

The road to Copenhagen and the role of carbon markets

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In December 2009, environment ministers and officials will meet in Copenhagen for the 15th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC). At Copenhagen, inter-governmental negotiators will try to agree a new climate treaty to succeed the Kyoto Protocol. Given the high expectations of an agreement being reached at Copenhagen, the lack of progress at meetings held during the summer of 2009 in preparation for the conference has raised questions concerning whether and what kind of an agreement could possibly be reached in December.

Although progress may have been impeded by countries not wanting to reveal their position too soon, and even though further meetings are scheduled in Bangkok and Barcelona before Copenhagen, there is a concern that, as yet, there has been little narrowing of options or clarification of proposals. Key issues requiring resolution in Copenhagen include:

- Which countries will take on emission reduction targets or some form of commitment, by when, and at what level.
- How to fund mitigation and adaptation measures and ensure a flow of funds from richer to poorer countries.

In relation to funding, in December 2007, at the 13th Conference in Bali, the Parties to the UNFCCC, agreed to the Bali Action Plan (BAP). The BAP accepted the need for:

“various approaches, including opportunities for using markets, ... to enhance the cost-effectiveness of, and to promote, mitigation actions, bearing in mind different circumstances of developed and developing countries”.

Although Parties to the UNFCCC accept that market mechanisms alone are not enough to achieve the global emission reductions required, there is division between developed and developing countries on the balance between public funding and finance from the market, particularly considering that developing countries are concerned about the predictability of funds from the private sector.

While it is too early to predict where that balance will be struck, market mechanisms will continue to play an important role in leveraging private financing for climate mitigation. What is clear is that the design and shape of the current market mechanisms is likely to change.

Against this background, this article reviews:

- Key issues on the negotiating table for a post-2012 international agreement on climate change.
- The implications for the role of international market mechanisms in leveraging private financing to mitigate climate change.

- The potential influence of EU and US positions.
- The expectations of Copenhagen.

STRUCTURE OF THE NEGOTIATIONS

The two working groups preparing the way for final negotiations at Copenhagen are the Ad-hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA) and the Ad-hoc Working Group on further commitments for Annex?I Parties under the Kyoto Protocol (AWG-KP).

The AWG-LCA was established exclusively to conduct negotiations on a Copenhagen deal and includes all 192 Parties to the UNFCCC (therefore including non-signatories to the Kyoto Protocol, such as the US). With a view to developing an international deal, the AWG-LCA seeks to address a shared vision (including a long-term global goal for emission reductions) and enhanced action in mitigation, adaptation, technology, and finance. Discussions will also address enhanced national and international action, including the consideration of:

- Measurable, reportable, and verifiable nationally appropriate mitigation commitments or actions by all developed countries.
- Nationally appropriate mitigation actions by developing country Parties, supported and enabled by technology, financing, and capacity building, in a measurable, reportable, and verifiable manner.

Other subjects for discussion by AWG-LCA include the use of sectoral approaches, approaches to enhance the cost-effectiveness of mitigation actions, including market mechanisms, and the issue of reducing emissions from deforestation and forest degradation in developing countries.

AWG-KP is mandated to consider further commitments of industrialised countries under the Kyoto Protocol beyond 2012, and to analyse the possible tools and the rules available to developed countries to reach reduction commitments. The two elements are connected in that developed countries will wish to understand how they can use the tools to meet reduction targets before determining what reduction targets they can accept. The tools being considered include:

- Improvements to emission trading and the project based mechanisms (the Clean Development Mechanism (CDM) and the Joint Implementation (JI)) that allow developed countries to meet part of their emission reduction target by investing in emission reduction projects in developing countries).

- Land use, land-use change, and forestry.
- Greenhouse gases, sectors, and source categories to be covered.
- Possible approaches for targeting emissions from specific sectors (for example energy intensive industries, such as the steel, aluminum, cement, and paper and pulp sector).

