



Entreprises pour  
l'Environnement

ACTEURS DU DÉVELOPPEMENT DURABLE

# EU-ETS REVIEW

## Mid 2006

Mai 2005

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## EU / ETS REVIEW

### Mid 2006

In application of directive 2003 / 87 / CE, a European system of tradable emission allocations started on January 1, 2005. This is a remarkable achievement and the concrete application of a political ambition to fight climate change.

On such a vast and diverse territory as the European Union, the implementation of such a new and complex system cannot achieve perfection from the start. This was understood from the beginning by the authors of this directive and a review has been planned in mid 2006.

In fact, in its present setup the EU/ETS will most probably:

- not really encourage innovation and investment in technologies that would lead to GHG emission reductions,
- not lead to significant emission reductions in the sectors covered by the directive,
- damage the competitiveness of European industry in the global market.

As such the EU/ETS is not in line with the Lisbon strategy, even if it has the great merit of building up the awareness and the efforts of the companies concerning their CO<sub>2</sub> emissions, and of revealing somewhat the price of CO<sub>2</sub> reductions. Its environmental and economic efficiency must clearly be improved before the second phase (2008-2012).

Indeed if the EU/ETS is left in its present state for eight years (2005-2012) and fails to deliver significant emission reductions and, most importantly, does not lead companies on the path of innovation and investments, the European Union will see its credibility diminished on the international scene, at a time when it is badly needed for the negotiation of the post 2012 system, and its industry ill-prepared for the necessary changes in production systems and in products.

Four simple amendments are proposed. They would improve both the environmental and the economic efficiency of the EU/ETS as well as increase its acceptability by the European industry.

### 1. Enlarge the possibilities for projects

Although partially opened by the "linking directive", the possibilities for European companies to invest in projects that lead to emission reductions in Europe (including domestically, i.e. in their own country), in other Annex 1 countries (Russia, Ukraine ...) as well as in non Annex 1 countries, and to use the credits gained in the EU/ETS, should be fully developed and encouraged. It is the investments made in the coming years that will deliver the emissions reductions necessary after 2012.

The European industry will most probably be the only one operating under a mandatory carbon constraint during 2008-2012. It is only fair that it be given access to all opportunities to invest at home and abroad in projects that lead to emission reductions (compared to ex-ante emissions for the product or service) and, at the same time, reinforce its capacities in the world competitive market. In addition it is, by far, preferable for the EU and its Member States to allow for a full and generous development of those projects than to buy hot air in order to meet its Kyoto commitments.

This proposal is further detailed in appendix A.



## 2. Extend the EU/ETS to all Kyoto gases

As long as measuring and reporting protocols exist the EU/ETS should be extended to all Kyoto GHG and all industries. This will increase liquidity in the market as well as bring on board additional industries (non ferrous, chemicals).

This proposal speaks for itself and is accepted by most stakeholders.

## 3. Allow companies in the manufacturing sectors to operate under relative emission targets

Absolute targets are equivalent to production limits and do not take into consideration the necessary flexibility for companies so that they can adjust their production to their market development. Since it is the governments' responsibility to maintain the best conditions possible for economic and employment development, this has led to NAPs which:

- do not seem very ambitious because they had to include production forecasts that were probably somewhat optimistic,
- create new entrant reserves (which will be very difficult to manage equitably), which work like development reserves,
- commit, in some cases, to allocate allowances in the future for investment in technologies which have the highest level of GHG emissions.

If the EU/ETS remains unchanged in 2006 there is no reason for the NAPs for 2008-2012 to be very different.

Companies in the manufacturing sector should be allowed to choose relative (i.e. emissions per unit of product) targets. It seems to be the best way to reconcile ambitious technology progress with flexibility in development.

This proposal is detailed in appendix B.

## 4. Set a price ceiling on the CO<sub>2</sub> market

During the whole period of 2008 to 2012 it is most likely that European industry will be the only one to operate under a carbon constraint, with possibly some weaker measures applying to the Japanese and the Canadian companies. Whatever amendments will be brought to the EU/ETS this constraint will entail some effect on the cost of manufacturing and, in an open economy, will have negative consequences on its profitability and its competitiveness.

