

USG response to the European Commission consultation on Structural Reform of the EU Emissions Trading Scheme

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1. Introduction

The EU Emission Trading Scheme (EU ETS) is in over-supply and there are requests, urges and proposals for interventions. The European Commission proposes a short-term measure, to backload 900 Mton allowances from 2013-2015 to 2019-2020, and that subsequently a structural reform is needed. For this structural reform, the Commission mentions "*six non-exhaustive options for structural measures*" in their report 'the state of the European carbon market in 2012', also named the 'Carbon Market Report'. Stakeholders and experts in the field of the European carbon market are invited by the European Commission to comment on its structural reform proposals for the EU ETS.

We would like to stress that we strongly support the EU ETS as a market-based instrument aimed at achieving environmental targets at lowest cost; a market-based policy instrument which works both in economic prosperity and in crisis. However, there are still fundamental shortcomings, which need to be resolved. Therefore, before commenting on the six proposed structural reform measures for discussion, we first address:

- the structural causes of the present state of affairs;
- the fundamental shortcomings of the EU ETS.

Then comments on the six non-exhaustive options proposed for structural reform are given. Finally a sketch of a comprehensive structural reform package is presented, aimed at tackling the fundamental shortcomings.

2. The structural causes of the present state of affairs

In a note ¹ the Commission stresses that intervention is "*urgent*" otherwise the EU "*ETS may become irrelevant*" and that situation is "*exceptional*". "*The economic and fiscal crisis has affected demand for allowances in such an exceptional manner that it presents severe risks for the continued orderly functioning of the EU ETS.*" In our view, the economic and financial crisis is indeed an important structural cause of the present situation, but not the only one. We distinguish the following structural causes:

- a) The early auction in 2011-2013 of the NER 300 ². The decision on early auctioning was taken in 2010 when the crisis was present and could (should) have been delayed.
- b) Auctioning of about 120 Mton left-overs of the NERs (new entrants' reserves) of Member States of phase 2. Instead of auctioning, these left-overs should have been shifted to the

¹ Explanatory note of mid September 2012 send by Commissioner Mrs. Connie Hedegaard to the European Parliament.

² 300 Mton allowances from the new entrants' reserve of EU ETS phase 3 to generate funds for promoting CCS (carbon capture and storage) and advanced renewables.

NER for phase 3. The `obliged` auctioning at the end of a trading period is a structural problem, which still figures in the EU ETS Directive for phase 3 (for left-overs in 2020).

- c) The ex-ante fixed allocation, which is in fact the only crisis-related cause. This allocation scheme gives emission allowances to industry on the basis of historic (median 2005-2008 or 2009-2010) production volumes and benchmarks. We estimate that the use of historic production volumes instead of actual production volumes has led to the highest contribution to the supply-demand imbalance: ~820 Mton EUAs by end 2012.

The supply of international credits is no structural problem, as this was known since 2008 and it has no relation to the financial crisis. The three real causes above are not structurally addressed in the six options proposed by the Commission. The handling of NERs (a and b above) is not addressed at all.

Concerning the over-allocation due to the crisis (c above) there seems to be an inconsistent reasoning in the analysis of the Carbon Market Report. The inconsistent reasoning is the notion that the EU ETS rules are 'normal' but that the economic circumstances are 'abnormal'. As if an economic recession or crisis hardly ever occurred in the past and never would occur in the future anymore. Regrettably, the opposite is well known.

The structural reform of the EU ETS should address these three basic structural causes. Without adequate reform, supply-demand imbalances are likely to re-surface in the future, which could already happen when the intended review of the EU ETS Directive is planned to be finalised (around 2015-2016). But there are also other structural problems, shortcomings, which also should be addressed in a proper structural reform, these are outlined below.

