

Notes on the ETS

Notes on the European Trading Scheme (ETS):
Quickly Covered in ESRP 285 Class on Feb 21, 2008

The ETS test phase was 2005-2007, an opportunity for the European countries to become familiar with cap-and-trade in CO₂ allowances. The initial goals for emission reduction were very modest as this was a “test-phase.” The idea was to become familiar with trading prior to the 2008-2012 period when the Kyoto emission reductions are required.

The participants are from the 15 countries of the European Union (EU) plus 10 accession countries. The emissions covered large emitters such as electric power plants and gasoline refineries. Most of the allowances were allocated to the emitters free.

The size of the allocations to different emitters was a MAJOR subject of discussion. The participants had to work out the allocation between different countries and between different industries within each country.

The price of an allowances is measured in Euros per metric ton of CO₂, (In Feb of 2008, one € was worth around 1.5 US \$.) An MIT report on the ETS reviewed various studies of the allowance price to be expected given the modest goals during the test phase. The estimates ranged from 1 to 5 €/per MTCO₂. Figure 1 shows the market opened with prices over 20 €/MTCO₂. MIT commented that these prices were shockingly high (compared to various modeling estimates). By March/April of 2006, the price was over 30 €/MTCO₂. If the opening price was shockingly high, then the 30 €/MTCO₂ was 50% more shocking. (The initial prices certainly makes one wonder about the value of the many models commonly used to estimate the price of allowances.)

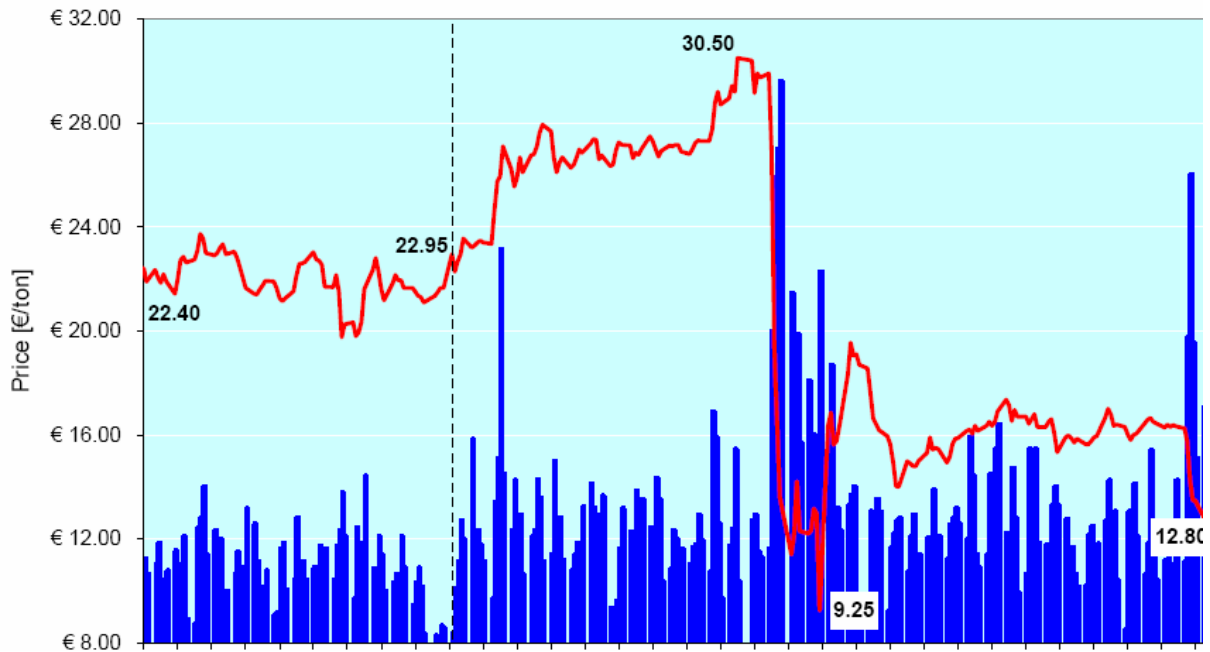


Figure 1. Price of allowances in the ETS from November 2004 to September 2006.

