

pour le débat

CLIMATE

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Using the carbon market to support the transition?

Sophie Galharret (Iddri)

HIGHLIGHTS

OFFSETS Offsets are a mechanism for compensating (or offsetting) greenhouse gas emissions for developed countries, enabling them to comply with their reduction commitments under the Kyoto Protocol by investing in emissions reductions in developing countries.

INTERNATIONAL NEGOTIATIONS The use of offsets by developed countries has led to confusion in international discussions regarding accounting methods for targets and the definition of new commitments. Although Copenhagen seemed to call into question the approach based on the international carbon market, the role of national markets has been strengthened. However, little information has been provided as regards to the reform of the CDM (Clean Development Mechanism) and the emergence of new sectoral mechanisms.

SECTORAL MECHANISMS Developing the CDM at the sectoral level induces considerable challenges in terms of aligning supply (the success of sectoral emission reduction strategies in developing countries) and demand (strengthening developed country efforts). Different mechanisms are possible, generating new public-private interactions, with very different implications in the North and in the South for the scope and type of financial assistance provided, for the stakeholders who bear the costs of reductions, and for the nature of the political and economic instruments to be put in place in the South.

TRANSITION Although the CDM has stimulated projects by prompting a new North/South movement of stakeholders through training in innovative financial mechanisms, it has not initiated any real reorganisation of the different economic sectors in developing countries. Complementary financial instruments and the active involvement of public stakeholders from developing countries in the implementation of national strategies will be necessary.

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Introduction	4
1. What role does the CDM play in funding?	5
2. The strengths and limitations of project-based mechanisms	8
2.1 For developed countries	8
2.2 For developing countries	10
3. Towards sectoral mechanisms to support the transition?	14
3.1 Sectoral mechanisms: are they really a good idea for developed countries?	14
3.2 What incentives could emerge from the reform of carbon markets?	15
3.3 Complementing the carbon markets with other instruments	18
Conclusion: Towards a new conception of the carbon market?	18
References	21

Introduction

The legal status of the Copenhagen Accord is still uncertain and is not binding on signatory states for the time being; nor does it set a date for reaching a binding agreement. It is more like a policy statement by Heads of State than a true agreement in the eyes of public international law, but it could bring major changes for climate issues in multilateral institutions. In terms of content, the agreement sets the target of limiting global warming to +2 °C, but does not define guaranteed methods for achieving this objective (no quantified commitments on reductions, carbon budget distribution or peak date for emissions). On 31 January 2010, the developed countries submitted their voluntary reduction pledges to be listed in the Accord's appendix and the developing countries submitted their unilateral actions along with those that will be supported by international finance. In total, 75 countries have made submissions under the Accord¹, but without any guidelines on how to do so in a harmonious manner there is little transparency on the nature of the pledges (with or without offset credits, establishment of baselines, nature of developing country actions, etc.). Finally, the Accord commits the developed countries to providing 30 billion dollars for developing countries by 2012, and 100 billion dollars per year by 2020.

The Copenhagen Accord is thus resolutely giving new direction to international climate discussions. From the top-down approach inherited from Kyoto (carbon budget divided between Annex I countries and use of the global carbon market, between States, to foster international cooperation and compliance with targets and to initiate transition in developing

countries), the Accord evolves towards a bottom-up approach, this time involving all the parties; in this case individual pledges and the definition of national instruments form the basis of discussions and actions.

Developed countries have traditionally used carbon finance to meet their targets. In particular, the Clean Development Mechanism (CDM) was set up by the Kyoto Protocol with the aim of enabling developed countries bound by the Protocol (Annex I countries) to invest in lower cost emissions reductions in countries that do not have binding targets under the Protocol, and to count them towards their commitments. These credits, which are a way of achieving lower cost reductions than within the developed countries themselves, compensate for these countries' emissions, and are therefore commonly known as offsets. This crediting mechanism thus enables developed countries to finance investment in GHG emissions reductions in developing countries. Obtaining credits provides additional income, ensuring emissions reduction projects profitability, making it possible to implement them on a large scale in developing countries. Public and private stakeholders subjected to carbon constraints have incentives to invest directly to secure the generation of the necessary credits for compliance purposes.

The CDM meets two objectives: it assists Annex I countries in achieving compliance with their commitments (limiting the risk attached to meeting these targets and the associated costs) and it contributes to sustainable development in developing countries². The carbon market is

1. See UNFCCC press release from end of March 2010: http://unfccc.int/files/press/news_room/press_releases_and_advisories/application/pdf/20100331_pr_cop_report_v2.pdf

2. See Article 12 of the Kyoto Protocol: "The purpose of the clean development mechanism shall be to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments (...)"

considered within the international framework in terms of the reform of the CDM and the implementation of new sectoral crediting mechanisms from 2010. The Copenhagen Accord provides little information on the nature of this post-Kyoto architecture. The use of offsets has in fact led to difficulties in accounting for commitments and to confusion during international discussions regarding effort sharing. However, the final Accord recognises the possibility of pursuing various approaches to implement mitigation actions, including carbon markets (paragraph 7 of the Accord). This strengthens the role of national markets, while leaving the possibility of increasing the share of international carbon finance through revised or extended crediting mechanisms, both in terms of offsetting a proportion of developed country emissions and to support the transition of developing countries that commit to a definite path change.

Thus, carbon finance can still be regarded as a dominant post-2012 instrument for encouraging investment in clean technologies and for leading developing countries towards low-carbon economies. Different questions will be raised depending on the reasons for setting up these market mechanisms, including: on an international scale, facilitating the adoption of greater commitments or to provide an “appropriate” channel for scaled up financial transfers to developing countries; and at the national level, creating incentives for redirecting investment towards clean technologies.

A re-examination of the composition of today’s carbon market makes it possible to question the opportunity for a change of scale and to appraise the carbon market’s contribution to North/South relations, especially regarding political and industrial change in developing countries in accordance with an ambitious low-carbon path.

1. What role does the CDM play in funding?

To begin with, a distinction must be made between:

- the international carbon market, between governments, set up by the Kyoto Protocol for the 2008-2012 period, which is structured around three mechanisms: international trading, between States that have

reduction targets under the Protocol of Assigned Amount Units (AAUs) (Art. 17) via the International Transaction Log (ITL); and two project-based mechanisms also aimed at assisting Annex I countries in achieving compliance with their Kyoto targets: the Clean Development Mechanism (CDM, Art. 12) and Joint Implementation (JI, Art. 6).

Countries with no targets (non-Annex I countries) may participate in the emissions trading market through the sale of credits issued by the CDM flexible mechanisms. This is therefore a form of offsetting developed country emissions, which is justified if the mechanism guarantees the additionality of emissions reductions, a key criterion for the development of CDM projects with a view to maintaining the integrity of developed country emissions caps. JI, on the other hand, is a zero-sum game based on transfers of reductions from one Annex I country to another without affecting the cap.

