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## The EU Emissions Trading Scheme: How to develop a National Allocation Plan

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### ***Introduction***

The elaboration of a National Allocation Plan is one of the most important tasks to be accomplished prior to the commencement of the European greenhouse gas emissions trading scheme. It is at the same time the subject of much debate surrounding the introduction of the EU Emissions Trading Directive.

In this note the National Allocation Plan as foreseen in the Common Position on the Directive is briefly reviewed. Six practical steps are elaborated that represent options and could serve as process guidance to Member State authorities in the development of the National Allocation Plans.

In the Common Position the Commission is required to develop guidance on the implementation of the Annex III criteria by end-2003. **While this note discusses the implementation of Annex III criteria, it does not constitute (a draft for) such a guidance document, but focuses primarily on process issues.**

### ***What does the Common Position say?***

Allocation of allowances is governed by Articles 9, 10 and 11 as well as Annex III.

Allocations are to be made before the beginning of each period (the first period being 2005-2007, with 5-year periods running consecutively thereafter). Member States draw up a National Allocation Plan, that is a statement of how they intend to allocate allowances to individual operators, and the plan is notified to the Commission. Furthermore it needs to be published at the latest upon notification in order to allow the general public to express comments prior to a decision being taken on allocating the allowances.<sup>1</sup> Within three months the Commission can reject a plan, and ask for changes to be made. National Allocation Plans will constitute state aid under Article

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<sup>1</sup> Member States should take into due account comments from the public when drawing up the National Allocation Plan. This might involve the publication of a draft the National Allocation Plan, or other forms of prior consultation.

87 (1) EC and will therefore have to be notified to the Commission for assessment under state aid rules. Competition policy procedural rules will apply in this respect. The Commission intends to take at the same time the two decisions legally required on the Plan as regards the assessment as required in the common position and the state aid assessment.

In a subsequent step, the Member State has to take its final decision on how to allocate the allowances. Companies can then plan on the basis of this decision. Although only a proportion of allowances will be issued each year, the total quantities to be allocated to each operator for the whole period will be known from the outset. This decision should also specify the proportion of allowances that the Member State will issue each year.

***Before the trading period commences, the issue of allocation concerning the period is closed.*** Further “adjustments” to an operator’s holding have to be carried out through buying and selling with other participants in the scheme. Any allocation discussion during an ongoing trading period, can only concern the initial allocation for the *next* period.

Any possibility to make revisions of the allocation decision during the trading period would create uncertainty for businesses. If revision were possible, companies might rely on special pleading rather than the market to acquire additional allowances. Furthermore, companies that made investments to reduce their emissions on the basis of the quantities initially allocated would be disadvantaged by the subsequent issue of extra allowances (by increasing the supply, the price of allowances would be expected to fall).

The Common Position leaves Member States some freedom to allocate the quantities of allowances appropriate to their national circumstances. This reflects also that the burden sharing targets agreed by Member States vary from –28% (Luxembourg) to +27% (Portugal). However, Member States must comply with the *method* of allocation laid down in Article 10, and, as stipulated in Article 11, their allocations “shall be in conformity with the requirements of the Treaty, in particular Articles 87 and 88 thereof”. ***This is a very firm affirmation that allocations to individual operators or sectors must not constitute incompatible state aid (i.e. aid which would distort or threaten to distort competition to an extent contrary to the common interest).*** Moreover, Article 9 stipulates that “the plan shall be based on objective and transparent criteria, including those listed in Annex III”.

The criteria of Annex III allow Member States to take a variety of approaches to establish absolute quantities (including historical emissions or a “national benchmarking” approach). A benchmarking approach can be used to set in the National Allocation Plan absolute quantities of allowances by multiplying input or output data with an emission factor.<sup>2</sup> They remain applicable also in context of future auctioning (in whole or in part). The Common Position does not lay down how Member States determine the quantities of allowances allocated to each operator.

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<sup>2</sup> The Common Position does not allow for determining absolute quantities of allowances ex-post by using actual production per installation in the period. If benchmarking should be based on output during the period 2005 to 2007, it can only be done using expected output.

