DISCUSSION DOCUMENT

Accounting for Project Based Mechanisms within the Nationally Appropriate Mitigation Actions of the Developing Countries - Taking China as an Example

Duan Maosheng (Tsinghua University)[1]

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[1] Tsinghua University, Beijing, 100084. The views expressed in this paper are entirely the author's own.

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1. Background

Project-based mechanisms, such as the Clean Development Mechanism (CDM), have played an important role in assisting developed countries in meeting part of their emission reduction commitments in the first commitment period under the Kyoto Protocol and has also contributed to lower the GHG emissions of the host countries, in comparison with the business-as-usual scenario. Market-based mechanisms, including both existing project-based and possibly new ones, have long been an important element of the negotiations on emission reduction commitments after 2012 of the developed countries and mitigation actions by the developing countries.

Some developing countries have already submitted their national mitigation actions to be implemented to the secretariat, expressed in different forms. Some of the submitted actions are in the form of aggregate emissions limitation, for example carbon intensity of the GDP. For example, China has submitted to the secretariat its autonomous domestic mitigation actions as follows: “China will endeavor to lower its carbon dioxide emissions per unit of GDP by 40-45% by 2020 compared to the 2005 level, increase the share of non-fossil fuels in primary energy consumption to around 15% by 2020 and increase forest coverage by 40 million hectares and forest stock volume by 1.3 billion cubic meters by 2020 from the 2005 levels.”

This is a critical change with regard to the context in which the project-based mechanisms are implemented. During the first commitment period of the Kyoto Protocol (2008-2012), developing countries do not face the issue of limiting their emissions as proposed in their submitted mitigation actions, while the situation will change after 2012.

This brings the question of how to account for the emission reductions already achieved or to be achieved by relevant projects under the project-based mechanisms in the assessment of the developing countries’ mitigation actions, mainly whether the emission reductions can be considered as part of the developing countries’ efforts.

2. Contribution of CDM Projects to Emission Reductions in China

China has been very actively participating in the CDM cooperation and is now one of the major players in the CDM market. Up to March 17, 2011, 1280 CDM projects hosted by China have been registered by the CDM Executive Board, with estimated annual emission reductions of 287 million tons of CO_2 equivalent. These numbers will increase with time. These registered projects are distributed across various sectors, including the renewable energy, energy saving and efficiency improvement, and fuels substitution sectors. CDM projects located in these three sectors reduce mainly CO_2 emissions and thus have direct implication to the country’s CO_2 emissions.

Table 1: Registered CDM Projects Hosted by China in Relevant Sectors

Sectors	**Number of Projects**	**Estimated Annual Reductions (tCO2)**	**% of the Total Estimated Annual Emission Reductions**
Energy saving and efficiency improvement	108	29,681,809	10.3
Renewable energy	1020	133,293,601.16	46.4
Fuels substitution	20	16,346,646	5.7
Sub-total	**1148**	**179,322,056**	**62.5**

According to IEA[3], China's CO_2 emissions from energy consumption are 6550 million tons of CO2 in 2008, which means that the expected annual CO_2 emission reductions of these CDM projects account for about 2.7% of the total emissions. This is not a ratio that can be simply neglected and how the corresponding emission reductions will be accounted in the mitigation actions up to 2020 of China is an important issue. Taking into consideration that most of these projects are located in provinces (autonomous regions) with rich renewable energy resources, such as Yunnan, Sichuan and Inner Mongolia, etc., the accounting issue is even more important for these provinces (autonomous regions).

On March 14, 2011, China's National People's Congress adopted *Outline for China's 12th Five-Year Plan on Social and Economic Development*, which has legal effects and has set forth China's forthcoming mitigation actions in the period between 2011 and 2015. For the first time there is a separate chapter in the report dealing with the climate change issue. It should also be noted that two dozen major indicators have been put forward on the social and economic development of China during this period, with half of these indicator being restrictive and the other half being predicative. Three restrictive indicators are directly related to the mitigation actions, i.e. to reduce the CO_2 emissions intensity of the county's GDP by 17%, to reduce the energy intensity of the country's GDP by 16% and to increase the share of non-fossil fuels in the primary energy consumption of the country to 11.4% from 8.3% in 2010.

To achieve the established target, various measures will be adopted, including for example adjustment of the economic structure and the energy mix, saving energy and improving energy efficiency, and promoting afforestation. It is also proposed to reasonably control the total energy consumption, with clearly defined total energy consumption limit and break-downs for different regions.

