

# *EU plans will cause huge growth in carbon trading*

| by Joost Kanen

The Climate Directive presented by the European Commission on January 23, will have far-reaching effects on the European and global carbon markets. A huge growth in trade may be expected.

Carbon trading has been a revolutionary global innovation since the European Union introduced its Emissions Trading Scheme (ETS) in 2005, after the Kyoto Protocol came into force in late 2004. The most eye-catching events since that time have been the windfall profits for power companies and the carbon price collapse in April 2006. Less visible have been the adaptation processes that many industrial companies and power companies have undergone, including in the ex-communist countries that have joined the EU. Eastern Europe also harbors the biggest opportunities for reducing carbon emissions, e.g. by switching away from coal-fired to gas-fired power stations or by optimizing the energy efficiency of large industrial complexes.

What effect will the new Climate Directive have on European carbon trade? Let us first look at the current situation in the period from 2008-2012 – the official Kyoto Protocol period as well as the second phase of the EU ETS. In the first phase from 2005 to 2007, there was an overallocation of allowances, which led to a steep price collapse. Will this happen again?

To answer this question, we must first look at what the impact will be on ETS of Kyoto's "flexible mechanisms" – the Clean Development Mechanism, Joint Implementation and International Emissions Trading. In the first phase, CER's from CDM-projects were allowed to be used in the ETS, but ERU's from JI projects in Eastern Europe and ex-Soviet states were not (see box for an explanation of these terms). Actually, whoever used CER's in the first period lost money because of the oversupply of EU-allowances.

The expected inflow from CER's and ERU's – which are allowed to be used in the second period to an average maximum of 13.4% of total reductions - is around 280 million tons (Mt) a year. The expected shortage in the EU ETS is estimated by most analysts to be between 150 Mt and 200 Mt per year. That would mean that there won't be a short situation and prices might collapse again.

So why are prices for EUA's for December 2008 delivery still around €21.00 per ton? And why are CER prices still around €15.00 per ton for guaranteed delivery in December 2008? Several factors probably play a role. The high gas and oil prices seem to favor more coal-based power generation with the associated higher emissions. Then there is the fact that EUA's will be bankable from 2012 into the third trading period of the EU ETS, which will extend from 2013 to 2020, even if the Kyoto Protocol itself isn't extended. The bankability of the EUA's combined with the spread in the prices between EUA's and CER's, stimulates many power companies and industrials to buy as many cheap guaranteed CER's and ERU's as possible, up to the allowed CER and ERU import caps of on average 13.4%. This means that companies that find themselves long towards the end of the trading period, can just take their EUA's into the new trading period. CER's, too, will be bankable into the 2013-2020 trading period.

## Post-2012 |

The most unpredictable aspect of the post 2012 period is how fast the decoupling between economic growth and emissions and energy use will occur. The expected increase in nuclear energy and the rapid increases in renewable energy coupled with the change to a service based information economy will speed up the decoupling process especially in some West European countries such as Germany, the UK and Spain. This decoupling can lead to substantially reduced demand for EUA's in some countries. However if these carbon emissions are simply outsourced along with industrial production to rapidly developing countries like China and India, this would not solve the global issue of climate change. Europe would simply wash its hands clean and pass the dirty work on to Chinese workers.

On January 23rd the European Union presented its new plan for the EU ETS phase III from 2013 to 2020 along with new plans for 10% mixing of biofuels in petrol and a renewable power target of 20% of all generation in 2020 as well as a EU wide trading system for



Photo: Mike Grandmaison/Corbis

renewable electricity certificates. Currently the EU ETS has around 2 billion allowances, which is around 40% of greenhouse gas emissions in the 27 EU member states and 44% of all CO<sub>2</sub> emissions in the 27 countries. European industry has tried to put pressure on the European Commission to reduce the amount of auctioning of allowances to only 20% of the total system allocation in 2013. This amounts to around 400 million tonnes. The pressure was exerted by threatening to shut down industrial installations in the EU and transplanting production to countries without national emissions caps, such as China, India and Brazil. The percentage to be auctioned will however be increased from 2013 to 2020, the third phase of the EU ETS, in order to achieve the EU's greenhouse gas emissions reduction target of -20% in 2020 versus 1990 levels.

The Commission has a plan A and a plan B. Plan A (preferred) is defined by a situation in which there will be an agreement on a global level on a continuation of the Kyoto Protocol and its concomitant greenhouse gas emissions reductions targets. In that situation the EU will strive for a 30% reduction target in the year 2020 versus 1990 levels. This assumes that both the US and several large developing countries such as China, India, Brazil and Russia sign up to a continuation of the Kyoto Protocol.

