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# Europe – a Pioneer in Greenhouse Gas Emissions Trading

## History of Rule Development and Major Design Elements

*The decision on the EU directive for emissions trading in June 2003 makes Europe a pioneer in the large-scale application of market instruments to climate policy. This development would have been unthinkable five years ago. The negotiations provide a textbook example of public choice theory in practice. We describe the crucial points of the recent and upcoming legislation process at the levels of the EU and the Member States, the latter with a focus on Germany. The timetable for the enforcement of the emissions trading directive at the national level seems very tight – especially when considering the likely manoeuvres by several stakeholder groups.*

Under the Kyoto Protocol of 1997, the European Union has committed itself to reducing its greenhouse gas emissions<sup>1</sup> by 8% between 2008 and 2012 compared to the 1990 level. However, so far the history of EU implementation of climate policy instruments has been lacklustre and the international credibility of the EU started to suffer during the late 1990s.<sup>2</sup> In order to address this challenge and to meet its Kyoto target cost-effectively, the European Climate Policy Programme (ECCP) was established in 2000 to identify the most promising (additional) climate policy measures. Several technical committees were established covering the fields of energy, industry, transport, agriculture, research and – as a potential new policy instrument – emissions trading. Until mid-2001, the ECCP identified about 40 measures that were evaluated as suitable in terms of both cost effectiveness and environmental effectiveness. Several problems concerning their implementation – such as political acceptability and the overall timeframe – were also recognised. The results of the ECCP were to support the European Commission in developing an overall EU climate strategy.<sup>3</sup> However, the progress of this strategy so far has been limited, with the exception of emissions trading. The latter was surprising, as previously the EU had been critical of market mechanisms and preferred fiscal as well as regulatory instruments. According to Commission officials, US experts “invested

a lot of time and resources” to convince sceptical European stakeholders of the advantages of emissions trading after Kyoto. They describe the scene in very nice terms: “On the one hand NGO representatives had a preference for ‘policies and measures’ (e.g. direct promotion of renewable energy) which give an illusion that something directly recognisable as ‘green’ is occurring. Emission trading does not produce such ‘visible’ results and thus the attitude is either (from a negative point of view) ‘Emission trading is an American invention which should not be taken seriously’ or (a bit more positively, but still unfortunately) ‘I am not against emission trading, but you should consider it only among other policies and measures’. On the other hand industry and their lobbyists hate caps, and like ‘voluntary approaches’, and do not see that an emission trading scheme contains many of the elements of a ‘voluntary agreement’, but would offer more”.<sup>4</sup> Other reasons for the quick start at the EU level were attempts to introduce national emissions trading schemes, for example in Denmark and the UK. As these schemes were not compatible with one another, the Commission feared a patchwork of systems.

Parallel to the ECCP, the Commission analysed whether emissions trading at the level of installations

<sup>1</sup> I.e. the emissions of the six “Kyoto gases” carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulphur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs)

<sup>2</sup> A. Michaelowa: Impact of interest groups on EU climate policy, in: European Environment, Vol. 8, No. 5, 1998, pp. 152-160.

<sup>3</sup> ECCP: European Climate Change Programme, Report June 2001, [http://europa.eu.int/comm/environment/climat/eccp\\_longreport\\_0106.pdf](http://europa.eu.int/comm/environment/climat/eccp_longreport_0106.pdf), obtained June 30, 2003.

<sup>4</sup> P. Zapfel, M. Vainio: Pathways to European Greenhouse Gas Emissions Trading: History and Misconceptions, FEEM Working Paper 85.02, Venice 2002, pp. 7, 24.

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might be an appropriate national policy to meet the EU's Kyoto target. In March 2000, a "Green paper on greenhouse gas emissions trading in the EU"<sup>5</sup> was published, initiating the public consultation process. In a follow-up, the "Proposal for a framework Directive for greenhouse gas emissions trading within the European Community"<sup>6</sup> was released on October 23, 2001 and therewith started the formal legislation process both at the level of the Member States and at the level of EU bodies. An intense consultation and lobbying process followed, leading to the publication of a council position on December 9, 2002.<sup>7</sup> Parliament presented its amendments in spring 2003<sup>8</sup> and intense negotiations with the council led to a compromise on June 25, 2003<sup>9</sup> which avoided a time-consuming reconciliation procedure. Within four years, the EU thus has become the world leader in greenhouse gas (GHG) emissions trading.

### Main Characteristics of the EU-ETS

International emissions trading (IET) was introduced into the Kyoto Protocol to allow more flexibility for the parties in reaching their targets and to increase its overall cost-efficiency. IET is defined as trading the "Assigned Amount Units" (AAUs), mainly at state level. In contrast to this, the EU emissions trading scheme (EU-ETS) takes place at the level of installations, thus targeting the emitters themselves. Both systems will

be operated independently of each other – at least in their initial phases.<sup>10</sup>

The core elements of the proposed directive are the following.