- national and/or regional markets, which regulate economic entities. These are usually binding in nature. Primarily, they are public policy tools aimed at implementing a national climate strategy, in addition to other instruments (taxes, standards, etc.). In the case of the United States, regional markets fall under State regulation as the concrete expression of commitments made by several States in the fight against climate change, despite the lack of any federal legislation. National markets may be used as a national instrument to meet part of the targets adopted at the international level. This is already taking place, for example, in the European emissions trading market for Kyoto targets. Compulsory markets, on which transactions are made over the counter and/or via emissions trading markets, usually redistribute part of the constraint to the private sector (this is the case in Europe and, to a lesser extent, in New Zealand, and is under discussion in Australia and Japan). Europe was the first to set up a market of this kind, followed by “spontaneous” regional initiatives in the United States³ (such as the Regional Greenhouse Gas Initiative) and New Zealand. Governments that have created their own market instruments tend to

3. The United States have not ratified the Kyoto Protocol.

immediately or progressively offer flexibility to the private sector by allowing it to use credits issued by the Kyoto Protocol flexible mechanisms to meet part of their emissions reduction targets⁴. This is an attractive option when the marginal cost of emissions reductions for economic agents is higher than the price of credits.

Voluntary markets also exist. The Chicago Climate Exchange (CCX), for example, is the leading voluntary greenhouse gas emission allowance trading scheme between companies⁵. Other voluntary approaches (by companies, administrations and regional authorities) have made widespread use of the practice of offsetting emissions by purchasing credits issued by GHG emissions reduction projects. These voluntary offsetting mechanisms, which develop alongside the UN CDM, may be purely declaratory or may call for labelling or standardisation procedures.

The recognition of credits issued under the CDM by several domestic markets set up through national legislation, provided for by the Kyoto Protocol without making it an obligation, has created the opportunity to “connect” both types of market. The global and domestic markets are thus indirectly linked through the authorised use of CERs (Certified Emission Reduction Units, credits issued by the CDM). Transferring the constraint to the private sector (mainly European), with the possible use of flexible mechanisms, has created a high demand for credits, made CDM credit markets more dynamic and led to an increase in the number of projects.

Economic agents facing carbon constraints have two possibilities if they want to take advantage of the lower cost reduction options provided by offsets:

- they can secure credits on the primary market before projects are launched;

4. In the case of the RGGI, the use of offsets is reserved as a matter of priority for domestic project mechanisms (emissions reductions achieved within the United States, outside constrained sectors) and, when there is lasting pressure on market prices, the use of CERs may be authorised.

5. Launched in 2003, it includes companies from the United States, Canada and Brazil that voluntarily adopted a 4% reduction target for 2003-2006 and 6% for 2007-2010 relative to mean annual emissions for the 1998-2001 period.

- or they can buy them on the secondary market from intermediaries or other carbon constrained stakeholders and credit sellers.

Stakeholders on the primary market are those who have the capacity to participate directly in the implementation of projects in developing countries or to secure the resulting credits from economic agents in these countries. In this case, they benefit from a credit price linked to the implementation cost of the CDM project. This price varies according to the nature of projects, but is generally low (from a few euros to around 15 euros⁶), and remains attractive provided it stays below the marginal reduction cost for the agents in question.

For compliance purposes, the use of CERs enables constrained economic agents to benefit from an avoided cost equal to the “spread”, for example in the case of the European market, between the price of allowances and the price of acquiring CER credits; this is also true for governments, who will benefit from an avoided cost corresponding to the difference between the price of international allowances and the cost of CER credits. As for non-constrained intermediaries on the European market (carbon funds, for example), they benefit from a net margin also resulting from the spread between the price of acquiring primary credits and the price set on the secondary market.

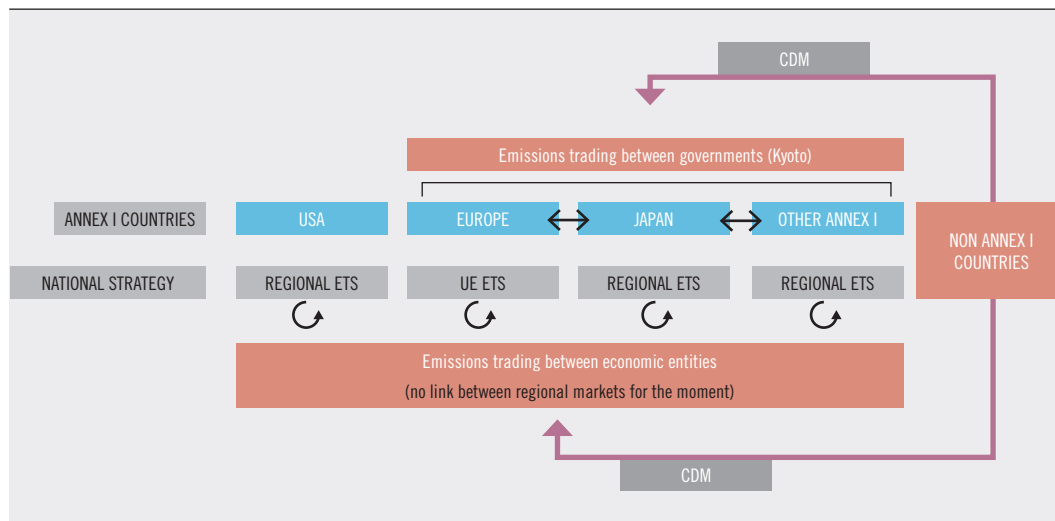
For all of these stakeholders, it is the very existence of this rent that motivates and enables capital investment in projects in developing countries. Stakeholders under carbon constraint with the capacity to develop projects are still in the minority. Another option is to acquire credits on the secondary market: the price is then correlated with that of the EU allowance (EUA), and the “EUA-CER spread” is generally comprised between 1 and 2 euros; although the risk is smaller, the stakeholder will not secure the revenue existing between the price on the primary and secondary markets.

Consequently, there are two types of buyers for credits issued by the CDM, both with very different dynamics:

- Under the Kyoto Protocol, the governments of Annex B countries (and among them, especially Europe and Japan). If they fail to

6. Average price of primary CERs in 2008: 11.46 € (according to the World Bank, 2009).

Figure 1: "Connections" between the international market and the regional markets



Note: ETS (Emission Trading Scheme), or allowance market.

reduce their emissions by their agreed targets, these States will have to buy either AAUs, or CERs/ERUs⁷. Although articles 6 and 17 of the Kyoto Protocol stipulate that AAUs and ERUs may only be used to meet part of the quantified targets, it is the Marrakesh Accords that specify the broad application of the “principle of supplementarity”⁸ to the three flexible mechanisms set up by the Kyoto Protocol. According to this principle, offsets must be supplemental to reduction actions undertaken within Annex I countries, but without specifying quantified limits for their use. In practice, the decision to

comply with Kyoto targets or to buy AAUs, ERUs or CERs will be the result of political arbitration. Governments have so far shown themselves to be relatively wary of acquiring large quantities of AAUs or credits⁹.

- Economic entities, typically the power generation sector and industries that find themselves constrained by the establishment of domestic markets, the largest of which for the time being remains the European market. To reduce the cost of compliance with their targets, States introduce clauses enabling constrained stakeholders to use CERs, but in this case, the quantities are clearly specified with strict conditions for their use¹⁰. Stakeholders will therefore conduct economic and strategic arbitration based on their expectations of the dynamics inherent to the domestic market (supply/demand balance, price of energies, technical capacity for reducing emissions, etc.) and to the international market in terms of the availability of CERs and the relative price of these credits in

7. Emissions Reduction Units, credits issued by JI.

8. The Marrakesh Accords, setting out the key decisions for the implementation of the Kyoto Protocol.

Decision 15/CP.7 on the “Principles, nature and scope of the mechanisms pursuant to Articles 6, 12 and 17 of the Kyoto Protocol” defines the nature of the principle of supplementarity:

“Emphasizing that the Parties included in Annex I shall implement domestic action in accordance with national circumstances and with a view to reducing emissions in a manner conducive to narrowing per capita differences between developed and developing country Parties while working towards achievement of the ultimate objective of the Convention,”

“Affirming that the use of the mechanisms shall be supplemental to domestic action and that domestic action shall thus constitute a significant element of the effort made by each Party included in Annex I to meet its quantified emission limitation and reduction commitments under Article 3, paragraph 1,”

“Decides that the use of the mechanisms shall be supplemental to domestic action and that domestic action shall thus constitute a significant element of the effort made by each Party included in Annex I to meet its quantified emission limitation and reduction commitments under Article 3, paragraph 1”.