Both groups have been tasked with producing draft Treaty Negotiating Texts. AWG-LCA currently has a negotiating text of over 200 pages (*FCCC/AWG/LCA/2009/INF.1*), in comparison to the 30 pages of negotiating text circulated before Kyoto. AWG-KP has not yet produced a negotiating text as such, although a document to facilitate negotiations among Parties has been prepared by the chair (*FCCC/KP/AWG/2009/10/Add.3/Rev.1*).

There is considerable overlap in the areas being discussed by the two working groups, bringing the complexity of unravelling parallel negotiations dealing with similar options.

EXISTING AND PROPOSED MARKET MECHANISMS

Market mechanisms already exist under the Kyoto Protocol in the form of international emissions trading and project-based mechanisms (CDM and JI). At the 2007 Bali Conference, it was agreed these mechanisms should continue. The most successful existing mechanism is CDM. Trading of carbon units originating from CDM projects was valued at US\$32.8 billion (about EUR22.3 billion) in 2008 (*State and Trends of the Carbon Markets 2009, The World Bank*). In addition, CDM has been successful in leveraging private finance and technology transfer to developing countries.

However, there is recognition that the CDM process is overly bureaucratic, involving extensive delays and high transaction costs, and CDM has failed to deliver the volumes of emission reductions needed. CDM also has been criticised for relying too heavily on high volume, high profit industrial gas projects, such as HFC-23 destruction, that make other, more desirable project types such as demand side energy efficiency, transportation and reforestation, including reduced emissions from deforestation and degradation, less competitive. Further, the vast majority of CDM projects have taken place in only a handful of countries (mainly China, India, and Brazil), with sub-Saharan Africa having less than 2% of the total CDM projects.

Another major criticism of CDM is whether projects have actually been additional. Additionality is established when there is a positive difference between the emissions that occur in the baseline scenario and the emissions occurring in the proposed project. In other words, without the financial incentive created by CDM, emission reductions would not have otherwise occurred. Projects that would have been implemented in the business as usual scenario, without the extra impetus of generating carbon credits, are currently not eligible for carbon credits.

Although AWP-KP has discussed improving existing market mechanisms, it has also discussed expanding and extending existing market mechanisms after 2012. The chair of AWP-KP has produced a paper setting out proposals on emission trading and project-based mechanisms. AWG-LCA has also considered new market mechanisms. Even with considerable discord on which of the proposals will form part of the final negotiations in Copenhagen, and uncertainty on the timeframe for their

implementation, it is useful to consider the proposals that are likely to have significant impact on the markets, if adopted.

Land use and forestry

A proposal has been made to extend the scope of land use, land-use change, and forestry activities (LULUCF). Currently, only afforestation and reforestation (A/R) activities are included in CDM. Inclusion of the following has been proposed by some Parties:

- Sustainable forest management.
- Other sustainable land-use management activities.
- Soil carbon management in agriculture.
- Restoration of wetlands.
- Re-vegetation post 2012.

Their inclusion in CDM will face not only financial and capacity barriers, but also regulatory issues. Currently A/R activities are capped at 1% of a country's total greenhouse gas emissions in 1990, multiplied by five. In addition, carbon credits from A/R activities are only temporary with credits expiring (depending on the type issued), at the end of the commitment period, following the period in which they were issued or the end of the crediting period of the project. The temporary nature of such carbon credits make them an unattractive option, and they are currently not accepted in the EU emissions trading scheme.

A further proposal to extend LULUCF to cover reducing emissions from deforestation and forest degradation (REDD) and REDD+ (which includes conservation and the enhancement of carbon stocks in existing forests, not just sustainable management of forests) has also resulted in much discussion. REDD is a central issue in climate change abatement, given that deforestation contributes up to 20% of global carbon dioxide emissions. A number of developing countries see a role for market mechanisms for REDD, with credits based on the difference between a national baseline for deforestation and actual deforestation. However, all Parties recognise that a large part of funding will be from the public sector.

