduction for 2008-2012 period from 1990 emissions	Reduction for 2008-2012 period from 1990 emissions (million tonnes CO ₂ equivalent)
Austria	-13	64
Belgium	-7,5	127
Denmark	-21	55
Finland	0	70
France	0	546
Germany	-21	949
Greece	+25	130
Ireland	+13	64
Italy	-6,5	487
Luxembourg	-28	10
Netherlands	-6	196
Portugal	+27	87
Spain	+15	347
Sweden	+4	72
United Kingdom	-12,5	636
EU TOTAL	-8	3840

Source: UNFCCC and EEA

The ten new Member States have also ratified the Kyoto protocol and they have reduction targets between -6% and -8%.



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

The EU-Emission Trading Directive

While 123 countries (including Japan, Canada, Switzerland, Norway, and New Zealand) have already ratified the Kyoto Protocol, it still needs to be ratified by either Russia or the United States to meet the threshold necessary for entry into force.

International emissions trading (IET) has been introduced to the Kyoto Protocol to allow more flexibility for the Parties in reaching their targets and to increase its overall cost-efficiency. IET is meant as trading the so called Assigned Amount Units (AAUs) mainly on state level. In contrast to this, the EU emissions trading scheme (EU-ETS) takes place on the level on installations, thus targeting the emitters themselves. Both systems will be operated independently from each other - at least for their initial phases.

The European Emissions Trading Scheme is based on a Directive which entered into force in October 2003. It is part of the EU's general policy on climate change and, as such, does not depend on the entry into force of the Kyoto protocol. The scheme will start in January 2005.

The Emission Trading Scheme (ETS) represents in the view of the European Commission a cornerstone in the fight against climate change. It is the first international trading system for CO₂ emissions in the world. It covers some 12.000 companies representing close to half of Europe's emissions of CO₂. The aim is to help EU Member States achieve compliance with their commitments under the Kyoto Protocol.

The overall policy objectives are to promote activities reducing greenhouse gas emissions in a cost-effective manner through market based instruments provided for in the Kyoto Protocol while contributing to global sustainable development and to offer lower cost compliance options to those companies that are subject to an obligation to reduce greenhouse gas emissions under the Community emission



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

allowance trading scheme. The overall policy objectives come within the context of both the international and Community policy frameworks to combat climate change and reduce greenhouse gas emissions: the Kyoto Protocol and the Community emission allowance trading scheme.

The Emission Trading System covers for the moment a total of more than 12.000 installations in the EU-25 (combustion plants, oil refineries, coke ovens, iron and steel plants, and factories making cement, glass, lime, brick, ceramics, pulp and paper). These installations are roughly responsible for 50% of CO₂ Emissions. In bigger Member States between 1.000 - 2.500 installations are falling under the systems. In average between 50 – 400 installations are affected in each Member States. The number of companies affected however is lower because some bigger companies are taking part in the system with more than one installation.

From the 1st of January 2005 these installations can only be run if the companies owns the necessary number of emission permits. From this day the emission certificats are tradable between the european companies.

Companies with commitments may trade allowances directly with each other, or they may buy or sell via a broker, bank or other allowance market intermediary. It could also be the case that a company purchasing a fossil fuel (coal or gas) will be offered allowances in combination with the fuel. Finally, organised markets (allowance exchanges) may develop.

There will also be an electronic registry system. This is now being developed in preparation for 1 January 2005. This registry system is separate from trading activity - not all trades result in changes in ownership of allowances, but where a trade culminates in a change in ownership there will be a transfer of allowances between accounts in the registry system. In this way, the registry system is similar to a banking system which keeps track of the ownership of money in accounts but does not track the deals made in the goods and services markets which were the cause of the money changing hands. So the registry system is not a marketplace; the way in which allowances are traded is a decision made by the participants in the market.



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

The system will be purely electronic, and so allowances will not be printed on paper but exist only in an online registry account. Each company with a commitment and any person interested in buying or selling allowances will need an account. The system will consist of a national component in each Member State where the allowances are held and a hub at European level, which will conduct automated checks on each transfer of allowances to ensure that the rules of the Directive are respected. Some of the data held in the registry will be released periodically, in accordance with UN rules and a forthcoming Regulation. A balance will be sought between environmental transparency and commercial confidentiality.

According to preliminary polls the trading price for one ton of CO₂ could be between 10 and 20 Euro.

The allocation of emission certificates in the National Allocation Plans (NAP)

The National Allocation Plans (NAP) determine the total quantity of CO₂ emissions that Member States will grant to their companies, which can then be sold or bought by the companies themselves. To do so, each Member State must ex-ante decide how many allowances to allocate in total for the period 2005 to 2007 and how many each plant covered by the Emissions Trading Scheme will receive. The idea is that Member States limit CO₂ emissions from the energy and industrial sectors through the allocation of allowances, thereby creating scarcity, so that a functioning market can develop later and overall emissions are then really reduced.

The allocation of the emission certificates will be organised by the Member States. The allocation takes place for a set period. The first three-year period will start from the 1st January 2005 and will last until the 31st December 2007. The next period will last from 2008-2012. Afterwards it is foreseen to have 5 year periods. Until 2012 the ETS-Directive foresees that the emission certificates are allocated free of charge.