Among the variety of sources the following installations are obliged to participate:

- thermal power plants > 20 MW
- refineries
- coke ovens
- iron and steel production (> 2.5 t per hour)
- cement (> 500 t per day) and lime (> 50 t per day) production
- glass (> 20 t per day)
- ceramics (> 75 t per day)
- pulp and paper (> 20 t per day).

Despite pressure from the European Parliament, the aluminium and chemical industries are not covered in the final compromise. This is due to strong lobbying, particularly by the latter. However, it is possible to "opt in" smaller sources from covered sectors, i.e. those installations that are below the capacity thresholds defined by the directive.

Each installation needs a general permit to emit greenhouse gases and gets an allocation of allowances representing its initial absolute emissions budget for a year or a compliance period. The first compliance period will cover 2005-2007, the second one 2008-2012 in accordance with the first Kyoto period.

Each installation will monitor its direct greenhouse gas emissions and balance those emissions with allowances. Allowances can be bought or sold on the market. Allowances can also be transferred to the following year<sup>11</sup> ("banking"), which gives additional temporal flexibility to the participants.

Non-compliance provisions entail a substantial financial penalty of 40 €/t CO<sub>2</sub> in 2005-2007 rising to 100 €/t from 2008 onwards for each excess tonne of greenhouse gas emission as well as the obligation to surrender missing allowances in the next compliance period. As market prices are likely to be much lower, the penalty should be a powerful deterrent.

<sup>5</sup> EU Commission: Green paper on greenhouse gas emissions trading in the EU, Commission (2000) 87 final, [http://europa.eu.int/eur-lex/en/com/gpr/2000/com2000\\_0087en01.pdf](http://europa.eu.int/eur-lex/en/com/gpr/2000/com2000_0087en01.pdf), obtained June 30, 2003.

<sup>6</sup> EU Commission: Proposal for a framework Directive for greenhouse gas emissions trading within the European Community, Commission (2001) 581, <http://europa.eu.int/comm/environment/climat/emission.htm>.

<sup>7</sup> Council of the European Union: Amended proposal for a Directive of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC. - Political agreement, Interinstitutional File: 2001/0245 (COD), Brussels 2002; Council of the European Union: Council's Common Position on the adoption of a Directive establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC of 18 March 2003, <http://register.consilium.eu.int/pdf/en/02/st15/st15792-re01en02.pdf>.

<sup>8</sup> EP Committee on the Environment, Public Health and Consumer Policy: Draft recommendation for second reading on the Council common position for adopting a European Parliament and Council directive establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, PE328.778, Strasbourg, April 9, 2003, <http://www.europarl.eu.int/meetdocs/committees/envi/20030210/488548en.pdf>; EP Committee on the Environment, Public Health and Consumer Policy: Consolidated amendment 1, PE 328.778/AMC. 1, Strasbourg, June 4, 2003, <http://www.europarl.eu.int/meetdocs/committees/envi/20030210/500378EN.pdf>.

<sup>9</sup> Council of the European Union: Amended proposal for a Directive of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC. Second reading agreement, June 25, 2003.

<sup>10</sup> For indirect interdependencies see S. Butzengeiger, R. Betz, S. Bode: Making GHG emissions trading work - crucial issues in designing national and international emissions trading systems, HWWA Discussion Paper No. 154, Hamburg 2001; S. Bode: Implications of Linking National Emission Trading Schemes prior to the Start of the First Commitment Period of the Kyoto Protocol, HWWA Discussion Paper No. 214, Hamburg 2003.

<sup>11</sup> Member States can decide to restrict banking between the first EU period and the second (2007 to 2008).

During the first period (2005-2007), the trading scheme is limited to carbon dioxide. Further Kyoto gases might be included in later stages. The European Parliament had proposed expanding the system more quickly, but did not assert itself in the final compromise.

In 2005-2007, at least 95% of allowances have to be allocated free of charge, and 90% from 2008 onwards. Allocation shall be based on an emissions path that allows the national target to be achieved. This means that governments need to establish a comprehensive national climate strategy which takes the emissions from non-covered sectors into account and does not just uniformly apply the national reduction target percentage to the covered sectors. A strict interpretation means that industries in countries whose emissions are currently far above the Kyoto target will have a higher gap to close than industries in those countries that are already approaching the target level. Thus, industries in cohesion countries would face a large gap and become buyers, while industries in Germany and the UK are likely to become sellers. Whether the cohesion countries will then invoke "force majeure"<sup>12</sup> depends on the criteria that are to be developed by the Commission by the end of 2003.