It is important to note that, in accordance with Article 11, initial allocation of allowances can only be made to operators of installations covered by the scheme. Hence installations not covered by the scheme cannot be allocated any allowances, although they may purchase and hold allowances as any other person.

## ***Process to establish a National Allocation Plan***

The objective in drawing up a National Allocation Plan is to fix a cap on greenhouse gas emissions from installations participating in the trading scheme<sup>3</sup> and to ensure a reasonably fair share-out of the task of emission reductions

- between sectors participating in the trading scheme and the rest of the economy;
- among sectors participating in the trading scheme, and
- among installations in the participating sectors.

It is important to develop a methodology, which does not favour particular sectors or firms unless it can be justified under the Annex III criteria. The allocation should avoid unjustifiable differences between covered sectors and sectors which are not covered, and between and within covered sectors.

This is likely to require looking at the historic and expected emission patterns in the economy as a whole, at the level of sectors, and within sectors.

### ***Step 1: Top-down analysis to define the share of emissions covered by the Directive***

Under the Kyoto Protocol and the EU ratification and joint implementation decision<sup>4</sup> Member States have accepted legally binding limits on their total greenhouse gas emissions.

The **first step** is for each Member State to undertake a top-down economy-wide analysis of **the share of its total allowable emissions under the Kyoto Protocol that it should grant to the total trading population** covered by the EC emissions trading scheme. For the period 2005-07, each Member State will undertake this first step with regard to progress towards meeting its first commitment period target under the Kyoto Protocol, taking into account the path to its Kyoto target.

There are three basic approaches possible, based on historical emissions, on forecast emissions, and on a “least cost” allocation.<sup>5</sup> In practice, it is likely that some combination of these approaches will be useful to arrive at a fair share-out of emission allowances:

#### ***a) The “historical emissions approach”***

Under this approach the total number of allowances allocated is determined by the share of that Member State’s emissions from installations carrying out activities included in the trading scheme emitted in a particular year (e.g. 2000), multiplied by total allowable emissions for the economy.

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<sup>3</sup> The overall cap will in fact be the total of allowances allocated by Member States.

<sup>4</sup> Decision 2002/358/EC of 25 April 2002

<sup>5</sup> The description of these different approaches does not contain an assessment of the compatibility with state aid rules.

*b) The “forecasting approach”*

Following this approach the total number of allowances allocated is determined by the share of that Member State’s estimated emissions from installations carrying out activities included in the trading scheme, multiplied by total allowable emissions. Such estimates or forecasts are established on the assumption that the sectors continue their activities without contributing (further) to greenhouse gas reduction efforts (“business-as-usual”).

*c) The “least-cost approach”*

Following this approach a share is determined, which represents the contributions that activities included within the scope of the scheme should contribute, if the overall limit (Kyoto target) is respected at the lowest overall cost. This share is multiplied by total allowable emissions. It is a fact that some activities have cheaper abatement possibilities than others. Abatement per tonne of CO<sub>2</sub> in the transport sector, for example, is generally more expensive to achieve than in the power sector. To follow the “least cost approach” means that more is being asked of those activities with cheaper abatement possibilities than of those with more expensive abatement possibilities, thus reflecting inter alia a possibility to accommodate early action.

Comparing the results from the three approaches will enable the Member State to determine a **preliminary range of the total number of allowances** to be allocated under the Plan.

To achieve its Kyoto target, the Member State’s allocation to activities covered by the EC emissions trading scheme must be **compatible** with the level of emissions that it expects from activities not covered by the scheme, taking account of the **expected emissions after adopting additional or reinforcing existing measures applied to these other sectors**. Unless a solid overview is maintained, too much may be allocated to sources covered by the emissions trading scheme or alternatively, the allocations may be particularly stringent.

In fixing the total number of allowances to be allocated a Member State will have to consider the potential to reduce emissions, other EC legislative and policy instruments, and national energy policies; and may consider to accommodate early action.