Specific programmes in certain areas, for example the energy saving and energy efficiency improvement area, have also been listed in the outline. Key energy saving programmes mentioned include: 1) retrofit for energy saving programme, covering for example cogeneration and green lighting technologies; 2) promotion of energy efficient products, for example high efficiency electrical devices; 3) demonstration of energy saving technologies, for example waste energy and waste pressure utilization, and 4) promotion of energy performance contracting.

It is also made clear in the outline that restrictive targets will be divided into sub-targets for the provinces (autonomous regions and municipalities), including possibly annual targets for the provinces (autonomous regions and municipalities), which will be one of the bases for evaluating the performance of the relevant local governments.

It should be noted that many of the mitigation actions listed in the outline, for example those related to energy saving, are eligible activities under the CDM, and whether CDM or other project-based mechanisms could be used to support these activities is of practical importance.

3. Accounting of GHG Emissions in Developing Countries after 2012

Although many developing countries like China have already submitted to the UNFCCC their mitigation actions that may be implemented in the future, it is however not very clear in some cases what their internal processes will look like in terms of the accounting of their GHG emissions for the purpose of assessing the effects of their mitigation actions.

It would be useful to have an overview of the submitted mitigation actions of developing countries and the related context, conditions and considerations associated with these mitigation actions. The

[3] International Energy Agency, 2010 Key World Energy Statistics.

secretariat, in accordance with the decision made by the COP16, has already compiled in one document (FCCC/AWGLCA/2011/INF.1) the information communicated by non-Annex I Parties on their mitigation actions, as well as the related context, conditions and considerations associated with these actions, including with regard to the support required for their preparation and implementation.

Generally, the submitted mitigation actions could be classified into four categories, in accordance with the related conditions or contexts, as shown in table 2.

For mitigation actions of category 1, as no associated conditions or context is mentioned, it may be interpreted that, if no further clarification follows, that the mitigation actions will be implemented by the relevant Parties themselves, without any outside assistance.

For mitigation actions of category 2, however, it is made very clear that their submitted mitigation actions are voluntary in nature and will be implemented in accordance with the principles and provisions of the Convention, in particular Article 4, paragraph 7, which states that "the extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology …" It is crystal clear that adequate assistance from the developed countries is a precondition at least for the full implementation of the submitted mitigation actions.

For mitigation actions of category 3, as a clear reference is made to CDM and/or other market-based mechanism, i.e. the use of the CDM or other market-based mechanisms which could be created under the Convention is not excluded, it may be interpreted that these countries view CDM and other market-based mechanism as one of the means to support the implementation of their proposed mitigation actions.

For mitigation actions of category 4, different types of mitigation action should be interpreted differently, with some similar to mitigation actions of category 1, some similar to mitigation actions of category 2 and others similar to mitigation actions of category 3.

In the case of project-based mechanisms, for example CDM, there is an additionality requirement for relevant projects, which means that without the incentive from the participation of the mechanisms, the emission reductions will not happen. The incentive is provided through the purchase of offset credits by developed countries. However, without the huge investment in most cases, compared with the carbon incentive, from the host country in the underlying CDM projects, the emission reductions are not possible either. This is especially true considering the reality that the benefits associated with the potential emission reductions to be achieved after 2012 by these projects are not secured because of the political uncertainty in connection with the negotiations. Therefore, the contribution of the host countries to the emission reductions should never be overlooked. In this sense, the emission reductions achieved thorough the participation in project-based mechanisms should be viewed as a result of joint efforts between the host country and those countries buying the credits.

As different categories of NAMAs were communicated, the appropriate consideration of the emission reductions achieved through project-based mechanisms in the calculation of emissions of developing countries for the purpose of assessing the implementation of their NAMAs is obviously dependent on the conditions associated.

For mitigation actions which rely solely on the host country's resources, such as the unilateral mitigation actions contained in Columbia's submission, the emission reductions achieved through the participation of project-based mechanisms should be excluded from the host country's efforts, as explained before.