Considering the unavoidable uncertainty of the price of the quotas, it would be totally justified and reasonable to set a limit to the effort asked from the European industry. This limit could be adequately expressed by setting a ceiling on the price of the ton of CO<sub>2</sub> in the European market. When the price in the market would reach that ceiling, an organization depending from the European Commission would sell allowances on the market to limit this price increase.

(It could also be envisaged that this same organization would buy allowances on the market if the price went under a certain level).

This measure would bring visibility to the industry in the medium term and would alleviate the concern of some of our industries for their survival in Europe.

The rationale for this proposal is further explained in appendix C.



There are other areas where measures are necessary for the EU/ETS, and more broadly for the European Climate Change Policy to succeed. Although they are not the subject of concrete proposals at this stage, EpE is ready to participate and contribute to discussions concerning these measures.

## 5. Specific problem of electricity production and distribution

It is widely agreed that international circumstances, namely the increase in energy demand, the necessary investments for replacing obsolete plants and increasing capacity, will lead to an increase in the cost of energy and of electricity in particular. Carbon constraint, leading to the establishment of a price for the emissions of CO<sub>2</sub>, will add a significant factor for the increase in the price of electricity. This could endanger the existence of some energy intensive manufacturing industries.

It is already possible to see some of the characteristics of the problem:

1. The electricity production accounts for around 30% of total emissions of GHG in Europe and it has clearly the largest potential of CO<sub>2</sub> emission reductions: switch coal to gas, renewables and nuclear. It is thus absolutely necessary to use the economic effect of the carbon constraint on this sector.
2. The CO<sub>2</sub> price level which will be necessary to induce a large movement from coal to gas, renewables and nuclear, particularly if it is not coherent with regular replacement dates, will lead to very significant problems for the energy intensive industries (cement, steel, aluminium, chemicals...) and potential important leakages.
3. In its present state the EU/ETS is clearly dominated by the electric industry and a few years of unfavourable climate conditions in Europe could lead the CO<sub>2</sub> market to explode.
4. The EU does not stand a chance to achieve the targets that have been announced by government heads of some Member States (reduction of 75% of emissions by 2050) if it does not adopt soon a coordinated European policy that will set the conditions for all new power plants (replacements or increases in capacity) to be CO<sub>2</sub> emission free (nuclear or renewables) at the best economic conditions. The investments decided before 2020 will still be in operation after 2050.



## 6. Start a large European research, development and innovation program on technology

The market mechanisms (emissions trading, JI, CDM) are extremely useful instruments for economic optimisation of the environmental effort.

But, in the end, only innovations and investments will bring concrete and important emission reductions. It is therefore absolutely essential, for EU to remain a leader in the fight against climate change, to :

- set rapidly the best policies and measures to induce a very significant development of innovation and investment in technologies in the private companies,
- conduct a large coordinated research program on the breakthrough technologies for the future.

### CONCLUSIONS

The four above proposals to amend the EU/ETS in mid 2006 (enlargement of projects possibilities, other Kyoto gases, relative targets for some manufacturing industries and price ceiling) are clearly necessary for the system to effectively encourage innovation and investment and be more efficient. They could be put in place without changing the architecture of the present system.

But EU/ETS is only one aspect of the European program on climate change. It is vital that it should be accompanied by concrete, transparent, medium and long term measures and policies in the areas not covered by the ETS (agriculture, housing, transport ...).

In addition all policies must be set in a medium and long term programming which will be sufficiently flexible to be modified in response to international conditions, the arrival of new technologies and the behavioural changes of consumers and citizens but which also provides a clear vision that will allow research and development and investments. By taking into account in this programming framework the life cycles of production investments and of products, the economic effort that will be necessary will remain reasonable.



## GHG EMISSION REDUCTION PROJECTS FOR EUROPE

From Jan. 1, 2005 until Dec. 31, 2012 European industry will be operating under a constraint on its GHG emissions while most of its competitors in the global market will remain free of this constraint.

