



The Ifri Energy Program

After the G8, Industry facing the Climate Change Challenge

September 17th - 2008

Renaissance Hotel

Conference Report

The context

The European Parliament and member state governments are currently studying the Commission's energy proposals. Decisions are expected by the end of 2008.

But effective implementation of these decisions will require real commitments not only on the part of the Commission and state governments, but will hinge on the capability of corporations to meet those commitments in ways that do not harm their international competitiveness and the willingness of households to modify their behaviour.

The IFRI "European Governance and the Geopolitics of Energy" program hopes to explore with industry, the question of improving the greenhouse gas emission allowance trading scheme.

Three categories of companies are primarily concerned:

- Companies producing electricity from whatever fuel, who will either need to buy or sell emission allowances and make the investments in de-carbonisation of the power sector:
- Heavy industry who are major consumers of fossil energy and emitters of greenhouse gases (steel, cement, chemical industry, etc...); and
- Industries that produce goods whose usage is related to energy consumption (automobiles, aeronautics, etc...)¹

The IFRI energy program organised a round table in Brussels to bring together high-level representatives of these companies to present their firm's point of view on these subjects, notably on:

- the EU ETS
- mechanisms that could be adopted to avoid outsourcing
- the opportunities presented by global sector agreements
- the opportunities presented by flexibility mechanisms (JI and CDM) in their respective areas
- incentives for the development of pilot Carbon Capture and Storage (CCS) units

Let us not underestimate the magnitude of these problems. Industries are the first to innovate, to take risks and to make many of the most important decisions, but the framework conditions and policy clarity must be in place for them to do these things. Therefore, EU ETS design and implementation must take into account the problems of adaptation of the industries.

¹ Construction being a unique case in relation to these examples

The EU ETS on the eve of phase 3

According to IEA *Business As Usual* scenario, CO₂ emissions could rise up to 42 Gt by 2030 and to 62 Gt by 2050. By contrast, the IPCC aims at a 15-20 Gt of CO₂ emissions by 2050. In order to put a price on carbon and help various stakeholders to reach this target through market-sensitive mechanisms, the EU has developed a comprehensive scheme for trading of CO₂ emissions among large emitting companies within the EU. The EU ETS is today the first Carbon Dioxide Trading Scheme in the world.

One year into the EU ETS phase 2 and drawing the lessons of phase 1 (carbon leakage, allocation process, windfall profits), what is necessary to make the EU ETS function properly to inform the design and implementation of the EU ETS phase 3?

On energy producers

Among the energy producers, their power mixes shape their concerns and constraints. Carbon free technologies such as hydropower or nuclear power are mature and competitive. However, they require a strong policy and regulatory framework upon which to build public support for what are very long term investments.

Volatility and relatively high energy prices have improved nuclear power's competitive edge in addition to the fact that it is one of few energy sources answering all three pillars of the European energy policy: competitiveness, security of supplies, low emitting CO₂ sources. The carbon market is only but one of several criteria that will determine the competitiveness of long term investments such as the building of nuclear power plants. Turbulence in financial markets, the lack of a stable policy and regulatory framework and the need for additional policy measures also increase uncertainty and risk for major investments.

For emerging technologies, the question of technology maturity is crucial. Promising technologies such as CCS (Carbon Capture and Storage) or generation IV nuclear have still a long way to go before they reach the market deployment stage. Clearly it is necessary to encourage research and development resulting in large scale prototypes. This calls for different types of approaches and has to be separate from technologies already commercially available.

On the CDM mechanisms

Energy needs globally are on the rise with particularly strong requirements for electrification in developing countries. China became the largest CO₂ emitter in 2006 while India is the world's third biggest emitter. According to the IEA World Energy Outlook (WEO) 2007, the electricity sector has the capacity to deliver strong reductions in emissions. As part of the global fight against climate change, available technologies can already help developing countries produce low carbon electricity generation. In particular, the expansion of CDM mechanisms² should be considered for technologies that are mature in developed countries. All technologies that could result in reduction emissions should be part of CDM mechanisms.

The CDM is still finding its way and hopefully improving. But some loopholes in the design and in the project based approval process have given way to an increasing number of critics:

- From an economic point of view, the share of CDM should not be limited. However, CDM must not be a way for developed countries to export CO₂ emissions reduction. Emission reduction must be effective in the developed country as well.
- Critics wonder if the CDM mechanism is genuinely providing additional climatic benefits since some projects were going to happen anyway.
- CDM projects are bringing unexpected windfalls for some Chinese manufacturers, in particular for chemical plants emitting HFC23. It is relatively cheap to deal with and a small amount of HFC23 destruction earns a huge volume of CERs, therefore this kind of project is very lucrative on the carbon markets. These "profitable" projects are developed to the detriment of renewable energy projects.
- Some sectors of activities, particularly exposed to international competition, might lose their competitive edge, providing their main competitors with the tools to improve their performances.

Competitiveness of alternative generation sources and technologies ultimately depends on many parameters, including geopolitical context, weather conditions, market liberalisation, the impact of carbon emission trading or how, for example, to integrate wind power into the electricity grid. Most studies point out that prices tend to favour coal-fired generation power plant as the marginal plant but practice in siting shows that gas combined cycle is most often the ultimate fuel of choice. Coal prices have been slow to catch up with oil and gas prices, but have increased significantly in the past year. Coal will keep playing a significant role in the energy mix of the future. However restrictions on carbon emissions hinder coal-fired power plant building absent the deployment of

² the project based approval process excludes some technologies

commercial carbon capture and storage. Instead, natural gas fired power plants are built and are setting a new marginal cost of electric production.