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

Each Member State had to prepare and publish a national allocation plan (NAP) by 31 March 2004 (1 May 2004 for the 10 acceding countries). The National Allocation Plans (NAP) determine the total quantity of CO₂ emissions that Member States will grant to their companies, which can then be sold or bought by the companies themselves. To do so, each Member State must ex-ante decide how many allowances to allocate in total for the period 2005 to 2007 and how many each plant covered by the Emissions Trading Scheme will receive. The idea is that Member States limit CO₂ emissions from the energy and industrial sectors through the allocation of allowances, thereby creating scarcity, so that a functioning market can develop later and overall emissions are then really reduced

Until now (10th September 2004) 20 Member States (14 old and six new Member States) have presented their NAP to the Commission. Two of the new Member States have only provided draft plans up to now. Three Member States (Greece, Malta and Cyprus) have not yet presented their plans.

The Commission has send two Member States - Greece and Italy - first written warnings because they have not yet submitted their national allocation plans. In the meantime Italy has presented its NAP. Five plans - from Denmark, Ireland, the Netherlands, Slovenia and Sweden - have been accepted unconditionally. Another three - from Austria, Germany and the United Kingdom - have been approved on condition that technical changes are made. This will make them automatically acceptable, without requiring a second assessment by the Commission.



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

National Allocation Plans by Member States

Austria

- Kyoto target: - 13%
- Austria is currently 16.8% above its Kyoto target. It would have to reduce its CO₂ emissions of soon 80 m tonnes to 52 m tonnes in order to meet its Kyoto target.
- Net buyer
- The cap is below the Business as Usual (BAU) development in the EU ETS sectors.
- The NAP indicates plans to buy credits from JI and CDM projects – however, the number of credits planned to be bought does not seem sufficient to bridge the gap between the Cap and the “virtual Kyoto commitment”.

Belgium

- General Kyoto target (-7.5%) will be distributed between Flanders (-5.2%), Wallonia (-7.5%) and Brussels (+3.5%).
- Emissions 1990-2000: +6.3% (But energy industry: -6%)
- Net buyer
- In Belgium, different NAPs have been published for the different regions with varying levels of detail. The Wallonian NAP gives a BAU, but the Flemish NAP does not.
- The NAPs indicate plans to buy credits from JI and CDM projects – the number of credits planned to be bought seem sufficient to bridge the gap between the Cap and the “virtual Kyoto commitment”.



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

Denmark

- Kyoto target: - 21%
- Emissions 1990-2000: - 9.8%
- Net buyer
- The Danish NAP allocates significantly less than BAU (roughly 15% below).
- The difference between Cap and Kyoto commitment can be partly explained by looking at the Danish JI/CDM programme, and the Danish Climate Policy. For non-ETS sectors, further policies and measures will be developed. However, the Danish Climate Policy recognises a shortfall of 20-25 Mtonne CO₂e in the commitment period.

Estonia

- Emissions 1990-2000: -- 55%
- Net seller
- Estonia's NAP indicates an allocation that goes approximately 1% above the BAU development in the EU ETS sectors. The BAU uses growth rate assumptions that are significantly higher than growth rates achieved in recent
- years.
- This leads to an allocation that will bring Estonia's total emissions in the EU ETS sectors to the same level as the "virtual commitment".

Finland

- Kyoto target: 0%
- Emissions evolution 1990-2003: +17 %
- Net buyer DTI: +13,1
- Finland's climate strategy leads to emissions roughly 8% above the Kyoto target in 2010. This scenario includes measures that have been implemented and decided upon in the current Climate and Energy Strategy. In order to reach the



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

target additional measures will be implemented, which will partly be in place during 2005-2007, especially focusing on the non-ETS sectors. A new scenario is introduced, including energy efficiency improvement, replacement of fossil fuels and peat by gas and renewable and importing electricity.

- Planning for the use of JI/CDM credits is in the early stages. The Finnish JI/CDM pilot programme aims to implement around 10 JI and CDM projects, with two agreements for JI projects being closed so far. In addition, Finland has invested 10 million Euro in the PCF.

France

- Kyoto target: 0% -28% national target for industry for 2010 (-18% achieved in 2001)
- Emissions 1990-2000: - 1.7%
- Net buyer
- The National Allocation Plan for France allocates emissions just under the BAU level
- The difference between allocation and “virtual Kyoto commitment” is recognised and addressed in the Climate Plan 2004, which focuses on the non-ETS sectors and non-CO2 gases to deliver the shortfall.

Germany

- Kyoto target: - 21% CO2 emissions have been reduced between 1990 and 2000-02 by 15%
- Net buyer
- The German allocation allocates in line with expected BAU developments, and in line with “virtual commitment”. However, no clear BAU development is indicated in the NAP, and as a consequence, the BAU used in the graph is from the study “Consequences of the EU ETS for German Industry”, 1999.