It seems consequently reasonable and fully justified that European companies could make use of the maximum of possibilities and of flexibility in order to invest in projects that will lead to GHG emission reductions and will ease the economic burden of this constraint. These projects will also help the development of the European companies and facilitate the dissemination of the most efficient technologies.

This amplification of the project activities of European companies should be made available under the three different schemes :

- A.** Clean Development Mechanism (CDM) under the UNFCCC and its Executive Board.
- B.** Joint implementation (JI) under the Kyoto Protocol for investments between Annex 1 countries.
- C.** Projects implemented in another Member State of the EU (European projects) or inside the State of the investor (national or domestic project).

Emission reduction units (ERUs) or Certified Emission Reductions (CERs) coming from these projects should be able to be used on the EU/ETS market as EEAs (European Emission Allowances).

For these three areas of application we recommend :

### A. CDM PROJECTS

- a.1** Agreements (Memorandums of Understanding) between host countries and E.U. Member States should be rapidly established in order to clarify and facilitate decision circuits. Industry's advice on the priorities between potential host countries should be taken into consideration.
- a.2** Bilateral agreements (M.O.U.) between an European Union Member State and a host country should provide for the possibility of application and management at the E.U. level in order to avoid the negotiation by each of the 25 European countries of a separate agreement with each of the potential host country.
- a.3** There should not be any restriction imposed by a Member State on :
  - the type of project,
  - the criteria of approval of projects,

that would be additional to those agreed upon at Marrakech.



- a.4** Operation of the Executive Board must be reviewed in order to increase its efficiency and to re-launch this Kyoto project mechanism, the results of which are totally unsatisfactory and far from the expectations.

Problems related to the consequences of proactive actions on the baseline and those concerning the financial additionality must be tackled and settled.

- a.5** In the longer term (post2012) a full re-appraisal and reconstruction of this CDM mechanism –which could potentially be a powerful instrument for sustainable development- should be envisaged. The concept of sectorial + regional baselines should be explored. EpE will prepare proposals on this point.

## B. JI PROJECTS

Under the Kyoto Protocol these will only be taken into account after Jan. 1, 2008.

The Marrakech agreements have established two instruction paths for these projects:

- track 1 for host countries which satisfy certain criteria,
- track 2 for the other ones.

Track 2 looks very similar to the CDM and might, consequently lead to similar bureaucracy, high transaction costs and inefficiency. Concerning operations with a zero sum in terms of emissions, this track 2 will probably be of little use as interested parties (the investor's country and the host country) could more simply use assigned amount unit (AAUs) transfers.

Track 1 could potentially include <sup>(1)</sup> :

- Japan
- Canada
- New Zealand
- Russia
- Ukraine

Considering this there are clearly two main priorities:

- b.1** Establish the process for instruction and approval at the European level of these JI-track 1 projects. This process should be very light as it really concerns operations negotiated by two legal entities under the control of their governments, which are themselves parties to the Kyoto protocol.
- b.2** Help, with sufficient means and efforts, Russia and Ukraine to adopt the necessary measures that will allow them to comply with the criteria track 1 of the JI.

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<sup>(1)</sup> Bulgaria and Rumania will presumably have entered the E.U. before.



## C. EUROPEAN AND DOMESTIC PROJECTS

Here the problem is to establish the process and the associated organisation for the instruction and the approval of projects where the investor is a legal entity located in an E.U. Member State and the host country is also an E.U. member State (whether it is the same as the investor's or another).

These projects would apply to sectors not covered by the EU/ETS Directive (2003/87/CE) such as:

- manufacturing sectors (not included in the directive),
- agriculture,
- wastes,
- buildings,
- transports,

and in a general way to all projects which effectively lead to emission reductions and cannot be covered by the EU/ETS such as non covered gases or local communities approaches.

Methodologies for project evaluation will need to be established and an European Executive organization should be set up to manage this stream of projects. The technical work accomplished by the Executive Board of the CDM will be useful and the learnings from its operation should be taken into account in order to establish an European Executive Board that would be much more efficient.

