



Emissions Trading in the European Union: Its Brief History

Recent discussions in the United States have raised questions about the performance of the European Union's Emissions Trading System (ETS). Some argue that this cap-and-trade system has not significantly reduced greenhouse gas emissions, has conferred windfall gains on firms receiving free allowances, and has resulted in carbon prices that are too volatile.

A May 2008 Pew Center analysis by two leading experts on the design and implementation of emission trading regimes reviewed the initial phase of the ETS and directly addressed these issues.¹ Noting that the initial period (2005-7) was a trial period with the goal of developing the necessary infrastructure for successful trading, the study concluded that given the start-up challenges, "the system has performed surprisingly well." The European Union has since adopted new rules to strengthen the system and ensure steeper emission reductions.

Overview of European Union's Emissions Trading System

The EU ETS is the world's most ambitious and far-reaching example of greenhouse gas emissions trading. It currently limits CO₂ emissions from approximately 12,000 facilities in the 27 EU Member States. Launched in 2005, the ETS covers power plants and five major industrial sectors (including oil, iron and steel, cement, glass, and pulp and paper) that together produce nearly half the EU's CO₂ emissions. An initial "learning phase" (Phase I) ran through 2007; a second phase coincides with the Kyoto Protocol compliance period (2008-2012); and a third phase is planned for 2013-2020. During the learning phase, ETS allowance prices fluctuated due to weather (affecting energy demand), shifts in energy prices, and initial over-allocation of allowances as a result of incomplete historical emissions data. Many regard these fluctuations as characteristics of a new compliance market. More recently, allowance prices have fallen as demand has eased in response to reduced economic activity and emissions. This is exactly how a well-functioning market should respond.

Issues Concerning the European Union's ETS

Initial EU Targets Were Too Lenient – The goal of the trial period was primarily to gain experience with key elements of the trading system in order to have a fully operational system for 2008-2012 when compliance with binding reductions would be required under the Kyoto Protocol. Lack of historical baseline data, the need to set separate targets among the 25 member nations (now 27), and the limited time (only one year) between issuance of the Emissions Trading Directive and the beginning of trading all contributed to lower initial targets. But in the end, the key elements of a trading regime were established and the goals of the trial period were fulfilled. In addition, Ellerman

¹ Ellerman, Denny and Paul Joskow, *The European Union's Emissions Trading System in Perspective*. Available at <http://www.pewclimate.org/eu-ets>.

and Joskow cite preliminary estimates that between 50-100 million tons of carbon dioxide were reduced in 2005 and 2006, or about 3-5 percent below what would have occurred in the absence of the EU ETS. Building on this effort, the reduction target for the current phase is 6 percent below 2005 levels by 2012, and the target for the third phase is 21 percent below 2005 levels by 2020.

Freely Allocating Allowances to Firms Produced Windfalls – Sharp increases in electricity prices during the first year of the trading program’s trial period gave rise to concerns that utilities that received free allowances were reaping windfall profits by charging higher prices to their customers. Ellerman and Joskow found that much of the increase in electricity prices was due to increased fuel prices that utilities were paying, particularly for natural gas. In the upcoming phases, the trading system gradually begins to shift toward greater use of allowance auctions. This should address concerns about potential windfalls and also eliminate the disparity in electricity price impacts that can occur with free allocation in regulated versus liberalized electricity markets. In Phase two, up to ten percent of all allowances can be auctioned, while in Phase three the rules for the electricity sector require a shift to 100 percent auction in 2013, but Member States can postpone that date to 2020 if certain conditions are satisfied.

Allowance Prices Have Plummeted – Prices in all markets are determined by the interaction of supply and demand. Toward the end of the trial period in 2007, prices dropped precipitously because allowances could not be carried over or “banked” and used in the next trading period. Allowances for the second phase are bankable which should help reduce downward price volatility toward the end of that trading period. In early 2009, however, the price of carbon allowances, like other commodities, began a downward slide – this time due to the global economic downturn.

Conclusions

The trial period for the European Union’s ETS served its intended purpose. It established the key building blocks of trading and set the stage for a fully operational regime for 2008-2012 when larger mandatory reductions in emissions are required. Like any flexible regulatory approach, the EU continues to refine its rules to improve and enhance the trading system over time. One thing is very clear – from the EU’s perspective, the trial was a success and the ETS will continue to be the cornerstone of their program for reducing greenhouse gas emissions.

The EU’s experience also provides valuable lessons for U.S. policymakers as they design a cap-and-trade system for the United States. These include:

- the need for an adequate period for regulations to be developed prior to start-up;
- the critical importance of good emissions data for distributing allowances and setting targets;
- the need for banking and borrowing to allow firms to minimize their costs and maximize their flexibility over time as one means of reducing price volatility; and
- the realization that allowance prices will fluctuate over time for a variety of reasons (e.g., changes in weather, energy prices, economic growth), but that price volatility can be dampened through design decisions (e.g., offsets, banking, borrowing, multi-year compliance periods).

Above all, the EU experience has demonstrated that an emissions trading regime can be an effective tool in efforts to reduce greenhouse gas emissions – one that can be modified and enhanced over time to expand coverage and facilitate a robust market.

March 2009