Table 2: Four Categories of Mitigation Actions by Developing Countries

Category Number	Conditions and/or Context	Example
1	with no condition or context mentioned	Republic of Korea: "to reduce national greenhouse gas emissions by thirty (30) percent from the business-as-usual emissions by 2020"
2	with conditions and submitted in specific contexts	China, India, South Africa, Argentina, etc. For example, India: "India will endeavour to reduce the emissions intensity of its GOP by 20-25% by 2020 in comparison to the 2005 level. Please note that the proposed domestic actions are voluntary in nature and will not have legally binding character. Further, these actions will be implemented in accordance with the provisions of the relevant national legislations and policies well as the principles and provisions of the UNFCCC, particularly its Article 4, paragraph. This Communication is made in accordance with the15rovisions of Article 12 paragraph 1(b), Article 12 paragraph 4 and Article 10 paragraph 2(a) of the UNFCCC."
3	with conditions and with a clear reference to CDM and other market based mechanisms	Brazil, Peru and Gabon, etc. For example, Peru: Mitigation actions listed are voluntary in nature and are guided by the principles and provisions of the Convention, especially Article 4, paragraphs 1 and 7, Article 12, paragraphs 1 (b) and 4, and Article 10, paragraph 2(a). The mitigation measures do not exclude the use of the CDM or other market-based mechanisms which could be created under the Convention. The development and implementation of its mitigation actions it requires support from the international community through the range of financial and cooperative mechanisms available..
4	with conditions for some actions and no conditions for some others	Colombia: "The Party communicated the following preliminary mitigation actions in three categories: (a) Unilateral actions: Colombia will guarantee that at least 77 per cent of the total energy capacity installed by 2020 will be generated from renewable sources. These are actions that Colombia commits to undertake using its own resources, both private and public; the Party would not require any international or market-based funding; (b) Actions with financial support: (i) Colombia will reduce deforestation in the Colombian Amazon rainforest to zero by 2020; (ii) Colombia will …; (c) Actions related to carbon markets: …"

For mitigation actions where a clear reference is made to the project-based mechanisms, the consideration of the emission reductions achieved through the participation of the mechanisms should be consistent with the statement. For example, in the case of Brazil, the contribution of CDM to the emission reductions should not be excluded from the calculation of the efforts by the host country. Although reference is not made to any other possible market-based mechanisms that may be established under the Convention or the Protocol, it is reasonable to interpret that when a reference is made to the CDM, the reference is actually made to all project-based mechanisms, including those that may be established at a later stage.

For the mitigation actions which are submitted under the condition of assistance from the developed countries, a question related to the consideration of the emission reductions achieved is, how the assistance should be defined and whether CDM or other project-based mechanisms can be considered as a means of support from the developed countries. If a general definition on assistance is chosen, then CDM and other market-based mechanisms could be considered as a means of support, and the contribution of these mechanisms should not be excluded when assessing the mitigation actions of relevant developing countries. If a narrow definition is chosen, then the option of excluding the contribution on mitigation from CDM and other project-based mechanisms may be considered, but under certain conditions. CDM projects, for example, generate credits which could be used for offset purpose on a periodical and ex post basis. Only emission reductions that have already been sold to the developed countries could be considered as a result of joint efforts between the host country and relevant developed countries, but not the emission reductions that could be generated by the project during its whole crediting period. Currently, most of the sales in the CDM market only cover transactions of Certified Emission Reductions (CERs) that could be generated before 2012, i.e. potential CERs to be generated after 2012 are still in the hands of the developing countries and the corresponding mitigation effects should be considered as efforts of the developing countries at this point in time.

With the progress of the negotiations on the post-2012 climate regime, this situation could change. Considering that most of the mitigation actions of the developing countries are expressed in the form of year 2020, not a certain period of time, the mitigation effects of the CDM or other project-based mechanisms should not be excluded as long as the credits to be generated in year 2020 is within the hand of the host country, even in the case of a narrow definition of assistance.

For mitigation actions with no condition, like the communicated NAMAs of the Republic of Korea, it is reasonable that the contribution from CDM or other market-based mechanisms is excluded. But in case that the credits are not sold, then the emission reductions should however be attributed to the host country.

It is possible that in a later stage, some developing countries will provide clarification regarding their submitted NAMAs. If further clarification is provided, then the clarifications should prevail.

