

HOW SHOULD THE EU ETS BE REFORMED FOLLOWING THE PARIS AGREEMENT AND BREXIT?

Christian de PERTHUIS, Boris SOLIER, Raphaël TROTIGNON

On 30 June 2005, six months after the launch of the European emissions trading system, the CO₂ allowance price stood close to €30 per tonne. Eleven years later, it has fallen to €5/t. The market is no longer delivering short-term emissions reduction, including in the electricity sector, where it is more profitable to use coal than natural gas as fuel in generating plants. Successive reforms, adding stop-gap solutions to a system that was falling apart, have produced further complexity without bringing visibility.

To make the system functional again, the situation must first be correctly diagnosed. In this Policy Brief we explore three possible paths, that differ according to the role assigned to the instrument within the framework of the European climate strategy – a strategy that needs to be reassessed following the Paris Climate Agreement and in view of the new institutional framework resulting from Brexit.

- ◆ **Diagnosis: a series of dysfunctions stemming from the problem faced by the public authority of setting an emissions cap that generates sufficient scarcity.** Rethinking the market requires clear decisions on the real level of constraint resulting from setting an emissions cap according to the objectives targeted. Three logics are possible:
- ◆ **The CO₂ allowances trading system as a complement to national policies and as warning indicator: a simplified EU ETS open to the outside.** In this configuration, the price of CO₂ is no longer the "cornerstone" of European policy to reduce the cost of climate action, but is a complementary instrument indicating the extent to which objectives have been met.
- ◆ **Refocusing the system on the goal of low-carbon transition in the electricity sector.** The simplest way to achieve this would be to set a floor price on emissions from the European electricity sector, allowing the substitution of gas for coal in existing power plants. Such a scenario would change the current system into a pseudo-tax mechanism for the power generation system by making emissions from the industrial sector free.
- ◆ **The CO₂ price signal as a key variable in the transition.** To make the CO₂ price the cornerstone of European climate strategy, the system needs to evolve into a hybrid instrument where the market price is constrained by a floor and a ceiling, coupled with increased coordination between national policies and European objectives given the CO₂ price trajectory.

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How should the EU ETS be reformed following the Paris agreement and Brexit?

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On 30 June 2005, six months after the launch of the European emissions trading system, the CO₂ allowance price stood close to €30 per tonne. Analysts were wondering about the system's degree of constraint. The European Commission was able to say: "The EU-ETS is a cornerstone of the EU Policy to combat climate change and its key tool for reducing GHG cost-effectively".

Eleven years later, this assertion still remains on the Commission's website, but has lost its credibility. The allowance price has fallen €5 per tonne. The market no longer produces emissions reduction in the short term, including in the electricity sector, where it is more advantageous to use coal rather than natural gas as fuel in power plants. Successive reforms, adding stop-gap solutions to a system that was falling apart, have produced further complexity without bringing visibility.

There is general agreement on the need for far-reaching reform of the system. To successfully implement such a reform, the causes of the problems that have arisen need to be correctly diagnosed. The type of remedy required depends on what goal climate policy is seeking to achieve and on the role of CO₂ pricing in making it credible – two strategic choices that Europe cannot avoid in the framework of the implementation of Paris climate agreement and in the new situation resulting from Brexit.

1/ Diagnosis: a series of malfunctions stemming from the problem faced by the public authority in setting an emissions cap that generates sufficient scarcity

In an allowances market, price reflects the scarcity constraint resulting from the cap imposed by the regulator on the volume of emissions. The gradual disintegration of the European mechanism stems from the difficulty for the European public authority in creating such scarcity. Three factors have contributed to this.

- The allowances cap for the 2008-2020 was calculated on the basis of economic benchmarks established from the 2009 recession, on the expectation of growing emissions. This turned out to be an unrealistic economic scenario.
- The cap was in actual fact inflated by the introduction into the market of more than a billion certificates issued under the Kyoto Protocol between 2008 and 2012, a quantity, moreover, that had not been correctly forecast.
- The cap had not been set taking into account other instruments such as "feed-in tariffs" or "sectoral price floors", that trigger emission reductions at costs higher than the allowance price. In the absence of coordination between instruments, these emission reductions reduce the demand for allowances and cause CO₂ prices in the market to fall.