9. Due to uncertainty regarding the development of the market, the Netherlands government has already bought 45 Mt of CERs. Owing to the economic situation, the Spanish government is considering reducing its commitment to buy 159 Mt of AAUs, CERs or ERUs (source: Point Carbon, CDM&JI Monitor, February 2010). Japan’s demand for CERs is estimated at <215 Mt by 2012 and 178 Mt of AAUs have already been secured by the countries that have Kyoto targets (source: Société Générale, Orbéo, April 2010).

10. See IDDRI’s *Synthèse* 03/2009, “Understanding the new US climate change strategy. The Waxman-Markey bill at a glance” [www.iddri.org/Publications/Collections/Syntheses/sy_0902_iddri_galharret_offsets.pdf].

Figure 2: Contribution of the CDM to funding for emissions reduction projects



comparison with the domestic market price. In terms of sources of financing, the CDM has created an incentive for developed countries to generate capital flows towards developing countries for investment in clean technologies in these countries which otherwise would not have been realised (the principle of additionality¹¹). Credits are generated throughout the duration of the project. Establishing a source of revenue (*ex post*) makes it possible to ensure or improve the profitability of the project (depending on the project's real performance level and the method chosen for defining the emissions reductions associated with the project). Although part of this revenue may be secured *ex ante* by financial arrangements (sales of futures contracts for credits), this is not in itself an upfront financial instrument, even though it may facilitate the obtainment of upfront finance. As a matter of fact, the financial planning prior to the project may be set up with different methods (see part III): public and private funding from constrained countries invested either directly, or through a fund, but also public international finance (for example from the World Bank) or the mobilisation of private and public funding within the developing countries themselves (through subsidies granted, for example in the case of feed-in tariffs for wind power, or loans obtained by national banks, etc.).

In theory, the CDM therefore creates an incentive to mobilise a financial flow from developed to developing countries (with a prevalence of private capital). In practice, only the case-by-case observation of financial plans for projects can determine how much is actually provided by developed countries. In certain circumstances, obtaining credits

creates leverage and thereby resolves issues concerning funding from local commercial banks, when non-profitable projects generate revenue – due to credits – making it possible to take loans from banking institutions. In other cases, creating the conditions for profitability and access to funding reduce pressure on sources of public international finance.

2. The strengths and limitations of project-based mechanisms

2.1 For developed countries

These mechanisms make it easier to set ambitious targets...

Within the framework of a system based on quantified, binding targets, the CDM plays two fundamental roles: it enables countries with quantified emissions reduction commitments to protect themselves from the risk of missing their targets at the national level, or from the risk of achieving compliance at very high cost. Credits therefore provide a compliance option based on lower-cost sources of emissions reductions (in relation to domestic marginal costs).

Flexible mechanisms thus play a key role in the ambition level of developed country pledges. The likelihood of developed countries increasing their pledges could partly depend on their opportunities to use additional offsets. For most Annex I countries, opportunities to set more ambitious short-term reduction targets (2020) are in fact limited by sectoral realities and the capacity to make heavy investment or to foster the emergence of new technologies by this date. Certainly, Annex I countries may comply with Kyoto Protocol accounting rules by using offsets; however, it appears that their real emissions are growing, since in 2007 the real level of emissions in New Zealand was 22% above 1990 (whereas this country's target was to stabilise its emissions) and in Japan this

11. The Marrakesh Accords (CP.7, Article 12, Section G, § 43) state that "a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity".

level stood at +8% (compared to a Kyoto target of -6%)¹². Although this does not cast doubt on the functioning of the Kyoto Protocol and its mechanisms, the evolution of actual emissions is increasing tension in international discussions on a new agreement. The trajectories these countries are following in fact make it hard to believe that very ambitious reduction targets will be achievable in the short term.

The emerging discussions on the shift from a 20 to a 30% target in Europe reflect this tension and presage intense negotiations on the methods, for sharing a new commitment. Indeed, increasing the reduction target is likely to have considerable sectoral impacts. In particular, the redistribution of efforts and the decision to introduce greater flexibility through the use of additional offsets will depend on discussions on the reduction potential that can be mobilised in the short term, the lasting effects of the current economic crisis on emissions, the associated costs and the impact on the competitiveness of the different sectors.

In the United States, the dynamics are fairly similar: in the bills under discussion, the volume of authorised offsets is very high (2 Gt/year, half of which are intended to be international offsets in the Waxman-Markey bill passed in the House of Representatives in June 2009; and between 0.5 and 1.25 Gt in the Kerry-Boxer bill proposed to the Senate), ultimately with a view to make it easier to meet the target. Furthermore, in the allowance system, international offsets act as a safety valve to maintain control over the cost of compliance.

For these reasons, developed countries, and more particularly Europe, have come down in favour of developing project-based mechanisms in a future climate agreement. In its communications, Europe envisages a key role for these mechanisms – revised and extended to include sectoral mechanisms – capable of generating high volumes of credits at the global level.

... but generate potential confusion in accounting methods...

The Copenhagen Accord is based on a compilation of voluntary pledges for binding reduction targets by developed countries and

voluntary reduction commitments by developing countries. It does not propose guidelines to harmonise the expression of these targets or to make them compatible with the objective of stabilising global warming at 2° C by 2050. It is therefore difficult to directly compare the targets proposed on 31 January 2010, as they are expressed in various ways: with or without offsets, different baselines depending on the country, and the definition of developing country actions, etc.

Indeed, developed countries are maintaining a level of confusion as to their intended use of offsets. They have chosen very different options for presenting their global effort level, with some including both their emissions reduction effort and their financial support. This raises questions as to the accounting method for credits and the allocation of associated reductions¹³, in terms of compliance with developed countries' quantified commitments and financial pledges. The acceptability of such a process will depend on the clarification of accounting methods for efforts and on the pledges expected from developing countries.

The carbon finance mechanisms that generate emissions credits thus overlap at several levels in this complex discussion, beyond the emissions offsetting role they may play. The diagram below illustrates the adjustment variables (symbolised by arrows) that will be the end result of political arbitration between the globally agreed effort levels and the way in which they will be funded and counted.

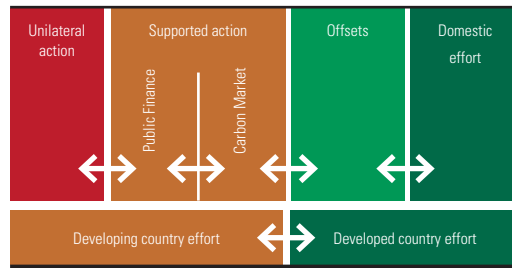
... questioning coherence with the emissions reduction pathways of developed countries

The issue of offsets is linked to a problem of coherence with medium- and long-term change

13. Although the US Waxman-Markey bill has little chance of being adopted as it currently stands, it states that some of the proceeds from the auctioning of allowances should be used to finance cuts in emissions from deforestation by buying back REDD credits if the decision is made to link this mechanism to the market. This makes it possible to define a budget for supporting developing countries, ultimately included in terms of additional reductions in relation to the targets of the US emission allowance market, which itself includes a volume of international offsets. In this specific case, the credits generated by the carbon market mechanisms are considered outside the US domestic market. They do not act as offsets to meet the global target. But this amounts to counting financial support for developing country actions through carbon credits and associated reductions as an integral part of total US effort.