**Example:** Under the Kyoto Protocol (i.e. in 2008 to 2012), Member State X's emissions are limited to a total of 100 million tonnes. In 2000, the activities covered by the EC emissions trading scheme emitted 40% of the total emissions of that Member State. Consequently, under approach (a) they will receive 40 million tonnes. If these activities continue to increase their total emissions under a "business-as-usual" scenario, they may be expected to emit 50% of total estimated emissions, so under approach (b) they will receive 50 million tonnes. Under the "least-cost approach" economic analysis may indicate that these activities should emit 35% of the Kyoto budget, as emissions are more expensive to cut in other sectors. So under this approach the sources covered by the emissions trading scheme will only receive 35 million tonnes. As a result of the analysis, Member State X knows that a political decision should be situated in the range between 35 and 50 million tonnes.

Moreover, the upper end of this range is only feasible, if emissions are expected to decline in other sectors, so that the overall ceiling of 100 million tonnes would be respected. In practice, basing the share of allocated allowances to participants on the "business as usual" forecasted trends approach may be equivalent to exempting them from contributing to (further) emission reductions, and could be incompatible with state aid rules and Annex III.

## **Step 2: Bottom-up exercise to collect data from installations / companies**

In parallel to step 1 the Member State needs to establish a list of installations covered by the scheme.

To facilitate a fair allocation of emission allowances to individual installations, it is useful to compile data from the companies operating such installations on

- a) ***current emissions from the installations***
  - => in the most recent year (e.g. 2002)
  - => on average over recent years (e.g. 2000 to 2002)
  
- b) ***historical emissions from the installations***
  - => in order to identify early action undertaken, possibly going back as far as 1990
  
- c) ***expected future development of emissions from the installations***
  - => 2005 to 2007 or 2012

If a Member State intends to accommodate early action, it could also compile information on specific measures<sup>6</sup> that have been undertaken in installations, which may qualify as early action.<sup>7</sup>

The information according to these approaches will give a detailed and comprehensive overview concerning an installation-based emissions pattern over the periods concerned.

A Member State could also invite companies to provide annual output data per installation for these periods, in particular if it intends to use a benchmarking element in determining absolute allocations.

**Example:** The bottom-up exercise results in current emissions by covered installations of 42 million tonnes and forecasted emissions of 50 million tonnes.

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<sup>6</sup> For the assessment of the National Allocation Plan under state aid rules it will need to be considered if such measures have been undertaken as a result of granted state aid.

<sup>7</sup> A simplified approach to accommodate early action could be to use an earlier year than the most recent year in an allocation formula. Benchmarking represents another alternative to this end.

### **Step 3: Consolidation of top-down and bottom-up information**

In this step a comparison is made of the information (totals and per sector) collected in two previous steps, at a minimum for current emissions (2002) and forecasted emissions (2005 to 2012). In other words, a comparison is made between the range established under the top-down analysis and the actual emissions profile put forward by companies under the bottom-up exercise. Three outcomes of this consolidation are possible:

- a) *the bottom-up exercise is compatible with the top-down analysis*
- b) *the bottom-up exercise gives a larger number than the top-down analysis*
- c) *the bottom-up exercise gives a small number than the top-down analysis*

The latter two outcomes are more likely in practice than a perfect match. In such a case it needs to be decided how to resolve the discrepancy. An in-depth review of the reliability of the data may perhaps be undertaken.

In order to resolve the discrepancy, the number of allowances calculated under bottom-up current or expected emissions could be reduced, or the Member State could adopt further measures in non-covered sectors so as to make more allowances available. The choice should be based on the scope for emission reductions in the covered and non-covered sectors.

Under outcome (c), a larger number of allowances could be allocated to installations, if this does not conflict with the criteria used to develop the Plan and state aid rules. Alternatively, more could be attributed to sectors not covered by the emissions trading scheme.

**Example:** Taking into account the results of the top-down analysis which has resulted in a range of possible allocation between 35 and 50 million tonnes, and forecast emissions in non-covered sectors, Member State X may decide to allocate allowances for a total of 40 million tonnes.