Regardless of the form of the NAMAs of a developing country, double counting should always be avoided, from the perspectives of both the developing countries and the developed countries. From the developing countries' perspective, if offsets are generated and transferred to the developed countries for the purpose of fulfilling their mitigation commitments, then the financial flows associated with the transaction of the credits cannot be considered as fulfilling the financial commitments of the developed countries, and vice versa. From the developed countries' perspective, the same emission reductions achieved by the developing countries which require assistance to be realized should not be supported more than once. Depending on the outcome of the negotiations, it is possible that some other market-based mechanisms will be established under the Convention or even the Protocol. There will also be support mechanisms for NAMAs. Therefore, the same emission reductions cannot qualify under two or more mechanisms established under the Convention or the Protocol. However, as explained before, the double counting issue should be dealt with on the basis of emission reductions, not on the basis of mitigation actions. Furthermore, emission reductions achieved with the support of the developed countries in many cases cannot be viewed as contribution of developed countries only, but joint contribution by both the developed and the developing countries. Such being the case, the double counting concept should be very carefully used when referring to contribution of developed and developing countries or a general agreement should be reached between the two sides.

Besides the mechanisms established or to be established under the Protocol and the Convention, there also exist many other mechanisms encouraging emission reductions to be generated by projects in developing countries for various purposes, including the generation of offset credits. Similarly, the double counting issue should be considered on the basis of emission reductions, not on the action or even a broader basis.

4. Accounting of GHG Emissions in China after 2012

China's submitted mitigation actions, as explained before, are conditional on the assistance to be provided by the developed countries. It is however up to now not clear how China's internal process will look like in terms of the accounting of GHG emissions of the country and thus assessment of the effect of the mitigation actions.

The Government of China is now still working on the possible break down of the national GHG emissions control target for year 2020 and it is not clear according to the public document whether the target will be divided into sub-targets for regions or sectors or both. However, according to the recently published Outline for the 12th Five-Year (2011-2015) Plan, restrictive targets will be divided into sub-targets for the provinces (autonomous regions and municipalities). The Government of China also has a tradition of dividing the national targets into sub-targets for provinces (autonomous regions and municipalities) rather than sub-targets for the sectors, with one possible reason being that there are no authorities in the sectors anymore that can bear the responsibility. It is therefore almost certain that China's national GHG control target for year 2015 will be divided into sub-targets for provinces (autonomous regions and municipalities).

Although whether there will also be targets for the sector are not clear, it is also possible that there will be GHG emission control targets for some large industrial enterprises, considering the experience of the 11th Five-Year (2006-2010) Plan. According to the Outline for the 11th Five-Year (2006-2010) Plan, China's GDP energy intensity was set to reduce by about 20% during this period. In order to achieve that target, it was divided into sub-targets for each province (autonomous region and municipality). At the same time, as the total energy consumption of the top 1000 energy consumers accounted for about 1/3 of the whole country's energy consumption in year 2004, the Government of China also set specific energy conservation targets for each of these enterprises for the period of 2006-2010. According to the Outline for the 12th Five-Year Plan, energy conservation and low carbon activities will be implemented in about 10,000 enterprises.

CDM projects have contributed not only to the emission reductions, but also reduction of energy consumption of China, for the period of the 11th Five-Year Plan. However, it is very clear that the contribution of CDM to the energy consumption reduction is not excluded when the efforts of the local governments were assessed by the central government. On the contrary, the local governments and the major energy consuming enterprises were encouraged to utilize all possible approaches, including the CDM, to help them to realize the established targets. Similarly, in the 12th Five-Year Plan, the contribution of the CDM on the emission reductions and on the energy consumption reduction will not be excluded from the efforts of the local governments.

Considering that the proposed mitigation actions of the developing countries are voluntary in nature, are not internationally binding and are conditional on the assistance from the developed countries, the exclusion of CDM from the efforts of the host countries will have negative impacts on the enthusiasm of the developing countries and discourage them in putting forward ambitious mitigation actions in the future.

During the 11th Five-Year Plan period, very significant efforts were made by China to reduce the energy intensity of the GDP and some measures taken by some local governments to reduce energy consumption even have already caused serious impacts on the daily life of the people. For example, in some regions, the supply of electricity to not only the industry but also the households was restricted. This is just one example on how serious the established energy and environment related targets are considered and how ambitious the established targets are.

According to the Outline for the 12th Five-Year Plan, China will gradually establish an emissions trading market. That market may start in the form of one or several regional or sectoral emissions trading markets. As long as the markets are domestic ones and are not connected with markets in other countries, these markets will only have impact on the counting of GHG emissions of different regions in China and will not change the counting rules of the national GHG emissions in China. However, if the market is connected with markets in other countries, then counting rules similar to those established under the Protocol should apply. This step will take quite some time to happen, considering for example both political and technical difficulties.