Of course it will be necessary to avoid interferences between such an European/National projects development scheme and the national policies and measures (such as Renewable or energy efficiency certificates) that have been put in place by some Member States. It is indeed clear that only one economic instrument based on a market can be operational at the same time for one economic sector.

Since this European/National Project development scheme will need some amendments to Directive 2004/101/CF, the preparatory work should start immediately in order to be ready for a start up in Jan.1, 2008.



## GHG EMISSION TRADING

### The case for relative targets in the manufacturing sector

*This note concerns targets for GHG emitting installations which are inside the scope of the EU/ETS. Intensity targets for countries, as opposed to companies, participating in a global world system is another matter, although some target definition relative to their state and rapidity of development will probably also be needed.*



Proponents of emissions trading as a tool for economic efficiency of emission reductions have often presented setting absolute targets (often called “cap and trade”) as the most, if not the only, efficient system.

However the lessons derived from the establishment of the NAPs under the EU/ETS clearly show that industrial companies, and their national governments, have interpreted the setting of absolute targets for CO<sub>2</sub> emissions as a potential limitation on their production, which in fact they are, at least in sectors in which the potential carbon cost is significant relative to the total production cost (cement, steel, ...). Indeed an European manufacturer who needs to acquire additional allowances in the market in order to develop its production in accordance with the demand for its products, will immediately examine if the import (including transportation cost) of the same products would not be cheaper.

Considering the low cost of transportation, leakage is to be expected, even for commodity products like steel or cement, if the price of CO<sub>2</sub> reaches a certain value in the European market.

In order to avoid such a situation industrial companies in Europe are tempted to overstate their production forecasts and have asked for development reserves. National governments, whose responsibility is to maintain the best conditions for economic development and employment, are induced to comply in revising upward their development estimates and establishing “new entrants reserves”.

This clearly shows that the cap and trade system based on absolute targets cannot be applied systematically on the manufacturing sector in Europe in a context where competing installations abroad do not support the same constraint. The economic efficiency of the present cap and trade system is not robust enough and would not hold in a context of high economic growth and its environmental efficiency as a tool to induce reductions is therefore quite limited.

If the establishment of the NAPs for the second period (2008-2012) is not adjusted, it is difficult to see why the situation would change. If it is the case the EU/ETS will not achieve its purpose.

This note will try to show that relative targets for a good part of the manufacturing industry could be used inside the EU/ETS and would improve its economical and environmental efficiency as well as its acceptability.



## GHG EMISSIONS TRADING with RELATIVE TARGETS

### 1. HOW IT WORKS

- Based on a benchmark of relative emissions (i.e.  $\text{teq CO}_2 / \text{unit of product}$ ) for a **manufacturing** <sup>(2)</sup> homogeneous sector – or sub sector- and on information concerning possible incremental or step-wide potential progress, the industry negotiates with the Regulator:
  - a relative target which must be achieved in year  $Y$  <sup>(3)</sup>,
  - the criteria (special geographical or social conditions, availability of alternative supplies or raw material, investment cycles ...) which must be strictly and uniformly applied to fix the trajectory attributed to each installation of this sector (or sub sector) to reach the relative emission target in year  $Y$ . This negotiation translates into a relative target for each year  $/ \dots n \dots Y : E_n$

For the EU/ETS the negotiators could be:

- the European Commission assisted by representation of the Member States which have a significant industrial activity in this sector,
- the industrial European federation of each sector assisted by some representatives of companies.
- The Regulator and the industrial installations discuss the production prevision for each year:  $P_n$ . This discussion takes place at the national level.

The company has the final decision on  $P$ .

At the European level a relative target  $E$  is negotiated:

The Regulator has the final decision on  $E$ .

- Each year ( $n$ ) the installation receives at the start of the year  $E_n P_n$ .
- Emissions and production are monitored, verified and reported and real results are on year  $n$ :

relative emissions  $E'_n$

production  $P'_n$

- At the end of each period, the State (or the EU)

gives an adjustment of  $E_n (P'_n - P_n)$  if  $P'_n > P_n$

receives an adjustment of  $E_n (P_n - P'_n)$  if  $P_n > P'_n$

**This adjustment is really a correction of the error of prevision of production.**

<sup>(2)</sup> This proposal is for manufacturing industries with well defined products (steel (BOF and EAF), cement, refining, big bulk chemical products, flat glass, bottle glass, aluminium, paper ...).