#### **Step 4: Setting allocations for sectors and installations**

The next step is for each Member State to share out the total amount of allowances that it will make available to the emissions trading system to specific **sectors (activities) and individual installations**. As with the allocation to the scheme as a whole, this should involve reconciling top-down and bottom-up approaches.

The emissions during a particular year – current or historical – could be used for defining allocations to individual installations. To take account of fluctuations in economic activity and emissions, rather than using a single year as the baseline, the **average emissions during a number of years**, e.g. 2000 to 2002, may be more appropriate in practice. Following this approach, there would be no necessity to set sectoral budgets prior to determining allocations per installation.

Another possibility for Member States would be first to **consider allocation** of allowances **to different sectors** covered by the EC emissions trading scheme, **based on approaches (a), (b), or (c) outlined under step 1 above**. The subsequent allocation to individual installations within sectors could be based on past emissions, as described above, or on other activity data such as inputs of raw materials (e.g. heat) or output of products. This approach allows the use of sector-specific formulae to determine allocations per installation and may require a provision to resolve data conflicts.

**Example a:** Member State X decides to allocate to installations on the basis of average emissions between 2000 and 2002. Average annual emissions of a cement plant (installation Z) are 2,5% of the total average emissions of installations covered by the EC scheme in the Member State. The operator of installation Z is allocated 2,5% of the total allocation, i.e. 1 million tonnes (2,5% of 40 million tonnes).

**Example b:** Member State X decides to allocate to sectors based on the proportion of emissions that these sectors contributed collectively and on average between 2000 and 2002. In this period cement plants accounted for 20% of the total emissions in that Member State covered by the EC trading scheme. The Member State X allocates 40 million tonnes in total to all the activities covered by the EC emissions trading scheme and the cement manufacturing sector will receive 8 million tonnes (20% of 40 million tonnes).

The Member State decides further to allocate to individual cement plants with a benchmark approach in the form of multiplying the average annual output in tonnes of cement in the years 2000 to 2002 with an emission factor. Assuming a benchmark of 0,8 tonnes of carbon dioxide per tonne of cement, and installation Z's annual average cement output in these years to amount to 1,5 million

tonnes, installation Z receives allowances for 1,2 million tonnes of emissions ( $1.500.000 * 0.8$ ). Note that if this approach would result in more than 8 million allowances to be allocated to installations in the cement sector, i.e. more than the sectoral budget, a balancing factor would need to be used to curtail allocations per installation to respect the sectoral budget.

*Note: These examples are purely illustrative. A Member State is free to choose any approach to allocate allowances to sectors and/or installations, provided it is consistent with the provisions in the common position, in particular Annex III, and the Treaty.*

### **Step 5: New entrants**

It is required under Annex III that a National Allocation Plan contains information on the manner in which new entrants will be able to begin participating in the emissions trading scheme. The way in which this is done is a matter for each Member State to decide. It is important to keep in mind that the new entrants issue is of a transitory character. What is a new entrant in one trading period will be an existing installation in the subsequent period and be treated in the same manner as all other existing installations.

In deciding how to treat new entrants a Member State needs to consider that the Treaty's provisions on the right of establishment in the internal market have to be respected. It is crucial that new entrants have access to allowances, as without this they could be prevented from establishing themselves in business and competing in the underlying product market of the sectors covered by the Directive. Guaranteeing this is the essence of the second paragraph in Article 11 (3) of the Common Position. A broad and liquid EU-wide market in allowances should in itself provide access to new entrants. Moreover, competition law at national and European level would be applicable in the unlikely event that uncompetitive market practices with respect to allowances should be used to erect market entry barriers.

Member States may choose to let new entrants buy allowances on the market, as is done under many existing emissions trading schemes. Operators of existing installations may have made investments before they were aware of the need for them to contribute to greenhouse gas emission reductions. In contrast, operators of new installations will make investment decisions with certainty of the need for them to take their climate change impact into account. If a Member State chooses to let new entrants buy allowances on the market, this obligation should not be imposed during a disproportionate period. Moreover, if a Member State chooses this option, there is no need to reduce the total allocated quantities as set in the preceding step to provide for new entrants.