3. The fundamental shortcomings of the EU ETS – need for structural reform

In our view the EU ETS with an ex-ante frozen allocation suffers from four fundamental shortcomings:

- a) Over-allocation during recession or economic crisis, as mentioned above.
- b) Under-allocation in the case of growth and investments, due to complex and risky allocation rules. These rules deter investments in the European Union and are likely to cause significant *investment carbon leakage*, especially when carbon prices increase in future. It is a significant barrier for growth.
- c) The clear incentive for *production carbon leakage*. In the current rules the production volumes can be lowered until and including 49% (partial cessation of operation rules) while the allocation of emission allowances remains unchanged. Above a break-even CO₂ price – which is rather low and seemingly hardly noticed (product specific, € 15-20/ton CO₂ for most exposed products, € 20-30/ton CO₂ for many other products) – the freed emission allowances will be sold and the shortfall in production will be imported from outside the European Union. Then the revenues from this carbon trade will more than compensate for the cost of transportation into the European Union.
- d) The possibility of windfall profits if companies are able to charge the opportunity-cost into the product price. These profits are undesirable for some stakeholders but essential for others (environmental economists) to achieve the (product) carbon price signal (resulting in lower product demand through price elasticity of demand). However, this carbon price signal cannot be combined with avoiding carbon leakage.

Currently the problems of carbon leakage are hardly debated and analysed; the present debate focuses entirely on the over-allocation.

For a detailed analysis of the huge barriers and risk for growth, see the study “*A reality check of the EU Emissions Trading Scheme; Does it allow growth – the major objective of the EU industry policy?*”, 18 June 2012, undertaken by USG/Chemelot, Borealis and Essenscia.

4. Comments on the six non-exhaustive options for structural reform

We thank the Commission for initiating this debate on structural reform of the EU-ETS and its efforts to include the input of experts and participants of the EU-ETS into the debate. The commission lists 6 options to structurally improve the EU-ETS:

- a) Increasing the EU reduction target to 30% in 2020.
- b) Retiring a number of allowances in phase 3.
- c) Early revision of the annual linear reduction factor.
- d) Extension of the scope of the EU-ETS to other sectors.
- e) Limit access to international credits.
- f) Discretionary price management mechanisms.

As a first general comment, any intervention “*to tackle the surplus*” of allowances is a measure to push the carbon price above a virtual price floor. However, the opposite possibility is hardly addressed (except in option f): what to do if after the present crisis the economy recovers with a – much desired – higher growth path than anticipated today?

Then the CO₂ price may go “through the roof”, e.g. rise significantly above the carbon prices of the Commission’s Energy Roadmap in all low carbon scenarios for 2030 (€ 35-63/ton CO₂) and thus undermine the EU ETS and the competitiveness of European Industry. With the present rules, significant carbon leakage is then highly likely. Note that in these scenarios global participation is assumed, which is a situation that has not been achieved yet.

Therefore we feel that there is an imbalance in the Commission's options. In our proposals for structural reform this imbalance is addressed fundamentally: efficient growth should be stimulated from the new entrants’ reserve, which is guaranteed to be refilled when depleted.

Below the proposals of the Commission are reviewed and commented on.

4.1. Option a: Increasing the EU reduction target to 30% in 2020

There are many ways to increase the reduction target to 30%. The Commission mentions a permanent retirement of allowances or a revision of the annual linear reduction factor (LRF).

The Commission states that previous analysis reveals that a retirement of 1.4 billion allowances would align with an overall target of 30% in 2020 compared to 1990. The Commission has mentioned that the EU ETS cap would move from -21% to -34% versus EU ETS emission in 2005, when total EU target moves from 20% to 30% reduction in 2020. This move to -34% is arbitrary, not based on agreed rules and hence a political decision.

In our calculation, -34% means that the total EU ETS cap (without aviation) would move from 1,777 Mton EUAs (published by the Commission) to 1,485 Mton EUAs, both in 2020. This would permanently remove ~1,520 Mton EUAs in the period 2013-2020.

As the Commission states, this option would not only require changes to the quantity of allowances in the EU ETS but also affect the targets adopted under the Effort Sharing Decision (the non-ETS obligations of Member States).