Annex III of the directive provides several criteria on which allocation must be based. Those criteria, however, are not sufficiently detailed and even appear contradictory in some respects. The Commission can change them with the exception of the target-setting principle discussed above, non-discrimination and the prevention of over-allocation, and coverage of early reductions. As the allocation procedure is one of the most crucial aspects in the national implementation process, we shall elaborate on it in more detail below.

### Lobbying – the German Background

After the release of the draft directive in 2001, negotiation processes both at the level of EU bodies and at the level of Member States – including governments and private players – intensified. In Germany, highly political debates took place at several levels. The "public platform" for discussions is the "German Emissions Trading Group / Arbeitsgruppe Emissionshandel zur Bekämpfung des Treibhauseffektes (AGE)" which was established by the Federal Ministry of the Environment in late 2000. Participants in the German Emissions Trading Group include representatives from industry, politics and government as well as from business associations and environmental organisations. Whereas in its early stages the group elaborated on design aspects of an emissions trading scheme in general terms, with the draft directive

the positions of individual stakeholders polarised.<sup>13</sup> Basically, three groups were established: some large, conspicuous opponents, a silent majority and a few proactive supporters.

Next to the public platform of the AGE, debates continued in several other circles such as in working groups of the German Industry Association (BDI) and the Chemical Industry Association (VCI). Both opponents and supporters tried by various means to convince politicians at the national and EU levels of their arguments. For example, the German Chemical Industry Association placed full-page advertisements in major German news magazines such as "Spiegel" and "Stern" as well as in "European Voice", stating that the "EU proposal [on emissions trading] would stifle investments in Germany".<sup>14</sup> Additionally, several letters were sent to the Chancellor's office.

The opposition by these sections of industry led to the Chancellor's publicly voicing opposition to emissions trading, e.g. at a workshop of the VCI at BASF. Official statements from the Chancellery were more balanced.<sup>15</sup> Among the Federal Ministries, too, positions differed strongly. Whereas the Ministry of Economics tended to oppose the ETS, there was support from the Ministry of the Environment and mixed interest by the Ministry of Finance. Interestingly, the common position of the AGE presented in September 2001 is very close to the version of the directive under discussion now.<sup>16</sup>

Finally, opponents from industry managed to make the government call for an "opt-out" clause and a "pooling-model" at the EU level. Also, "early action" will be covered. In the German context this is understood as allowing the use of an early base year (e.g. 1990) for the allocation of the allowances. This could then reward some businesses whose reductions were due to the economic collapse and restructuring of East Germany. Without any additional provisions those rules would have enabled German industry to continue with the non-ambitious voluntary agreements

<sup>13</sup> AGE: Zwischenberichte der Unterarbeitsgruppen 1 - 4 der "Arbeitsgruppe Emissionshandel zur Bekämpfung des Treibhauseffektes", Berlin, December 2002, [http://www.bmu.de/de/1024/js/download/down\\_index\\_emissionshandel/?id=252&nav\\_id=2875&page=1](http://www.bmu.de/de/1024/js/download/down_index_emissionshandel/?id=252&nav_id=2875&page=1), obtained July 2, 2003.

<sup>14</sup> VCI: advertisements "Emissions Trading: Falscher Ansatz der EU-Richtlinie für den Klimaschutz" and "Emissions Trading - EU proposal would stifle investments in Germany!", 2001, 2002, [www.vci.de](http://www.vci.de), search for "emissions trading", obtained July 4, 2003.

<sup>15</sup> Bundeskanzleramt: Schröder mahnt faire Lastenverteilung bei EU-Emissionshandel an, July 10, 2002.

<sup>16</sup> AGE: Stellungnahme der AGE zum "Issue Paper for Further Consultations on Emissions Trading" zur von der Kommission durchgeführten Beratungsrunde über die Schaffung von Rahmenbedingungen für einen EU-weiten Handel mit Emissionsrechten, Grevenbroich, September 2001, [http://www.bmu.de/files/emissionshandel\\_dok2.pdf](http://www.bmu.de/files/emissionshandel_dok2.pdf), obtained July 2, 2003.

<sup>12</sup> Article 29 of the directive allows Member States to issue additional allowances to certain installations "in cases of force majeure".