Alternatively, a Member State could choose to build a reserve of allowances for new entrants. In this case, the basis according to which new entrants will be allocated, and the total number that could potentially be allocated, should be specified clearly and objectively in the National Allocation Plan. Up to the amount of allowances in the reserve, new entrants would be given a free allocation. If there turn out to be fewer new entrants than expected, the Member States needs to determine what it will do at the end of the period with the unused allowances. In case a Member State should decide to build a reserve, it needs to modify the allocations to individual installations defined in the previous step accordingly.

**Example:** Member State X decides to build a reserve and allocate 3% of the total number of allowances issued to this reserve.

As a consequence the Member State would only allocate 38.8 million tonnes (out of 40 million tonnes) to existing installations and hold 1.2 million tonnes in the reserve. The operator of installation Y, a power plant that would originally have received allowances for 2 million tonnes, would receive an allocation of 1.94 million tonnes.

## **Step 6: Completion of the National Allocation Plan**

The Member State summarises the work undertaken and drafts its National Allocation Plan. It may want to undertake consultations and seek comments from concerned stakeholders prior to publication and submission to the Commission and notification under state aid procedures.

The most important items the Plan should contain are indicated as follows:

- the share of the Member State's emissions cap under the Kyoto Protocol intended to be allocated in the form of allowances for the period
- what principles, assumptions and data have been applied to determine that share (total and sectoral historical emissions, total and sectoral forecasted emissions, least-cost approach and potential to reduce emissions, account taken of other regulations)
- whether early action has been taken into account, and if so, the methodology for doing so
- whether the installations in the "trading population" (i) benefit from environmental tax exemptions, with or without agreements with the authorities on emission reductions, and (ii) whether they are covered by any environmental investment aid scheme
- whether the installations that are to benefit from "early action" received state aid for the investment(s) concerned
- how clean technologies have been taken into account
- how national energy policies have been taken into account
- details of how the number of allowances intended to be allocated to each installations has been determined
- a list of installations and the respective quantitative allocation intended per installation for the period (including the amounts to be issued each year)
- annual emissions and other data per installation for all years used in the allocation formula(e)
- the manner in which new entrants will be able to begin participating in the greenhouse gas emissions trading scheme in the Member State (and the details of any reserve, in case it has been decided to constitute one)
- how any public comments have been taken into account already, and how public comments on the National Allocation Plan will be taken into account.

In order to facilitate the access to and comparability of National Allocation Plans, the Commission considers presenting to Member States in the course of 2003 a common format (i.e. table of content) for the presentation of the National Allocation Plan.

### ***Concluding remarks***

Allocation is about striking a balance between the theoretically desirable and the practically feasible, while keeping in mind that it defines a starting point rather than an outcome. It is important that each Member State has a certain degree of freedom to allocate the quantities of allowances deemed necessary. The Directive does not tell it how to do it. Subsidiarity is one reason and the Kyoto target is the other. The Kyoto Protocol sets the overall target that a Member State must respect. As a consequence, and in contrast to other policy decisions, the targeted environmental quality is pre-determined by the Kyoto target. Allocating more or less to participating installations does not deteriorate or improve the environment. How a Member State distributes the required effort between different sectors is within certain limits (e.g. state aid provisions) for it to decide. A Member State may decide to take more national measures in a given sector than others.

The emissions trading Directive constitutes a balanced division of tasks between the Member States and the Commission. By doing so, it prevents over-allocations that could disrupt competition and the internal market, but leaves considerable leeway for a Member State to take account of its particular circumstances. The Commission – following the provisions of the EC Treaty as well as those under the Directive – will scrutinise the submitted National Allocation Plan and its contribution to achievement of the Member State's Kyoto target. Through the state aid scrutiny as well as by checking and comparing the Annex III criteria and principles applied this will safeguard the environmental integrity of the scheme and prevent unacceptable distortion of competition within the single market from arising.