



EU ETS POST 2012

SUBMISSION TO THE EU REVIEW

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Key findings

- Delivering emission reductions requires innovation, optimisation and substitution along the chain of industrial production processes and products, and a carbon price is a necessary though not sufficient mechanism for achieving this. The EU ETS is the only credible mechanism for establishing a common carbon price across Europe.
- The EU ETS instruments must rest within a structure of obligations on total national emissions, to ensure that governments retain incentives for complementary, supporting policies.
- Multiple uncertainties, both internal and external, make EU ETS prices volatile and thus reduces its efficiency and effectiveness: its role in supporting low carbon investment could be supported by the use of a reserve price on EU ETS auctions to protect investors against extremely low price scenarios
- Efficient investment requires that the EU ETS must continue after 2012, despite the inevitability of a world of unequal implementation and prolonged international differences in carbon prices
- The ultimate objective of the EU ETS should be clarified as being to reduce the carbon footprint associated with European industrial activity. Leakage can thus be a legitimate concern, but must also be balanced against the loss of emission reductions associated with potential counter-measures
- Leakage from direct emission costs is likely to be only of concern for few specific sub-sectors: semi-finished steel (BOF), clinker & lime, and potentially pulp, Ammonia and basic organic chemicals from steam cracking.
- Aluminium and copper may also be exposed due to electricity price impacts, but the marginal carbon intensity of EU electricity means that re-location is likely to be associated with a move to lower emission sources
- The total economic value-added of potential exposed sectors is unlikely to exceed 1% of EU GDP. Successful measures to reduce leakage would reduce potential competitiveness losses to a trivial magnitude. Any measures to tackle leakage should be considered at the level of specific subsectors and products on a case by case basis, and approached in terms of reducing leakage not economic protectionism

- Options to reduce leakage span free allocation, sectoral agreements, border adjustments, and potentially use of auction revenues:
 - Continued free allocation has five specific drawbacks: ‘updating’ distortions; disincentives to innovation; exacerbation of uncertainties; dampening of the product price signal; and distributional consequences that would reduce public support for the instrument. Several of these disadvantages would be considerably exacerbated by a move to ‘output-based’ free allocation, which would also require revision of the Directive
 - Voluntary sectoral agreements among industry can deliver multiple objectives, but are unlikely to directly address leakage concerns. Exempting participants of such agreements from the EU ETS would seriously undermine the ultimate objective. Sector agreements established with other governments should be actively explored for the principal sectors indicated, plus electricity
 - Border adjustments to compensate for differential carbon prices can comprise export taxes levied by external countries, or import and export tax adjustments levied by the EU. These are technically and legally feasible, but politically and institutionally challenging. BTAs should not be considered as an implicit ‘threat’, or for protecting competitiveness, but solely as a possible option in discussion with other countries for addressing leakage
 - Use of auction revenues for addressing leakage would probably raise State Aid issues that might require revision to State Aid rules, though degree may be possible through the existing special provisions around environment and R&D.
- Consequently, we conclude that:
 - the fundamentals of the EU ETS Directive do not need to be renegotiated in relation to the issues we have examined;
 - free allocation should be greatly reduced, where possible to zero;
 - the Directive should stipulate a *minimum* not *maximum* level of auctioning by Member States;
 - non-zero free allocation should constitute a temporary derogation for a few specific sectors whilst intergovernmental negotiations are pursued to explore the possibilities for state-based sector agreements and international agreement on border adjustments specifically designed to reduce leakage

Introduction

The G8+5 countries have jointly declared their commitment to contribute their fair share to tackle climate change by stabilizing green house gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system.¹ To deliver these emission reductions, a mix of policy instruments has to be applied at national and regional level covering three dimensions: (i) technology policy; (ii) evolving institutional and regulatory frameworks; and (iii) creating strong CO₂ price signals, for which the EU ETS is the principal instrument across Europe.

This submission to the EU ETS Review is the joint product of two international collaborative studies convened by Climate Strategies: a study on quantifying competitiveness effects, led by Jean-Charles Hourcade at CIREN, France; and a study on design options for the EU ETS post 2012, led by Karsten Neuhoff at Cambridge University UK. The other two named authors have been closely involved in the work and associate themselves with the conclusions set out here. This submission rests on a number of supporting documents arising from workshops held during the course of our studies and posted at www.climate-strategies.org.

I. Economic instrument options

The EU ETS is an important pillar of European climate policy and seeks to deliver CO₂ emissions reduction associated with European industrial activity. One alternative discussed as alternative to ETS are CO₂ taxes. They are politically difficult to implement and the uncertainties associated with a transition to taxes could severely delay investment in low Carbon projects.