## ECONOMIC TRENDS

**Figure 1**  
**Time Frame for Enforcement and Implementation of the EU Directive on Emissions Trading**  
 National implementation: example of Germany

Tasks	2003						2004												2005	
	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Mai	June	July	Aug	Sept	Oct	Nov	Dec	Jan	
<b>I. European level</b>																				
Decision of the EU Parliament (-> enforcement of directive)																				S t a r t
Guidance on allocation criteria of Annex III by COM						until 31.12.														
Guidance on monitoring and verification by COM			until 30.09.																	
<b>II. National level</b>																				
Transformation of directive into national law & Institutional set-up																				S t a r t  E T S
Preparation and enforcement of national emissions trading law												until 30.06.								
Act on application & scope of emissions trading law												until 30.06.								
Act on monitoring and verification															until 30.09.					
Act on verification of emissions reports and eligible verification bodies															until 30.09.					
Act on registries for allowances												until 30.06.								
Institutional set-up: designation of a "competent authority" as in article 18 of the directive																			until 31.12.	
Institutional set-up: establishment of a registry as in article 19 of the directive																			until 31.12.	
<b>Allocation of allowances</b>																				
Identification of installations covered by the directive																				S t a r t  E T S
Acquisition of emissions data on the basis of the Emissions Control Act																				
Integration of data into preliminary allocation formula(s), coordination with other policies and measures (national climate protection programme)																				
Establishment and notification of the (preliminary) national allocation plan to the COM																			until 31.03.	
Approval / rejection of the preliminary NAP by COM																			until 30.06.	
Possibly: correction / revision of NAP by German government																				
Possibly: additional data acquisition																				
Final allocation to installations																			until 30.09.	
Communication with stakeholders / operators																				
Formal objection to allocation by some operators, possibly court procedures																				
Time for operators to prepare for ETS (development of strategy, set-up of monitoring and reporting systems etc.)																				

assumed time for preparation
  deadline



instead of being forced to participate in the ETS from the very beginning. Although it was taken into account in the initial Council position, opting out has now been limited to installations, making it cumbersome to exempt a whole sector. Moreover, exempted installations have to underlie policy instruments that achieve the same reduction as the ETS, thus making the clause relatively unattractive to operators of covered installations. Pooling will not work unless it is mandatory as companies that have achieved emissions below their allocation are unlikely to give away the surplus permits to laggards within their pool. Consequently, one cannot expect those extra rules to be applied on a large scale.

### **The Challenge of Implementation**

Having reached a political agreement, the most difficult task now appears to be the implementation of the directive in all the Member States in time. As Figure 1 shows, the timetable is very tight for:

- transformation of the directive into national legislation
- “technical” implementation of the ETS within the Member States.

Concerning the transformation of the directive into national legislation, we need to be aware of two facts: first, Member States usually have a respite limit of two years for the transformation process, simply because the national legislation process might be quite time-intensive.<sup>17</sup> In practice, there are often significant delays in Member States for various reasons. So the simple but nevertheless crucial question is whether there is a realistic chance of implementation in all Member States in the next 18 months.

As far as the second aspect is concerned, again we need to realise that there are numerous organisational tasks to be worked out. Some details are given in Figure 1. It is striking that even if Member States manage to come up with a solid national allocation plan by March 31, 2004, this leaves only three months for the Commission to evaluate the NAPs and, e.g. if it fears distortions of the internal market, to ask for revisions. Three months can hardly be considered a sufficient time-frame for an in-depth analysis of 15-25 national allocation plans. Now imagine the Commission asks a Member State for a substantial revision. Will there be enough time for that government to make the required changes? What happens if it is not possible?

What is more, it can easily be imagined that some operators do not agree with the amount of allowances

<sup>17</sup> In Germany, preparations for the legislation process, i.e. the drawing of a proposal for a German emissions trading law, have already been initiated.

they are allocated. Consequently, some formal objections can be expected, in some cases even involving court procedures. The German government intends to minimise the potential number of court procedures by means of early and generic communication. However, there still is a great risk of time-consuming debates.

Next to those procedural aspects in terms of legislation, the intrinsic process of implementation and enforcement of the emissions trading directive will in many Member States be a complex, time-consuming task. We shall now discuss the most relevant steps of transformation and provide some examples from Germany.

### **Member States' Competition**

Current discussions show that most Member States face the same problems in the implementation process, concerning the details of allocation for example. It is interesting to note, however, that the degree of difficulty encountered varies strongly between Member States. This might be due to the national structure of industry. For example, in Germany it is assumed that 2500-3000 installations fall under the EU-ETS, whereas in Austria, the number of installations covered by the directive is estimated at about 130-150. This shows that there are significant differences in the order of magnitude.