**Joint Report on the Implementation of
the Emission Trading System in
Chemical Regions**
13.09.2004

Ireland

- Kyoto target: +13%
- Emissions 1990-2002: +29%
- Net buyer
- The Irish Allocation plan allocates emissions below the BAU assessment. An open circle is used for the BAU number because the number in the NAP is not consistent with BAU numbers in the supporting documents.
- It is recognised that the Cap will not meet the “virtual commitment” and a JI and CDM credits purchasing programme is being put into place. Furthermore, domestic measures in the non-ETS sectors have been confirmed.

Latvia

- Emissions 1990-2001: - 60.8%
- Net seller
- The Latvian allocation is significantly above expected BAU developments, where the BAU which is derived from the NAP and other documents.
- As can be seen from the graph, the “virtual commitment” will not be a problem for EU ETS participants.

Lithuania

- Emissions 1990-2000: -- 54%
- Net seller
- The Lithuanian NAP allocates more allowances than the Business As Usual developments would justify.
- The Kyoto commitment, however, will not be jeopardised.



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

Luxembourg

- The NAP allocates 5% less than BAU would demand.
- The gap with the virtual commitment will be bridged using the acquisition of 3 M tonne CO₂ through the Kyoto Mechanisms over 5 years.

The Netherlands

- Kyoto target: - 6%
- Emissions 1990-2000: +2.6% (energy industry in 2001: +27%!) Country must not emit more than 199 Mt CO₂eq to reach its Kyoto obligation. Business as usual would, however, lead to an increase to 239 Mt CO₂eq per year in 2010.
- Net buyer
- The Dutch NAP allocates 3% more than BAU would justify. This BAU includes all current and firmly planned policies and measures, but excludes JI and CDM.
- The Kyoto Mechanisms currently plan for the acquisition of 20Mtonne CO₂ per year, of which 15.4 M tonne is currently contracted, with a budget set aside for the remaining amounts.

Portugal

- Kyoto target: +27%
- Emissions 1990-2000: +30.1%
- Net buyer
- The BAU is not based on text in the Portuguese NAP, but estimated based on the requests for industry's requests for allowances. Portugal allocates more than the expected BAU developments
- There is also a significant gap with the "virtual commitment". The short-fall during the commitment period, currently expected to be around 5.1 M tonne CO₂/year, will be made up using the Kyoto Mechanisms. The non-ETS sectors, especially



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

transport and the renewable sectors are expected to contribute significantly to meeting the Kyoto Target.

Slovenia

- Slovenia has allocated less than BAU development.
- The short-fall to the “virtual commitment” is expected to be met by additional measures in non-ETS sectors.

Spain

- Kyoto target: +15%
- Emissions have increased since 1990 by 38%
- Net buyer
- The Spanish NAP allocates less than BAU.
- The cap indicated in the graph is excluding the CHP allowance.
- The significant short-fall with the “virtual commitment” is recognised in the NAP, and the use of the Kyoto Mechanisms is indicated in the NAP to account for the difference.

UK

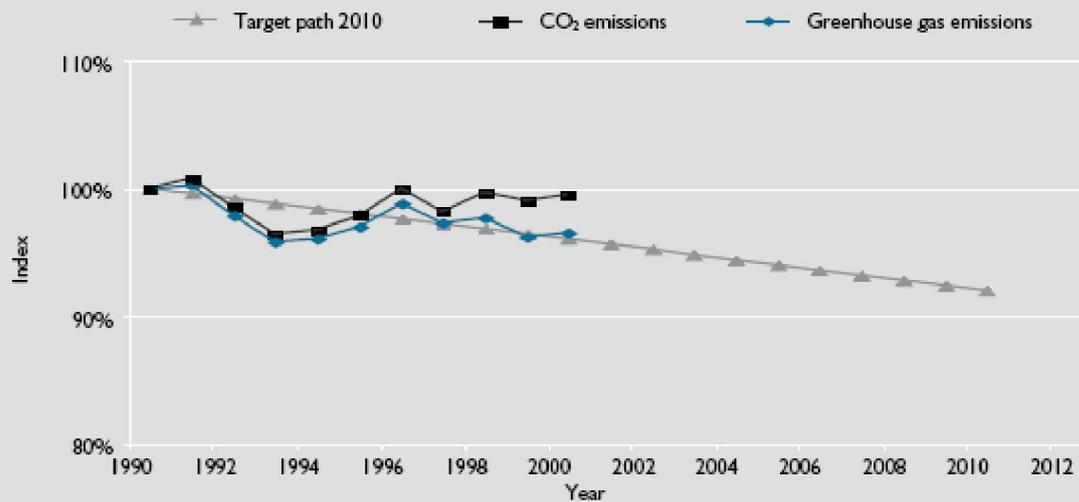
- Kyoto target: - 12.5% National goal – 20%
- Emissions 1990-2000: - 12.6% Emissions increased by 1.5% during 2003 on 2002 levels. The reasons seems to be a rise in demand, and a switch-back from gas to coal in power generation, due to market forces.
- Net seller
- The UK has allocated slightly below BAU development, and is on target to meeting Kyoto.

Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

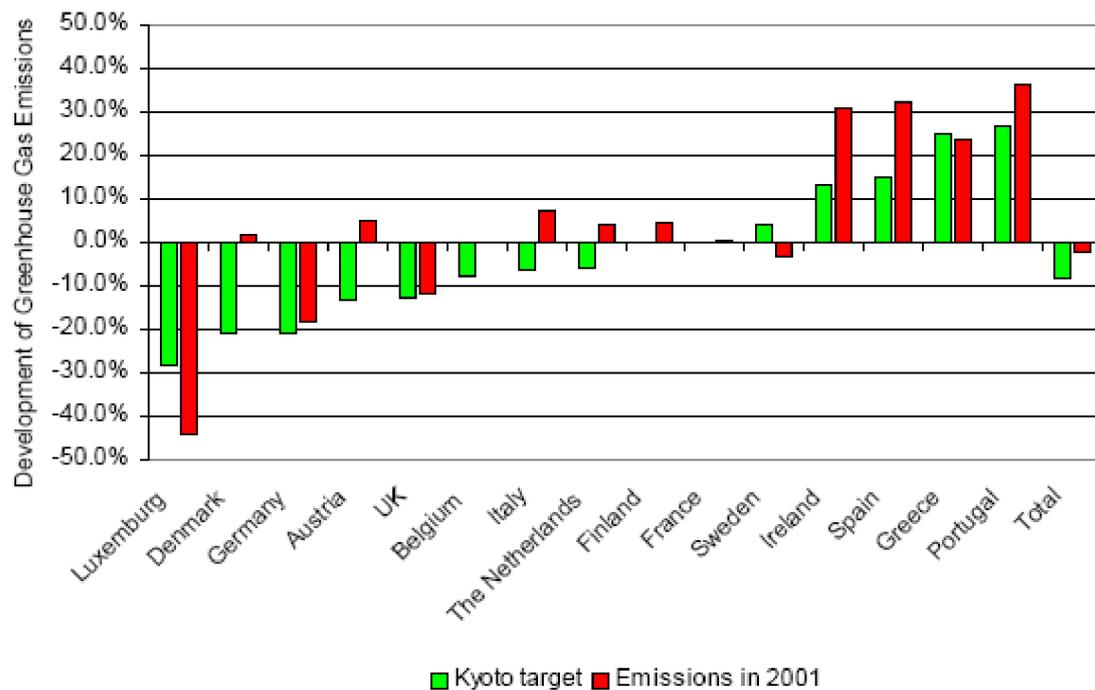
EC greenhouse gas emissions vs targets (excl. LUCF)

Exhibit 3



Source: European Environment Agency: Greenhouse gas emission trends in Europe, 1990 to 2000

National Kyoto targets and Emissions in 2001 in EU Member States





Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

The European Commission has accepted eight national allocation plans for CO₂ emission allowances. Five plans - from Denmark, Ireland, the Netherlands, Slovenia and Sweden - have been accepted unconditionally.

Criteria	Austria	Denmark	Germany	NL	Ireland	Slov.	Sweden	UK
(1) Kyoto path								
(2) Emissions development								
(3) Potential to reduce, incl. tech. potential								
(4) Consistency with other EU legislation								
(5) Non-discrimination			Conditionally accepted					
(6) Provisions for new entrants								Conditionally accepted
(7) Credit for early action								
(8) Credit for clean technologies								
(9) Public consultation								
(10) List of installations with quantity for each one	Conditionally accepted		Conditionally accepted					Conditionally accepted
(11) Outside competition								
Article 10: At least 95% of allowances allocated for free								



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

Potential economic costs of implementing the Kyoto Protocol

Leadership in the fight against climate change does not come without a price, although this would have to be balanced against the effects of inaction if no measures are taken against greenhouse gases emissions. Because of the many variables involved, such as energy inputs, growth of GDP and trade-offs with other policy areas, it is impossible to give firm figures for the costs of compliance.

However, estimates for the annual cost to the Union as a whole range from less than 0.1% to nearly 1% of GDP. The relative costs for individual sectors will depend on whether some are called on to make greater reductions than others or whether a flat rate target is set across the board.

The EU ETS may have a significant impact on the price of electricity, which, in turn, may have a significant, although opposing impact on the two major sectors, i.e. the power producers versus the energy-intensive industries (which are the main consumers of electricity). Studies have shown that emissions trading at an allowance price of €10/tCO₂ may lead to an increase of the electricity price in 2010 by 0.42 cent/kWh. Based on a commodity or producer cost price of 2.7 cent/kWh before emissions trading, this implies an increase of that price of some 15 percent due to the EU ETS.