Source: This graph was part of a seminar by Barbara Buchner at Boston University and MIT in the Fall of 2006. The allowance price is in red, with the scale on the left from 8 to 32 €/MTCO₂. (The price is shown for 2006 delivery of allowances.) The blue bars is the volume of trading. (The volume scale on the right is not shown since it is not important. The main conclusion from the volume data is that there was very little trading during most of the time interval.)

(I'll put 30 €/MTCO₂ in perspective later in the class. It turns out to be approximately the allowance price that would induce power plant operators to cut back on coal-fired generation and make up with more gas-fired generation. This fuel switching can cut CO₂ emissions in a significant manner. However, in the ETS test phase, significant reductions were not necessarily required.)

May 15, 2006: What Happened?

The most dramatic day in the ETS was May 15, 2006. Can you guess what happened? Perhaps the MIT report was released and participants were convinced that the market price was shockingly high? No, the important event on this day was the release of a different report – the registry report on the actual emissions. The report showed that emissions were lower than expected. This meant that the market participants were holding more allowances than previously thought would be needed. The market value of those allowances fell dramatically in the weeks after May 15, 2006.

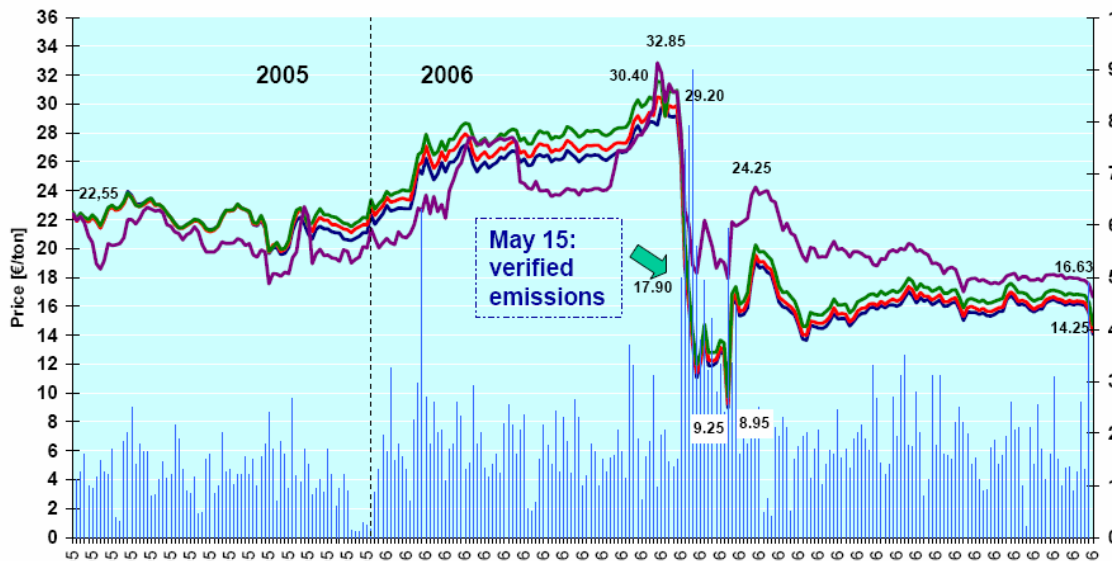


Figure 2. Closer look at the prices in May of 2006, when the registry report was released and revealed that emissions were lower than expected.

Source: this is another graph from Barbara Buchner's seminar.

The time interval is September 2005 to September 2006. The bars in faded blue are volume of trading.

The four lines are for allowance prices in the spot market and for delivery in 2006, 2007 and 2008.

The price scale (on the left) ranges from 0 to 36 €/MTCO₂.

One Conclusion from the ETS Test Period: High Volatility is Certainly Possible

A carbon market is viewed as the way to put a price on carbon if it is important to have a legislated cap on emissions and then allow the market to determine the price of allowances.

A carbon tax is viewed as the way to put a price on carbon if it is important to have a legislated price on carbon and then allow the actual emissions to be determined by the investments and operating decisions of the emitters.

Advocates of the carbon tax argue that it is important to create a clear price signal to investors. They warn that a carbon market could lead to highly volatile prices. The early experience in the ETS test period certainly confirms the possibility of high price volatility.