12. Excluding LULUCF. See in particular: http://www.iepf.org/media/docs/publications/346_N_decryptage_CdP15.pdf

Figure 3: Effort level and means of support between developed and developing countries



in the economies of developed countries. The lack of clarity surrounding the nature of efforts made at the national level by developed countries and methods for supporting developing country efforts correspond to certain tactical challenges in the international arena.

This entails some serious implications, as achieving compliance by making emissions reductions within the national territory or by purchasing offsets will not have the same effects on the transformation of developed economies. If the rules for allocating emissions reductions under Kyoto correspond to a zero-sum game, arbitration between domestic efforts and the use of offsets in developed countries will have to take into account the need for these countries to ensure coherence in their transition to a low-carbon economy. Adopting a single accounting approach to meet these targets, in terms of the neutrality of emissions reductions in the atmosphere, runs counter to the need to adopt certain path changes in the key economic sectors of developed countries.

A real challenge therefore exists, which can be illustrated by looking at the European situation. Currently, the 20% target laid down in the Climate Package actually roughly corresponds to a territorial reduction target of 15%, assuming the totality of the volumes authorised (up to 50% of reduction effort) is actually employed¹⁴. What impact is this likely to have on the dynamics of investment in clean technologies and the development of practices leading towards a lower carbon economy? In this debate, the answer entirely depends on the choice of long-term pathway for the European

14. See IDDRI's *Analyse 02/2009*, "Climate and Energy Package: Would too many offsets hollow out the EU Package?" [<http://www.iddri.org/Publications/Collections/Analyses/Climate-and-Energy-Package-Would-too-many-offsets-hollow-out-the-EU-Package>].

economy and the coherence between the intermediate stages (2020 and 2030) and this trajectory. A scenario without offsets (a unilateral -20%) by 2020 would be coherent with a Factor 4 scenario on the long-term (2050). However, a Factor 4 pathway assumes a very rapid pace of emissions reductions after 2020. The provisions of the Climate Package, authorising a high volume of offsets, thus introduce a "deviation" in 2020 from the European emissions reduction trajectory in comparison with an ambitious pathway (such as Factor 4). This questions the feasibility of "catching up", given the implications for the current economic and industrial situation. Achieving a faster pace of emissions reductions from 2020 onwards implies that additional investment in energy efficiency, demand reduction or low-carbon production systems will begin well before 2020, across all sectors. The 2012-2020 period and the nature of the targets and incentives that will be defined are therefore critical for the launch of investment that will govern medium-term emissions, regardless of the real emissions level reached in 2020.

2.2 For developing countries

The CDM project-by-project approach also aims to produce a reversal of emissions trends in countries without targets, by establishing incentives with the objective of redirecting investment towards emissions reductions in developing countries. Has the CDM helped to trigger this transformation in developing countries?

The CDM is thought to have leveraged significant investment in clean technologies in developing countries since 2002: according to the World Bank, the CDM received 75 billion dollars of investment between 2002 and 2008, with an estimated leverage ratio of 4.6. These figures are far higher than those generated by official development assistance to support clean energy policies and projects (16 billion euros over 2000-2006)¹⁵. The CDM has thus constituted a useful tool for stimulating the emergence of certain projects that would not have occurred through development assistance financing mechanisms alone. It has made it possible to stimulate the economic sphere,

15. World Bank, "State and trends of the carbon market 2009".

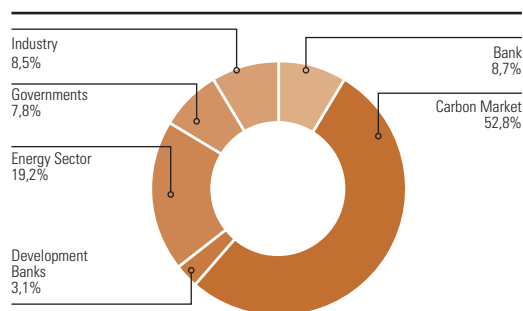
leading stakeholders in developed and developing countries to take steps towards new types of funding, providing the means to launch projects that would not have been implemented otherwise.

Demand for credits for the Kyoto period comes mainly from the private sector, especially in Europe, for compliance purposes, and to a lesser extent from the governments of Annex I countries, justifying an appetite for options that remain low-cost on the whole (see Figure 4 and Figure 5):

- Governments remain in the minority on the primary market, with a project portfolio dominated by renewable energies.
- The CDM has further increased private sector mobilisation, especially among stakeholders already present in developing countries, for direct investment in projects, and particularly the energy sector that is constrained by national or regional regulations. These stakeholders generally invest in projects where they have full understanding of the processes or technology and for which they can assess the risk.
- This mechanism has especially enabled the emergence of carbon funds, which act as intermediaries, since the capital invested may come from governments or carbon-constrained companies, but also from other stakeholders wishing to take advantage of the financialisation of the market. This is the case, for example, of the leading buyer on the primary market (EcoSecurities).

CDM projects have developed where costs are channelled in the lowest part of the abatement curve¹⁶. The mechanism seems to have been successful in stimulating projects in well-understood processes with predictable performances or in available technologies that are not far off from profitability. Thus, through the CDM the private sectors in developed and developing countries seem to be adequately incentivised to develop projects focusing on HFC reduction, landfill methane, energy efficiency in industry, fuel substitution, or renewable energies (wind, hydro, solar power, etc.), see Figure 6. This would remain true when scaling up CDM,

Figure 4: Nature of buyers on the primary market



This graph depicts buyers directly involved in the primary market, and does not show the share of constrained public and private interests with capital in carbon funds (grouped here as the "carbon market"). Furthermore, the volumes purchased by stakeholders with allowances do not imply that all volumes serve to achieve compliance with the imposed limitations, but reveal in certain cases a specialisation in the financialisation of the market.