5. Possibility for Crediting Projects in Developing Countries after 2012

Compared with the current situation, after 2012, some developing countries will implement NAMAs as communicated to the secretariat, and then a relevant question may arise, i.e. whether it is appropriate to credit new projects developed after 2012 under CDM or any other market-based mechanisms or even to continue to credit projects developed before 2012.

In developing countries or sectors of the developing countries where the NAMAs to be implemented are conditional, no contradiction is expected between implementation of the NAMAs and continued crediting of projects, regardless of existing or new ones.

If it is clearly mentioned that contribution from the CDM will be excluded or only domestic resources will be used to implement the NAMAs, then crediting of the projects could be ceased, but with details to be worked out according to the specific conditions and in cooperation with the relevant national authorities and also possibly the project participants.

In the case that the NAMAs are not conditional, it is also necessary to continue the crediting of existing CDM projects until the end of their crediting period, given that the impacts of these projects on emissions should have already been taken into consideration by the host country in the decision making process. If existing projects are not allowed to generate credits in their crediting period, then the basis for proposing the NAMAs has changed and it may be necessary for the host country to reconsider the decision. This issue is rather straightforward in case of fixed crediting period, but may not be so in case of renewable crediting period, because in this case existing projects need to go through further scrutiny before they could continue to generate credits. To avoid any possible double counting, a decision could be made not to allow the crediting of new projects after 2012 or renew the crediting period of existing projects.

Depending on the outcome of the negotiations, some new market-based mechanisms may be established. There will also be support for mitigation actions in developing countries in other forms. If the same sector is covered by more than one mechanism, then there is a high possibility that double counting may occur and measures should be taken to avoid this, preferably limiting the possible eligibility of one sector only to one mechanism. It is also possible that a registry is established in the host country and also at the international level, to register all mitigation projects in developing countries that have received financial or other forms of support from outside the country. Any mitigation project seeking support from outside the country, whether under the market-based mechanism or not, will be checked against the registry to ensure that no double accounting will occur. The check will ensure that no mitigation projects or the corresponding emission reductions which have already received support will be supported again, and no financial flow from the developed countries can both generate offset credits and be considered as fulfilling the financial obligations of the developed countries. Given the large number of possible mitigation projects, the operation of such a system may require considerable resources.

Even if double counting is avoided, the Parties may also need to reach an agreement on how to classify the financial flows from the developed countries to the developing countries, for example, which type of financial flows could be considered as support and which could generate offset credits. Such a discussion could take a long time, and a simple way is that as long as double counting is avoided, it is up to the developed countries which provide the financial flow to make the choice.

6. Conclusion

CDM has played an important role in mitigating the GHG emissions in China and some other developing countries, which have submitted to the secretariat their NAMAs that may be implemented. How to account the emission reductions to be achieved by the CDM projects during the period when the NAMAs will be implemented could be a very important issue.

Different consideration should be given to emission reductions to be achieved through project-based mechanisms to the calculation of emissions for the purpose of assessing the implementation of NAMAs, according to the category of mitigation action:

- For mitigation actions which rely solely on the host country’s resources, the emission reductions achieved should be excluded from the host country’s efforts.

- For mitigation actions where a clear reference is made to the project-based mechanisms, the consideration should be consistent with the statement.

- For the mitigation actions which are submitted under the condition of assistance from the developed countries, the accounting of the emission reductions to be achieved will depend on the definition of the assistance. If CDM and other market-based mechanisms are considered as a means of support, then the contribution of these mechanisms should not be excluded from the efforts of the developing countries. Otherwise, emission reductions that have not been sold to the developed countries should be considered as an effort of the developing countries.

- For mitigation actions with no condition, the contribution from CDM or other market-based mechanisms should be excluded. But in case that the credits are not sold, then the emission reductions should however be attributed to the host country.

Regardless of the form of the NAMAs, double counting should be carefully assessed and avoided, for the sake of transparency and reliability of the international mitigation cooperation. Double counting should be dealt with on the basis of emission reductions, not on the basis of mitigation actions. If offsets are generated and transferred to the developed countries for compliance purpose, the financial flows associated with the transaction of the credits cannot be considered as fulfilling the financial commitments of the developed countries, and vice versa. The same emission reductions cannot qualify under two or more mechanisms established under the Convention or the Protocol.