

Stepping-up the role of the ETS in EU energy sector decarbonisation

Lunchtalk, Bruegel, February 8th, 2012

This seminar was jointly organized by the Institute for Sustainable Development and International Relations (IDDRI) and Bruegel, to discuss policy instruments for incentivizing long-term investments in decarbonizing the energy sector – specifically, the role of the EU ETS. **Laurence Tubiana**, Director of IDDRI, chaired the discussion. The event opened with a presentation by **Georg Zachmann**, Research Fellow at Bruegel, followed by presentations by **Karsten Neuhoff**, Deutsches Institut für Wirtschaftsforschung (DIW) / Climate Policy Initiative (CPI), and **Michel Colombier**, Scientific director, Institute for Sustainable Development and International Relations (IDDRI).

Georg Zachmann began by outlining the energy investment needs and decarbonization perspectives in member states. Although the theoretical costs of decarbonization are low, theoretical projections operate under the assumption that the EU moves along the optimal decarbonization path. In reality, policy failures cause costly deviations from the optimal decarbonization path. Increasing the role of European energy and carbon markets may help bring decarbonization costs closer to the efficiency frontier. One important conclusion from the Energy Roadmap is that we will see significant shifts from variable costs to fixed costs with decarbonization. The current system of fossil fuels has variable costs, but renewables have almost no variable costs and require significant fixed cost investments. The estimated requirement is an investment cost of 1 trillion Euro / year up to 2050, so getting the investment signals right is extremely important. There is anecdotal evidence that we are not moving along the optimal investment path – e.g. coal-fired power plants in Germany, a dearth of transmission capacity between Scandinavia and the continent. Georg Zachmann then looked at the investment signals for different components, transmission lines and power plants. In terms of transmission lines, many of the investment signals are at the national member state level. The bulk of transmission lines are nationally regulated – for example, in Germany there has been no increase in cross-border transmission capacity in the last six years and investment has not changed much over the last five years. In terms of power plants, one would expect higher investments in generation capacity when wholesale prices are high. In examining price and capacity data over four-year periods, this appears to hold nationally, but does not hold for the EU as a whole. Within countries, companies appear to increase investment when prices increase. However, in Europe as a whole investment does not systematically occur where prices are highest. There are a myriad of options for ensuring that future electricity needs are met. Each option is characterized by different (and changing) fixed and variable costs. An example of national schemes can be seen in the German feed-in-tariffs. In 2010, over 80% of German generation investments received national tech-specific feed-in-tariffs. If the 25 GW of subsidized German PV had been installed in Greece, the value of the additional electricity generated would have been around 1.3 billion Euros in 2011. In France, with the NOME law, regulated tariffs limit the demand-side response. In the UK a carbon floor price above the current ETS price may shift abatement from the continent to the UK. National policies deviate markedly from a European market-driven approach. Getting the wrong combination can be very expensive. The problem is too complex for an administrative approach (even at the member state level). To stay close to the optimal path, we should step up the role of the ETS and the single energy market so as to rely less on government intervention and avoid costs stemming from government failure.

The next speaker, Karsten Neuhoff, presented on the ETS surplus, while stressing the importance of a European perspective. The ETS surplus is determined by: formerly withheld allowances for new entrants, and early auctions for future periods (this increases the volume of unused allowances to €1 billion). Additionally,

international offsets and CDM have picked up a lot quicker than expected, most of the 1.7 billion credits which can be imported will be imported by 2013. The recession has also contributed to the increase in unused allowances. Any assessment of ETS must take into account the uncertainty of future emissions – in the past we failed to take this into account. Unused allowances go to several buyers. The power sector hedges four years into the future and so buys allowances to hedge future power sales. There is a hedging corridor, however, as the unused allowances demanded by the power sector depends on the plants they use. Due to low CO₂ prices, we believe they hedge against the carbon-intensity of coal-fired power plants but that could change in the future. If the power sector were to hedge against the carbon-intensity of gas-fired power plants in the future, this could lead to an increase in unused allowances as gas plants only require about half the emissions allowances. In addition, industry stocks up on free allowances (“banking”) at the low prices, though how much is unknown. Both industry and power sectors are very reluctant to speculatively invest. According to interviews, a 10-15% rate of return is expected by speculative investors due to the expected return of other commodities markets. Banks and trading desks are quite active but are meeting the utilities’ hedging demand so this does not affect supply/demand. If all allowances carried by hedging buyers there would be a relatively low discount (for a 5% annual return, a 2020 price of 25 Euro implies a present price of 17 Euro), but if the volume of unused allowances exceeds hedging demand, then speculative buyers would need a return of 10-15% per year – resulting in a much higher discount rate (a 2020 price of 25 Euro implies today’s prices are 8-12 Euro). The discount rate could be even higher as we are unsure of the expectations for 2020 or post 2020. The expectations post-2020 will largely depend on what is happening in the market now. In terms of current policy options, if we move to a 30% target and gradually tighten-up to 2030, we take year-by-year more and more allowances off the market but we will enter the hedging corridor only at the end of the decade. More and more people are talking about set-asides in the European parliament. 700 million tons reduced from the auctions in 2013 and 2014 would quickly move into the hedging corridor and would push up today’s prices. Finally, a reserve price auction is one in which we only issue allowances into the market if the price people are willing to pay is above a certain price. Auctions would clear at zero volumes until hedging demand meets unused allowances. Reserve auctions could provide protection for economic/financial crisis. It is important to tighten the post-2020 target as discounting depends on what is happening now – timing matters.