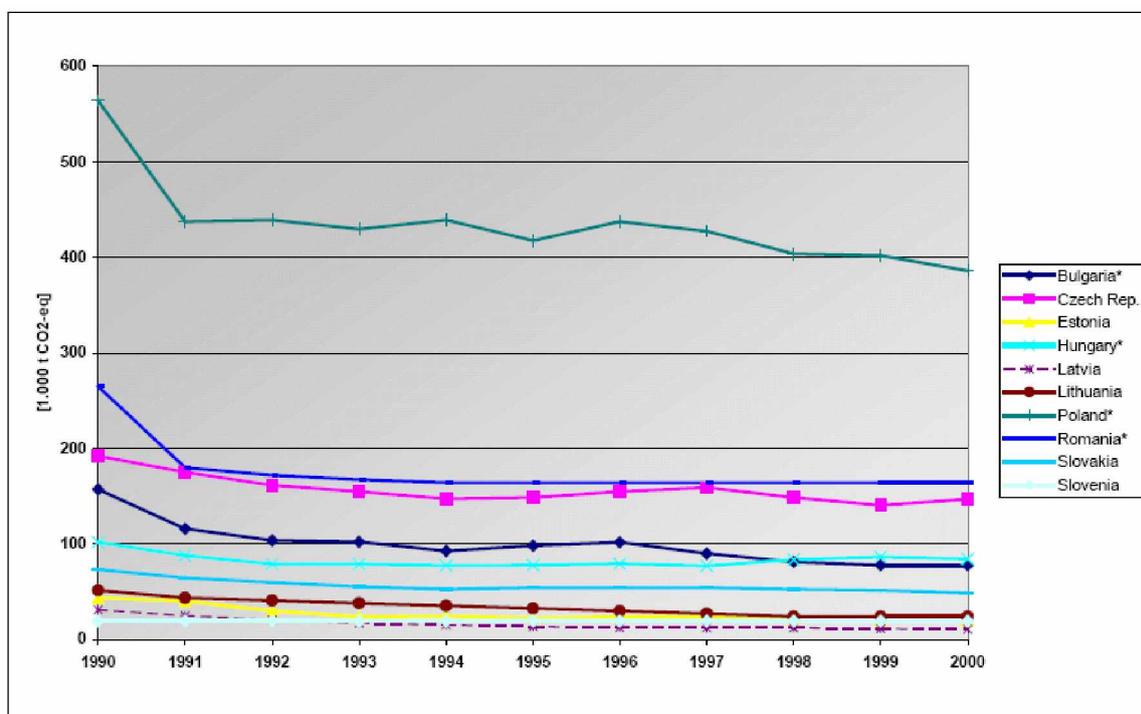


figure 4: Emission trends in accession countries 1990 – 2000

It is quite likely that only Eastern Europe will be in a position to sell permits. The strength of the effects also depends on the sectoral emission intensity in each country. France and Norway/Iceland that produce low CO₂ intensive electricity using nuclear resp. hydropower can even profit from the ETS. The energy-intensive production sectors are not much affected in the first trading scenario. This is different if the emissions are restricted in the sectors outside the ETS.

As these are sectors with relatively high abatement costs, their gross energy prices rise considerably. As a result, these sectors suffer more than the sectors inside the ETS that profit from an equalization of marginal abatement cost across Europe.

The strength of the effects of ETS on competitiveness depends to a large degree on the CO₂-intensity of sectoral production in each country. If other countries such as the USA and the Rest of the Annex B countries decide to restrict their emissions as well, the non-energy sectors gain from reduced a shift of production.



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

Energy-intensive sectors such as steel, basic chemicals and pulp and paper, precisely because they have already made significant emission reduction efforts, and face tough international competition, could incur higher marginal reduction costs. On the other hand, companies moving early to develop, patent and implement the necessary technology to reduce emissions or produce alternative forms of energy may gain a competitive advantage.

With regard to competitiveness the ETS can therefore have the following effects:

- Uncertainties on the medium and long term freezes investments in the energy intensive industries and in the electricity producing sector which have a 40 year long life cycle.
- An enormous amount of time and efforts is spent on texts and procedures, not on research, innovation and technology.
- Uncertainties on the level of the CO₂ price fuels fears of the industry that it might lose its competitiveness. Ex-ante examinations of import-export situations are not relevant.
- Potential effect on the price of electricity leads to additional fears.



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

The Chemical Industry in Europe

Chemicals form the Europe Union's second largest manufacturing sector, just behind food, drink and tobacco in terms of production, and behind electrical engineering in terms of added value. The EU is also the world's most important producer of chemicals, accounting for 32% of the total global output. Its positive trade balance is bigger than that of the chemical industries in the USA or Japan. European industry directly employs more than 1.7 million people and has a turnover of more than €400 billion. Another three million employees work in sectors using chemical products as direct inputs.

Of the world's top 30 chemical companies, 15 have headquarters in the EU and a further three in Switzerland. However, while large companies predominate in petrochemicals, small and medium sized enterprises (SMEs) play a vital part in the industry as a whole

The products and services of the chemical industry are instrumental in meeting many needs of mankind. They are present in all facets of life, from food and clothing, housing, communications and transport – through to leisure activities.

Chemicals manufacture is very heterogeneous in nature, mainly comprising the transformation of materials into diverse substances with new chemical and physical properties.

Progress of the chemical industry in emission reduction

Overall, this diverse sector has demonstrated good progress towards sustainability. Following the Kyoto and Buenos Aires conferences on climate change, it is coping with increased pressures to reduce its contribution to the greenhouse effect. Despite a 26% increase in production volume over the past few years, carbon dioxide emissions have remained stable – with an effective cut of 21% per unit of production



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

since 1990. Furthermore, the industry has reduced its energy consumption by 8% over the same period.

The European chemical industry has been engaged in a Voluntary Energy Efficiency Program (VEEP) aimed at reducing its specific energy consumption. Over the years 1980-1995 fuel and power efficiency increased by 30% and CO₂ emissions per unit of output was reduced by 40%.

