

What is driving Price Volatility in the EU ETS?

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This article assesses the price volatility of European Union Allowances. It analyses the main factors underlying the volatility and outlines potential lessons.

EU allowance (EUA) market has developed rapidly over the last one and a half years since commencement of the EU ETS in January 2005. About 2.1 billion EUAs have been allocated by government each year in the period 2005-2007 and the World Bank estimated the annual turnover of the EUA market (volume traded annually as a percentage of total allowances) in 2005 at 14.6%.

In theory, the price of such allowances should establish the marginal cost of emissions reductions sufficient to meet the cap set in the EU ETS. The reality appears somewhat different as shown in Figure 1 which shows substantial volatility. Most notably, prices for EUAs remained around € 26/tCO₂ from January until the End of April 2006, but plummeted to around € 10/tCO₂ as a response to the publication of verified emission data for 2005, which indicated a surplus of about 44 MtCO₂e/a. Prices have since traded at around €12 to 16/tCO₂.

Figure 1: EUA price development



Price determinants

Four different influences on allowance prices have been identified by market observers:

- immaturity of the market;
- general price driving factors;
- supply factors;
- demand factors.

Immaturity of the market

The EU ETS is thought to be volatile in part because it is a new market. New markets generally need time to achieve real price discovery. In addition, the delayed approval of National Allocation Plans (NAPs) (the last NAP was approved six months after the EU ETS commenced), and technical problems associated with getting registries operational have affected the functionality of the EU ETS.

General price driving factors

Market structure and allocation method:

Although the EU ETS covers more than 11,000 installations, only professional traders, large electricity producers and a few industrial companies with their own trading departments are active in trading. With a small number of large buyers and sellers, market prices can react strongly to individual trades.

The current prices seem far too high in a long market if there is a high probability that there will also be surpluses in the years 2006 and 2007. But they might be explained based on the fact that all active trading groups have an incentive to keep prices up. Electricity companies can pass through the costs of permits (so called opportunity costs in case of free allocation) to their electricity consumers and thus the higher the permit price and the higher the proportion of permits allocated for free, the higher the profits. Similarly, traders favour high prices since they receive a share of the transacted volume. In addition lower prices might have a negative impact on future allocations for 2008-2012, which are negotiated currently.

Political decisions: For example, future coverage of sectors within the scheme (e.g. aviation), linking with other countries' schemes (e.g. Norway), and future caps (National Allocation Plans for 2008-2012 are currently being assessed by the EU Commission) and allocation methodologies. The latter will have a major impact if "updating" of allocation occurs, which would mean today's production/emissions would serve as the basis of future allocations.

Information disclosure: The release of actual verified emissions data had a major price impact at the end of April 2006. The market reacted with a sharp decrease following the early release of some – but not all – 2005 emissions data.



Supply side factors

The supply of EUAs during the first trading period of the EU ETS was largely determined by the following factors:

Uncertainty of total available EUAs in 2005-2007 and auction details: The treatment (auctioning or cancelling) of surpluses of New Entrant Reserves has created uncertainty regarding the total amount available and thus scarcity of the market as such. This is especially relevant for the accession countries, which have allocated relatively high amounts of their allocations to their New Entrant Reserves.

Supply of CDM credits (CERs): The Linking Directive allows for unlimited accounting of CERs for compliance under the EU ETS in 2005-2007. As CERs are in general cheaper than EUAs, this linking of carbon markets should have a downward effect on the EUA price. However, supply at this stage has been limited since CDM projects have a substantial lead time before CERs are issued and the International Transaction Log is not yet operational (expected to be in April 2007), thus preventing any spot trading of CERs. In addition, there is uncertainty surrounding the demand of other Kyoto ratifying countries (e.g. Canada) and the post 2012 regime.

Banking and borrowing EUAs within the period: Borrowing and banking between the three years of the first trading period 2005 to 2007 are allowed. As a result, many small operators have not engaged in trading to date but are following a “wait and see strategy”. The prohibition on banking and borrowing between Phases I and II (from 2007 to 2008) in most EU countries - only France and Poland allow restricted banking - might lead to another price drop at the end of 2007.

Demand side factors

The demand for EUAs is mainly determined by the projected emissions of covered installations. The following factors might be relevant:

Fuel prices and abatement options: Short-run abatement options in the EU ETS are mainly based on fuel switching to lower emitting fuels (e.g. biomass or gas) or energy efficiency measures. Fuel switching options are strongly influenced by fuel prices, especially gas prices, which increased significantly in 2005/06. This reduced the attractiveness of switching from coal to gas, thus increasing demand for EUAs at that time.

Weather: Weather has a significant impact on emissions of the major covered installations since they are in the power and heat sector. The summer of 2005 was hot and winter of 2005/06 was very cold and led to a clear increase in energy requirements and emissions.

Economic growth: Optimistic growth scenarios for project emissions, together with double-counting of emissions by inclusion of allocations to cover both expansion of existing installations (growth rates included in the allocation formula) and new installations (via the New Entrant Reserves) might have contributed to overallocation in 2005.

What are the disadvantages of volatile markets?

The main disadvantage of volatile markets is that long-term investment decisions will be more risky since price volatility needs to be included in investment calculations. In addition, sharp price decreases also lead to a loss in overall market value, which can reduce confidence in the market itself. However, financial instruments like forward contracts, futures, swaps and options have been developed to hedge against price risks (see European Climate Exchange, ECX).

Conclusions

Volatility in the emissions trading markets cannot be eliminated entirely. The EU experience highlights the importance of having a solid understanding of how market structure and the allocation process can affect prices. To reduce the volatility of an Australian NETS the following EU ETS design lessons are likely to be useful:

- that registries are fully operational from the start of the scheme,
- more certainty regarding the total number of permits available from all sources, including new entrant reserves, and no undecided legal claims,
- an allocation process which ensures an effective price discovery (e.g. more auctioning at the beginning)
- a suitable release process for sensitive information, and
- limited opportunity for political decisions that could affect prices.

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