Explicit CO₂ emission limits without trading are also discussed as alternative to EU ETS. They have been effective changing combustion processes or development and deployment of filters for air and water emissions. It seems unlikely that similar end-of-pipe technologies will suffice to achieve emission reduction targets, because tackling CO₂ necessarily requires innovation, optimisation and substitution along the production process will be required. It is difficult to envisage how this can be achieved without incentives from price signals. Emission limits are thus a complement to, rather than a substitute for, EU ETS.

EU ETS is only one pillar of climate policy and both member states and the EU commission will retain overall responsibility for delivering national and EU emission reductions. This is necessary, because they are needed to implement and monitor emissions trading and to pursue complementary policies on the technology and institutional side.

We will now discuss the challenges EU ETS has to address post 2012 (I) as an effective instrument in the international context, (II) leveraging synergies with other climate policy instruments, and (III) ensuring efficiency, equity and effectiveness and how that all fits together (IV).

II. EU ETS in the international context

Countries will balance the choice of different instruments, so as to reduce emissions most effectively in their specific political, economic and social situation. Retaining this flexibility for the national implementation facilitates negotiations on a comprehensive agreement within the United Nations Framework Convention on Climate Change.

¹ Joint declaration by the G8-Presidency and Brazil, China, India, Mexico and South Africa, 2007

The flexibility to balance different policy instruments can imply that countries initially pursue independent trading schemes or CO₂ taxation approaches. For a significant transition period this can result in different CO₂ price levels across regions. Market participants' confidence in robust CO₂ prices and thus their low Carbon investments requires that the economics and politics of the system can cope with such prolonged price differences.

The principal objective we suggest for the EU ETS is to reduce the CO₂ emissions associated with European industrial activity. This implies that emissions associated with the consumption of industrial products is relevant, though not the principal focus. Consequently, leakage of emissions, through potential industrial relocation or external substitution as a result of the EU ETS, is a relevant consideration; however, possible measures to tackle leakage must also be balanced against any consequences that could undermine efficient domestic emission savings.

The EU ETS has been effective in mobilising capital and other resources for technology transfer, engaging developing countries and targeting low cost abatement opportunities under the Clean Development Mechanism (CDM). The scale and scope of the mechanism is likely to increase both towards addressing large scale avoided deforestation and towards the increasing use of renewables. It is still not clear what role several developing countries attribute to the CDM mechanism and what project types, marginal abatement costs and institutional frameworks evolve in developed countries. Thus the supply and demand balance is rather uncertain – and uncertain market clearing price could potentially undermine investment in higher cost abatement options, like renewables both where CDM projects are realised and where project credits influence EU ETS allowance prices.

Clear definition of objectives of the CDM post 2012 will be required to provide a robust investment framework for projects in Europe and internationally, to leverage financial flows from CDM to maximise international emission reductions, and to ensure real domestic emission reductions by European industry.

III. EU ETS in the climate policy mix

EU ETS is only one of several necessary policy instruments to pursue climate policy in Europe. This raises two issues:

Price is not the only influence on emissions, even in the predominantly market-driven sectors covered by the EU ETS. The current arrangement of EU ETS provides limited incentive for governments to support emission reductions in covered sectors after national allocation plans have been agreed. Given the importance of complementary policies to address technology aspects and institutional concerns this is worrying. There might even be perverse incentives to increase emissions for domestic industry covered by emission trading if current emissions will form the bases for future burden sharing agreements between member states. One solution could be to clearly establish that the emissions from EU ETS sectors remain clearly within the scope of total national emissions, for which governments of member states retain responsibility in terms of delivering national emission targets. This creates incentives for governments to contribute to technology and institutional frameworks to reduce emissions of these sectors over time.

The EU ETS addresses a limited number of sectors and the rate at which strong CO₂ price signals can be extended across sectors will depend on (i) the extent to which redistribution from changes of relative price levels can be compensated effectively and political opposition minimised (ii) the ability to achieve some of the objectives using other policy instruments like regulation, infrastructure or information provision (iii) the potential for leakage or international coordination required. A clearly defined transition strategy for each sector will increase public understanding and acceptance, and contributes to investment certainty. The inclusion of additional sectors into EU ETS is part of this transition strategy, and might involve different time frames for different sectors.

III. Internal consistency of EU ETS

EU ETS has to still resolve some internal challenges:

(i) The allowance allocation under the European Emission Trading scheme is significantly different from the text book model of a lump sum transfer. After all, governments are not able to commit credibly to the allocation for more than one commitment period, where knowledge of climate change impact and mitigation opportunities and the international context is still evolving. As a result, allowances are allocated repeatedly and firms face incentives to deviate from efficient operation and investment decisions to influence the volume of their future allowance allocation. This early action problem arises from expectations about future free allowance allocation.

(ii) Concerns about leakage and competitiveness might explain additional – non text book – provisions in the national allocation plans. Investors in fossil or CO₂ intensive plants receive subsidies in form of free allowances while allocation is withdrawn from closing installations. These provisions create incentives to continue investing and operating conventional CO₂ intensive processes, and delay a decarbonisation.