In November 1992, CEFIC has launched VEEP 2005 which is a unilateral commitment to reduce its specific energy consumption by a further 20% between 1990 and 2005.

The barriers to further energy efficiency improvements are the thermodynamic limits of the various processes in use, the availability of new breakthrough technology, the remaining useful life of the existing plants, and the limited capital available for investment.

The Emission Trading System and the chemical industry

Major contributors to CO₂ emissions are: the power, heat & energy sector (35%), transport (26%) and households & services (21%). Industry as a whole accounts for only 17% of total CO₂ emissions in the European Union. The share of the chemical industry amounts to 2.6% (see chart I). The industry sector, and the chemical industry in particular, have experienced a constant decline of their CO₂ emissions since 1985. By contrast, the transport sector has constituted a growing source of emissions.

The EU has decided that the chemical sector as a whole will not be initially included in the project for trading allowances for greenhouse gas emissions. However there was strong interest in the European Parliament to include the chemical industry in it.



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

Therefore it is quite likely that the chemical industry as a whole will be covered by the ETS in the future.

Furthermore installations of chemical companies above 20 MW are already today included in the ETS.

The impact of the ETS on the chemical industry is mainly based on the fact the industry is buying nearly 50% of its energy demand from energy producers which will try to transfer the higher energy costs onto the chemical industry.

One can predict that for the EU chemical industry as a whole, energy costs would rise between 5 and 25% and that annual growth rates in volume would be cut by 0.5 to 1% points. Actual results will depend on the future energy mix, the price of emission permits and credits, and the possible restrictions imposed on the use of economic instruments such as emissions trading and joint implementation. The more energy-intensive parts of the chemical industry are clearly much more vulnerable to climate policies than suggested by the average figures above.

Especially the chemical sector in the Benelux countries is under pressure since the Kyoto targets are only to be met by a large CO₂-tax combined with the comparatively high emission intensity which is for example about twice the emission intensity of the Scandinavian chemical sectors.

The UK Chemical Industries Association (CIA) has welcomed amendments to the European Emissions Trading Scheme, which will link the scheme to countries outside the EU via the Kyoto project mechanisms. The so-called amending (or 'linking') directive now formally adopted by the European Parliament will allow emissions cuts to be connected to the EU Emissions Trading Scheme due to start in January 2005. Linkage will allow European companies participating in emissions trading to count credits from emission reduction projects around the world towards their obligations under the EU scheme.



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

Examples of implementing the Emission Trading at national level

United Kingdom Model to implement the ETS

The chemical industry accounts for two per cent of GDP and is the UK's top manufacturing export earner, with an annual trade surplus of over £5bn. It continues to be the largest user of electricity and natural gas in the manufacturing sector, accounting for approximately 6% of total UK supply in each case, with an associated annual bill in the order of £1bn. The industry also has an excellent record of improving energy efficiency. Between 1967 and 1990, the output of chemical products more than doubled, while energy consumption per unit output was reduced by almost 60%; and 1998 data shows a further improvement of 19%. Secure and competitive prices energy are critical to the long term success of the industry and therefore we welcome the opportunity to respond to this document as part of the consultative process that the government is undertaking.

The UK Government published its Climate Change Programme in 2000, setting out the approach to be used to reduce greenhouse gas emissions from six broad sectors; energy supply, business, transport, domestic, agriculture forestry and land use and the public sector. Revision of the Climate Change Programme is scheduled to take place at the end of 2004.

Measures to reduce emissions from the business sector included a UK Emissions Trading Scheme. Energy intensive industries that signed challenging agreements to reduce emissions were granted a reduction in energy tax payments. Emissions Trading was envisaged as an optional way of ensuring compliance with agreed targets.

The current UK scheme is voluntary and began in March 2002 and covers 6 greenhouse gases, unlike the EU Trading scheme that only covers CO₂. It is intended to deliver a reduction in carbon equivalent emissions of 11.88 million tonnes



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

during the period from 2002 – 2006. In the first year of operation participating companies reduced their emissions by 4.64 million tonnes of carbon dioxide equivalent, and the second year the reduction was almost 5.2 million tonnes.

A provisional list of installations to be included in the UK National Allocation Plan was forwarded to the European Commission on 14 June 2004. A consultation document was issued by the UK Government on 6 May 2004 on the National Allocation Plan, with comments requested before 4 June 2004. Responses will be used to revise sector and installation level allocations and the revised lists will be published in late July or early August 2004.

The UK Government is seeking approval for participants in the UK Emissions Trading Scheme that are also covered by the EU scheme to be temporarily excluded from the EU scheme. These exclusions would cover the first two years of the EU scheme when their existing agreements with the UK scheme are still in force.

Emission Trading Scheme Installations will be issued with 736 million tonnes CO₂ allowance for the period from 2005 – 2007. Just over 92% of these allowances will be issued free of charge to existing installations in three equal instalments. The remaining allowances will be kept as a reserve for allocation to new entrants. Should there be any remaining allowances at the end of the year these will be auctioned.