Next, Michel Colombier presented on how to build long-term vision through short-term policy decisions. The first conclusion we can draw from the earlier presentations is that intervention is needed. The second conclusion is that there is a big difference between the commodity market and the carbon market – in the carbon market there is no way to predict the future without a clear public commitment. There are investors out there who would invest in a low-risk investment with a much lower discount rate. In the short-term, dark spread is much higher than spark spread – you make much more money running on coal than running on gas. Also in the short-term, one can expect that the carbon price may compensate for costs of feed-in-tariffs given to mature renewable technologies today. A concern is that these reasonable short-term expectations are likely not to be met. In the long-term, the prospects for CCS, nuclear, etc. are unclear, and many investment projects have been delayed or cancelled. Investors are risk-averse on stranded assets. It seems reasonable that the rules guiding 2020 should be settled at least five years in advance. Additionally, if we delay the discussion too much we will have a locked-in situation with decreased negotiating power. Looking at the energy roadmap, there are large differences in the predictions from different scenarios. Taking the most extreme scenarios, there is a 4% difference in CO₂ (2.6 gigatons extra in the system). The targets that we should fix is not a discussion, the discussion is over the pathway. A discussion requiring legislation on period III will cause delays, weaken credibility, and be meaningless. Instead, we should immediately launch discussion on the future 2030 cap and make a rapid but technical decision on where we want to stand.

Additionally, what's necessary right now is to prepare the ground for the transition – this means increasing energy efficiency. Energy efficiency will not have a large impact on demand in the short term, but will go along with goals on energy security. Finally, specific economic incentives are needed to counter the myopic behavior of markets – this is not a contradiction but a complement to a market-based approach.

Philip Lowe then commented that the energy roadmap and decarbonization roadmap are attempts to dimension a strategy beyond 2020. It is difficult to be technologically-neutral in the market sense. Having said that, the issue as to what kind of milestones/targets needed beyond 2020 is the essential debate between now and the end of next year. All the scenarios presented for the development of the energy sector and the economy are extremely complex and may be impossible to achieve on a centralized basis. Therefore, we are bound to look for a strong dose of market-based instruments. There are at least 3 public policy concerns which would need to be addressed for markets to work effectively: energy security, environmentally sustainability, and network industries with heavy upfront investments. We are not only dealing with third-party access but also wanting to provide an environment where companies can naturally hedge the future on price. A current problem is that regulators optimize on a national basis and don't carry out cost-benefit analysis across borders even though this has a huge impact on security of supply, competitiveness, and scale and scope of network. On renewables, there is an inevitable read-across to the market for carbon. There is bound to have some interaction between the two if you are successful. The bet in 2008 was to support the new technologies for a transition period until costs come down and they can compete naturally on the market. There has been a bit of confusion amongst investors on how the support schemes should work – an unlimited period of support was expected but as costs come down, subsidies must come down. That has to be looked at, especially as renewables become an increasingly important part of energy production – will support schemes at a national level have implications internationally? We should not disturb the framework up to 2020 but we should look more closely at the effectiveness of national schemes. We do need to think about what should go on after 2020. Are we confident that the original bet is the correct one – that the market would pick winners and there will be a sufficient carbon price? It seems a bit too early to take a judgment. Additionally, what we should be looking at is not harmonization but some degree of framework so that decisions are coherent. European legislation is all about the wholesale market. There is a consistent criticism that we have not deregulated retail prices – so do not have the benefits of wholesale liberalization as retail prices have not been liberalized. Markets which reflect market choices and not government choices are important, while still protecting vulnerable consumers. An achievement is that electricity no longer flows from high price areas to low price areas – the flows are rational – and this is a major victory. Though as we have seen, investments are not yet rational. Does the third package really help us in incentivizing long-term investments? No. All low-carbon generation today is subsidized by public schemes, including CCS. If we want to benefit from the advantages of an internal market, we should look at all low-carbon sources to find the right mix and allow the market, on a decentralized basis, to take the right decision. That certainly means thinking about ETS, and it may also mean an emissions target in 2013 and 2014. If we want both generation and infrastructure investments to be incentivized, we need to make sure that regulators simplify the system of determining internal rates of return. We need a framework/guideline to address the lack of capacity for low-carbon technologies. We will need both the ETS and greater regulation – government intervention on a basis that is transitional, necessary, and proportionate without open-ended support to any technology. Public support of various kinds, feed-in-tariffs, strike prices, will be part of it too.

During the discussion portion of the event, Philip Lowe commented that it is also important to consider investment signals on transmission returns. Five years ago, infrastructure was not really discussed, but investment in transmissions and distribution is vital. There are 58 TSOs in at least one country in Europe, and

so we should facilitate consolidation and encourage the smartest transmission systems. Investment in energy efficiency may be an opportunity to create employment. National interventions should also concentrate on the fact that people don't believe markets are providing signals soon enough – long-term contracts should push market. Karsten Neuhoff commented that there should be facilitation of coordination on the infrastructure side. Feed-in-tariffs might be considered more as long-term contracts than subsidies – so do we want more long-term contracts beyond 2020? Michel Colombier added that there is not just an issue of credibility but a legal issue as well. The next Cap needs to be consistent; not just an overall objective for Europe but bottom-up.