CDM – panacea or niche player?

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With the distinct prospect of the entry into force of the Kyoto Protocol, the attention of observers now focuses on the actual implementation of the Protocol's instruments. Obviously, the Clean Development Mechanism (CDM) is the instrument that draws most attention as it is the one that should have started already two years ago while all others kick in only in 2008. The CDM is also in the limelight as it combines the goals of cost-efficient greenhouse gas reduction and sustainable development. Thus all the unfulfilled hopes as well as the abysmal disappointment that have characterised recent debates about development co-operation re-emerge in the discussion about the CDM. Reading newspapers in the developing world, some journalists clad the CDM into the hue of a bonanza lying just around the corner while others see the dark spectre of neo-colonialism lurking around the corner. After a period of widespread acceptance of the CDM by host country governments, opposition has stiffened again, culminating in Thailand's announcement that it would not approve any CDM projects. It is imperative to become sober in this discussion to avoid future disappointments.

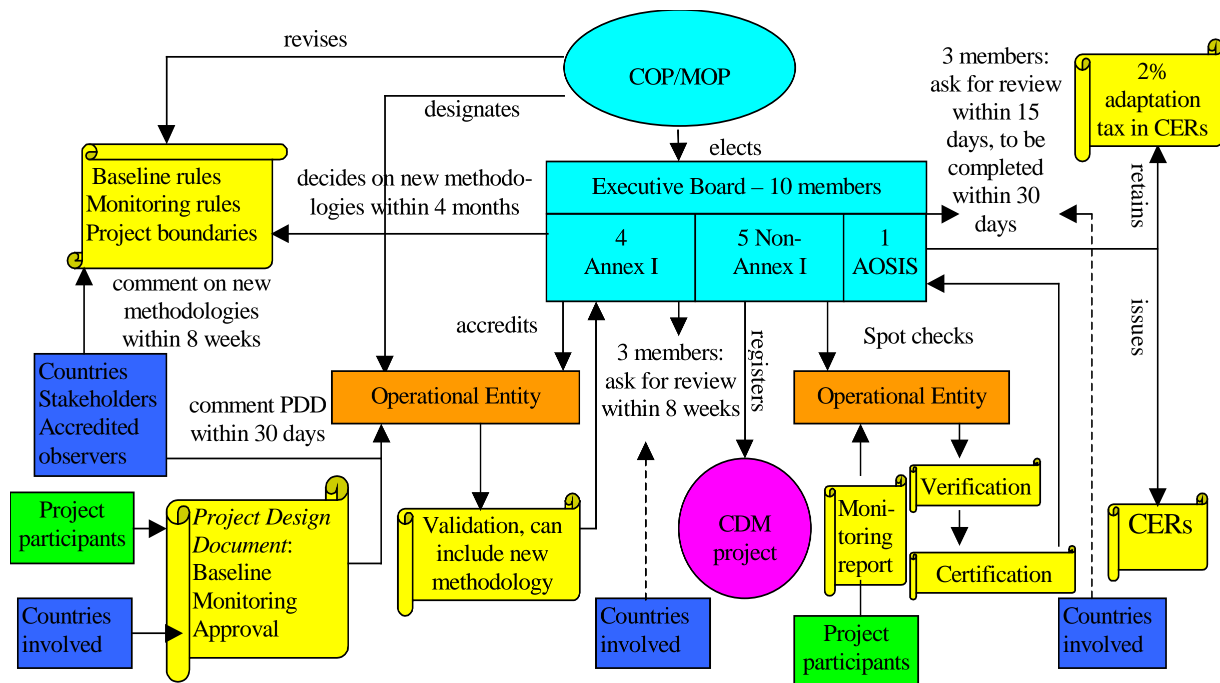
The CDM in a buyers' market – no panacea for development

The announcement of the U.S. not to ratify the Kyoto Protocol has broken out a big chunk of the demand for greenhouse gas reductions. All renowned modelling groups agree that the amount of unused emission rights in the countries in transition – the so-called "hot air" – is bigger than demand from the remaining Annex B countries. Economic theory would thus predict a market price of zero. But the real world does not necessarily behave in that way. Countries with "hot air" will restrict its supply, forming a cartel. Aiming to maximise their revenue, they will probably only put a third of the available "hot air" on the market.
Under such a scenario, world market prices per tonne of CO_2 would be in the lower single-digit range, probably around 3 to 5 $. This is of course far from the dreams of the late 1990s but could provide an incentive to get the CDM going, especially the more attractive project categories such as landfill gas recovery and renewable energy in good locations. The former category can easily get a boost of its internal rate of return of more than five percentage points. Models predict an overall market share of the CDM of around a third with total revenues reaching several billion $ throughout the commitment period. Thus, the CDM would be an order of magnitude lower than official development assistance flows but still have a considerable size. The question of course is which countries would be able to become attractive hosts. There is an expectation that CDM flows could be restricted to those countries that are anyway attractive for foreign direct investment. Latin America has shown that it is possible to attract CDM investment even when the overall investment climate is not very promising. This is due to the early start in institution building and the build up of considerable human capacity. Asia is lagging somewhat and Africa remains at the earliest stages. This has already led to strong statements from African ministers of environment who do not want their countries to be left out from the CDM. A growing acceptance of these fears has led to the establishment of easier rules for small-scale projects that are deemed to be more widely spread than the large ones. Nevertheless, it is unlikely that this will lead to a sufficient reduction in costs to make up for the cost gap to large projects. It is most likely that small project will remain limited to some demonstration projects financed by governments while being ignored by private investors. Only at a higher price stage of the market this may change.