<sup>(3)</sup> We suppose here that objectives are modulated on a yearly basis. If they were fixed for a period average, the same reasoning and formula apply, just by suppressing the index  $n$ .



The installation has received in total  $E_n P_n + E_n (P'_n - P_n) = E_n P'_n$

if  $E'_n > E_n$  it will have to buy  $(E'_n P'_n - E_n P'_n)$  on the market

or if  $E'_n < E_n$  it will be able to sell  $(E_n P'_n - E'_n P'_n)$  on the market.

These quantities are independent from the prevision of production  $P_n$ , which suppresses the temptation to overstate it at the time of the NAP negotiation.

## 2. PROS AND CONS

**Let us look at the answers (A) that can be derived from this system to the various criticisms (C) that have been made against relative targets systems.**

- C.1 States (parties to the Kyoto Protocol) have accepted absolute targets. The same philosophy should apply to national (or regional) systems.
- A.1 There is nothing in the Kyoto Protocol which limits the way Parties manage their emission reductions.**
- C.2 Absolute targets are more stringent than relative ones.
- A.2 There is no reason for that. The Regulator is not entitled to limit the absolute production of the manufacturing companies and has little knowledge of the market. On the contrary, based on international benchmarks and with the help of consultants, the Regulator can effectively discuss potential technical progress which the company could put in application taking into consideration the investment cycle. Targets could be more ambitious as the company knows it depends on its own management and it will not be constrained in its development by a cap on its production.**
- C.3 Relative targets will be good for companies that operate in a growing market but will disadvantage companies in a declining market.
- A.3 No. Relative targets only bring a correction of mistakes in forecasting production. These mistakes can understate or overstate future production, irrespective of the trend in production.**
- C.4 Relative targets tend to freeze processes and do not lead to process or product substitution of less emitting ones.
- A.4 On the contrary, the negotiation on relative emission should lead to a discussion on the best process to achieve the product or the service.**
- C.5 Relative targets do not lead to the incorporation of the carbon price on the product.
- A.5 This is true. But the new entrant reserve, introduced in the cap and trade system, has the same effect. The reason is that the incorporation of the carbon price in the product is not feasible as long as international competition combined with low transportation cost would lead to displacement of production to installations outside of the E.U. This reasoning does not apply however to sectors protected from competition of countries outside Europe.**



- C.6 A relative targets based system is more complicated to manage.
- A.6 The system proposed is not more complicated than an absolute system. The only additional figure to be taken in consideration for calculating the adjustment is the production level, which is naturally monitored. The ex-post adjustment is simple and can be automated at the time of reporting (the reporting is necessary in any system).**
- C.7 A relative targets based system will reduce the liquidity of the market.
- A.7 No, since the bulk of the allocation is done ex ante (exactly as in the cap and trade system) and since companies are much more efficient in monitoring their technical progress than in forecasting their sales and production.**
- C.8 The relative targets increase the uncertainty and the volatility of the market because of the adjustments at the end of each period.
- A.8 On the contrary, relative targets would decrease volatility by reducing the magnitude of the variations.**
- C.9 A relative targets based system relies on benchmarks. These are difficult to obtain.
- A.9 1 – Benchmarks are not too difficult to find if the sectors and sub sectors are carefully defined and if the system is applied to the main industrial products and processes that have worldwide applications (aluminium, steel, cement, glass ...) as opposed, for instance, to pharmaceutical products unless one could propose an agglomerated product indicator.**
- 2 – Anyway allowances distribution under an absolute target system also requires benchmarks if it aims at transparency and a certain fairness.**
- C.10 The SO<sub>2</sub> emission trading system in the US was based on absolute targets and was successful.
- A.10 The SO<sub>2</sub> system was designed for one industry and one product (electricity). No international competition. End of pipe solutions available. Long term targets.**



### 3. Consequences for the state

Let us now turn to questions (or criticisms) from the point of view of the State.