Plan B entails several steps and greenhouse gas reductions targets that the EU will take on independent of whether other countries in the world agree on a renewal of the Kyoto

## Glossary of emission trade terms

### JI - Joint Implementation

A mechanism under the Kyoto Protocol that allows the industrialized countries that have emission targets under the Protocol (so-called Annex 1 countries) to invest in emission-saving projects in other Annex 1 countries and receive credits (so-called ERU's) for the emissions saved.

### CDM - Clean Development Mechanism

An arrangement under the Kyoto Protocol allowing industrialized countries with a greenhouse gas reduction commitment (so-called Annex 1 countries) to invest in emission reducing projects in developing countries, for which they receive credits (so-called CER's) that count as emission reductions.

### ERU's - Emission Reduction Units

Emission reduction credits, equivalent to one metric tonne of carbon dioxide, obtained from JI-projects, that may be used by countries to meet their commitments under the Kyoto Protocol.

### CER's - Certified Emission Reductions

Emission reduction credits, equivalent to one metric tonne of carbon dioxide, obtained from CDM-projects, that may be used by countries to meet their commitments under the Kyoto Protocol.

### EUA's - European Union Allowances

Emission reduction credits specific to the EU emission trading scheme (EU-ETS) and only valid for use within the ETS. In the current phase of ETS, companies can convert CER's and ERU's into EUA's within certain limits.

Protocol or another similar treaty to combat climate change. Plan B is the base case scenario, where the EU shows its willingness to go it alone as a leader on the issue of climate change. This EU go-it-alone scenario entails a 20% reduction target versus 1990 levels of greenhouse gases by the year 2020. In this scenario the EU no longer allows new ERU's and CER's to be sold into the EU ETS and limits the flow of post 2012 CDM credits to EU governmental buyers (outside of the EU ETS) to a level of 3% of 2005 EU ETS emissions, which comes down to around 75 million tonnes of CER's.

In scenario A the inflow of new CDM and JI credits will be allowed to a maximum of 50% of the extra reduction that will be undertaken to reduce emissions by 30%. This inflow will however be conditional on the host country signing up to the successor to the Kyoto Protocol. That means that in that case a maximum of around 200 million extra CER's and ERU's will be available on aggregate to EU ETS installations and non EU ETS governmental buyers. The exact CER and ERU inflow into the EU ETS depends on how much of the extra reduction effort is placed on the shoulders of ETS participants. For example if of the 400 million tonnes reduction (representing a 10% extra reduction) 200 million tonnes will be taken off of the EU ETS aggregate allocation, 50% of that will be realized via CER and ERU sales to ETS participants. Also all CER's and ERU's that were generated and weren't used during the second trading phase until 2012 will be bankable into the third trading period, which will last eight years instead of five years as in the second trading phase.

Sectors not covered by the EU ETS will have to reduce emissions by 10% vs. 2005 levels (most reliable year with regard to data). The installations inside the EU ETS will have to reduce emissions by 21% vs. 2005 levels, and jointly the ETS and non-ETS reductions will amount to a 20% reduction in greenhouse gas emissions versus 1990. The Commission is proposing to use GDP per capita as the criteria to set targets for member states. Countries with higher GDP per capita will have to reduce more than countries with low GDP per capita, both in- and outside the ETS.

### Auctioning |

The third trading phase of the EU ETS from 2013 to 2020, will still allow 100% grandfathering, which is the handing out for free of EU allowances, to industrial sectors such as the steel, aluminium (which currently isn't included in the EU ETS) and cement industry. The refinery, pulp and paper and mineral industries will be confronted with 20% auctioning and 80% grandfathering according to the EU proposals. The amount of auctioning will increase to 100% towards the year 2020 for all industries. It is proposed that benchmarking, which is a methodology that works with relative energy efficiency targets instead of absolute caps will become important for industry in establishing caps in the period from 2013-2020. Allocation as from 2013 onward will no longer be done on a national basis for the ETS sectors but on a EU wide basis.

Compared to the 2008-2012 period two new sectors (ammonia and aluminium) and two new greenhouse gases (nitrous oxide and perfluorocarbons) will be included in the EU ETS. Furthermore Norway, Liechtenstein and Iceland will participate in the EU ETS. The EU's plans will however impact most severely the power generation sector, which will have to buy 100% of its allowances as of 2013 via auctions. Power plants that use carbon capture and storage (CCS) will not have to buy emissions allowances however, which will stimulate this new technology.

