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EMISSION TRADING SCHEME (EU-ETS)

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Abstract

Defined in Art. 17 of the Kyoto Protocol, the European Emission Trading Scheme (EU-ETS) represents the largest active trading program in the world for greenhouse gases. Formally, it is one of the flexible mechanisms of the Protocol, and was approved in 2003 although entered into force only in 2005. Under the EU-ETS Parties which are net emitters can buy emissions credits from other countries to meet the reduction targets set by the Protocol. The selling countries are those whose level of total emissions is lower than their target. The first phase of the mechanism covered the period 2005 to 2007 while the second goes from 2008 to 2012. The third phase will start after 2012.

To the aim of preventing irremediable disasters and limit the increasing cost of climate mitigation and adaptation (European Commission, 2007), the European Commission set, for the Kyoto period, a limit or cap on the amount of CO2 that each member can emit, in order to control the concentration in the atmosphere of this greenhouse gas and not exceed 2°C of the mean global surface temperature. EU-ETS is one of the flexibility mechanisms (along with CDM and JI) provided by the Kyoto Protocol to contain GHGs emissions from pollutants. By signing the Kyoto Protocol parties (Annex B) accept the emission reduction targets of the European Commission and are given a certain number of Assigned Amount Units (AAUs) which represents the right to emit a specific amount of GHGs.

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The EU-ETS was approved with the Directive 2003/87/2003 EU-ETS and it come into force on the 1st of January 2005. The Directive divides the scheme into two phases. The first one, the pilot phase, started in 2005 and ended in 2007. The second one covers the period which goes from 2008 to 2012. After the decision of the European Union to reduce 20% of its emissions (comparing with the 1990 values) by the year 2020, a third phase will begin in 2013 and will last until 2020 (post-Kyoto). While the Kyoto Protocol assigns to the European Union (EU), the 8% general emission reduction target, distributed among its 15 members, for the EU-ETS no common target was provided. For this reason, the Directive 2003/87 requires, in order to develop the EU-ETS, the implementation of the National Allocation Plans (NAPs).

With NAPs each participating government is asked to determine a national cap, namely the maximum quantity of emissions allowed, to be distributed among all the possible national emission sources within different sectors. NAPs, which base the emission computation on the analysis of past emissions, must also take into account, emissions from sectors not considered, or partially considered by the EU-ETS. In the pilot phase, the total amount of quotes for each country was calculated by adjusting the projections of past emissions in the different sectors considered. These emissions were distributed within the three year period of the phase I. Every country, in the pilot phase, presented its own NAP to the European Commission for approval.

The EU-ETS is defined by the Kyoto Protocol in the Art. 17, which states that under this trading scheme countries that use only a part of the emissions permitted are allowed to sell the extra units to those that are over their targets. There exist a number of emission trading programs (regional and national) for several pollutants, but their markets are generally smaller and more localized then the ones of the GHGs (Stern, 2008). For GHGs the largest active trading program in the world is the European Union ETS. Emission units and removals can then be traded with:

- Allowances-based transactions, in which the buyer purchases emission allowances (AAUs) created and allocated by regulators under the cap-and-trade ETS (Kyoto

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Protocol, Art. 17). This mechanism allows countries that need to increase their right to emit to buy credits from those who do not "use" their emissions.
- Project-based transactions, in which the buyer purchases emission credits (in the form of CERs, ERUs, and RMUs) that result from a project under the CDM, JI mechanisms and the land use, land-use change and forestry (LULUCF) activities (see the Kyoto Protocol, Art. 6 for the JI, Art. 12 for the CDM, and see the IPCC GPG for LULUCF). Once the emission credits are issued they work as allowances. Because they are project-based credits, they involve significantly higher transaction costs and embody risks (related with regulation, project performance, etc.) that are reflected in their transaction value. Furthermore, sometimes project-based scheme may generate negative impacts outside the project boundaries.

All these transactions have created a market of allowances also called "carbon market" (as carbon dioxide is the principal greenhouse gas), where the buyer is charged for polluting, while the seller is being rewarded for having reduced emissions, or created removals.

The introduction of a wide range of possibilities, in terms of credits and projects to be implemented, has the aim of reducing marginal costs of mitigation measures. Investing in emission reduction policies in developing countries as well as in Economies in Transition, possibly requires a lower economic effort and could support essential technology transfers toward them. Summarizing, by providing economic incentives the EU-ETS approach allows emission reduction at the lowest possible cost for society.

In January 2008, the European Commission proposed several changes to the EU-ETS, e.g. the substitution of the national allocation plans, with a centralized allocation by a European Authority, the inclusion of all GHGs, the extension of emission reduction targets to the air transport industry, etc. The revisions are likely to become effective only starting from January 2013 (Third Phase).

There is an open debate about which one, between an emission cap program (quantity target based system), rather than a tax on carbon or an hybrid scheme (price target based mechanisms), offers greater benefits in terms of achieving the

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reduction targets at the lowest cost for the society. Under a pure emission trading scheme, or a hybrid scheme (McKibbin W., 2008), there will be certainty on the achievement of the level of emissions reduction provided by the target, but uncertainty about the price of emissions which could eventually reach very high values. On the contrary, with a tax, or with a mixed scheme where the emissions price is capped, the price would be certain while the amount of emissions reduced uncertain. Both mechanisms aim at the same goal but they seem to differ in more than one feature. For some aspects, the carbon trading approach can be better than a direct carbon tax or regulation.

In fact, it can be politically preferable since the initial allocation of allowances is provided by a European centralized authority on the basis of historical emissions. Moreover, the investment directed at environmental sustainable projects (CDM, JI) in developing countries can contribute achieving the Millennium Development Goals. Nevertheless, several criticisms have been made about the emissions trading of carbon, regarding complexity, monitoring, enforcement, and partiality in the initial allocation methods and caps. Furthermore, a massive use of credits may discourage investments in clean technology and energy efficiency in developed countries. With respect to the transmission of economic disturbances among regions, the global cap and trade regime would probably spread the shocks more than the tax or hybrid scheme. Furthermore in a context of financial slowdown a price based mechanism allows cost-efficient reductions in emissions, while in the cap regime, which is counter-cyclical, carbon prices fall, as a result of the world economy slowdown, reducing the economic deceleration (McKibbin W. and P. Wilcoxen, 1997, 2002).

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