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C.11. The State (and /or the E.U.) will not know what its total emissions will be (and if it will be able to meet its national (or regional) absolute target, because if economic conditions are strong, the relative target manufacturing sector will be allowed to emit more than has been forecasted.

**A.11. - The manufacturing sector for which relative targets would be applied would realistically not represent more than 20% of total national emissions. If the sum of the production of all the installations included in the system would increase their production by 5% instead of a forecasted 2%, the end result would be an increase in the national emission of only 0, 6%.**

**- Much larger variations of total national emissions will come from transport activity, households heating and electricity demand as a function of weather and fossil prices evolution.**

**- National inventories uncertainty levels are higher than 0, 6%.**

2/

C.12 If the relative target based manufacturing sector emits more than forecasted, the State will have to supply additional allowances, one way or another, and bear a cost. In fact this would be a transfer of State (tax payer) money to the industry.

**A.12 In fact the receipts by the State (VAT, company tax, social contributions, decrease in unemployment benefits) will be much larger than the cost of the necessary allowances for this ex post adjustment.**

**The transfer of money will be the other way around.**

3/

C.13 This would not preserve the integrity of the European emission absolute target if the net sum of adjustments is positive, namely if the State has to give additional quotas.

**A.13 Not necessarily. At first, the State would use the reserve coming from past negative adjustments, if any. Furthermore the following scheme would preserve the integrity of the European emission absolute target:**

**The State would buy the required European allowances units on the European market. The total amount of allowances inside the EU/ETS would thus remain the same. The price of the CO<sub>2</sub> would increase on the market as a consequence of this purchase and would put more pressure for emission reductions.**

**In other words, the room for the positive adjustment would be made by an additional emission reduction of the covered sector.**



## Conclusions

The proposed relative targets based system

- does not increase significantly the administrative burden,
- does not impair the liquidity of the market,
- can lead to acceptance of more ambitious objectives,
- solves the problem of different treatments of the same industry in different Member States,
- solves the problem of new entrants and closures,
- allows for commercial and industrial development,
- is a step forward in the Common Market,
- will prepare European industry for worldwide sectorial agreements.

## PRICE-CAP: A PRE-CONDITION FOR AMBITIOUS CLIMATE ACTION

Jean Charles HOURCADE – CIRED – 24 mai 2005

In climate issues, the first proposal of inserting a price-cap in a carbon-trading system was made before the Kyoto Conference by Kopp, Morgenstern and Pizer <sup>(4)</sup> with an aim to build an international accord on binding emissions targets acceptable by both 'environmentalists and industry'. In this context a price-cap was a pre-determined per tone payment made by a nation on its excess emissions which would operate as a 'safety valve' in case of excessive abatement costs, the revenues from which would be directed to various GHG mitigation activities. The use of the revenue yielded by these payments would be determined by the Conference of the Parties; the general idea was to fund abatement activities to recover part of the missing GHGs reductions.

Between Kyoto and the failure of COP 6 at The Hague, this idea was circulated and amended as a policy tool capable of facilitating an international agreement and to secure compliance. But its underlying logic has potentially a more general scope and can be applied at various levels. We will treat in a first section of this note the overall rationale of this policy tool, in a second section we will discuss its main criticisms and, in the third, we will elaborate on specific issues raised by this potential application as a component of the EU trading system.

### A TRIPLE-FACETED RATIONALE:

A price-cap is often interpreted as placing an upper limit to environmental efforts, thus operating a trade-off between economic objectives and environmental objectives. Even though this interpretation seems obvious at first glance, it rests on a misperception of the real impact of this policy tool; this impact comes from the interaction between three mechanisms:

- **hedge against uncertainty:** one weakness of any quota based system is its sensitivity to costs uncertainty; this is true at an aggregated level (can the selected objectives be met within the real willingness of society to pay for them?) and in terms of fairness of the ultimate burden sharing (will not the agreed quota allocation ex-post prove to impose undue constraints on some participants to the system?). In addition to real uncertainty about costs of techniques to reduce emissions and about the rate of growth of baseline emissions, part of the risks come from the vagaries of the negotiation process and misjudgments about the ultimate implications of any emission commitment. A price cap is an insurance against such 'bad surprises',
- **assistance towards compromises:** the adoption of environmental targets may be blocked by an explicit denial of the necessity to act. More generally however, the source of the deadlock comes, in a more indirect manner, from the opposition between pessimists and optimists regarding abatement costs. This is true in a negotiation process amongst countries (as exemplified by the failure of COP6); this is also true when European or national public administrations seek a balance between enterprises (concerned by their competitiveness) and non governmental organizations (making reference to the lower estimations of cost assessments). A price-cap at a reasonably sufficient level allows for a pragmatic compromise: companies should be incited to remove their implicit veto to significant objectives and the proponents of ambitious climate action should not be concerned since, if abatement costs are really low, the safety valve will not be triggered,

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<sup>(4)</sup> Reference plus date: 1997 September 29th.



- **incentive to share “real” information:** negotiating emission targets, be it for countries or enterprises, confronts problem of asymmetry of information about abatement costs. Without a price-cap, each party of the negotiation will tend to invoke the possibility of very high costs to negotiate loose targets; companies in particular, under pressure of international competition, can lobby to obtain targets close to their emissions baseline. Once a price-cap is agreed upon, discussions can be more sincere since the partners that are the most reluctant to take on stringent targets will be protected against surprise about costs; similarly the proponents of more ambitious action will need to be more explicit about their views on the relation between carbon prices and specific targets.

Thanks to the interplay between these three roles, the existence of a price-cap as an eventual safety valve thus enhances the chance of policy process to deliver **targets as close as possible as the most stringent of the feasible ones** given technical, economical and political constraints.

## ENVIRONMENTAL INTEGRITY AND COMPLIANCE: PRICE-CAP IS NOT AN EFFORT CAP

The main critics against the idea of price-cap point out the risk, for the environmental integrity, of allowing parties to the agreement not to fulfill their objectives without being submitted to the sanctions included in the compliance system. To appreciate this risk, it matters first not to be mistaken about the reference against which this option should be compared, second to be precise about how the funds collected through the price-cap will be utilized:

- the key point is whether or not societies have some form of **upper limit in their willingness to pay** for climate policies. If not, the baseline is an idealized Candide's <sup>(5)</sup>scenario in which 'good faith' participants meet their commitments at whatever cost; a price-cap thus generates lower abatement since all participants have the opportunity of not meeting their targets if the pessimistic costs expectations prove to be right. If such a limit exists (and this seems politically realistic), this Candide's baseline no longer holds since the overall political acceptability and environmental efficacy of the system will ultimately be undermined by political lobbying for relaxing the agreed targets, voluntary non compliance (expecting non enforcement of serious sanctions) or, in the worst case, by opting out of the system.
- in case of limited willingness to pay, a price-cap **enhances the environmental performance** of the system both in static and dynamic terms by securing a minimum level of effort. In case of carbon prices far above their willingness to pay, parties can indeed follow paths which may result into very low and even negligible efforts:
  - at the government level within the Marrakech accord a) *good faith governments* facing domestic political tensions will import emissions allowances and will not pass the burden to consumers to remove opposition due to high carbon prices. But, in case of excessively high imports, they will have arguments to ask for loose targets for the second period b) *bad faith governments* will simply use the compliance provisions of the accord as a *borrowing facility* since they will pass the burden to their successors and can expect anyway a depreciation of their cumulated debt (as for any other form of debt) c) *both* can always opt out the system
  - within a domestic system incorporating very high penalties (and all the more so as these penalties are not “in full discharge”) industry can a) lobby for an ‘opt-out’ option in the face of demonstrable difficulties; public authorities may not be in *position* to refuse such a demand by exposed industry in a context of enhanced international competition from developing countries that are not subject to any carbon constraint, b) import carbon intensive goods from non carbon constrained countries (all the more easily as they have subsidiaries in these countries) which will generate carbon leakage c) to prepare negotiations for further commitment periods so that only very loose targets will emerge;

<sup>(5)</sup> Candide is the somewhat naïve character of a famous Voltaire novel.