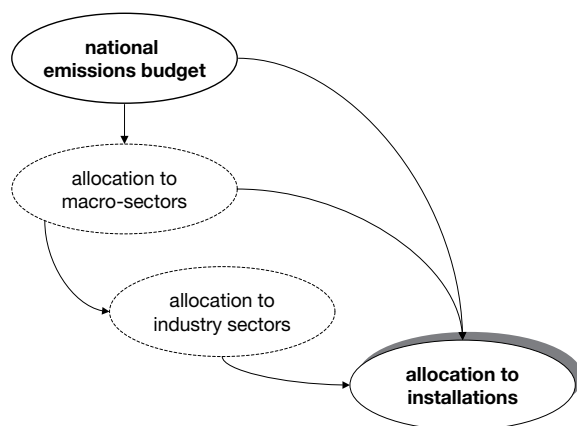
The currently most pressing issues at the national level concerning the enforcement of the EU directive include:

- identification of covered installations
- allocation of allowances
- technical procedures for monitoring, compliance control etc.
- institutional set-up.

### **Identification of Covered Installations**

It is interesting to see that even in a highly developed and sophisticated political region like the EU the identification of installations that fall under the emissions trading directive is not a trivial task. Indeed, some Member States will face severe problems in establishing an accurate, full inventory. There are several reasons for this. At the EU level, so far no comprehensive register of industrial installations, covering all sectors and sizes, exists. Although the first report by Member States under the European Pollutant Register (EPER) is due this summer and will provide emissions data, including CO<sub>2</sub> and the other major Kyoto gases for the year 2001, there are some structural gaps. For example, EPER covers combustion installations with a capacity larger than 50 MW, while the EU trading

**Figure 2**  
**Methodological Approaches to Defining**  
**the Participants' Emissions Targets**



directive covers those combustion installations with a thermal input exceeding 20 MW.

At the national level, the situation is not necessarily better. Even in Germany with its comprehensive Emissions Control Act causing highly bureaucratic procedures, available data does not match fully with the requirements of the directive. Additionally, procedural issues emerge: whereas the Federal Ministry of the Environment will be responsible for the establishment of the emissions trading scheme, the Federal States (German "Laender") execute the regulations of the Emissions Control Act and therefore also hold installations' data. Consequently, federal and state ministries will need to collaborate closely.

Finally, several questions concerning the exact definition of an installation will prolong things. Even in the case of the relatively simply structured power plants, in some cases it might be difficult to decide whether the installation falls under the directive or not. Consider the following example: an electricity company operates three boilers of 7 MW thermal capacity each on a single factory premises. The operator holds two operation permits, of which one covers the operation of two boilers. The three installations are broadly interconnected with each other in technical terms. From the juridical perspective, the question will be whether the three boilers are to be seen as individual installations, which then would not be covered by the ETS, or whether the capacities add up to 21 MW thermal capacity and then fall under the directive. Defining the term "installation" can be expected to be much more difficult for complex production facilities. Close coordination between Member States as well as between Member States and the Commission is to be recommended.

Generally speaking, current data availability is not satisfying and assumptions concerning the overall number of installations covered by the EU-ETS still have to be relied on.

### Allocation of Allowances

One crucial aspect in the implementation of emissions trading is the allocation of allowances to the participants. The EU directive effectively defines an allocation free of charge ("grandfathering"); Member States are unlikely to auction any share allowances if other states give away 100% for free. Although the method of allocation does not affect the cost-efficiency of the instrument,<sup>18</sup> emissions trading itself has distributional effects. The total quantity of allowances allocated determines the compliance costs for the participants. Potential allocation methods also have to fulfil demands on transparency, data requirements, "fairness" and transaction costs. Existing national climate policy instruments and policy targets<sup>19</sup> will influence the discussion. These differ strongly among the Member States, which complicates the task of achieving a "fair" allocation throughout the European Union.

In the following we shall first deal with selected theoretical aspects of allocation.<sup>20</sup> Emissions targets have to be defined for all participants. This can be done either directly or via targets for macro-sectors<sup>21</sup> and industry sectors (branches) as depicted in Figure 2.

At each level, there are several options for the quantification of emission targets including:

- reference figures (e.g. historical/future emissions, production or financial data)
- mitigation costs and potentials
- negotiations
- benchmarks (relative emissions, e.g. per unit of output)
- politically decided targets (e.g. national climate protection programmes).

Combinations of these options are possible as well.

Concerning the *allocation to macro-sectors*, both historical emissions and forecasts seem practicable, although the inherent uncertainties of forecasts can be considered a disadvantage. The earlier the reference

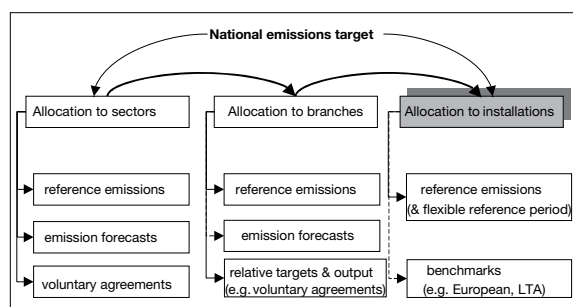
<sup>18</sup> Transaction costs are not considered here.