Assessment

- This option – as a maximum as stipulated in the EU ETS Directive – should be maintained when a new Global Climate Agreement is achieved to prevent a too strong loss of competitiveness of the European industry. Global participation is a prerequisite for achieving a deep reduction in Europe like 80-95% by 2050 as mentioned in the Commission's Energy Roadmap.
- This option would worsen the position of industry and therefore would make industry even more vulnerable for carbon leakage, in absence of structural measures addressing the present fundamental shortcomings.
- This option is not a structural measure because by any new recession or crisis again an imbalance in supply-demand will occur again.
- This option does not address the fundamental shortcomings of EU ETS, as presented.

4.2. Option b: Retiring a number of allowances in phase 3

According to the Commission, this retiring could be done by a separate decision, to be taken by the European Parliament and Council, rather than a fully-fledged revision of the EU ETS Directive. This could be done indeed, however we do not support that it should be done.

Assessment

- Retiring of any number of allowance is not a structural measure. The number of allowances involved as well as the timing and possible re-occurrences are non-structural decisions, which would undermine the trust in the EU ETS.
- See further the assessment of option a.

4.3. Option c: Early revision of the annual linear reduction factor

In the current EU-ETS rules, the total amount of allowances will decrease by the linear reduction factor (LRF) of 1.74% annually, compared to the average annual total quantity for the period 2008-2012. The Directive foresees a review of the linear reduction factor as from 2020 with a view to be adopted by 2025. This proposal is that the linear reduction factor would be revised soon and set at levels in-line with an overall EU target of 30% GHG reductions compared to 1990, as described under option a.

Assessment

- Increasing the linear reduction factor (LRF) in line with the target to 30% in 2020 would mean in our calculations a change from -1.74% to -3.10% as of 2013 and would imply a large removal of allowances (the calculated ~1,520 Mton EUAs).
- This option would directly have a double negative effect on the competitiveness of industry: more scarcity of allowances leading to increasingly higher carbon prices and a lower allocation to industry, which continues to worsen also after 2020. Thus the risk of carbon leakage would increase instead of decrease.
- See further the assessment of option a.

4.4. Option d: Extension of the scope of the EU ETS to other sectors

The Commission states:

“The fourth structural option could be to include sectors less strongly influenced by economic cycles. Whereas the emissions in the EU ETS decreased in 2009 by more than 11%, in the sectors outside the EU ETS this reduction was only around 4%.

The coverage of the EU ETS could therefore be expanded to other energy related CO₂ emissions in sectors currently outside the EU ETS by for instance including fuel consumption in other sectors. ... Several policy questions would need to be addressed, such as who would carry the obligation to report emissions and surrender allowances, fuel producers or users, or some kind of a hybrid system. Therefore, this measure requires more analytical work, including on how it would relate to existing policies in these sectors.”

The final energy use – which includes electricity – of transport and households is 27% and 33% of total final energy use of the EU in 2009, while that of the industry (ETS and non-ETS) is 24%. The inclusion of sectors like transport, with perhaps shipping, and households would indeed increase liquidity of the EU ETS market. Extension of the scope of the EU ETS Directive has its merits, also by elimination of a needed flanking CO₂ tax in included sectors.

Assessment

This option is structural and should be considered, but extension of the scope should be no (non-structural) “backdoor” measure to significantly alter the supply-demand of allowances and no reason to refrain from solving the flaws of the present EU ETS since option d:

- is not a structural measure to avoid oversupply of emission allowances, by any new recession or crisis the same oversupply will occur again.
- does not address the fundamental shortcomings of the EU ETS as outlined above.

4.5. Option e: Limit access to international credits

The Commission states:

“Following the exceptional macro-economic developments and the fact that emissions have been substantially lower than the cap, the quantity limit of international credits in the period 2008 to 2020 has turned out to be rather generous and is a major driver for the build-up of the surplus.

...

In phase 4 the regulatory framework could be crafted in a manner that initially allows for no or much more limited access to international credits. This would create more certainty about the effort to be undertaken in Europe and thus could spur indigenous investment in low carbon technologies, instead of external monetary and technology transfers through the EU ETS. This may, however, have to be balanced against adverse impacts on financial flows and transfer of technology to developing countries.