REDD and REDD+ have the potential to generate a large number of credits. Some Parties, particularly Brazil, have raised concerns that carbon credits from REDD and REDD+ could flood the carbon market. In addition, they point to the fact that problems on the permanence of credits, monitoring, and establishing the baselines are, as yet, unresolved.

There are a number of proposals being discussed by both working groups. REDD and REDD+ are being discussed as an extension of the Kyoto Mechanisms under AWG-KP and as a potential nationally appropriate mitigation action under AWG-LCA.

Developing countries

There has been much discussion on the commitments that should be made by developing countries. The EU has indicated that developing countries, as a group, should limit the growth of their emissions to 15% to 30% below business as usual. Similarly, the US has signalled that commitments by developing countries would be essential in securing ratification in the US Senate. Developing countries have and continue to undertake increasingly ambitious programmes to slow growth in emissions, including a recently announced forestry management programme in India.

However, they have been resistant to taking on targets as part of a formal international agreement on the grounds that developed countries have historically been responsible for climate change, and the burden should not be shifted to developing countries at the expense of their economic growth.

The BAP included provision for nationally appropriate mitigation actions (NAMAs) by developing country Parties, supported and enabled by technology, financing, and capacity-building, in a measurable, reportable, and verifiable manner. AWG-LCA's draft negotiating text adopts this concept. NAMAs present a form of burden-sharing by developing countries, although the argument on whether NAMAs should be voluntary or mandatory continues. Actions considered as NAMAs are still under consideration, but could include:

- REDD activities.
- Carbon development plans.
- Cap and trade schemes.
- Sector-wide technology standards.

Developing countries have indicated that whatever NAMAs are taken on, significant funding will still be required from developed countries. It is clear that public funding (domestic or from international funds), will have a significant role in supporting developing countries' NAMAs. However, there is potential for verified emissions reductions from developing countries' NAMAs to be eligible to generate carbon offsets, attracting private financing. Issues that must be dealt with include:

- Setting the allocation.
- Ensuring developing countries cannot sell allowances if the actions resulting in the reductions were paid for by technology or funding from developed countries.
- How NAMAs will be measured, reported, or verified (whether nationally or internationally).
- Whether actions developing countries commit to or the actual impact of the actions should be measured.

China, India, and Brazil's negotiators are resisting credits from NAMAs being used by developed countries to meet emission targets. However, other developing countries see market mechanisms as having a significant role in supporting NAMAs, particularly Korea and Mexico.

Sectoral crediting and trading

The US and EU are pushing for a reformed CDM, in particular, for a mechanism based on emission reductions achieved within particular industrial sectors/countries (known as sectoral CDM). In the Communication from the European Commission (Commission) (*Stepping up international climate finance: A European blueprint for the Copenhagen deal, 9 August 2009*), the Commission proposed that financing for climate change requires up-scaling by introducing sectoral carbon market crediting mechanisms, with project-based mechanisms only being implemented in the least-developed countries.

Sectoral CDM is based on a sector reducing its emissions compared to a specific benchmark. For example, avoided emissions up to the benchmark (which reduce over a specified period) can be credited. However, there are variations on this theme, including:

- A transnational agreement in a particular sector (global sectoral approach).
- A cap and trade system for a particular sector within a country with the country being allocated allowances (sectoral trading).
- Entities in a sector being included in a scheme with credits being issued only if the aggregated emissions from all entities within the sector are below a sectoral crediting baseline (sectoral crediting).

Sectoral CDM could be adopted as a NAMA, with a developing country emitting less than a set benchmark for a sector, such as electricity, generating offset credits. The potential for sectoral crediting and trading is enormous. However, how sectoral crediting and trading will affect global demand and supply, or how it will deal with investment and subsequent returns from a private sector stance (for example, if credits are gained only by the sector as a whole reducing emissions) remain outstanding issues. In addition, the issue of fungibility may raise questions on whether credits from some sectors would be more valuable than credits from other sectors.

