The cement industry position on the Entec study: “Assessment of the possible development of an EU-wide NOx and SO2 trading scheme for IPPC installations”

The cement industry - represented at the European level by Cembureau - the European Cement Association and at the national level in Poland by the Polish Cement Association is against an EU-wide trading scheme for NOx and SO2 emissions and has already expressed its position based on very strong reservations about the putative environmental and economic benefits of such a scheme.

A central point is that industrial and other emissions of these gases are already effectively regulated under several international agreements, European directives and national measures such as taxation. A trading scheme would bring double regulation and generate unnecessary costs.

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ENTEC STUDY FOR THE EUROPEAN COMMISSION

On 10 February 2010, the European Commission (DG-ENV) organised a stakeholder consultation meeting on NOx and SO2 trading at which the Entec study “Assessment of the possible development of an EU-wide NOx and SO2 trading scheme for IPPC installations” was presented. The meeting was attended by representatives of the Member States, NGOs and industry among which CEMBUREAU.

The draft report on the first study does not make a convincing case and does not provide clear and satisfactory responses on a number of vital points.

Furthermore, CEMBUREAU has identified a clear error in the Business-as-Usual (BAU) emissions assumptions for the cement sector.

CEMENT SECTOR ERRONEOUSLY KEY FOR TRADING

The conclusions of the whole Entec study are driven by what may happen in the cement sector. Therefore cement is the key sector in respect of which a trading system would make sense, according to Entec.

The study concludes that a huge reduction of emissions for the cement sector is potentially achievable and relatively cheap under a trading scheme. However, some of the assumptions by Entec are questionable:

1) Entec calculated the average emission of a plant by dividing total emissions by the number of installations, thus ignoring CEMBUREAU’s point to consider whether there actually is – or not – a need for abatement at installation level. The result is that more abatement potential for the cement industry was assumed than is actually possible.

This is even clearer for SO2. In the cement industry, the SO2 emissions are directly related to the sulphur content in the raw materials, therefore EU-wide emission levels
from cement plants are overall low, which means that most of the plants do not need any abatement measures.

2) Request for installation specific information was not directly addressed to CEMBUREAU by Entec. This led them to assume that the abatement techniques were installed in plants with the lowest emissions. This is not accurate and does not represent the reality.

Plants with low SO\textsubscript{2} emissions are not necessarily those with abatement measures in place. Those with emissions of 400mg/Nm\textsuperscript{3} may have applied abatement measures and thus have no further potential to reduce emissions. The only installations with the potential to reduce their emissions are but a few with high SO\textsubscript{2} emissions related to the sulphur content in the raw materials.

This also applies to NO\textsubscript{x}, but to a lesser extent. Some plants have come down to 800mg/Nm\textsuperscript{3} and have no room for further abatement, whereas others, at 700mg/Nm\textsuperscript{3}, may have.

3) Current NO\textsubscript{x} emissions of the cement sector are around 400kt. With no capacity increase, 2020 BAU emissions for the cement sector would total 281kt. However BAU emissions for the cement sector are assumed to increase to 500kt even under upper-BAT conditions with the implementation of the Industrial Emissions Directive.

The equivocal assumptions in the modelling are due to:

a) The huge capacity increase based on GVA applied directly to clinker production, which is unlikely, and

b) The huge capacity increase being built with flame cooling or low-NO\textsubscript{x} burners as BAT, and no SNCR, which is the BAT foreseen in the new Cement BREF Document from May 2009.

This point has been acknowledged by DG ENV as crucial to the REFERENCE SCENARIO and Entec has been asked to clarify it.

GENERAL INACCURACIES IN THE ENTEC STUDY

The report contains some inaccuracies and methodological approximations which raise questions about the robustness of the conclusions presented:

1) The uncertainties in the assumptions are high
   The uncertainties in the assumptions, combining macroeconomic models with microeconomic installation data are higher than the differences between the scenarios presented. This casts a doubt on the approach as such and scenario based policy making in general.

2) The policy baseline is questionable
   The report attempts to second-guess the outcome of two key items of air quality legislation: the Industrial Emissions Directive (IED) and the National Emissions Ceilings (NEC) Directive, neither of which has been finalized.