...

Additional flexibility regarding the access to international credits could be foreseen in case of strong and sustained price increases. Such a mechanism could have a similar function as Article 29a of the Directive, but would not result in the rapid growth of the surplus as experienced at present. Furthermore, the right international conditions could enable a strengthening of the cap and therefore allow for additional cost containment through increased access to international credits.”

The second possibility – regarding protection against too high (unforeseen extreme) CO₂-prices – deserves consideration.

In a new Global Climate Agreement planned to be realised by 2015 the (possibly stepwise) introduction of a global carbon market should be achieved, thus potentially reducing part of the present supply of international credits. Other new supply could emerge, such as from REDD (“Reducing Emissions from Deforestation and Degradation” in developing countries), but such developments are still uncertain today.

Assessment

- This option is structural, it should be considered in the context of a new Global Climate Agreement and anyway in the structural reform of the EU ETS for after 2020.
- However, the fundamental shortcomings should be tackled as well.

4.6. Option f: Discretionary price management mechanisms

The Commission mentions two possible mechanisms in the Carbon Market Report:

“As from the third trading period a large amount of allowances will be auctioned, a carbon price floor has been discussed as a feature applied primarily in the primary market, i.e. for auctions. A carbon price floor would create more certainty about the minimum price, giving a better signal for investors.

Alternatively, a mechanism could be devised that adjusts the supply of allowances, when the carbon price would be affected by a large temporary supply-demand imbalance, by means of a price management reserve. If decreases in the demand were to generate an excessive price decrease below a certain level deemed to affect the orderly functioning of the market, an amount of allowances to be auctioned could be deposited in such a reserve. In the opposite case, allowances could be gradually released from the reserve.

The reserve could initially be funded by reducing phase 3 auction volume by an amount corresponding to a substantial share of the accumulated surplus.”

Assessment

- The first option is not supported. It does not provide a solution for too high CO₂ prices.
- It is noted that some proposals for an ETS, like the Waxman-Markey Bill adopted in the House of Representatives on 26 June 2009 (which later failed in the Senate) did contain a price floor and price ceiling with a strategic reserve.
- Any intervention “*to tackle the surplus*” of allowances would be a measure to push the carbon price above a virtual price floor. Therefore any direct or indirect price floor should be complemented by a direct or indirect price ceiling to protect the EU ETS just for extreme situations, as foreseen in the second option as long as there is no global carbon market. However, the ETS should in essence remain a market-based instrument.
- This option does not tackle the fundamental shortcomings of the EU ETS, which were outlined above. The possibility of a (temporary) price collar system is no reason to refrain from solving the fundamental flaws of the present EU ETS.

5. A comprehensive structural reform package to tackle the fundamental shortcomings

Introduction

In this paragraph a sketch is presented to structurally improve the EU-ETS. We stress the importance of a proper functioning European (and global) carbon market both for sustainability arguments as well as for a competitive European industry.

Global participation of industry and electricity production in an ETS with a same global CO₂ price and a same allocation methodology are vital to maintain the competitiveness of European industry on the global market. The ultimate globally linked ETS is likely to be based on auctioning, which reflects the polluter-pays principle.

With auctioning, the CO₂ impact expressed in €/ton-product follows actual production. With auctioning the cost price difference between two producers A and B producing the same product is given by the difference in carbon efficiency: $\text{Eff.}_A - \text{Eff.}_B$. This is exactly the same as under an allocation with benchmark multiplied with actual production, the cost price difference is: $(\text{Eff.}_A - \text{Benchmark}) - (\text{Eff.}_B - \text{Benchmark}) = \text{Eff.}_A - \text{Eff.}_B$.

Therefore auctioning is clearly an “ex-post” system, just like benchmarks multiplied with actual production, in which a provisional production is ex-post adjusted to actual production (just like the system to pay corporate and personal income taxes).

