The downside of European Union emission trading – a view from the pulp and paper industry

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Why pulp and paper manufacturers fear that Europe's emission trading scheme will harm the industry.

Emission trading under the European Union Emissions Trading Scheme (EU ETS) – which covers CO_2 emissions from energy, ferrous metals and mineral industries such as cement, glass and ceramics, as well as pulp and paper industries – began in January 2005 for a three-year trial period.

The pulp and paper industry, like most EU industries, supported the principle of emission trading and had high expectations for it, as it should allow emission reduction measures to be implemented in a cost-efficient manner within the normal business cycle. However, the design of EU ETS raises several concerns for the competitiveness of EU industry, most notably an alarming impact on electricity prices. It is also questioned whether the scheme really serves as an incentive to reduce emissions.

HOW DOES THE SCHEME WORK?

Every EU Member State has its target for cutting emissions. The EU burden-sharing agreement, the so-called "EU-bubble", stipulates that some countries would reduce emissions while others could increase them, as long as the EU-15 as a whole achieves its Kyoto Protocol target of minus 8 percent compared with 1990 emission levels. (The new EU Member States have their own targets as agreed in the Kyoto Protocol.) That target, which covers all greenhouse gas emissions and not only CO_2 from the industries covered by EU ETS, is the basis for national allocation plans, which allocate the maximum amount of CO_2 each individual installation can emit. Additional greenhouse gases and sectors could be added to the scheme for the first real trading period of 2008–2012, although this is more likely to take place at the country than at the EU level.

EU ETS is a "cap and trade" system. This means that if an installation's emissions are higher than a set maximum limit (the "cap"), that installation will have to buy allowances from the market. If its emissions are below the cap, the installation will have allowances to sell. An alternative is a relative target, in which the cap does not apply to absolute emissions, but is set relative to production.

Most EU Member States decided to allocate allowances to installations based on their past emissions, which are not necessarily equal to expected emissions during the trading period. This approach is called "grandfathering". As per the directive, 95 percent of allowances were granted free of charge; in fact most EU Member States gave all the allowances from the initial allocation for free.

Alternative allocation methods are benchmarking and auctioning. In benchmarking, which in theory would take into account early actions, the target is given as an efficiency target, i.e. those installations that are more energy efficient or emit less CO_2 than the benchmark would have something to sell, and those that are less efficient or emit more than the benchmark would have to buy. Although in principle this could be a fair way of allocating allowances, many technical issues would first need to be resolved. In the pulp and paper industry, the same product can be produced through different processes and from different raw materials which influence the energy consumption and CO_2 emissions.

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In auctioning, every installation would begin with zero allowances and would have to buy the initially required allowances on the allowance market. This would also, in theory, be an efficient solution, but as EU ETS is the only European scheme, it would increase the costs of European operators considerably relative to others and would damage the competitiveness of European industry.

EU ETS does not cover forest activities; they were considered uncertain because forest fire or disease could destroy the forest and release the carbon stored. Although companies covered by EU ETS can use credits from Joint Implementation (JI) and the Clean Development Mechanism (CDM) to meet part of their targets under the scheme, forestry credits from these mechanisms are explicitly excluded for now.

Most, if not all, CO_2 emissions from pulp and paper mills are related to fuel combustion. EU Member States vary in their treatment of energy-producing installations related to the pulp and paper industry; some treat them as separate energy activities, others as part of the pulp and paper industry. Whatever the approach, pulp and paper installations are small emitters, and the pulp and paper industry is a small player in EU ETS. Of the 11 500 installations covered by EU ETS, only 7 percent (830) are pulp and paper mills, and the pulp and paper industry represents only 2 percent of allowances allocated under EU ETS. About half of the pulp and paper installations covered by EU ETS emit less than 25 kilotonnes CO_2 per annum, and there are even paper mills with zero allocation, since the scheme does not have any threshold excluding small emitters. Installations with zero allocation have to monitor and verify that they really do not emit any CO_2.

DOES THE SCHEME DELIVER?

EU ETS was adopted with considerable haste, and this has resulted in some shortcomings that have become apparent as the effects of CO_2 allowance trading have emerged. The plan to develop a trading scheme was launched in March 2000, and EU ETS was adopted two years later. At that point EU Member States were given only two and a half months to transpose the Emission Trading Directive into their national legislation (whereas at least 18 months would have been normal), and another three months to submit their national allocation plans to the commission by the end of March 2004.

The system requires agreement on a huge number of details in order to function smoothly, and many are still unclear. Countries have different ways of dealing, for example, with taxation and accounting rules for the allowances, rules for new entrants (new installations that start up during the trading period), the setting up of marketplaces and transaction logs for trading, and the monitoring, verification and reporting of emissions. The most worrying aspect of the way that EU ETS has been designed and implemented, however, is its harmful impact on electricity prices.

Interplay between the energy and allowance markets

The interplay between the energy and allowance markets was not sufficiently understood when EU ETS was designed. Developments in the energy market naturally have a direct impact on the allowance market too. For example, at the beginning of 2005, Nordic countries experienced heavy rainfall, which resulted in a large amount of hydropower in the market. In turn, this meant less coal production and hence less demand and lower prices for allowances. As another example, increasing oil prices have raised the price of gas, which has meant higher demand for coal and hence for CO_2 allowances.