<sup>19</sup> For example the voluntary agreement on climate protection between German industry and government, the German federal emission control act / the IPPC directive, the renewable energy sources act and the law on the support of combined heat and power installations, the ecological tax reform as well as the agreed phasing out of nuclear power.

<sup>20</sup> Auctioning schemes are not taken into account.

<sup>21</sup> Defined in this context as industry (including electricity generation), households and services, and transport.

**Figure 3**  
**Appropriate Methodologies in the Case**  
**of Grandfathering**



year chosen, the more automatically early sectoral actions are considered. Neither a reference to mitigation costs/potentials nor benchmarking seems appropriate for sectors since the level of aggregation is too high. Where available, quantitative sectoral targets of national climate protection programmes might be referred to.

At the level of *industry sectors* (i.e. branches such as iron & steel, cement, energy production) historical emissions are suitable as a basis. Data availability can be assumed to be high. Emission forecasts might also be used, though the methodological details of those forecasts need to be checked carefully. The applicability of mitigation costs/potentials seems low due to uncertainties and the strong influence of the underlying assumptions. Existing voluntary agreements might be an attractive option as targets are already indicated. However, if the voluntary agreements consist of relative targets, the transfer of relative targets to absolute ones might cause intense political debate.

The most practical reference figures at the level of *companies/installations* currently seem to be historical emissions, since there is no potential for gaming. Although an early reference year/period such as 1990 would help in acknowledging early actions, it is currently not clear whether the data needed is broadly available. Even if it were available to the operators, some might choose to state that they do not have data in order to prevent an early reference year.<sup>22</sup> A politically attractive alternative might be to allow participants to choose their preferred reference year. This would allow the consideration of early actions wherever minimum data quality requirements are met and could significantly decrease potential debates on the base year issue. The application of neither emission forecasts nor mitigation costs is practicable at the company level due to the potential for gaming.

<sup>22</sup> An operator might choose this strategy if he fears a relative disadvantage compared to his competitors.

The application of EU benchmarking seems limited until 2012 due to the existing burden-sharing agreement but could be an interesting option in the long run. Furthermore, any benchmark methodology is likely to cause high costs. Open questions are whether the definition of appropriate reference figures is possible and what degree of differentiation is necessary, e.g. to take account of differences in product quality. A summary of appropriate reference figures at all levels is given in Figure 3.

### Allocation in the Context of the Emissions Trading Directive

Member States have to develop a “national allocation plan” (NAP) containing details of the method and quantity of allocation. NAPs are subject to approval by the Commission and need to be submitted by Member States by March 31, 2004. The objective of this procedure is to avoid – or at least minimise – market distortions due to uneven allocation methods. Annex III of the directive contains several criteria for the elaboration of NAPs. The criteria include:

- the consistency of allocation with the (technical) potential of activities to reduce emissions;
- the consideration of “unavoidable increases in emissions resulting from new legislative requirements”;
- the avoidance of undue discrimination between companies or sectors;
- the option of accommodating early actions;<sup>23</sup>
- provisions on how to account for new market entrants.

Due to ongoing uncertainties within Member States, e.g. on the interpretation of state aid rules, the Commission plans to develop “allocation guidelines” by the end of 2003. This, however, will hardly be in time to provide real support as in many Member States work on the NAPs is at an advanced stage.

### Practical Approaches: the Example of Germany

As the method and quantity of allocation bear potentially significant economic implications for individual players, these issues have been and will be at the centre of political interest. Again, debates are ongoing at different levels.

At the beginning of 2002, the German Emissions Trading Group established a sub-working group on allocation. This sub-working group evaluated the major allocation methodologies such as grandfathering (based on historical emissions, industry’s voluntary agreements and benchmarks), auctioning and hybrid models as well as specific problems of allocation – for

<sup>23</sup> See footnote 6.



example data availability, accreditation of early actions, treatment of “newcomers”, combined heat-and-power installations (CHP), process emissions and the procedure in the case of the shutdown of installations. Since the beginning of 2003, even two sub-working groups are dealing with allocation. The second group focuses on macro-allocation, i.e. emissions targets for the macro-sectors as well as other generic questions like the building of a reserve of allowances to account e.g. for newcomers. However, considering the existence of other, quite influential circles (see below), the overall political influence of those groups can be doubted.