These problems are not specific to the EU ETS. The initial overestimation of baseline scenarios is found in the majority of allowances systems in place worldwide. The risk of windfall effects is a well known feature of project mechanisms. The difficulty of coordination between an allowances market and other climate policy instruments is a recurring problem, especially in California and Quebec, which are sometimes cited as examples to be followed.

The distinctive feature of the European system lies in its decision-making process, involving various trade-offs and long delays, including in technical areas like changing the auction schedule or calculating free allowances. Because of this inertia, attention is polarizing around secondary aspects. Stopgap measures are applied, which complicate the system without any clear change in the control variable, namely the change of the cap over timeⁱ. Any overhaul of the market calls for clear decisions on the real degree of constraint resulting from the setting of the emissions cap, depending on the desired objectives. Three logics are possible.

2/ The CO₂ allowances trading system as a complement to national policies and as warning indicator: a simplified EU ETS open to the outside

In this configuration, the measures decided in each Member State supersede the guiding objective of common action through a pricing instrument. The price of CO₂ is no longer the cornerstone of European policy for reducing the cost of climate action, but is a complementary instrument that plays a dual role.

- It reflects the cost of the last adjustments to be made once all national measures have been implemented. If national measures have matched the emissions reduction targets, it will tend to be low (the current situation). In the converse case, it will tend to increase.
- The price of CO₂ should also play the role of an alert indicator, rising sharply when the set of national measures are insufficient to achieve the emission reductions aimed for. In this situation, the rise in price results in additional cuts by companies. It simultaneously induces a reduction in the cost of national measures, which can encourage Member States to be more ambitious.

Such a configuration involves prior coordination of national climate policies, with a regular review of national emissions reduction targets and the instruments contributing to them. This review can anticipate the share of emission reductions incumbent upon the market. It will be facilitated by a drastic simplification of its operation, resulting from the gradual elimination of stopgap measures, that make the system opaque and hinder the implementation of dynamic management of the supply of allowancesⁱⁱ. Finally, the coordination of national policies should ensure that incentives for re-orienting investments are deployed in Member States, because the CO₂ price can no longer perform this guidance function for medium- and long-term investments.

This scenario is not "cost-effective" as understood by economic theory, but may well be consistent with a logic of raising the common ambition, in the spirit of the Paris climate agreement. A very simple way to do this would be for Member States to agree on a further reduction of the cap over the period 2020-2030, so as to lend credibility to European commitments within the UN framework. Such tightening would induce a rise in prices and would avoid the deployment in 2019 of the Stability Reserve, whose mode of operation is unsuitableⁱⁱⁱ. Such a decision could accompany the opening of negotiations with a view to linking the European allowances system with markets of other countries or governing authorities wishing to coordinate their climate policies with that of EU Member States.

3/ Refocusing the system on the goal of low-carbon transition in the electricity sector: the transformation of the EU-ETS into a sectoral pseudo-tax system

A major symptom of market failure is the inadequacy of the CO₂ price for switching from coal-fired power plants to gas plants and exploiting one of the main ways of reducing CO₂ emissions at least cost. Moreover, much of the complexity of the system results from processing by industries, with various stopgap measures to prevent the supposed risks of carbon leakage. This situation lends weight to proposals for a dual CO₂ price, higher for the power sector than for industry.

Such a dual price mechanism is incompatible with the proper functioning of the CO₂ allowances market, which is fully homogenous and fungible. On the other hand, one possible strategy would be to re-centre the CO₂ pricing mechanism on the electricity sector.

The simplest way to do this would be to set a floor-price on the European electricity sector's emissions, at a level in the first year sufficient to initiate the switch from coal to gas in existing power plants (around €30 to €40/tCO₂), then to define a growth path over time to align investments on the objective of total decarbonisation of the electricity sector within the next 30 to 40 years. As has been shown by a study by the Climate Economics Chair^{iv}, such a scenario would result in the present system being transformed into a pseudo-tax mechanism for the electricity sector by making industrial emissions free.