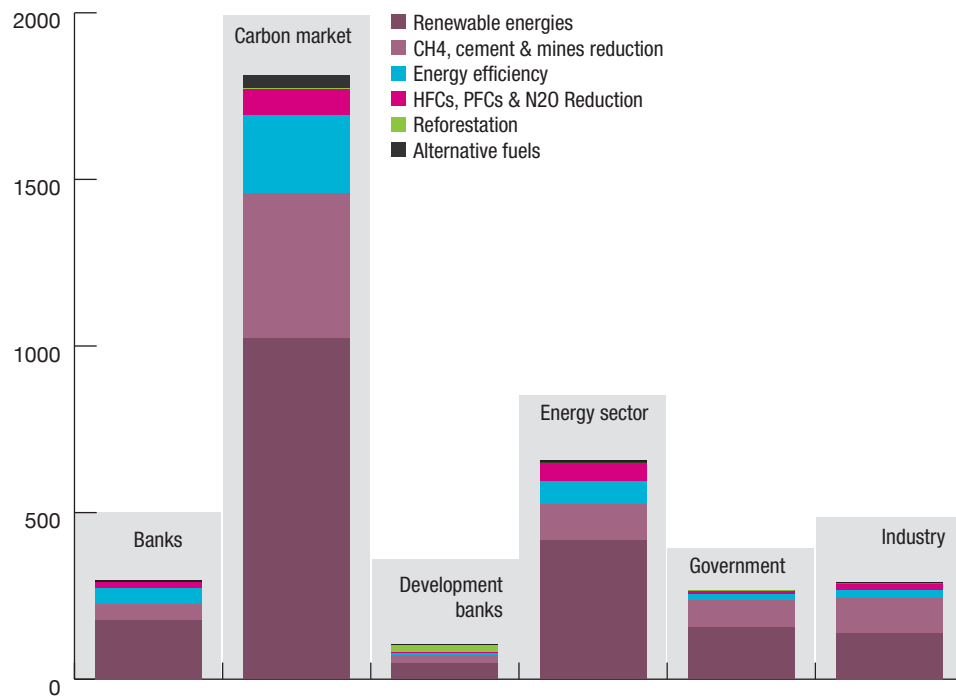
meaning that this market mechanism may not be used to finance a technology that is still at the demonstration stage and has particularly high abatement costs such as carbon capture and storage (CCS). There is also political deadlock over the issue of making CCS eligible under the CDM: the European initiative to propose its inclusion at COP 14 in Poznan (Poland) in a pilot phase met with opposition, especially from the G77/China, resulting in the deferral of this debate until COP 15 in light of a study by the CDM Executive Board on the implications of this inclusion. Nothing was decided in Copenhagen, and the decision was once more postponed until 2010¹⁷.

Evidence shows that few projects aimed at improving demand-side energy efficiency, especially in the building industry, have been developed, despite the fact that estimated abatement costs for these measures are fairly low¹⁸ and that demand-side management in these sectors will be crucial for transition in developing countries. There are several reasons for the lack of energy efficiency projects in this sector, calling into question the suitability of crediting mechanisms for creating ad hoc incentives:

16. See the Abatement Curve v2 of the McKinsey Cost Curve analysed in Carbon Trust (2009), "Global carbon mechanisms: evidence and emerging implications".

17. <http://blog.iddri.org/index.php?post/2009/12/12/L%E2%80%99inclusion-du-CSC-dans-le-MDP-%3A-peut-on-r%C3%A9pondre-clairement-par-oui-ou-non>

18. See McKinsey Abatement Curve v2.

Figure 5: Nature of projects by stakeholder type

Source: Portfolio of projects, UNEP Risoe (updated March 2010), based on a selection of stakeholders and main project categories representing 96% of the total number of projects

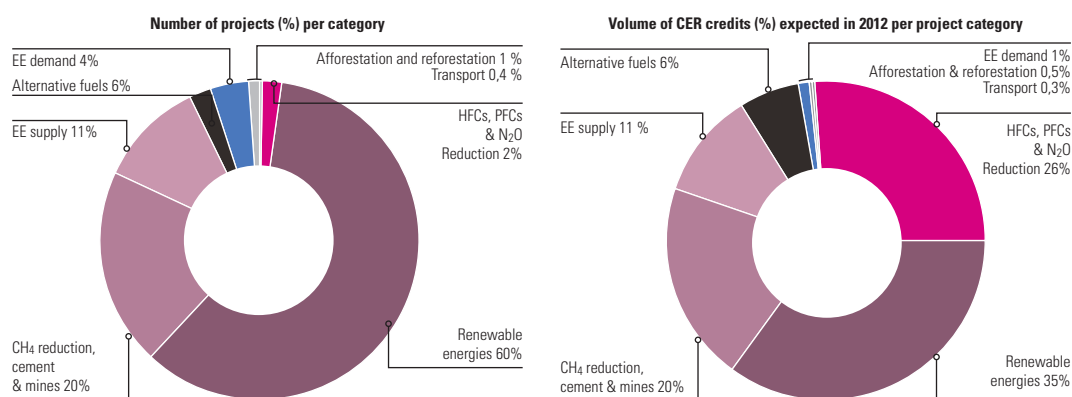
- The mobilisation of capital without generating cash flows;
- Difficulties encountered during the project submission process, especially in terms of demonstrating the additionality of projects (a key condition for the acceptance of CDM projects);
- Although there is considerable potential at the sectoral level, it is comprised of a number of small projects for which the dispersion and the nature of stakeholders may make financial incentives less appropriate. There have been no examples of using CDM to support the financing of a public policy on energy efficiency in buildings.

Projects focusing on curative rather than transformative solutions for the development model (such as the treatment of pollutants) make up the majority of the wide-ranging project portfolio that constitutes the carbon funds (see Figure 5 above). Moreover, this type of project generates high volumes of credits in comparison with renewable energy projects, and could dominate the credit supply volume in 2012, making this an attractive

option for stakeholders on the supply market (see Figure 6). The number of projects does not in fact indicate the volume of credits that will be generated, as this depends not only on the number of projects, but also the emissions reduction potential and the method used to quantify the number of credits. Thus, HFC, PFC and N₂O reduction projects are now in the minority in the global CDM project portfolio (2%), but they could represent a very large share of the total volume of credits expected in 2012 (26%), due in particular to the scale of these projects and the very high global warming potential for HFC, PFC and N₂O gases compared to CO₂¹⁹.

The different stakeholders do not appear to select project methodologies with a view to influencing the nature of activities undertaken in developing countries or the conditions of sectoral change. In some cases, the constrained public and private investors acting through funds establish selection criteria (nature of project and country) aimed more at ensuring risk management than at selecting specific activities. Nevertheless,

19. According to IPCC assessment methods.

Figure 6: Type of projects and quantity of credits expected in 2012 per activity type

Source: Portfolio of projects, UNEP Risoe (updated in March 2010)

World Bank Prototype Carbon Fund investors have, for example, adopted selection criteria for end-use energy efficiency projects. Some NGOs have stepped up initiatives to foster the emergence of more innovative projects, such as improving demand-side energy efficiency in households. However, these projects are still a minority and are not capable of generating any significant supply of credits.

However, some experiences indicate substantial improvements in the field. This is particularly true for projects to produce electricity from landfill gas which, without the additional revenue from the CDM, would not emerge. Project managers report successful technology and knowledge transfers towards developing countries, such as training for technicians in these countries, who can then reproduce other projects without carbon fund support. This knowledge transfer starts up the process of disseminating practices, for projects that do not require a significant technology leap. This experience sharing illustrates the possibility of the CDM generating co-benefits, which was one of its expected effects, without being an explicit mandate. In this respect, a study by Stephen Seres (for the UNFCCC), "Analysis of Technology Transfer in CDM Projects" (2008), estimates that 36% of CDM projects involve technology transfer, mainly in agriculture, industrial gas destruction and wind power projects.

Although the CDM has stimulated projects by launching new North-South dynamics through training in innovative financial mechanisms,

it is not in a position to bring about real change in economic sectors in developing countries, which would in turn foster a path change towards a low-carbon economy. While the mechanism is proving effective in certain sectors and for certain technologies, it is not enough to harness reduction potential in the building, transport and agriculture sectors, or to stimulate the whole of the innovation chain to meet the challenges of the path change. Thus, CDM will not be sufficient to achieve the transition to a low-carbon economy as a considerable number of market failures exist:

- the lack of remuneration for stakeholders involved in innovation and insufficient implementation and development of innovative practices, due to the spillover effect²⁰ or because regulations limit opportunities for stakeholders to reap the benefits of their innovations;
- the time lag between investment and return on investment limits stakeholders' attention to energy savings and CO₂ emissions reductions;
- stakeholder uncertainty and conservatism regarding changes in practices and technologies;
- uncertainty surrounding the evolution of regulations creating a risk for investors (should carbon prices in fact be lower than expected);

20. Where innovation benefits those who played no part in it due to knock-on effects.

- the need to coordinate a large number of stakeholders and networks in order to achieve the transition: training, developing infrastructure and the industrial capacity to provide technologies, developing practices for operating and maintaining installations, etc.;
- imperfections in political processes, which may delay the development of regulations and appropriate political frameworks.