All sectors covered by the scheme will be allocated allowances equivalent to their projected emissions, with the exception of the Power Station sector which will be allocated less allowances than their projected emissions during the first phase. In the first instance the allowances will be allocated to sectors, with subsequent allowances then being allocated to individual installations.

The share for the sector will be shared out proportionally between all the individual installations in the sector. Subsequent allocation of allowances at installation level will be made on the basis of the average emissions for the average operating years



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

between 1998 – 2003; calculated after the year with the lowest emissions has been taken out of the equation.

Industry has concerns that differences in National Allocation Plans could lead to distortions in competition. The UK is particularly concerned at what appears to be an overly generous approach of some other Member States Allocations.

German Model to implement the ETS

Since the 1992 Climate Framework Convention of Rio, the German chemical industry has worked for effective climate protection using voluntary mechanisms. One result of this initiative has been a voluntary agreement by the chemical industry to reduce its specific energy consumption and its energy-induced CO₂ emissions by 30% from 1990 to 2005. By the modification of production processes and the intensive use of combined heat and power systems, this reduction target was achieved as early as 1999. In the meantime, the German chemical industry has promised to reduce the relevant greenhouse gases by 45 to 50% by 2012 and the specific energy consumption by 35 to 40% below the values of 1990.

Early reductions were achieved mainly through closing down inefficient and energy intensive production sites and highly polluting lignite-fuelled power plants in the former East Germany, whereas a slight increase of GHG emissions could be observed in West Germany (Gummer and Moreland 2000). As part of the EU burden sharing under the Kyoto Protocol, Germany's national reduction target is 21%. Furthermore, the internal domestic target of 25% has not been dropped.

Already in 2002 the region of Hessen has started a Pilot project to test the potential outcome of a Emission Trading system in Germany. The so-called 'Hessen-Tender' organised by the Hessen Environment Ministry was a pilot-project to develop working procedures for greenhouse gas emission trading and was closely linked to joint



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

implementation. The project gave companies and product developers the chance to sell emission reductions to be generated between January 2005 and December 2009. In the Hessen-Tender auction on December 12, 2002, carbon dioxide emission reduction credits were traded for the first time in Germany. The final price in the auction of one reduced tonne of CO₂ was € 6.58. Over the course of this initiative about 1.3 million tonnes of CO₂ emissions will be reduced between 2005 and 2009. About 160,000 tonnes of CO₂ credits were purchased within the Hessen-Tender itself. The remaining 1.14 million tonnes of CO₂ credits, which are owned by the participating companies, can be sold on the existing carbon markets. Thus, companies can earn a supplementary income in addition to the money from the Hessen-Tender. By selling future emission reductions, companies could therefore achieve additional income and lower the financing needs for their project accordingly.

Upon the entry-into-force of the greenhouse gas emission allowance trading law on 15 July 2004, the German Emission Allowance Trading Authority at the Federal Environmental Agency (DEHSt) has issued an updated list of all the facilities participating in emissions trade. It is based on a voluntary survey from 2003 and takes account of all changes in the Länder and businesses made since early 2004, especially as concerns involvement of the public in the National Allocation Plan. According to current knowledge, 2,350 facilities in Germany will participate in emissions trade.

The Federal Environmental Agency advises that the list of facilities serves only as orientation and does not represent any form of legally binding determination of any one facility's obligation to trade in emissions. Whether or not a facility is subject to emissions trade is determined by the regulations in the greenhouse gas emission allowance trading law. The list of facilities can be downloaded from the website of the German Emission Allowance Trading Authority (www.umweltbundesamt.de/emissionshandel).



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

Recently HeidelbergCement has taken legal steps against the German laws on emissions trading. These laws place a completely unreasonable burden on the cement industry in Germany. The Group would like to bring about a decision by the German Federal Constitutional Court (Bundesverfassungsgericht) regarding the constitutionality of the Emissions Trading Act this year, i.e. before the commencement of the first trading period, if possible.

To this end, HeidelbergCement has instituted legal proceedings with the competent Administrative Courts (Verwaltungsgerichte) for locations in Baden-Württemberg and Bavaria. The Group refers to its operating licences, which were granted for an indefinite period and which allow the CO₂ emissions necessary for its operation. According to the legislation previously in force, it is not possible to withdraw or shorten the duration of these licences. However, the Greenhouse Gases Emissions Trading Act (Treibhausgas-Emissionshandelsgesetz or TEHG) states that the emissions allowances are to be withdrawn from the plant operators, with no transitional period or compensation, so that the Federal Environmental Office (Umweltbundesamt) can redistribute them based on the allocation plans issued by the Federal Government. HeidelbergCement would be permanently committed to the low production levels of the 2000-2002 reference period and thus lose 40-50 % of its licensed plant capacity with corresponding long-term job effects.



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

Further Information Sources:

- **European Commission: Emissions Trading Resources**

<http://europa.eu.int/comm/environment/climat/emission.htm>

- **Green Paper on greenhouse gas emissions trading within the European Union:**

http://europa.eu.int/comm/environment/docum/0087_en.htm

- **European Pollutant Emission Register (EPER)**

EPER gives users access to information on the annual emissions of 9,256 industrial facilities in the 15 Member States of the EU as well as Norway – mostly from the year 2001.