Other improvements to CDM

There is considerable scope to improve existing Kyoto Protocol mechanisms, and to meet this aim, proposals include (*Annex 1, FCCC/KP/AWG/2009/10/Add.3/Rev.1*):

- Introducing carbon capture and storage and nuclear as CDM options, and in the case of the latter, also as JI activities.
- Encouraging the development of standardised, multi-project baselines under CDM.
- Development of lists of project activity types that would automatically fall within CDM (therefore dealing with the controversial issue of additionality).
- Improving access to CDM project activities by specified host parties. The proposals include exempting some CDM projects from meeting the additionality criteria or from payment of the levy on CDM to cover administrative expenses (share of proceeds).
- Promoting CDM projects with co-benefits (such as projects that demonstrate technology transfer, energy efficiency, poverty alleviation, or social benefits) by measures such as exempting such projects from the additionality criteria or from payment of the levy on CDM to cover administrative expenses.
- Introducing multiplication (or discount) factors in relation to the credits issued, dependent on attributes such as the type of project or technology employed or the host party involved, therefore encouraging certain types and locations of projects over others.

Other proposals cover improvements to JI, and banking and borrowing carbon credits over commitment periods.

Positions of the EU and US

When the US refused to ratify the Kyoto Protocol, the EU pushed ahead on climate change policy by designing and implementing the first and largest carbon trading market. Although the US moved slowly, if at all, at international and national levels, there

was considerable activity at state and local levels, much of which has played an important role in informing the reinvigorated national debate on climate change that began after Democrats took control of Congress in 2006 and intensified after the election in November 2008 of President Barack Obama. Despite this change in leadership and a renewed political commitment by the US to lead on climate change issues, there remains considerable uncertainty as to what the US will do.

The EU

Much less ambiguity exists in relation to the EU, which has declared it is fully in favour of a post-2012 international agreement to address climate change and the development of new market mechanisms. The EU set out its position clearly in January 2009 that even if there is no post-Kyoto agreement, the EU would, through Phase III of the EU Emissions Trading Scheme (EU ETS), accept banking of carbon credits from the existing Kyoto Protocol mechanism by exchanging such credits with EU Allowances (emission allowances issued in EU ETS), provided the Kyoto Protocol mechanism carbon credits were generated:

- Before 2013 (this will be allowed until 2015).
- After 2012 from projects registered before 2013.
- In least-developed countries (this will be allowed until 2020 unless an international agreement is concluded).

Absolute limits will be set on the number of Kyoto Protocol carbon credits that each member state will accept. However, overall use must not exceed 50% of EU-wide reductions from existing sectors between 2008 and 2020, under the EU scheme. In the event of a new international agreement on climate change, the EU will reconsider this issue.

Although acceptance of international carbon credits under Phase III is limited, the EU has been vocal in support of the introduction of improved market mechanisms and the importance of a global carbon trading market. The EU estimates that up to 40% (about EUR38 billion (about US\$56 billion) per year from 2020) of the finance required for adaptation and mitigation in developing countries could be delivered by carbon markets. Consequently, the EU is pushing for a global carbon market linking comparable domestic emissions trading systems with the introduction of a multi-party market by 2015 (possibly including all member countries to the Organisation for Economic Co-operation and Development) and an even broader market by 2020.

The US

US climate policy is less defined and hinges on a variety of interrelated domestic and international issues. Overall, while the Obama Administration is likely to bring a change in tone and ambition to the US position at Copenhagen, many of the principles underlying its negotiating objectives will not necessarily differ from the previous administration.

The House of Representatives passed an economy-wide cap-and-trade bill (American Climate and Energy Security Act of 2009), on 26 June 2009, by a margin of 219 to 212. This bill would impose a cap on about 85% of US greenhouse gas emissions and aim to reduce them by 17% below 2005 levels by 2020, and by 83% below 2005 levels by 2050.