A review of the mechanism is needed, along with mediation by public stakeholders to accompany economic entities.

3. Towards sectoral mechanisms to support the transition?

In a future global architecture, all Annex I parties have expressed their desire to attach special importance to carbon market mechanisms. However, these could be articulated in very different ways depending on the international regime that will emerge in the wake of Copenhagen. In this respect, COP 15 gave no details as to the role that could be played by the carbon market, or about the possibility of extending the international market and the flexible mechanisms, their reform and the emergence of new sectoral mechanisms.

Strengthening this instrument would be based on the prospect of a change to be made to the nature of investments. Given the lessons learnt from the CDM, the challenge is to establish mechanisms to meet the requirements of change, and in a greater number of sectors in developing countries. This implies a change of scale for the volumes of credits generated by these potential new crediting mechanisms and a different kind of involvement by governments in developing countries. Here, we examine the implications of implementing national mechanisms, of the sectoral no-lose targets type, defining a performance level to be reached by the sector in question, beyond which credits may be generated.

3.1 Sectoral mechanisms: are they really a good idea for developed countries?

The capacity to align supply and demand

Although some developed countries have expressed a predilection for sectoral mechanisms,

demand for credits from domestic markets and governments in these countries does not appear to be unlimited, because of both the aforementioned difficulties in stepping up efforts and demands regarding the quality of credits and associated emissions reductions²¹.

Uncertainty also surrounds the volumes that could be generated by these mechanisms and the methods for absorbing these volumes in developed countries. This goes back to the difficulties described in 2.1 and to the apparent paradox between the interest shown by developed countries and the difficulties of absorbing high volumes of credits if necessary. CDM are already expected to generate considerable volumes of credits (1.35 Gt by 2012 and potentially over 5 Gt after 2013)²². While the European market still accounts for the highest demand for CERs, the cap established prior to the economic crisis now seems ineffective in terms of providing a long-term price signal that is high enough to induce change in capped sectors. The verified emissions data for the European market in April 2010 show a cut in emissions of around 11% relative to 2008²³, generating surpluses that will be carried over to the rest of the period (2020). At a time when Europe is planning to revise its domestic climate agenda in order to raise its 20% reduction target, the volumes of CERs authorised could be further restricted, or in any case represent relatively limited volumes in relation to the potential scope of supply. Finally, uncertainty weighing on the future of the international carbon market could result in an acceleration of ERU credit supply (issued by the JI mechanism), reducing demand for CERs. Indeed, the eligible host countries could take advantage of the possibility of transforming some of their surplus AAUs, in the uncertain post-Copenhagen future, into a considerable number of ERU credits. While they would not necessarily correspond to additional emissions reductions, these credits could then vie with the supply of CERs²⁴.

21. Europe in particular reserves the right to establish criteria for selecting the type of projects that are eligible under the European system. See IDDRI's *Synthèse 02/2009*, « Paquet Climat Énergie : Usage et impact des offsets » [http://www.iddri.org/Publications/Collections/Syntheses/sy_0902_iddri_galharret_offsets.pdf].

22. See Carbon Trust, "Global Carbon Mechanism", 2009.

23. Deutsche Bank, 1 April 2010.

24. See *Tendances Carbone* n°45, March 2010, "Supply of Kyoto credits: some uncertainty".

On the supply side, the creation of new mechanisms at the sectoral level would however be likely to generate very high additional volumes. Estimations for forestry sectors alone evaluate these volumes at around 10 Gt, and for the power sector in the main emerging countries at ~3.2 Gt for 2013-2020²⁵. To make sense, the development of such sectoral mechanisms would therefore imply considering:

- the capacity for stepping up developed country commitments by using offsets, and the acceptability of this increase achieved through offsetting in relation to their unilateral commitments;
- the potential (or impossible) transfer to the private sector and domestic emissions trading systems, also in line with selection criteria for credits (type of project, etc.);
- the acceptable volume of direct credit purchase, for financial support to developing countries.

This issue is linked to the attempt to strike a balance between the different instruments to support the transition (carbon finance and public finance), in terms of the respective incentives and efficiency they are likely to generate. In this respect, the issue of costs is crucial.

At what cost?

Is extending crediting mechanisms to the sectoral level a low-cost source of reductions for developed countries?

Offsets will provide an indirect link between the different emerging domestic carbon markets if these markets authorise their use. If government demand for credits also increases, an equilibrium price will be established according to these different sources of demand and the credit supply capacities in developing countries. The credit price will be set at the marginal reduction cost in developing countries. Is this likely to be much lower than in developed countries? Some of the reduction actions will be unilaterally financed by developing countries while others will be eligible for developed country support, partly through the acquisition of credits. Controversy over

developed countries using low-cost sources of reductions in developing countries could be avoided by formulating a baseline, beyond which reduction actions would generate credits. Developing countries could then retain control over least cost actions.

Furthermore, as the aim is to achieve a real path change in these countries, a considerable amount of investment must be redirected towards clean technologies, the optimisation of existing and future systems and the development of new infrastructure, etc. This implies a shift on the abatement curve towards a potentially higher credit price than in the case of the CDM, allowing some doubt as to whether or not sectoral mechanisms could correspond to low-cost flexible options for meeting developed country targets, which was the initial rationale for offsets. This raises questions regarding the effectiveness and the opportunity cost for developed countries when buying large volumes of credits whose price is increased by the marginal reduction cost, which is also potentially high in developing countries, in comparison with a more targeted financing approach, taking into account a global capacity for financing that is not unlimited.

3.2 What incentives could emerge from the reform of carbon markets?

The reform of the CDM particularly aims to overcome the difficulties linked to the processes for submitting and accepting projects, and to reduce red tape and transaction costs in order to increase the scope and effectiveness of the actions undertaken. The need for change in developing countries will also call for the implementation of national policies and programmes, including capacity building, the creation of leverage on national funding sources, coverage of risks linked to the implementation of more costly or less profitable actions, support for research and development, and the deployment of new technologies, etc.

These new mechanisms must also endeavour to better define the conditions for rent sharing, an emerging issue within the CDM. Given the considerable spread between primary and secondary market prices, China has set a floor price for the sale of CER credits. The ability of host countries to harness some of the profit would generate additional financing capacities,

25. "Sectoral Approaches and the Carbon Market", Annex I Expert Group, June 2009.

but this balance must be carefully thought out to avoid compromising the incentive nature of the mechanism.