On the auctioning mechanisms

Originally, cap & trade systems have been preferred to a carbon tax because permits were to be distributed freely to industries. The introduction of a good deal of auctioning, starting from 2013, will correct part of undue windfall profits that have been observed during phase 1. However, the debate on tax versus cap & trade might rise again, especially when considering the implementation of such a system internationally: taxes would be simpler but their impact on consumption is uncertain.

Participants have mixed feelings regarding the impact of full auctioning on electricity prices. Economists believe that full auctioning will not impact the electricity prices. On another hand, “uncontrolled auctioning” worries some representatives of energy intensive industries who are afraid that the carbon market could attract more financial players and speculators causing the prices to skyrocket. Energy-intensive industries fear that producers operating in countries where “pollution” is cheaper will put European operators out of business. They believe that the perspective of a global climate change deal that could resolve such an imbalance is not very positive.

Subsidies being given to particular renewable energy sources such as photovoltaic in France or wind power in Germany raise concerns about equity and fairness. Generally, there was broad support for the phasing out of renewables subsidies as an incentive to efficiency and marketisation of the technologies.

On incentives and future technologies

Oxy-combustion is a promising solution for reducing the intensity of CO₂ emissions from traditional industrial activities such as coal-fired power plants, blast furnaces and cement plants. Using oxygen (instead of air) for the combustion of coal or other fuels, results in exhaust gases of relatively pure CO₂ that is ready for capture, storage or direct use. CCS technologies need consistency and politician support, to be able not only to support research and development, to invest in CO₂ transport and to get demonstrations plants

The same kind of commitment is needed regarding nuclear investment. Coal and nuclear both face negative public attitudes and CCS has yet to be brought before public opinion

On the Energy renewable targets

The 20% objective of renewable energy in the European energy consumption by 2020 seems feasible to industrial representatives. But it raises a number of questions. First, the renewable energies are intermittent. Except for hydroelectric and geothermal sources, renewables cannot provide the base load power required to produce energy at a constant rate and meet demands. For the power sector, it means that the new investment in renewable sources must be matched by the same amount of investment in base load capacity (nuclear, coal-fired plants...). Secondly, the national targets themselves are not well defined: It is unclear whether they concern primary or final consumption. Then, the national targets appear far away from the power sector's realities: The real question is what kind of technologies should be promoted. The inclusion of nuclear energy in meeting the renewables' objective will probably prove essential. Finally, the costs to achieve the 20% target are huge although the age of power plants in Europe is already going to force the necessity of building new capacity.

Review of energy-intensive industries

Unlike the power sector, it is not possible for the most impacted sectors to pass CO₂ costs on to the consumer. Energy intensive industries like aluminium, cement, copper and steel insist that not only are they subject to the rise of electricity prices, since they are heavy consumers, but that they are twice impacted since they have to pay for their own CO₂ emissions. Additional EU ETS cost burdens would be unsustainable and could result in carbon leakage (relocalisation, closing factories). Rather than a generalisation of full auctioning, these industries insist on the use of a benchmarking/best practice criteria, based on the technology processes involved. All these industries are involved in global agreements, since their situation is different in the EU, the US or in China. They expect that the European Commission will find a balance between competitiveness and environment and in doing so will recognise the international field that these sectors are playing in. Therefore, energy-intensive industries would like to keep benefiting from free carbon dioxide emissions allowances at least until an international agreement is reached and legal uncertainties are substantially reduced. Concern is that the overall impact of the economic damage that these industries might suffer, wouldn't be so great on European economy, even though these industries represent jobs and are important at a regional level.

Copper Industry

Energy consumption has been decreasing for a long time. The European copper sector is the most energy efficient in the world and 25% of the electricity consumption can be attributed to environmental protection, therefore the feeling that it would be unfair for the copper sector to have to pay twice.

Zinc Industry

Energy efficiency is at the core of the zinc industry's competitive advantage and the shift to the most energy efficient processes has already occurred. Additional cost on European zinc means that Europe could import zinc produced at less energy efficient levels.

Steel industry

China and India's involvement are crucial regarding this sector. This industry is more particularly concerned with the physical limits on what you can do with reduction. Breakthrough technologies that could bring about enhanced reductions in CO₂ emissions from steelmaking require significant levels of investment.

Chemical industry

Chemical industries are extremely diverse. 8 sub-sectors can be considered as energy intensive. For others, CO₂ emissions are mainly due to industrial process. One might think of a physical limit that will set an "acceptable" level of CO₂ emissions above which, industries would be accountable of their CO₂ emissions. Representatives of the sector underline also that chemical industry is providing solution to fight climate change.

Main requests:

- Industries exposed to international competition must be treated differently than the power sector.
- Implementation of an "authorised" CO₂ emission limit (above which, industry will be accountable for their emissions). This benchmark could be used for direct and indirect CO₂ emissions.
- World sectors agreement
- Taxes compensation in order to restore competitiveness (must go along WTO rules)

According to all participants, the current uncertainty on the shape of the future EU ETS implementation hinders investment. The EU ETS can't by itself, even if well designed, provide the tools for long term incentives. Help from governments and public policy is necessary to shape R&D technology investments.

A few words on transport sectors

The automotive industry has failed to meet the environmental challenge because the lack of a real market. Things have begun to change. The same concerns expressed by energy intensive industries are shared by air transport/automotive sectors. For these particular sectors, energy prices already seem to be an efficient incentive to reduce energy consumption (no need of additional taxes). As observed in the previous session, the competitiveness aspect in the transport sector is the most important issue.

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List of discussants

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