<http://www.eper.cec.eu.int/eper/>

- **The International Network for Environmental Compliance and Enforcement (INECE)**

The International Network for Environmental Compliance and Enforcement (INECE) is a partnership of government and non-government enforcement and compliance practitioners from over 100 countries. INECE's goals are: raising awareness to compliance and enforcement; developing networks for enforcement cooperation; and strengthening capacity to implement and enforce environmental requirements.

<http://www.inece.org>

- **Principles of Environmental Enforcement:**

<http://inece.org/enforcementprinciples.html>

- **INECE's Europe Regional Network:**

http://inece.org/region_europe.html



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

- **European Environment Agency (EEA)**

The EEA aims to support sustainable development and to help achieve significant and measurable improvement in Europe's environment through the provision of timely, targeted, relevant and reliable information to policy-making agents and the public.

- **Emission Inventory Guidebook (2003):**

<http://reports.eea.eu.int/EMEPCORINAIR4/en>

- **Annual European Community greenhouse gas inventory 1990-2001 and inventory report 2003:**

http://reports.eea.eu.int/technical_report_2003_95/index.html

- **Greenhouse gas emission trends and projections in Europe:**

http://reports.eea.eu.int/environmental_issue_report_2003_36/index.html

- **Pew Center for Research on Global Climate Change**

The Pew Center on Global Climate Change brings together business leaders, policy makers, scientists, and other experts to bring a new approach to a complex and often controversial issue. Our approach is based on sound science, straight talk, and a belief that we can work together to protect the climate while sustaining economic growth.

<http://www.pewclimate.org/>

- **Emissions Trading in the U.S.:**

Experience, Lessons, and Considerations for Greenhouse Gases:

http://www.pewclimate.org/global-warming-in-depth/all_reports/emissions_trading/index.cfm



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

- **Designing a Mandatory Greenhouse Gas Reduction Program for the U.S.:**
http://www.pewclimate.org/global-warming-in-depth/all_reports/mandatory_ghg_reduction_prgm/index.cfm
- **Promoting Meaningful Compliance with Climate Change Commitments:**
http://www.pewclimate.org/global-warming-in-depth/all_reports/promoting_compliance/index.cfm
- **Emission Trading and Competitiveness**
- **Overview of emissions trading and competitiveness issues**
www.ucd.ie/envinst/envstud/CATEP%20Webpage/pb6.pdf
- **OECD steel and CO₂ tax study**
[www.ois.oecd.org/olis/2002doc.nsf/LinkTo/com-env-epoc-daffe-cfa\(2002\)68-final](http://www.ois.oecd.org/olis/2002doc.nsf/LinkTo/com-env-epoc-daffe-cfa(2002)68-final)

www.iddri.org/iddri/telecharge/climat/competitivite/dolf_gielen_steel_9-04-03.pdf
- **Quirion 2002 - Effects of allocation methods on steel output and profits**
www.ucd.ie/envinst/envstud/CATEP%20Webpage/papers/quirion.pdf

Hourcade, Quirion 2004 - European industry exposure
www.iddri.org/iddri/telecharge/climat/competitivite/ife-iddri/ife-iddri_hourcade_quirion.pdf **Iddri competitiveness website** (partly in French)
www.iddri.org/iddri/html/themes/climat/competitivite/competitivite.htm
- **Ederington et al. 2003**
www.nber.org/papers/w9718



Joint Report on the Implementation of the Emission Trading System in Chemical Regions

13.09.2004

For more Information

Andreas Fiedler

ECRN Secretariat

isw GmbH

Phone +49 345 29982724

Fax: +49 345 29982711

Mobile: +49 172 3417385

Email: fiedler@isw-gmbh.de

Catrin Gutowsky

Ministry for Economy and Labour of

Saxony-Anhalt

Phone +49 391 567 44 52

Fax +49 391 567 44 50

Email : catrin.gutowsky@mw.lsa-net.de

Notes for Editors:

ECRN: The “European Chemical Regions Network” has the objective to exchange experiences about the joint challenges for chemical regions and initiate a mutual learning for the strengthening of the chemical sector. Joint positions on relevant policy issues are developed to raise the regional voice in the European decision making process. The partner regions are Saxony-Anhalt as the coordinator, North Rhine Westphalia and Lower Saxony (GER), Huelva, Asturias and Catalunya (SPA), Lombardia and Piemonte (ITA), North East and North West of England (UK), Limburg (NL), Masovia (PL) and Ida-Viru (EST). Contacts to further chemical regions have been established to enlarge the network and become a stakeholder at European level. The total project budget is 1.639.000 €, 61% of which is funded by the European Union. More details about the ECRN can be found on its website at www.ecrn.net.

INTERREG IIIC is an EU-funded programme that helps Europe’s regions form partnerships to work together on common projects. These projects enable regions to share knowledge and experience that will help them develop new solutions to economic, environmental and social challenges. 98 percent of all European Union regions are involved in INTERREG IIIC projects. There are more than 250 INTERREG IIIC projects running involving 2500 local and regional actors from 50 countries; 20 percent of these are from new EU Members. More information on INTERREG IIIC can be found on www.interreg3c.net.