As long as there is no global auctioning system, free allocation of allowances to industry is essential to avoid carbon leakage and to achieve industrial competitiveness, while the incentive to reduce emissions must be fully maintained as well. Benchmarks are the driver to improve and thus to reduce emission per ton product produced. The stringency of the benchmarks should be carefully assessed as more stringent benchmarks lead to a higher incentive for carbon leakage. Benchmarks combined with actual production follow the polluter-pays principle³.

For ‘significant capacity extensions’ actual production is already now of relevance. However, in the present rules the actual production of just two months within three or six months after start-up (“start of normal operations”) determine the ‘formal’ capacity to be used for allocation. The use of this “start-up” capacity is very risky due to possible technical start-up problems, lack of market demand in times of recession and crisis, or, is not realistic for a novel (performance) product which requires years to develop market demand.

And with this risky rule go many other barriers and risks, which are addressed below.

³ The same is valid for benchmarks and an ex-ante fixed allocation, but only if the production does not change. However, in reality the production volumes do move, up and down, then competitive and environmental distortions occur. A market share winner is punished while the market share loser is rewarded, thus violating the polluter-pays principle. Market share winners are most often innovative market players with more efficient technologies, these are in an ex-ante system hindered instead of stimulated. Under full auctioning, innovative market share winners are stimulated, just as under benchmarks with actual production.

A comprehensive 7-points program

For the reasons above, the following structural reform is proposed for careful consideration:

1. Global participation adjustments.

In a global auctioning system there will be a level playing field. But in case of a (still) poor global participation by 2020 the stringency of the cap for 2030 and beyond, at least for industry, should be evaluated.

The allocation to industry in the EU ETS should anyway be brought in line with those of other emissions trading schemes outside Europe.

2. Benchmarks with actual production data.

Use the combination of actual production figures and benchmarks to determine the allocation of allowances. This circumvents supply-demand imbalances due to lower production due to whatever cause.

If the actual production is lower than the historical baseline the excess flows into the new entrants' reserve (NER), which is a (kind of) structural backloading. If the actual production is higher than the historical production the shortage is taken from the NER. This use of actual production data and balancing with the NER removes the present barriers and risks for growth, eliminates the possibility of windfall profits (in the present ex-ante system by the possible capitalisation of the opportunity-costs) and mitigates the incentive for carbon leakage (zero incentive for production and investment carbon leakage when a manufacturing plant performs at the benchmark).

This main structural improvement will avoid the risk of undermining the stability of the carbon market, as is the stated objective of the structural reform.

3. Direct & indirect allocation.

The unstable and incomplete (in terms of scope and level) financial compensation for indirect (electricity) emission should be changed to a comprehensive long term predictable **indirect allocation**, to complement the allocation for direct emissions.

Companies cannot base investment decisions on an inherently unstable financial compensation.

4. NER replenishment when depleted.

The NER is used to balance the market. The NER needs to be **replenished** from the auctioning volume **if depleted** to provide certainty for investments and avoid investment carbon leakage. A possible **surplus must not be auctioned**. In this way the total EU ETS cap will be maintained.

This provides for a second structural improvement to avoid the risk of undermining the stability of the carbon market.

5. Sliding path allocation.

The **stringent "top 10%" benchmarks** should be the **target for after 2030**, not immediately as from 2013.

The starting point for the benchmark should be Weighted Average Efficiency (WAE). Companies need considerable lead time to invest in achieving such an ambitious top 10% benchmark. The early application of the top 10% benchmark removes significant

financial resource from industry, while the same industry is supposed to undertake considerable investments to reduce emissions.

Contrary to conventional thinking, this temporary weakening of the benchmarks does not undermine the environmental effectiveness of the scheme. The incentive to reduce emissions is fully independent of the stringency of the benchmark for an investment to reduce emissions, it equals avoided costs plus revenues of sales of allowances.