- to what extent a price-cap enhances the real efficiency of the system depends ***upon how the revenues from the price-cap will be used***. One option is to fund abatement projects either domestically or in developing countries in CDM projects; this option should be enforced during a true-up period. Obviously, this would never restore the totality of the expected abatements, but this would add to the abatements of the real baseline. Another option, to minimize the 'missing tons' would be to use the collected funds in sequestration projects representing the same amount of abatement; this option supposes an agreement about the equivalence between avoided emissions and sequestration. A third option would be to use the price-cap revenues in the form of a security which would be given back to the party when it comes back into compliance. Note that this third option provides a guarantee against the risk of accumulating environmental debt which is implicit in the current provisions of the Kyoto Protocol;

To sum up, placing a "Price-cap" does not amount to place a "cap on effort" but creates a hybrid system of explicit quantity limits and prices through which the policy process will be capable of adopting the most ambitious of the possible targets, to secure the credibility and viability of climate policies and to maximize the participation to the system in a fair manner. One issue however is that, in its early version of the safety valve proposal, the price-cap was supposed to be paid domestically and not paid into an international fund. Sectors that are covered by a domestic emissions trading system will simply pay a certain price for their excess emissions to their governments or other domestic entities. If governments recycle internally the price-cap payments, this would in fact corrupt the system. The price-cap should be used to deliver an incentive to governments for adopting serious domestic policies, which cannot be made in the absence of consequences on external payment balances. This may confront the reluctance by some Parties to pay into an international regime; however it matters to note that the payment of the price-cap to international restoration funds (or forms of clean development mechanisms) is a mechanism that facilitates compliance to an international agreement and by no means constitutes an automatic subscription to an international fund.

## WHAT ROLE OF A PRICE-CAP FOR THE EU INDUSTRY TODAY?

**The EU directive on carbon-trading is critical for the future of climate policies both because it opens a "real-life" test before the 2008-2012 period, and because of its role as a model for other Parties to the UNFCCC. It may be misleading, therefore, to consider that the introduction of a price-cap is premature given the anticipated low costs of carbon:**

- current modeling exercises by general equilibrium models conclude that the withdrawal of the US and the permanence of a risk of 'hot air' in former USSR will lead to a very low world carbon price. But the two assumptions on which these results depend may not become reality. The first is the capacity of EU25 to import carbon from Russia and Ukraine (due to the claimed political reluctance of the EU to do so). As of now, EU industry would not have access to 'hot air'; the second is the fact that appropriate measures may not be taken in time to control emissions trends in the transportation sector (due to a mix of technical and institutional difficulties and of the political sensitivity of these measures), thus pushing the carbon prices upwards. Moreover the European carbon market is a prototype and there is no certainty that its behaviour will not demonstrate large fluctuations around an average value, in particular by the end of the period in case of a low number of exchanges.



- despite these uncertainties, it is not very likely that carbon prices in Europe up to 2012, will reach levels capable of strongly changing the product competitiveness of the European industry (the expected changes of production prices in carbon intensive industry will be around one tenth lower than the one triggered by the large changes in €/ \$ exchange rate during the three last decades); *however*, in an increasingly globalised economy, economic analysis shows that moderate increases in production costs may affect far more significantly profit margins and stock values. The resulting lack of investment in new capacity during the medium term may have long-term implications as to whether these businesses remain within the EU.
- in a context of harsh international competition from large developing countries on labor intensive industries and services (including skilled labor), the political sensitivity to employment issues may not lead governments and the European authorities to impose really strong carbon constraints on carbon intensive industry (which is generally capital intensive) if pessimistic assumption about carbon prices prove to be right. As it stands, the EU ETS does not provide for an emergency measure operating as a safety valve (except for art.29 Force Majeure when a Member State can ask the Commission for the right to issue more credits. The Commission judges if it is a case of Force Majeure.). The penalties for non-compliance are not meant to be price-caps, as non-complying installations need to pay back the excess emissions in the next commitment period. The response by industry will simply be imports from non-constrained countries and political lobbying against significant targets in the future.

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