



CONTENTS

Interview: Aurélie Faure, Financial Analyst at Dexia Asset Management.....	p. 1
Hot topics in Copenhagen.....	p. 3
CDM projects opportunities: Focus on Morocco.....	p. 5
Corporate News.....	p. 6



Interview: Aurélie Faure, Financial Analyst at Dexia Asset Management

Question: As a Financial Analyst of the utility sector, could you tell us how carbon has impacted strategic decisions in this sector?

A. Faure: The targets of the EU Energy and Climate Change Policy are mainly drawn towards the power sector. In 2013, this sector will bear 100% of the cost of its inherent CO₂ emissions, and therefore, will be fully exposed to the risk that CO₂ prices increase over time.

Within the utility sector, the common approach is to adjust investment decisions. While in the past, utilities were investing in power plants based on the expected return of electricity generation versus fuel cost assumptions, they are now also discounting the cost of CO₂. As of today, there has been no change in final investments strategies to replace the existing generation fleet in Europe. Despite a strong emissions intensity, coal and lignite remain attractive. Nevertheless, the opportunity cost of missing the renewable energy boom would simply be too high and the share of renewable energy generation is growing rapidly. RWE for instance, a traditional coal-based power company, has already developed a pipeline of 15 GW of renewable assets.

Question: How do you value the carbon risk when analyzing these companies?

A. Faure: We analyse carbon on a purely financial basis. We project annual CO₂ emissions and a CO₂ emissions deficit for each company within our portfolios. We use different carbon price assumptions (eg. EUR 15/ton - EUR 25/ton - EUR 40/ton). This leads to a value of the potential risk to earnings and equity valuation. A EUR 5 move in long term price assumptions implies a change of 5% in the equity value on average in the utility sector.

Question: For power companies, the cost of producing electricity from fossil fuels includes the prices of gas, coal, oil and carbon. How do they hedge their risks?

A. Faure: Utility companies hedge their risk by selling futures for every MWh they produce. They start hedging on average 3 years in advance. A typical hedging profile would be 20% of the volumes in year 1, 20% in year 2 and 60% in year 3. As a result, the average realised price is an average of future prices smoothed over the 3 most recent years.

Question: At what fossil fuels and carbon prices levels are renewable energies becoming competitive for power companies?

A. Faure: Building renewable energy plants requires a significant amount of fixed costs. We estimate that renewable energy is profitable between EUR 100/MWh (onshore wind) to EUR 200/MWh for large hydro dams. This is equivalent to a price of oil at USD 140/barrel and a price of carbon at EUR 45/ton.

Question: As mentioned before, power companies usually hedge their risk 3 years in advance. As there are uncertainties regarding the post Kyoto regime, do they already have a carbon strategy after 2012?

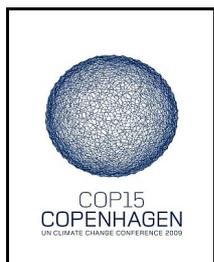
A. Faure: There are two different strategies: managing electricity price volatility for end customers and managing CO₂ risk for the company. Hedging strategies have been relatively constant over the recent years regarding the time horizon, and carbon has been integrated as of January 1st, 2005 in the cost of electricity.



As far as CO₂ is concerned, power companies have built a portfolio management approach, which consists in a diversification of the risk. Their strategy is to diversify their 2013 position through Joint Implementation – Clean Development Mechanism projects.

Aurélie Faure is Financial Analyst at Dexia Asset Management.

Hot topics in Copenhagen



The Kyoto Protocol will end in 2012. The 15th Conference Of the Parties of the UNFCCC is hence a cornerstone for a new international agreement. Although it is difficult to predict what will come out of the conference, especially in terms of quantitative commitments, some hot topics have good chances to be addressed such as LULUCF, Sectoral CDM and Emissions Trading Schemes.

Land Use, Land-Use Change and Forestry (LULUCF)

The International Panel on Climate Change (IPCC) estimates that deforestation is responsible for 15 to 20% of the global greenhouse gas emissions. The Kyoto Protocol's first commitment period excluded emissions reductions from the forestry sector. This should not be the case in the post Kyoto agreement. Reducing emissions from deforestation in developing countries, popularly known as REDD, has emerged as a key issue. Still, the REDD mechanism is complicated and faces stiff opposition due to its link to the carbon markets. At the same time, most Parties agree that the current LULUCF rules are inconsistent, complex and have to be modified. Decisions should be taken during the Copenhagen Conference in this sense.