3) There will be double regulation
   It is acknowledged in the report that air quality limits will need to be respected and therefore may be required to impose emission limit values (ELVs). Although the
modelling indicates that ELV’s would be lifted, this is not a likely scenario in the Member States.

There is no assessment of the impact of setting ELVs for NO\textsubscript{x} and SO\textsubscript{2} on top of trading, which is the likely situation. BAT/ELVs and trading do not work together as market liquidity will be very low.

4) **Costs are unclear and underestimated**

   Apparently the environmental benefits and costs for society have been mixed with the costs for industry, blurring the picture of who bears which costs.

   Second, costs in the report are presented as savings compared to a reference scenario. In fact, they remain costs for industry. For companies already applying BAT the system will bring costs only. Only in the situation where the allocation rules would give full free allocation to any installation applying BAT would this be resolved. Anyhow, administrative costs would come on top of this.

   The total of €35 million/year regarding monitoring, reporting and verification cost seem an underestimation.

   There is no assessment of the indirect costs to energy intensive industries due to the effect of a trading scheme on power prices. These effects need to be assessed at a national level. Whether the indirect costs will be taken into consideration into the second study, the first study does not read clearly as excluding the indirect impacts on power prices.

5) **Environmental and health impacts are not properly addressed**

   The analysis of environmental impacts could be insufficient as a 10x10 km grid was used and local impacts can only be studied at a 1x1 km grid.

   The report does not properly address the issue of cross-media effects (page 150). There will be cross media effects if the IPPC/IED is no longer applied to the pollutants.

   An EU-wide trading scheme does not make sense environmentally as it would be equivalent to giving the right to trade health effects across Europe. Members States with the lower-cost options for reducing SO\textsubscript{2} and NO\textsubscript{x} would be expected to suffer greater health impacts than under IED.

   Furthermore, a trading scheme has the potential to increase emissions in centres of population, thereby creating air quality hotspots. The study does not adequately address this issue.

6) **The database of industrial installations contains uncertainties**

   The distribution of emissions between member states estimated by IIASA and Entec are clearly different. Therefore, there is a risk that the Entec database is not adequate in terms of its composition of plants per member states.

   It is questionable if the database gains a sufficient degree of representativeness of the actual plants situation. If not, it is impossible to rely on data regarding emission reductions and related costs, as these two are strictly plant-related.

7) **Modelling process contains huge uncertainties**
The basis of the study for 2020 projections is an out-of-date set of energy projections from the PRIMES model which do not adequately account for the effects of the economic crisis. In addition, the expected huge growth in emissions is unlikely as all new investments will be at BAT level.

The conclusions of the study are based on a very complex modelling process which contains significant uncertainties throughout.

For example, the BAU scenarios show enormous growth in sector emission compared to the EPER 2004 data. There is little or no sensitivity analysis of the data used in the scenarios. The study lacks a more careful assessment and quantification of the impact of these uncertainties on the policy-relevant conclusions.

8) Functioning of an “theoretical” trading scheme
There is no assessment of the liquidity of the market under the different trading scenarios. New installations should in practice have little room to trade.

The perfect market conditions assumed in the report in fact do not exist. This is clearly seen in the EU CO\textsubscript{2} ETS and it has a significant impact. For instance:

- “Benefits” of trading immediately vanishes if the system moves away from total revenue recycling, which is ignored as possible outcome of the legislative process.
- Trading can be seen as fund raising. Only ‘hot spot’ operators will have an interest since they will expect funds from revenues to be given for extra abatement beyond BAT. “Benefits” of trading is difficult to see for emitters outside ‘hotspots’.
- Overlap and interference of the trading system with the EU CO\textsubscript{2} ETS have not been fully assessed. CO\textsubscript{2} and NO\textsubscript{x} emissions are often coupled, CO\textsubscript{2} lowering will increase NO\textsubscript{x}.
- The report has not looked on key drivers of the CO\textsubscript{2} price, e.g. oil price impacts, organization of auctioning, sector caps, etc. The report assumes that the lowest cost technical options will set the price, which in fact is by no means the case in the EU CO\textsubscript{2} ETS.
- From an ecosystem and health perspective, sectors/countries with effects of emissions categorized as “high” pose the highest risk if emissions are increased. Trading between sectors/countries with “high” and “low” effects would only be beneficial one way, from “high” to “low”, and detrimental if the trade occurred the other way around, from “low” to “high”. Therefore, a rather complex system of trading possibilities between member states arises when taking all the effects into account.