The bill, which runs to nearly 1,500 pages, creates a complex set of programmes and requirements to meet these short- and long-term emissions targets. This includes a broad array of financial

incentives to improve energy efficiency and encourage development and deployment of renewable energy sources. It also aims to accelerate development of carbon capture and sequestration, and restart development of long-stalled nuclear power projects.

The bill would create a vast new market for carbon offset credits, allowing up to two billion credits to be used each year to meet compliance obligations. Each covered entity can use offset credits to cover about 30% of its greenhouse gas emissions. Significantly, up to half of this percentage can be offset credits from projects outside the US, with the other half reserved for domestic projects. Given that in the early years of the programme, US agriculture and forestry projects may not be able to generate one billion credits per year, the bill would, in certain circumstances, allow covered entities to source up to 75% of their offset credits from international projects.

A potentially major barrier to the crediting of international projects, however, is a requirement that the host country be a party to a bi- or multilateral agreement or arrangement with the US that sets out a variety of criteria and standards for offset projects. Depending on how stringently this provision is interpreted, international offset project developers may have to wait until a successor to the Kyoto Protocol is agreed, before attempting to sell credits into the US system. International offset credits would also face a discount beginning in 2018, where a covered entity would have to hold five international offset credits to cover four carbon dioxide equivalent tons of greenhouse gas emissions.

The bill grants the US Environmental Protection Agency (EPA) authority to recognise credits issued under CDM or other successor mechanisms created at international level, but similarly requires host countries to be party to an agreement or arrangement with the US, establishing various project standards and requirements. Allowances credited by a foreign government, such as allowances under the EU ETS, or regional agreement also could be used in the US system, subject to a variety of restrictions, including that the foreign programme must be at least as stringent as the US programme.

The bill also vests broad new powers in US agencies charged with overseeing financial and commodity markets, partly driven by last year's meltdown on Wall Street and concern over market manipulation and fraud. In particular, the restrictions on over-the-counter transactions could create challenges for project developers and financiers, who often deal with novel issues in carbon transactions.

With the bill having passed the House, it is up to the Senate to pass its version of the bill. A minimum of 60 votes (out of the 100 members seated in the Senate) is required to break a procedural hold, known as a filibuster, that is without doubt, expected to come from conservative Republican Senators opposed to action on climate change.

The chances of the Senate passing a climate bill in late 2009 or even in 2010 appear slim. This was expected, given the origins of the House bill, which is often referred to as the Waxman-Markey bill after its two chief co-sponsors, Representative Henry Waxman, a liberal Democrat from California and the chair of the House Energy and Commerce Committee, and Edward Markey, a similarly liberal Democrat from Massachusetts and the chair of a key Energy and Commerce subcommittee. With two of the House's most liberal members as the bill's primary authors, it is unsurprising that the House bill has drawn little, if any, support from Republicans and many moderate Democrats in the Senate.

This means the Senate's version of the bill (which after several delays, may be released by late September or early October) will almost certainly have changes, including allowance price floors and ceilings (for example, a price collar), greater support for nuclear power, and, in particular, stronger protection for US-based manufacturing deemed to be vulnerable to international competition and, therefore, carbon leakage.

In relation to Copenhagen, the most significant potential changes to the House bill that may eventually be considered by the Senate in order to have a modest chance of passage include:

- More modest near-term emission targets (for example, 14% below 2005 levels by 2020 instead of 17%).
- A later start date (for example, 2015 instead of 2012).
- Some kind of off ramp, if major emitting developing countries such as China and India fail to adopt and enforce their own commitments within several years of enactment of the US cap-and-trade programme.