6. Adapt reduction factors.

The **Linear Reduction Factor (LRF)** of 1.74% per year for new entrants and heat users receiving heat from electricity generators should be **adapted to a lower realistic value** and the **Cross-Sectoral correction Factor (CSF)** should be fully **abandoned and replaced by the LRF**. **A future more stringent LRF should depend on the new Global Climate Agreement.**

The LRF should be based on a realistic assumption of when the top 10% efficiency can be achieved for all manufacturing plants of all sectors. This may be around 2035-2040, thus leading to a LRF of e.g. 1.25-1.50% per year based on a starting WAE benchmark. It is essential that the allocation for new entrants is exactly the same as for incumbents (environmental effectiveness, equal treatment).

If Europe comes (hopefully) in 2-3 years out of the present crisis, more new investments for manufacturing growth should be envisaged, which then take until 2017/2018 to come on stream. The economic evaluation period is then 2018-2028/33. But then the present LRF is already as low as 91% in 2018, 74% in 2028 and 70% in 2030, which would with the stringent top 10% benchmark result in very low allocations. The continuously low and decreasing allocation and many other barriers and risks for growth in the present rules will to deter investments in Europe and will cause significant investment carbon leakage.

For example, the top 10% in Europe for steam crackers is close to the best proven technology. A much better performance needs e.g. biomass feedstock or CCS (carbon capture and storage), which are in the Energy Roadmap of the Commission foreseen to fly after 2040 (with the prerequisite of a global approach).

Even more extreme examples are processes with process emissions, like ammonia. The European ammonia plants are the most efficient in the world. The top 10% (1.619 ton CO₂/ton ammonia or 28.9 GJ/ton) with the 1.74%-LRF will cause an allocation for new entrants of 1.14 ton CO₂/ton ammonia or 20.3 GJ/ton in 2030 (thermodynamic minimum is 20.7 GJ/ton!). Thus CCS would from now on be necessary for new ammonia plants to be built for new market demand or as replacement for older stock.

7. Certainty of the carbon leakage status.

Industry sectors should have certainty to be categorised as 'exposed to the risk of carbon leakage', for example by complementing the present assessment with an assessment of the costs of CO₂, natural gas (ref. shale gas), feedstock and electricity in Europe versus the other major industrial regions in the world. Then the **Carbon Leakage Exposure Factor (CLEF)** can in practice be **abandoned**.

This improvement package is very much in line with global ETS developments, for example:

Californian ETS and Western Climate Initiative (WCI): The allocation is also based on a direct link with actual production. This link was also foreseen in the Waxman-Markey Bill for a US nation-wide ETS and in the Canadian ETS, both schemes are for the time being on hold. There is a protection of indirect (electricity) cost by compensation through distribution utility.

South Korean ETS: There is an indirect (electricity) allocation, as far as known there will be a link to actual production.

Australian ETS: The industry benchmarks are based on Weighted Average Efficiency and there is an indirect (electricity) allocation, of 1.0 ton CO₂/MWh. Australia has no limitation on the number of product benchmarks, which avoids difficult issues with the EU ETS “fallback” benchmarks (heat, fuel, process emissions). The Australian free allocation for “exposed” sectors is 94.5% of the Weighted Average Efficiency benchmark in fiscal year 1 decreasing to 86.2% in fiscal year 8 (around 2020), the relative reduction factor is 1.30% per year (thus decreasing annually in absolute value) leading to an average “LRF” of 1.18% over the first 8 years. The allocation is based on actual production, the provisional production is ex-post adjusted to actual production.

In conclusion, the parameters actual production and indirect allocation are not the exception but the rule in emerging emissions trading schemes globally. Consider that actual production data already now must be carefully monitored in the EU ETS, because of the rules for partial cessation of operations.

This package is a structural re-thinking of the EU ETS, but it is still simple and easy to implement. It makes part of the Commission Decision and most of the very complicated Guidance Documents (together 500+ pages) on allocation obsolete. The EU ETS is then made robust so that globally exposed industries can endure much higher CO₂ prices, which will appear in the distant future.

The structural improvement to a more robust European Union ETS will make it alongside the Australian ETS a real blueprint for the world.