Will the market be able to cover all of these needs? For developing countries, an architecture built around new sectoral mechanisms seems to encourage greater institutional involvement than in the project-by-project configuration, along with a more complex interweaving of the carbon finance mechanisms and the institutions and stakeholders concerned (it includes: private/private, public/private or public/public interactions). The developing countries form a very heterogeneous group, with highly varied contexts and capacities. The major emerging countries would be more likely in the short term to implement revised crediting mechanisms (widespread use of programmatic CDM and a shift towards sectoral mechanisms). Different options are therefore possible, stimulating the emergence of new interactions between the private and public sectors, with very different implications for the scope and means of financing provided by developed countries, the stakeholders bearing the reduction costs, or the nature of the political and economic instruments to be implemented:

- Private/private mechanisms: one of the challenges for these new mechanisms is to preserve the mobilisation of economic entities from the industrial world in developing and developed countries that has been one of the factors of success of the CDM. The European Union Emission Trading System (EU ETS) provides an interesting case: In the European system, stakeholders with allowances have the right to use offsets for a specified volume. These mechanisms make it easier for stakeholders with allowances to meet their targets. This has motivated some operators to develop projects directly in developing countries in order to secure the credits they need for compliance. Bilateral CDM projects have often been more effective, partly because their implementation has been accompanied by knowledge cooperation or technology transfer²⁶ between the private sectors in Europe and in the host countries. The use of CDM credits for compliance will still be authorised after 2012,

26. "Empirical analysis of performance of CDM projects", *Climate Strategies*, 2008.

with certain restrictions (type of project, specific requirements regarding the quality of projects, depending on their compliance with different social or environmental impact criteria). New domestic markets, such as the one under preparation in the United States, also leave the possibility of authorising companies to use credits issued by new crediting mechanisms for compliance purposes (whereas it may also be selective on the mechanisms that will have generated credits). This may prompt the direct mobilisation of the private sector in developed countries to cooperate with its counterpart in developing countries and to directly invest there. However, in order to meet all developing country financial requirements, the reduction targets transferred to these private sectors will need to be much higher. This seems possible, but for a rather limited share of investment needs and in line with the discussions on carbon leakage risk in some industrial sectors²⁷. To generate credits, these new mechanisms, which are no longer established on a project-by-project basis but through the implementation, monitoring and success of sectoral actions, will need to first mobilise the active involvement of governments in developing countries, which could thereby reclaim all or part of the profit; this will be discussed hereafter.

- Public/private and private/public mechanisms: the credits generated will depend on the success not of a project, but of cross-cutting policies and measures at sector level in developing countries. This goes beyond the scope of developed countries and implies the implementation of a sectoral change policy organised by the developing countries themselves. Is the emergence of incentives through sectoral crediting mechanisms likely to be a catalyst for the implementation of such policies? To be able to generate credits on a larger scale, governments must succeed in initiating the investment needed to structure sectoral policies and in mobilising all economic stakeholders within the sectors

27. In Europe, an assessment was made to determine which industries were subject to this risk with a view to mitigating the impact of the carbon constraint on their production costs (free allocation). This dimension is also very present in discussions on a future federal law on GHG emissions reductions in the United States, accompanied by an allowance market.

concerned, in order to achieve the emissions reductions which then generate credits. First, the crediting mechanism alone cannot support all the costs linked to the implementation of policies and measures, which induce only for a small part emission reductions. It is important to bear in mind that the implementation of programmes generates net costs for the economy including investment and transaction costs. For example, establishing a building standard requires the formation of an ad hoc administration, the development of skills and the organisation of networks, etc., before the implementation of the standard will deliver any emissions reductions. The ex post distribution of credits does not resolve the issue of upfront financing, or the issuance risks. It is therefore necessary to rapidly free up funding to cover these costs and to ensure it is then possible to introduce a crediting mechanism in the sectors concerned (market readiness). In Copenhagen, the developed countries made specific pledges to provide fast-start funding of 30 billion dollars by 2012 and 100 billion dollars per year from 2020.

As for the mobilisation of local economic entities, this assumes that governments are capable of guaranteeing private entities insurance against risks related to the implementation of reduction actions: direct regulatory measures to increase the predictability of certain investments for these private entities; guarantees regarding the acquisition of credits or equivalent remuneration ensuring costs are covered for successful entities, independently of success of the action undertaken at the national level. This implies covering upfront implementation and investment costs, possibly representing significant amounts that seem difficult to motivate by the simple prospect of obtaining credits.

The fact remains that national interests in implementing a climate policy will prevail for different reasons (energy security, pressure on natural resources, the development of new technology markets, etc.). As previously discussed, it appears that within this new framework there are still opportunities for developing private/private cooperation, if there is an incentive for private

entities in developed countries to do so, and depending on the possibility of using offsets for compliance purposes.

- **Public/public mechanisms:** in the complex negotiations on increasing the level of effort for private entities subject to domestic markets in developed countries, the resulting demand for offsets would in any case be incapable of absorbing the volumes likely to be generated by extended sectoral crediting mechanisms, should these prove effective. The emissions reductions that can be expected and the potential volumes to credit in order to ensure funding for these actions are in fact on an entirely different scale²⁸. The volumes that these mechanisms could generate are also fraught with uncertainty: the fact that the commitment is non-binding provides no certainty as to the likelihood of developing countries reaching the baseline or the generation of credits for additional efforts. An accurate estimation of credit volumes is tricky, according to the assumptions considered (the methodology for establishing the baseline and the level of ambition for actions).

The change of scale could be achieved through a mechanism for public/public interaction, in which developed country governments buy credits from developing country governments, either bilaterally or through platforms that pool supply sources, once again with a view to overcoming uncertainty regarding volumes. Credit purchase may take several forms: using offsets to comply with commitments, or – irrespective of meeting targets – to honour a pledge of financial support to developing countries. This is the case, for example, with the US Waxman-Markey bill, which proposes both the use of international offsets (1 Gt/year) for compliance, and, moreover, the repurchase of REDD credits irrespective of reaching the cap. If governments do not transfer tougher targets to the private sector, they may envisage different means of involving economic entities in cooperation beyond a simple credit purchase strategy that would enable governments to

28. Estimations for the forestry and power generation sectors in the main emerging countries at ~10 Gt and ~3.2 Gt respectively for 2013-2020, see "Sectoral Approaches and the Carbon Market"; Annex I Expert Group, June 2009.

honour pledges of financial support to developing countries. They must then develop incentives that will enable economic entities to cooperate and invest in emissions reductions in these countries.

3.3 Complementing the carbon markets with other instruments

Although it appears that carbon finance reform provides opportunities for mobilising private stakeholders from North to South, market mechanisms alone are not sufficient to meet all the financing needs of sectoral change in developing countries. Tied to reformed carbon finance mechanisms, a vast range of complementary instruments connected to other international financing mechanisms seem necessary to structure the establishment of coherent public policies in Southern countries.

Carbon finance and public international funds will therefore be complementary as they serve different purposes and do not target the same stakeholders. In particular, demands for funding from public international finance will be required where incentive mechanisms stemming from the mechanics of carbon markets are ineffective. It is therefore essential to use a whole range of financial instruments that are complementary to the carbon market itself, especially to improve its efficiency. These instruments may increase incentives or reduce the cost of investing in low-carbon technologies, lessen or divide the risks, prove that governments are committed to maintaining the stability of the regulatory framework or, on the whole, structure the conditions for the emergence of effective public policies with a view to fostering a lower carbon economy.

Furthermore, finance must also endeavour to support capacity building – whether institutional, industrial or the development of skills – in developing countries, a key element in the appropriation and replication of the knowledge and practices inherent to a lower carbon economy.

Conclusion: Towards a new conception of the carbon market?