(iii) The public debate about windfall profits in the power sector emerged with allowance prices exceeding 20 Euro during 2005 – and disappeared with the current low price level. Forward prices suggest that higher prices will be maintained throughout the entire second commitment period, and could reignite the debate. Sectors other than the power sector might be included in the criticism. The longer observation periods will provide empirical evidence of price pass through even where price formation is inert or relative CO₂ costs are small. Where allocation is free and costs are passed through, consumer opposition to the resulting corporate profits will increase, potentially undermining political support for the EU ETS. One justification for such redistribution could be compensation of producers for the value loss of Carbon intensive assets in a low Carbon future. This justification will decline sharply concerning allocation post 2012, as prolonged profiting from the scheme becomes more difficult to justify.

(iv) Investment and financing decisions are affected by uncertainties about stringency and allocation provisions of ETS post 2012. Different sectors and market participants use different investment appraisal methodologies, focus on different policy and market signals and face different financing constraints. Hence uncertainty will have differing impacts across sectors.

(v) In general increased uncertainty is likely to result in investment delays and biases towards technologies with lower capital cost and possibly lower carbon efficiency. Where uncertainties are large, the guiding signals arising from the scheme are weak, and some managers might continue to pursue their business as usual strategy. Creating future visibility about stringency levels and methodologies of allocation would be valuable. Protecting investors in low Carbon projects and technologies against the risk of very low allowance prices facilitates investment decisions and financing.

All five of the above problems would be reduced (or removed) by moving away from free allocation, combined with a far greater use of auctioning, though this does raise other concerns considered in the next section.

The very low allowance spot prices observed in 2007 will not be repeated, as the constraint on banking between periods was unique to 2007. However, the level of future banking and its contribution towards avoiding low allowance prices is uncertain and depends on the stringency of climate policy in subsequent periods. Many investors and banks face difficulties in quantifying such impacts - hence the value of future allowance is still not bankable. To facilitate investment and financing of low Carbon projects throughout the period of adjustment towards a globally strong and persistent Carbon price some protection against the largely political risk of low allowance prices

would be valuable. A group of European governments or all of them together could pursue for example the following two options:

A. Governments can announce a reserve price for allowance auctions. Assuming that a sufficient fraction of allowances is auctioned, and initially the supplementarity criteria for CDM/JI inflows remains, then this reserve price will translate into a price floor for CO₂ allowances. After all, some of the allowances will be required to satisfy demand, and hence no one is going to trade allowances below the minimum price that has to be paid in the auction.

B. Governments can issue put options on future allowances, thus committing towards investors that they will retain a stringent scheme in place. The options allow investors to directly hedge against the risk of extremely low allowance prices. But more important – when the options will be called, market participants have to return allowances to governments. This will increase scarcity and push the allowance price back to the option strike price. Hence a long-term price floor is established and helps investors that are indirectly exposed to allowance prices, via electricity prices or demand for their low Carbon technology. Where allowances are auctioned, these option contracts do not constitute a net financial exposure for governments.

V. Leakage and competitiveness

For some production processes persistent CO₂ price differences can result in leakage. Where production is re-located, global emissions are not reduced, the price signal of ETS is dampened and incentives and liquidity to finance innovation is missing. Furthermore, as leakage changes the scarcity price of allowances under EU ETS, the risk of leakage increases CO₂ price and investment uncertainty. In addition, where job losses from leakage will be attributed to ETS the political support and the ability of the scheme to show leadership might suffer.

The following aspects are important for the identification of exposed production processes: First, the cost increase relative to value added in the production process (value at stake). Second, the level of international competition of the commodity, influenced by transportability, product specialisation, level of customer relationship required and other product attributes. Third, the linkages of the exposed production process in within the value chain of the overall production, influencing the decision whether the process can be outsourced.

Our analysis suggests that with persistent CO₂ price differences, leakage is only of concern in few subsectors, including the production of semi-finished steel (BOF), clinker, lime and probably for pulp, Ammonia and for a few basic organic chemicals principally derived from steam crackers (eg. Ethylene, Propylene, Butadien)..

For aluminium and copper higher electricity costs can also contribute to a re-location of the production. As marginal units of European electricity are relatively Carbon intensive, such re-location is likely to result in global emission reductions.

The following options are usually presented to address leakage in the exposed sectors:

Sectoral agreements can engage other countries in pursuing similarly stringent CO₂ policies for specific sectors. By focusing on specific sectors rather than full coverage reaching agreement could be achieved. To address leakage and competitiveness concerns, industry in other regions has to be exposed to similar CO₂ price signals. Voluntary sectoral agreements are unlikely to address leakage concerns and their negotiation should perhaps focus on delivering other benefits. By accelerating the process of integrating other regions they accelerate the move towards CO₂ price signals and thus contribute towards reducing leakage concerns.