The House bill's near-term target of 17% below 2005 levels by 2020 falls short of the EU's commitment of 20% below 1990 levels (and 30% if an international agreement is reached) and falls well short of the calls of some developing countries for 40% below 1990 levels. However, these commitments are too ambitious to win passage in the US. The House bill does seek to achieve supplemental emission reductions outside the cap-and-trade programme, including reductions equal to an additional 10% below 2005 levels through international forest-based programmes, which could partially offset the lower near-term target for the cap-and-trade system. Additionally, the US has other regulatory programmes under development, including ambitious new fuel economy standards, that could further narrow the gap. However, the near-term target is a key example of where the Obama Administration's clear desire to lead international climate could be hindered by political realities at home.

In relation to the later start date, the question is less an issue of political reality than administrative feasibility. Under the House bill, the cap-and-trade programme would begin operation on 1 January 2012, and the power sector and certain other types of covered entities would face their first compliance deadline on 1 April 2013 (with other types of covered entities phased in over a four-year period). However, a 2012 start date would mean that EPA and several other US agencies would need to complete more than 40 rulemakings and other major agency actions within two years (after which, legal challenges to the rules could be filed, which can take an additional two to five years to resolve). These rulemakings could have major impact on the scope and shape of the carbon market, since they would include, for example, the complete list of eligible offset project types and project methodologies and the entire administrative framework for the registering and issuing of offset credits. At the earliest, it is difficult to imagine these vital programmes being fully implemented before 2012, meaning that the first compliance deadline could be due before the bill's key cost containment mechanism is operational.

Commitments by developing countries to reduce emissions (or at least, to slow business-as-usual projections) poses two major issues for US leadership on climate change. First, no domestic cap-and-trade programme is likely to win passage in the Senate without assuring that the US manufacturing base will be protected. The House bill's detailed programme of emission allowance rebates for

energy-intensive manufacturers and border adjustments for importers of goods from uncapped countries, may not be sufficient to alleviate concerns over the effect of emission caps on the US economy, particularly in the midst of a protracted recession. Calls for an off ramp, suspending or otherwise providing relief from compliance obligations, if countries such as China and India do not accept commitments (and prove they are being enforced) have come from some moderate Democrats and many Republicans. Second, the Senate is unlikely to ratify an international agreement on climate change that does not place limits on developing country emissions (for treaty ratification, a super majority of 66 votes is needed).

Despite these substantial barriers to passage in the Senate, it is important not to overlook the fact that, thanks to a ruling by the US Supreme Court in *Massachusetts v EPA* in 2007, the Obama Administration has authority through EPA to bypass Congress altogether and begin using the existing Clean Air Act to regulate emissions of greenhouse gases. Although the Clean Air Act is ill-suited to deal with a problem like global climate change (as opposed to localised air pollution, which is the purpose for which Congress enacted it), the potential for Clean Air Act regulation creates an important driver that gets harder and harder to ignore, especially because EPA is currently poised to begin regulating greenhouse gases under the Clean Air Act as soon as early 2010.

WHAT CAN BE EXPECTED AT COPENHAGEN

With only three months remaining to Copenhagen, many are watching to see if there will be any increased momentum in negotiations and whether the Parties will narrow the range of possible options.

But as things currently stand, the best that may be hoped for at Copenhagen is a policy framework agreement perhaps not too different, at least symbolically, from the Berlin Mandate in 1995, which paved the way for the Kyoto Protocol in 1997. When compared to the situation even a few years ago, such an outcome is a significant diplomatic achievement. However, if such a framework fails to include some kind of commitment by major emitting developing countries, ratification by the US may be at risk. Additionally, if it fails to include sufficient detail on the structure and shape of the international market mechanisms going forward, CDM and JI will face an uncertain future and may, at least temporarily, only be attractive to private investors to the extent their carbon credits are incorporated into national and regional carbon markets in the EU and (possibly) the US. This would not be the death knell some have feared, but could significantly undermine the potential of these mechanisms to leverage private financing for developing country actions to reduce greenhouse gas emissions.

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