CDM hurdles: bureaucracy, additionality and baselines

As the CDM creates emissions credits valid under the commitments of industrialised countries, it has created an elaborate institutional structure to safeguard the quality of these credits which looks very complex (see Figure 1) and will lead to substantial transaction costs.

Figure 1: The CDM maze



Each project proposal has to undergo major scrutiny by independent certifiers. Both on host and investor country level as well on the international level dedicated CDM institutions shall be set up. The international level has started work with the set-up of the CDM Executive Board in November 2001. Unfortunately, the Board is a largely political body and even selection of members of its expert panels on methodological and small-scale project issues was done on a basis of strict regional representation. This bodes ill for controversial decisions on technical details. On the national level only a handful of countries so far has specified its "Designated National Authority" and institutional capacity remains a major bottleneck for swift development and implementation of CDM project ideas. Interministerial bickering, personnel change and rent seeking are all factors hindering sommoth institutional procedures.
A major problem of the CDM is the determination of additionality. If projects that just represent business as usual are awarded emissions credits, the environmental integrity of the Kyoto Protocol is shattered. Unfortunately, it is very difficult to develop objective rules for determination of additionality and most stakeholders would only lose from a stringent rule. Thus it is not surprising that the negotiations have tried to sideline this issue. Nevertheless, host countries should be aware that approving non-additional projects means that they cannot reap development benefits from these "anyway projects". A clever host country should weed them out even if it may be perceived in getting lower CDM inflows than its competitors.
Baseline determination is the great riddle of CDM. It becomes even more enigmatic by the unwillingness of the CDM Executive Board to provide a manual with basic rules. So in the initial phase of the CDM each project has to submit a new baseline methodology for a lengthy and expensive evaluation procedure. Hopefully this phase can be kept as short as possible, maybe by a mass submission of projects by the Prototype Carbon Fund that would serve to provide the foundations of the baseline rules. Standardisation can be applied in some contexts but not generally.

The early market – vultures or business angels?

Even before the entry into force of the Kyoto Protocol there has been a fairly active market in emissions credits from developing countries. As this is a "grey" market, there are huge differences in the quality of the emissions credits and many of them may fail to get certification under the CDM.
At the top of the list are the World Bank's Prototype Carbon Fund (PCF) and the Dutch CERUPT programme. Both aim to get high-quality CDM credits, have strongly influenced the rule-setting on the international level and provide a lot of capacity to certifiers and consultants as they publish all their documentation on the internet. Both PCF and CERUPT use emissions credit purchasing programmes and do not finance the full investment. PCF financing has helped some project developers considerably to raise long-term private finance. CERUPT contracts put the risk whether emissions reductions actually become certified as CERs on the investors; this is problematic inasmuch scrutiny of baselines and additionality is less thorough than under the PCF. PCF and CERUPT currently offer around 3 \$/t CO_2, a price surprisingly similar to the model results quoted above.

Some private banks' funds form the second layer but are very intransparent. The third layer is a bilateral, broker-based negotiation of projects. At the bottom, emissions credits are created that will most likely not fulfil the CDM rules and are marketed to US companies. These sell at prices around 1.5 $ per tonne.
Many host countries complain that the early movers in the market are not prepared to pay decent prices. But given the risks that surround the fledgling stage of the market, prices are likely to remain low. Especially the institutions at the high end of the market tend to deserve the label "business angel" while the vultures flock to the lower levels.

Where are the investor country incentives?

The main disappointment that I have encountered on the path to a viable CDM is the unwillingness of the industrialised countries to provide their private sector with clear incentives. So far, big industrial emitters have almost everywhere succeeded to get exemption from climate policy instruments. Even in countries such as the UK and the whole of Scandinavia that tax industrial energy use or emissions, it is impossible to get tax refunds in exchange against emissions credits. The Netherlands currently remain the sole country providing substantial government funds to a CDM tender programme even if some announcements have been made that Sweden and Denmark would follow soon. The UK and Danish emission trading schemes do not provide for integration of CDM credits. However, the cloud has a silver lining inasmuch the EU now plans full integration of the CDM from the start of its emissions trading system in 2005. This would give a strong boost to the CDM. However, each year that we lose means we reduce the advantage of the CDM as given common project lead times, only a few projects will start to produce a relevant amount of credits prior to 2008.

The sinks dilemma

Forestry sinks only barely scraped into the CDM and have been relegated to be a late starter as rules are only to be set until late 2003. Major issues such as permanence and specific baseline rules will give the background for tough and protracted negotiations. NGOs still fight strongly against this project category. However, for many small and poor tropical countries, sinks provide the only interesting project category. Whether the different views can be reconciled remains open.

Kyoto does not stop in 2012

Most observers tend to forget that the Kyoto Protocol does not stop in 2012. In fact, there will be a succession of commitment periods and we will see both a strengthening of targets as well as a broadening of the set of countries taking up a target. Both trends will put upward pressure on CDM prices but one should also not forget that business discounts the future rather strongly. Still, a prudent investor should build up a CDM portfolio now – she is likely to see good returns in the long run. Given the long lead times of projects we may see some surprising developments in this area, especially around 2005 when the targets for the second commitment period are negotiated and the U.S. may be starting to consider rejoining the regime. Another aspect of a long-term view should be that medium-to high income host countries should write contracts in a way to guarantee that credits revert to them when they take up a target. This would imply leasing clauses that remain to be developed.

The blind man and the elephant

The CDM is like the elephant touched by a blind man – it has many different aspects that at first seem to be difficult to reconcile. But in the end it can become an elephant if all interests involved get their incentives right and climate policy continues on a steady path!

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