The outcome of Copenhagen leaves many questions unanswered regarding the role of the carbon market in a future global climate architecture. There are several possible options:

- Prolonging the existence of an international market – but still a partial one – between countries adopting binding objectives in line with the Kyoto principle. This option requires progress to be made in international discussions on whether or not the two negotiating tracks will be merged and on commitment methods. However, the Copenhagen Accord seems to condemn the top-down Kyoto approach, since it proposes an entirely different bottom-up approach based on voluntary pledges for developed country commitments and reduction actions in developing countries, and simply mentions the possibility of using a market mechanism. It should be noted that the United States continues to oppose the principle of Assigned Amount Units (AAUs), which form the very framework of the Kyoto Protocol as a common unit of measurement setting the carbon budget that countries that have ratified the Protocol must not exceed for the commitment period.
- The maintenance or the extension of flexible mechanisms through the purchase of offsets issued by the CDM/JI and new sectoral mechanisms is possible. Indeed, developed country commitments, whether top-down or bottom-up, could be partly met using credits issued by the flexible mechanisms. These credits would only play the role of offsets for governments in the case of a global architecture based on binding emissions targets. Otherwise, the extension of mechanisms that generate credits would remain crucial for binding regional instruments where they play the role of offsets for regulated economic entities. It should be kept in mind that the COP recognised that the CDM Executive Board could remain operational even in the absence of a second Kyoto commitment period. With the confirmation of this institutional framework, economic and government stakeholders are thus assured of the continuation of the CDM. For governments, the credits could also prove their financial commitment to developing countries, but this time solely by providing funding for some of the investment costs through the purchase of credits, since the incentive for direct investment is no longer effective without a greater binding commitment. The emergence of new sectoral mechanisms

Table 1: Examples of public financing mechanisms from different institutions

	Public Finance Mechanism	Direct support	Indirect support	
		International to project	International to national	National to project
Contribution to investment and operation	Up-front grant: - Standard technical assistance grants - "Smart" grants	GEF (Global Environment Facility) grant Other bilateral or multilateral organisations	Official development assistance	Investment support
	Funding during operation	Offset mechanisms (CDM) World Bank support	Grants linked to continuous delivery (finance + regulatory stability)	- Payment of incremental cost of support for renewable energy - Reducing subsidies for fossil fuels - Carbon tax/ cap and trade scheme
Facilitating access to finance	Provision of investment capital - private capital - venture capital - long-term investment	Asian Development Bank: clean energies Private capital funds European Investment Bank/ European Bank for Reconstruction and Development: Sovereign wealth funds	European Investment Bank/ European Bank for Reconstruction and Development Support for venture capital, support for costs of implementing funds and co-investment funds	Carbon Trust Venture Capital Fund
	Provision of debt and capital - Loans (generally with conditions for governance methods) - Credit lines - Capital (major projects, with foreign investors)	International financial institutions: European Bank for Reconstruction and Development, International Finance Corporation.	International Monetary Fund and World Bank loans	
	Risk coverage - Partial or full guarantees - Policies to cover specific or all causes of project's failure to perform - Other financial products	Multilateral Investment Guarantee Agency: political risk insurance	World Bank/ International Finance Corporation partial credit and risk guarantees	Export credit agency guarantees

Source: "Structuring international financial support to support domestic climate change mitigation in developing countries", J.-C. Hourcade, E. Guerin, K. Neuhoff, S. Frankhauser, H. Jackson, R. Rajan, J. Ward.

nevertheless remains highly dependent on the future of multilateral commitments: the level of efforts, the balance of power with developing countries for the acceptance of offsetting mechanisms, and the likelihood that these countries will decide that this mechanism meets their investment needs, which does not seem to be the case at present in China, the country that could potentially be the leading supplier of credits in the case of a sectoral mechanism.

- The extension of domestic markets, which corresponds to a different approach, seems to be the path chosen in Europe and also in New Zealand, and is emerging at the federal level in the United States, despite difficulties passing the cap and trade bill. These markets could continue to develop according to the policies and measures States adopt, unless a major diplomatic crisis following the Copenhagen Accord should call into question the reduction policies and measures already adopted or that are under consideration by the highest emitting countries, leading to the unlikely decision to return to other less binding and more flexible instruments. If

necessary, developing markets could potentially join together if deemed compatible²⁹. They could continue to maintain an indirect link with the international market through the recognition of JI/CDM credits and/or of credits issued by new crediting mechanisms according to the rules adopted at the international level. The shift towards bilateral agreements becomes increasingly marked, as indicated by the conditions for defining the offsets that would be accepted in the US system under the Waxman-Markey and Kerry-Boxer bills. This raises serious questions about the conditions for comparing the reductions obtained through these offsets that are defined outside the UN system and could limit the development of the CDM or any reformed system.

These options therefore depend largely on the question of whether the approach to the global carbon market should be top-down, as in the Kyoto Protocol, in other words establishing reduction targets and authorising emissions

29. See "Linking emission trading schemes", *Climate Strategies*, May 2009.

trading between States, or bottom-up based on a link between existing and emerging domestic markets and the recognition of offsets created by the international regime. In several respects, extending crediting mechanisms to the sectoral level could be seen as a tool aimed at structuring national policies in Southern countries, making it possible to establish a transitional mechanism towards the adoption by the most advanced developing countries of national cap and trade markets covering part of their economy.

The future climate regime seems to be steadily adopting a pledge and review approach, in other words targets will not be negotiated according to a top-down method, but an agreement will recognise the targets announced by the different countries (subject to negotiations on the additional degree of effort, with a highly uncertain amount of manoeuvre room at present following the ambiguous results obtained in Copenhagen), consistent with verification mechanisms. If this leads to the end of the Kyoto Protocol³⁰, transactions on the global market will perhaps no longer be verified as they are today by the ITL or counted as units (AAUs, ERUs, CERs, RMUs³¹), in accordance with the provisions of Article 7(4) of the Kyoto Protocol, through national registries.

The European Union has already made arrangements for taking this eventuality into account:

30. On the types of possible agreements, see IDDRI's *Idées pour le Débat* 06/2009, «Négociations climat : Compte-rendu de la conférence de Barcelone (2-6 nov. 2009)» [<http://www.iddri.org/Publications/Collections/Idées-pour-le-debat/Négociations-climat-Compte-rendu-de-la-conference-de-Barcelone-%282-6-nov.-2009%29>].

31. "Removal units" are units issued for net absorption of CO₂ equivalent for forestry activities and land use covered by Article 3(3) and 3(4) of the Kyoto Protocol.

a new 2008 regulation on the registry enables the EU ETS to function independently (disassociating itself from AAUs) of the Kyoto Protocol from 2013.

The United States, on the other hand, believes it is unnecessary to retain the elements of Article 7(4) for the market to function, which goes back to the discussion on measurement, reporting, and verification conditions for targets and compliance to determine exactly if and how offsets are used to meet targets without any double-counting.

The carbon market is not considered to have constituted a useful instrument in negotiations. It is being held hostage by negotiations on Annex I country commitments and developing country actions and also by the issue of funding for developing country actions. This "hostage taking" is accentuated by tension between the two negotiating tracks: long-term cooperative action (AWG-LCA) and the Kyoto Protocol (AWG-KP).

Above all, national carbon markets need precise rules to enable them to function and to produce the price signal required to mobilise investment in clean technologies: price predictability is the first demand from market stakeholders. This is undoubtedly why they are prepared to defend the idea of the continuation of the Kyoto Protocol, at least as a provisional measure, to guarantee the predictability of transactions for CDM credits that are in the pipeline (projects registered to date for which the credits will only be certified after 2012), despite the fact that the predicted deconstruction of the Kyoto Protocol architecture could go as far as questioning the survival of project-based mechanisms at the international level. ■

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Using the carbon market to support the transition?

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