Sectoral agreements could involve harmonisation either 'up' or 'down'. The latter would involve the

possibility that sectors choose whether they are covered by EU ETS or by other policy instruments such as CO₂ taxes. By avoiding or limiting emission reductions the leakage effects are also limited. This would eliminate the benefits of EU ETS to deliver a common CO₂ price across Europe, and could create significant CO₂ price uncertainty, not only for the affected sectors, but also for the scarcity of allowances available to the remaining sectors.

Border adjustments compensate for higher production costs from purchases of CO₂ allowances. For example in steel the CO₂ intensive process is the production of semi-finished steel. Exporters of steel products from a region with high CO₂ prices would be reimbursed for allowance costs they incurred for production of primary semi-finished steel if they used the best available technology. Importers face the same tariff. While the economic principle and WTO compatibility is relatively straight forward, the success hinges on the international political support.

Attempts to define and use border tax adjustment as political threat should be abandoned so as to not discredit the approach. Instead a wider set of countries will need to be engaged to develop border adjustment as an economic instrument that allows regions to take leadership with a strong CO₂ price signal. This will involve aspects like transparent institutional structures to define and quantify best available technologies, clear restrictions to ensure only a very limited set of commodities are targeted, early engagement of developing countries to build confidence and understanding, use of net revenues to fund adaptation funds.

Another, or complementary, approach can emerge if external countries agree to impose export taxes on products to reflect their domestic CO₂ emissions. As the international negotiation of these approaches will require flexibility, the option to use **free allowance allocation** to exposed sectors has to be kept open for the time being to ensure leakage effects can be addressed domestically. Assuming the next commitment period will last from 2013-2020 a lump sum allocation would not address leakage concerns, as installations could still close down and re-locate. Hence the allocation will need to be contingent on the continued production at the installation.

The use of free allowance allocation to address leakage would result in the negative effects discussed in the previous section, and should therefore be as restrictive as possible. Proposals in Australia and California to allocate allowances to specific sectors for free to address leakage concerns may illustrate that if the first schemes use free allowance allocation to address leakage concerns, it will be difficult for subsequent countries not to grant the same benefit to their industry. European countries can take leadership by reducing the risk of such a lock in – exploring other instruments, limiting free allowance allocation, and formulating sunset clauses that give governments the flexibility to stop free allowance allocation without delay if leakage ceases to be a concern or is otherwise addressed.

V. Conclusion: fitting it all together

The EU ETS aims to deliver emission reductions associated with European industrial activity. Continuing large scale free allowance allocation post 2012 will severely undermine this objective:

- The distortions from free allocation methodologies reduce incentives for emission reductions (early action problem).
- The administrative constraints from allowance allocation and subsidies to incumbents reduce incentives for innovation in low Carbon technologies.
- Uncertainty about future allocation methodologies complicate and thus delay investment decisions.
- The subsidy for Carbon intensive commodities dampens the price signal that is required for a shift towards lower Carbon products and processes.
- Increasing concerns about equity/fairness can reduce public support for EU ETS.

Hence, securing maximum efficiency from the EU ETS requires a move to dramatically reduce the level of free allocation. To address distortions from early action and reduce investment uncertainty an early commitment towards this strategy will be valuable. To support this and to minimise internal

distortions between Member States, we recommend that the Directive should for Phase III of the EU ETS specify a minimum level of auctioning rather than a maximum level.

For specific subsectors and product markets, there is a case to consider measures to alleviate leakage. Free allocation is a second-best option and should only be considered if complemented by an international negotiation strategy aimed at securing agreement around sectoral policies, export taxes levied by competing countries, and/or internationally accepted border tax measures.

The EU ETS is one policy instrument in the policy mix. National governments and the commission retain overall responsibility to reduce emissions associated with European economic activity. The EU ETS review can contribute towards achieving this objective by:

- Providing a strong and early commitment to the full use a Carbon price signal, including full auctioning, unless leakage is demonstrated to be of serious concern for a specific sub-sector.
- Developing policy instruments to address leakage in exposed sub-sectors, on a technical and political level with the objective to minimise the distortions of Carbon price signals.
- Assessing policy options to reduce risk of extremely low Carbon prices so as to facilitate low Carbon investment
- Clearly defining the objectives of CDM mechanisms post 2012.
- Ensure ambitious caps post 2012

Supporting working papers are available at www.climatestrategies.org and www.electricitypolicy.org.uk/TSEC/2/proq2.html

- International strategies to address Competitiveness concerns
- Can output based allocation and sectoral agreements address leakage?
- Investment decisions under climate policy uncertainty
- Differentiation and dynamics of EU ETS competitiveness impacts