Today, the main issues are the following:

- Currently, only afforestation, reforestation and deforestation require compulsory accounting. This needs to be extended.
- The mechanism allows to add to or to subtract from a given country's emissions target. Credits are generated from carbon sinks, such as sequestration from growing trees. These are subtractions. To the opposite, emissions from cutting down or burning trees are additions. The mechanism should be clarified on the above.
- Many Parties want to offset industrial emissions through savings from the LULUCF sector, or by purchasing REDD credits from developing countries. But this should be capped.
- There is a risk that carbon credits for forests could be sold without acknowledging the rights of the indigenous people.
- Monitoring and reporting remain a recurring problem, depending of technical and governance capacities.



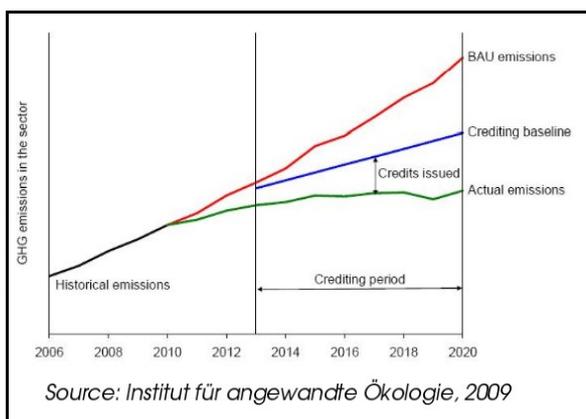
Sectoral CDM

The sectoral crediting mechanism (SCM) is viewed as an alternative to the CDM and may replace it stepwise. Under a sectoral CDM, the crediting baseline is set at the business-as-usual emissions level. Sectoral targets suggest that the baseline is set below BAU emissions. Currently, there are two

approaches for a sectoral CDM. The first one is that a policy-based CDM can be seen as an engine for promoting national or local policy initiatives rewarding the government with CERs that may be passed on to all or some of the projects participants. This option consists in modifying a mechanism originally targeted at private investments into a measure for governments to finance climate protection. The second option defines a mechanism driven by private operators where local projects are clustered along the lines of a sector.

Some points remain unsolved:

- Sectoral binding targets could be related to the existing emissions trading mechanism, but how?
- A host country could develop a policy which could be financially and technically supported by industrialised countries. Again, how to make it unilateral and not bilateral?
- Uncertainty about the financial instruments that will apply after 2012 is problematic. As there is no clear visibility after 2012, it could mean that the projects registered between today and 2012 are not necessarily additional.
- Sectoral carbon leakage are also an issue. Production (and GHG emissions) may be moved from countries or regions under carbon constraints to those without ones.

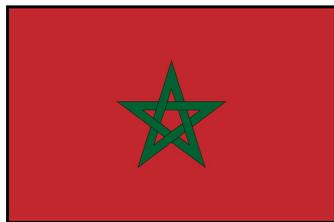


Emissions Trading Scheme (ETS), Phase III

The European Commission has already unveiled plans for a third phase of the ETS until 2020. The proposals have widened the scope of the scheme to include other greenhouse gases and a number of industrial sectors. The United States, China, India are expected to get involved. Still, regarding an international cap-and-trade system, Europe plays a leading role:

- The unilateral EU target of a 20% emissions reduction by 2020 (from 1990 levels) could increase automatically to 30% in the event of an international agreement.
- The European Commission proposes an auctioning system of 60% of the total emissions allowances from 2013 with full auctioning for utility companies and only 20% of permits for other sectors.
- The extension of the scope of the scheme to cover sectors such as aviation will already be effective before 2012. Other sectors and/or additional greenhouse gases could follow from 2013. For instance, all installations producing over 10,000 tCO₂ per year could be included.
- For industries suffering international carbon leakage, a higher degree of free allocation could be possible.

CDM projects opportunities: Focus on Morocco



The Kingdom of Morocco has been involved in the Clean Development Mechanism for a long time: in 2001, the country published its first national strategy to mitigate climate change and defined appropriate procedures for CDM projects approval. The DNA was established in 2002. Today, five projects are registered and new CDM projects have been gradually developed in the last 3 years. Some of these projects are listed below:

- Construction of new wind farms with an expected installed capacity of 1,440 MW
- New hydroelectric complexes with a total capacity of 400 MW and the installation of 400,000 m² of solar thermal panels
- Implementation of a pilot project using oil shale – a local resource – with a capacity of 100 MW

At the policy level, Morocco is a Party of the Euro-Mediterranean partnership aiming at benefiting from technology transfers to create a balanced regional energy market. A new law on renewable energy is under preparation, in which the state-owned power company ONE (*Office National d'Electricité*) will no longer have an exclusivity regarding electricity generation from renewable energy. Further, a strategy will be developed to enable the national energy system to be in harmony with the priorities of the country such as the increasing demand in electricity. For instance, energy efficiency projects should achieve a 12% energy savings by 2020.



Morocco's Designated National Authority

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