Such a sectoral instrument would move away from a cost-effectiveness logic, since industry would no longer have a price signal to encourage it to reduce its emissions. Its implementation would result in a significant rise in the wholesale price in the electricity market. It would be politically acceptable in the European Union only if harmonised redistribution mechanism from the proceeds of pricing limit the risks, on the one hand, of burdening the competitiveness of electricity-intensive industries and, on the other, of negatively impacting low-income households.

4/ The CO₂ price signal as a key variable in the transition: a hybrid system with a “price corridor” and strengthened coordination with national policies

In this scenario, the aim is to make the price of CO₂ the cornerstone of Europe's climate strategy. The idea is that the signal price should be high enough in the short term to trigger the required emission reductions and sufficiently predictable in the medium and long term to re-orient investments. The most appropriate method would be to introduce a tax. Because this route is impractical at the institutional level^v, an alternative would be to change the allowance system into a hybrid mechanism in which the market price is constrained by a floor and a ceiling.

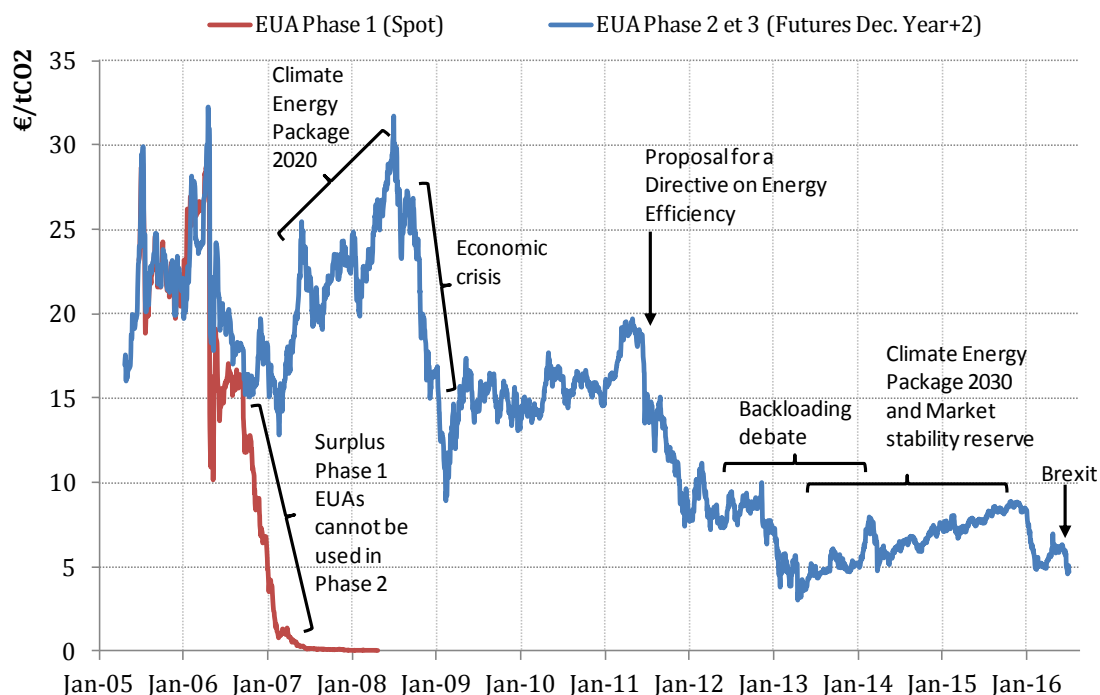
- To set the floor price, a reserve price is defined ex ante, below which allowances are no longer sold at auctions. In effect, the system then becomes a tax mechanism that encourages installations to further reduce their emissions. These additional reductions diminish the need for allowances for compliance, thereby accentuating the imbalance between supply and demand in the market. This is why it is very difficult to move up from the price floor once it has been reached, as shown by the Californian example.
- If the ceiling price is set by accounting for the return to the market of allowances placed in reserve, the mechanism is very weak in the event of prolonged tension on the allowance price, because the reserve is liable to be quickly exhausted (as in the RGGI on the east coast of the United States). It is more robust to have a ceiling by imposing a penalty for non-compliance that discharges companies from surrendering the corresponding allowances, which effectively makes it a pseudo-tax.