9) No analysis at member state and sector level
There is no analysis of the impact of a trading scheme on costs at either member state or sector levels. Abatement costs will differ widely between sectors and no information is given on technological options and related costs. There is no assessment on the abatement cost for emissions in Member States in “high” impact zones that would not be allowed to trade in comparison to Member States allowed to trade.
OVERAL ASSESSMENT

The objectives of the Entec study are basically assessed against one single parameter: the theoretical cost-advantage of a trading scheme versus an IED approach, thereby concluding that a trading scheme would be substantially cheaper than the implementation of the IED.

However:

- The trading scheme does not start from an IED upper-limit BAT restriction, but rather from a ‘higher’ BAU emissions baseline. Thus, the study assumes non-compliance with the European Union’s most recent IED policy. The main share of the cost-gain of a trading scheme is actually calculated in the first track of a trading scheme, when emissions are reduced down to the level of upper-limit BATs.

- Indirectly the Entec data suggest that the cost-gains of applying trading scheme on top of IED upper-limit BAT requirements are fairly low. In other words, most of the cost gain occurs in the first step of a trading scheme in which emissions are reduced from BAU to upper-limit- BAT-s levels.

- Entec assumes that a fully effective trading scheme is operational in 2016 while at the same time compliance with IED is no longer required. This seems a rather optimistic time planning; also regarding the fact that the IED has recently strengthened the local BAT approach. Introduction of a trading scheme at a later stage would reduce baseline emissions and reduce the cost-gains from a trading scheme.

- The key cost-savings mechanism of the trading scheme scenarios in the Entec study is that expensive SCR measures in the power sector are postponed in favour of cheaper abatement measures in other sectors, which can consequently sell their credits to the power sector. However, SCR in the power sector is a matured technology with related costs amortised and not expected to further decrease over time. When the European Commission aims at deeper emissions reductions in the long run, SCR-measures will have to be taken at a point in time anyway. As a result, with decreasing caps, the cost-advantage of trading scheme over IED will disappear.

- The introduction of a trading scheme for NOx and especially for SO2 may not be proportional. Acidification related to SO2 emissions will have become a regional or local problem in 2020, to which industrial SO2 emissions will contribute only 11%. SO2 emissions are also strongly associated with CO2-intensive fuels (coal, oil) and probably, at least in the long-term, climate policies will provide an additional incentive for a reduced use of these fuels.

CONCLUSION

The Entec study actually shows that the ‘window of opportunity’ for an trading scheme is quite small. Although this conclusion is somewhat hidden in the report, the large cost-gains seem to rely heavily on the assumption that all IED requirements are removed and upper-limit BATs can be reached via trading scheme. The cost-advantage of moving beyond upper-limit-BATs via an trading scheme appears to be limited.

Actually the trading scheme is being proposed at a late policy phase in which the environmental problem has been reduced substantially already. Industrial emissions of NOx and SO2 in the EU, including those in the cement sector, have dropped substantially since the mid 1990s. This has been achieved through the legal enforcement of Emission Limit Values for individual emissions sources.
Furthermore the trading scheme is introduced within a policy landscape that all stakeholders agree cannot be simply removed as Entec assumes. Interaction with standing polices will decrease its potential efficiency and increase the complexity of air pollution policies, where the Commission aims at simplification.

The proportionality of introducing a trading scheme for NO\textsubscript{x} and especially for SO\textsubscript{2} is questionable as it goes in the opposite direction to the EU supposed policy making. From the perspective of the cement sector, these arguments are even stronger because the SO\textsubscript{2} performance of the sector is already good.

The desired air quality can be achieved by the better implementation of the existing legislations, which has been the European Commission’s motive for the ongoing recast of the IPPC and other six directives into the Industrial Emissions Directive.