In late 2002, the Federal Ministry of the Environment commissioned a study on the development of a national allocation plan; first results are expected in the second half of 2003. To keep up, the German Industry Association commissioned another study on the same issue from the Rhine-Westphalia Institute for Economic Research (RWI). Finally, in early 2003 the Federal Ministry of Economics and Labour added a third study – interestingly also from the RWI. The RWI is regarded as relatively “industry friendly”.

At a third level, numerous official and unofficial working groups/task forces on allocation have been established, e.g. in the German Industry Association and also within some industrial sectors. Lately, a high-level segment with selected representatives from industry has been established under the auspices of the German Chancellor’s office.<sup>24</sup>

Besides the method of allocation to a single installation, another elementary question is what the contribution of the non-participants of the emissions trading scheme will be, namely households, the transport sector and industry/services that do not fall under the directive. Member States should develop a comprehensive strategy including all macro-sectors to reach the national target under the burden-sharing agreement.

### Institutional Set-up

Besides allocation, a functioning emissions trading scheme implies a wealth of tasks, *inter alia* concerning:

- the application and granting of permits;
- the monitoring and reporting of greenhouse gas emissions (statistical data as used e.g. in the German voluntary agreements are not adequate for emissions trading);
- verification and control of emission reports;

- registration of emissions, settled trades between participants, retired or expired allowances etc.;
- penalties for over-emissions or procedural non-compliance.

Some of those tasks might be conducted by private service providers, as e.g. technical inspection agencies. Other tasks like the enforcement of penalties are of a governmental nature. The latter could either be delegated to existing administrative bodies – be it at the Federal or at the State level – or a new administrative body could be introduced. Any such system must be effective and cost-efficient. As the decision also involves the creation of new employment or the safeguarding of existing employment in those agencies, a more or less intensive conflict between administrations at the Federal and the State (or regional/local) levels can be expected. From the perspective of cost-efficiency, it can be expected that a central administration is more efficient, as fewer employees need to be trained and assigned to the above-mentioned tasks. Additionally, the uniform application of rules would be supported.

In Germany, there is a clear tendency in favour of the central emissions trading office (Zentrale Emissionshandelsstelle, ZEHS). Given the procedure on data gathering described earlier, close cooperation between the ZEHS and both the Federal and State Ministries will be necessary.

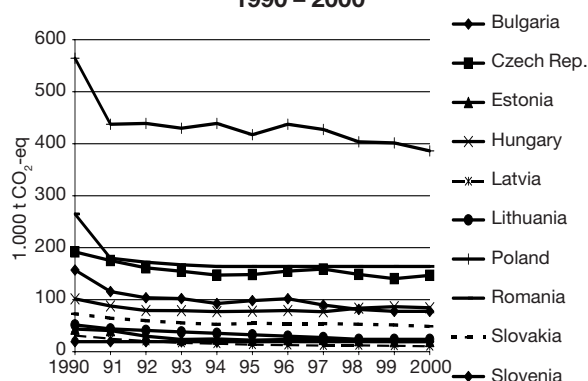
### Integration of Project-based Mechanisms

As the Kyoto Protocol has defined the two project-based mechanisms CDM (clean development mechanism) and JI (joint implementation) for generating emissions credits from abroad, an important design question of the EU trading scheme is whether CDM and JI credits are valid in the EU system. From an economic point of view, full validity would make sense as this would allow the minimisation of mitigation costs. Thus the fear of many industrial opponents that emissions trading could involve crippling costs would be alleviated. World market prices for CDM credits would define a ceiling for EU allowance prices. As CDM credits trade for 3-4 €/t CO<sub>2</sub>, the burden for European industry would be fairly small. Moreover, the hitherto lacklustre demand for CDM credits would be boosted, which would show developing countries that the CDM is taken seriously by industrialised countries.

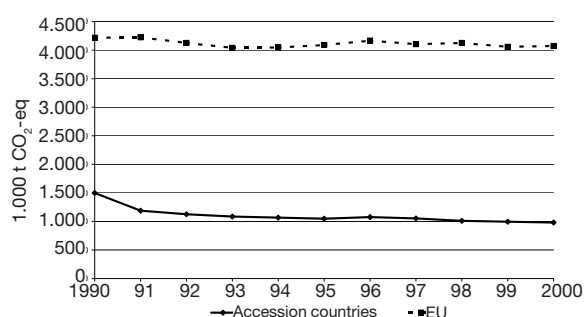
Unfortunately, the old scepticism of EU stakeholders with regard to market mechanisms has now concentrated on the Kyoto Mechanisms. The original Commission draft did not contain a link between the mechanisms and the EU-ETS, referring only to a possible inclusion through a separate directive. Only strong industry lobbying was able to insert a clause in

<sup>24</sup> F. Vorholz : Was kostet die Luft?, in: Die Zeit, No. 29, 10.07.2003.