The reductions in greenhouse gas emissions will be generated not so much in the industrial sectors but more in the power generation sector and in the residential sector that isn't part of the EU ETS. Aviation will be included in the EU ETS from 2011 but sectors as shipping will not be. As mentioned allocations in the EU ETS will no longer be made on a national level but they will be allocated on a EU level. Installations in East European countries, that still have excess allowances to emit under the Kyoto Treaty,



Ethanol fueled vehicle. Photo: Car Culture/Corbis



Biodiesel Powered Car at BedZED. Photo: Ashley Cooper/Corbis

will actually be allowed to increase their CO<sub>2</sub> emissions under the current Commission plans while installations in more developed economies such the UK, Germany will have to reduce most.

### Huge growth |

What does this mean for the carbon market? Well, it means a huge growth can be expected in carbon trading. This will improve price formation and liquidity substantially as now the market price will be more representative than before of the underlying marginal abatement costs of carbon. This is caused by the proposed large increase in auctioning. It means also that the biggest change in emissions patterns will come from power generators. Studies have shown that under a scenario whereby rising oil and gas prices are combined with ambitious targets for greenhouse gas reductions, renewable energy and energy efficiency, coal based power generation and renewables will take on larger roles in the power supply mix. Gas and oil fired power generation will be reduced to a balancing role. It is likely that because renewable power generation is notoriously difficult to plan (the wind blows when it blows), power prices will continue to be set by gas-fired power stations.

Carbon prices are likely to no longer to be driven by fuel switch prices from coal to gas but by switch prices from coal to subsidized (via the new trading scheme) renewable power generation. Prices will be affected by opposing tendencies. Energy efficiency will drive carbon prices down. The effect of renewable energy is as yet unclear as it depends on the way the EU renewable power trading system will work. More ambitious greenhouse gas reduction targets tend to push up prices. The upshot of all this is unclear. What is certain is that plan B, in which the EU goes it alone, is bearish for prices from CDM and JI projects from developing countries and ex Soviet-states. Only the CER's and ERU's that manage to get into the EU ETS on time will be able to fetch (very) good carbon prices, the excess will face lower prices and depend on global demand from a less dense governmental playing field and Japanese companies.

With regard to the other players on the international chessboard, that the carbon market is, things are more diffuse. Canada probably will not be very active in buying CER's and ERU's as the country wants to achieve its reductions mostly domestically. In the US the end of the Bush-era will probably have a profound effect.

Australia has recently ratified the Kyoto Protocol after its previous conservative Australian government had long sided with the Bush administration. Australia and the US both have huge coal reserves.

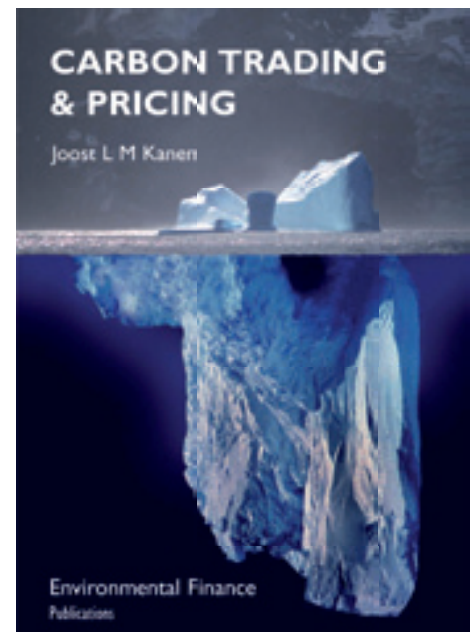
Japan is quite vulnerable to the outcome of the climate negotiations. It has stamped its name on the Kyoto Treaty, has a strong, highly energy-efficient industrial base, but lacks any domestic energy sources. Its options to do something about emission are therefore very limited. Japan will depend for a large part of CDM and JI projects. The only option it has domestically is to build more nuclear reactors, but there have been several nuclear accidents over the past several years.

Brazil has one of the cleanest and lowest carbon economies in the world, comparable to Norway. Like Norway, Brazil has mostly hydro-based power generation. That means that even if Brazil were to get emissions caps under a follow-up Kyoto Treaty, it wouldn't be able to reduce emissions much. Brazil is also confronted by energy shortages. It could grow its forest, but the country refuses to become the garden of spoilt Westerners that want to export their greenhouse gas reduction efforts and bad conscience to its Amazon forest.

China and India will probably continue to resist mandatory reduction targets. They will however most likely quickly be confronted with the negative environmental effects that the massive economic growth will have, so they will be forced to increase energy efficiency substantially. ■



*The trading in carbon emissions will continue to grow. Photo: Guntmar Fritz/zefa/Corbis*



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*([www.carbon-trading.eu](http://www.carbon-trading.eu))*