For the market to continue having a function, the introduction of the price corridor needs to be combined with strengthened coordination between Member States' emissions reduction policies on the one hand and management of the supply of allowances in the market on the other. In the event of overlapping with emission reductions obtained by national measures at costs higher than the CO₂ price, it would be advisable to withdraw the corresponding quantities from the allowances cap. Such a measure is advocated by a recent report by the European Parliament^{vi}. Conversely, if the price is stuck at the ceiling, it is a signal showing that the other climate change instruments are not sufficient to attain the emission reductions targeted, given the CO₂ price ceiling.

To be consistent with enhanced climate ambitions, the price corridor needs to lead to sufficiently high CO₂ prices to trigger the changes required by the low-carbon transition. This is why its introduction should be combined with harmonised redistribution mechanisms for carbon prices within the European economy, so as to attain three objectives: maintaining the price competitiveness of the production system by lowering other costs; making transfers to those Member States that are most vulnerable in the short term to increasing CO₂ prices; and addressing the potential risks of carbon leakage. Without agreement between Member States on these vital issues around carbon price redistribution, it will not be possible to sustainably raise the price of CO₂ in Europe.

The hybrid system to which the price corridor leads, if accompanied by increased coordination between national climate policies, is a way of approaching economic efficiency in Europe. This logic would be strengthened by widening the scope of the mechanism, by including in the system diffuse emissions arising from the use of fossil fuels in land transport and buildings. Such inclusion, which is technically relatively straightforward, would considerably strengthen the impact of the price signal. On the other hand, such a system would be much more difficult to link to external markets within a logic of widening the price signal at an international level.

Change in CO₂ allowance prices since 2005



Source: Climate Economics Chair, from Bluenext and ICE ECX Futures

ⁱ The measure known as “backloading”, involving the postponement of auctions, has long resulted in uncertainty regarding the real cap applying over the period 2013-2020 in the absence of clear information on the final destination of allowances withdrawn from the market between 2014 and 2016. The “Stability Reserve”, as it has been calibrated by the Commission, makes it impossible to know in advance the real cap that will apply over the period 2020 to 2030.

ⁱⁱ De Perthuis, C., Trotignon, R. (2014). Governance of CO₂ markets: Lessons from the EU ETS. Energy Policy, volume 75, pp. 100-106, December 2014.

ⁱⁱⁱ De Perthuis, C., Trotignon, R., Gonand, F. (2014). EU ETS reform in the Climate-Energy Package 2030: First lessons from the ZEPHYR model. Climate Economics Chair, Policy Brief No. 2014-01, January 2014. <http://www.chaireeconomieduclimat.org/wp-content/uploads/2015/10/14-03-07-Policy-Brief-2014-01-EN-v2.pdf>

^{iv} De Perthuis, C., Solier, B., Trotignon, R. (2016). The impacts of introducing a CO₂ floor price in the electricity sector. Climate Economics Chair, Informations & Debates No. 46, June 2016. http://www.chaireeconomieduclimat.org/download/16-06-21-cahier-id-46-de-perthuis-al_fr-pdf/?wpdmdl=5937&masterkey=576a4e8e5a421

^v The unanimity rule is required for all tax decisions, whereas a qualified majority is sufficient for introducing CO₂ pricing through an allowances mechanism.

^{vi} This is one of the most interesting proposals of the report by the European MP Ian Duncan. ENVI Committee, Rapp. Ian Duncan, Draft report on the proposal for a directive of the European Parliament and of the Council amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments, 31-05-2016. <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-%2f%2fEP%2f%2fNONSGML%2bCOMPARL%2bPE-582.397%2b02%2bDOC%2bPDF%2bV0%2f%2fEN>