**Figure 4**  
Emission Trends in Accession Countries  
1990 – 2000



**Figure 5**  
Comparison of EU-15 and Accession Countries  
(GHG-Emissions, 1990-2000)



the Council position that specified that linking of the EU-ETS to the Kyoto Mechanisms was “desirable” and credits would be recognised in principle. However, the idea of a separate directive specifying the details was retained. The first Commission draft of this directive was circulated in June 2003.<sup>25</sup> It is very restrictive due to the following features.

- CDM and JI can only be used from 2008. The additional incentive created by the EU-ETS to start CDM projects now will thus be reduced compared to a prompt-start scenario.
- CDM and JI credits have to be converted into EU allowances through an application procedure at government offices. This will generate transaction costs and delays, but helps to enforce the environmental objectives of the EU.
- An overall limit of 6% of issued allowances applies. Administration of such a limit will be cumbersome. One can expect trade in “CDM/JI conversion quotas” at the level of installations/companies.
- Sinks, nuclear power and hydropower projects that do not conform to the guidelines of the World Commission on Dams are not allowed. Excluding sinks even before the international rules have been defined might be considered premature. Anyway, it is consistent with the EU’s traditional position on the inclusion of sinks into the Kyoto framework.
- JI projects from accession countries can be continued even if the project installation falls under the emissions trading scheme. Project developers/ investors will need to decide either to participate in the trading scheme or to continue with JI status in order to avoid double counting.

<sup>25</sup> EU Commission: Commission Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/.../EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol’s project mechanisms, Brussels 2003.

It remains to be seen whether industrial lobbying manages to get rid of some of these restrictions. Especially the “concrete ceiling” is a relic of the past and leads to an unnecessary compartmentalisation of the market. It might also send problematic signals to Russia because it makes clear that the overall volume of the Kyoto Mechanisms’ use will be limited. Moreover, there is no option to implement a “green investment scheme” at a company level, i.e. selling “hot air” to Europe but reinvesting the revenues in emission reduction projects. As Russian ratification of the Kyoto Protocol is by no means sure, a willingness to be a buyer of Russian permits would have been helpful. One might also argue the other way around, since the EU-ETS creates an *additional* demand at the level of companies that has not inherently been induced by the Kyoto Protocol. Thus, there is no worsening of the situation by the design of the EU-ETS.

#### The Role of Accession Countries – Laundering “Hot Air”?

The accession of ten countries to the EU in 2004 has an important repercussion on the EU trading scheme. Most accession countries have strongly reduced greenhouse gas emissions due to the economic transition process. It is likely that they will have a considerable surplus of emissions rights in 2008 – 2012.

A comparison with the figures of the “old” EU Member States shows that emissions from accession countries account for less than 25% of EU-15 emissions (see Figure 5).

If the emissions of the accession countries are assumed to stay at their 2000 levels throughout the first commitment period, the amount of “hot air” will be about 330 000 tons CO<sub>2</sub>-eq annually. This is more than the current gap of the old Member States from the EU target, which amounts to about 200 000 tons CO<sub>2</sub>-eq (2000 data).

Emissions trading did not play a role in the accession negotiations. Now, the directive will be seen as part of the “acquis communautaire”. So far only Hungary has indicated that it wishes to apply for a transition period<sup>26</sup> and several accession countries are in the vanguard of countries preparing for the emissions trading system. The farthest advanced is Slovakia which has already introduced a domestic system with the help of the US think-tank Center for Clean Air Policy (CCAP). CCAP predicts that most of the countries in the region will end up using free allocation based on historic data, going back three to five years. The declared aim of the Slovak system is to monetarise surplus emissions.<sup>27</sup> At a conference of the EEP/Öko-Institute in June 2003, a representative of the Ministry

<sup>26</sup> Point Carbon: CEEC obstacles: Capacity and data, in: Carbon Market Europe, April 11, 2003.

of the Environment clearly stated that allocation to installations will include hot air benefits. The Ministry also intends to conduct a “pilot allocation” this summer to check the reactions of industry before drawing the final allocation plan.<sup>28</sup>

The main challenge in implementing the EU directive in the accession countries will thus be how the question of over-allocation is dealt with. Under a broad interpretation of “early action”, no problem will arise but the Commission could be criticised for hypocrisy towards the project-based Kyoto Mechanisms while accepting “hot air” from its own backyard.

<sup>27</sup> Point Carbon: Slovak allocation set to be based on historical approach; and Slovenské Elektrárne:- Emissions trading holds no risk, in: Carbon Market Europe, May 16, 2003.

<sup>28</sup> <http://www.oeko.de/elni/The%20Case%20of%20Slovakia-Fischerova.pdf>.