The real flaw in the design of EU ETS is, however, the fact that it makes it possible for electricity producers to pass on not only increased costs resulting from EU ETS, but also the opportunity costs of the allowances they received free of charge. When the allowance trading started, the free allowances received also acquired value which was determined on the allowance market. Electricity producers then, like other industries, had two options: they could either produce energy and emissions and consume the

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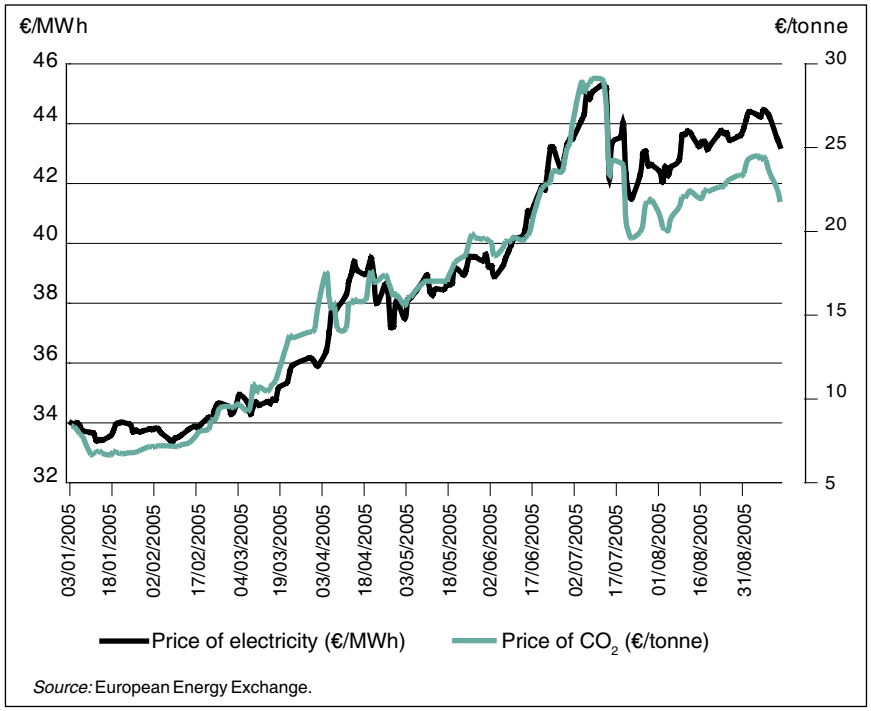
Most CO_2 emissions from pulp and paper mills are related to fuel combustion; in this large plant in Finland, modern recovery technology reduces emissions almost to zero



Source: European Energy Exchange.

Correlation between electricity prices and the prices of CO_2 allowances under EU ETS

allowances, or they could refrain from producing energy and sell the allowances on the allowance market, getting the market price of the allowances as income.

Producers that choose to produce electricity would thus expect it to bring in additional income worth the lost opportunity to sell allowances on the market. Because of the structure of the European electricity market and the nature of energy as a product – i.e. that electricity cannot be imported from countries outside the EU and is therefore priced locally, not globally; that it cannot be bought when it is cheap and then stored; and that it cannot be substituted with other goods – electricity producers can pass on almost the full price of CO_2 allowances to electricity prices.

The pulp and paper industry is unable to do the same and pass on these costs, as its product prices are determined on the international market (contrary to electricity prices which are local and also vary greatly within the EU). As a result, there will be a large distribution of wealth or transfer of revenues from the energy-intensive industries to electricity producers.

The prices of CO_2 allowances and electricity correlate very closely – the correlation factor is about 0.95 (see Figure). The price of an allowance at the beginning of January 2005 was slightly more than €8 per tonne of CO_2; it topped at €30 in July 2005 and was €22 in mid-September 2005. The price of electricity (German forward prices for 2006) was around €34 per megawatt hour (MWh) in January 2005, slightly more than €45 in July 2005 and €43 in mid-September 2005. For the European pulp and paper industry, which buys some 65 million MWh of electricity annually, this price increase of about 25 percent would mean additional costs of €780 million. The impact is tremendous and without any environmental justification. Since this is only the "trial" period, pulp and paper producers should probably ask for their money back.

Environmental goals

EU ETS does not appear to provide a strong incentive for emission reductions. When the allocation is carried out for every trading period using grandfathering, the scheme may well reward inaction instead of action; if the allocation for the future is based on past emissions, then why decrease them? For the electricity industry, the major emitter and player in the scheme, the incentive to reduce CO_2 emission levels is highly questionable as the industry can pass on the actual costs incurred through EU ETS, as well as the opportunity costs, to its customers.

As a result, EU ETS is revealing itself to be a very expensive trial that will not meet the environmental expectations placed on it but will put a disproportionate burden on EU manufacturing industries.

FUTURE OF EUROPEAN EMISSION TRADING

The possibility that EU ETS gives to electricity producers to pass on the full opportunity costs to their customers is a clear flaw in the design of the scheme and should be corrected immediately. There are several possibilities to address this, for example introducing a cap for the allowance price, or taking away the choice to use or to sell by linking the amount of allowances allocated to the actual production of electricity. Taxing away the excessive profits gained by the electricity producers would not solve the situation from the industry point of view, as the money would hardly be paid back to the industry.

The European Commission has started work on a revised Emissions Trading Directive to be proposed by mid-2006 and effective for the period starting in 2013. EU Member States are in the process of preparing their national allocation plans for the period 2008–2012. It is hoped that they will take into account the experience gained. ◆