# CDM IN THE KYOTO NEGOTIATIONS:

*How CDM Has Worked as a Bridge between Developed and Developing Worlds?*

NAOKI MATSUO (n_matsuo@climate-experts.info)
*Climate Experts*
*Isshiki 1433-3, Hayama, Kanagawa 240-0111, Japan*

**Abstract.** The Clean Development Mechanism (CDM) under the Kyoto Protocol to the UN Framework Convention on Climate Change (UNFCCC) has its origins in the decade of UNFCCC negotiations. "Joint implementation" and "activities implemented jointly pilot" opened the door for the project-based mechanisms between developed and developing countries. The US proposal of the Joint Implementation in the Kyoto Protocol negotiations was almost identical with CDM approved in Kyoto; however, a detour around the Clean Development Fund (CDF) concept raised by Brazil in the negotiations catalyzed the mutual understanding on the win-win nature of the concept of *joint* implementation. CDM has been played an important role to bridge the developed and developing countries in its development process initiated as the joint implementation in the UNFCCC, and can lead to the cooperative future in the implementation stage starting from the year 2003, including the development of future commitments beyond 2013.

**Keywords:** CDM, Kyoto negotiations, US, market mechanism, joint implementation

**Abbreviations:** UNFCCC – United Nations Framework Convention on Climate Change; INC – Intergovernmental Negotiating Committee; COP – Conference of the Parties; JI – Joint Implementation; AIJ – Activities Implemented Jointly; CDM – Clean Development Mechanism; CDF – Clean Development Fund; AGBM – Ad-Hoc Group on Berlin Mandate; CoW – Committee of the Whole; USIJI – US Initiative on Joint Implementation; CCAP – Climate Change Action Plan

## 1. Introduction

Clean Development Mechanism (CDM) is a new and innovative channel to facilitate climate mitigation in developing countries.

The international fora successfully adopted the rules and modalities of the Kyoto Protocol at the 7$^{th}$ Session of the Conference of the Parties (COP 7) to the UN Framework Convention on Climate Change (UNFCCC) in Marrakech, Morocco in 2001 (UNFCCC, 2001). As for CDM, the Executive Board—the supervisory body for CDM—has been struggling to decide detailed operational rules of CDM for more than a year, including the accreditation procedures of the Operational Entities which are the third parties to validate the projects and verify/certify the emission reductions (UNFCCC, 2003). In 2003, approval process

by the CDM Executive Board of new methodologies on baseline and monitoring started in March; some projects are expected to be registered as CDM by the end of this year. The year 2003 is the starting year of the Kyoto mechanisms given the anticipated entry into force of the Kyoto Protocol by the ratification of Russia.

Bearing in mind the current development of CDM, this paper tries to backcast how CDM was invented under which intentions in the history of negotiations.

The concept of CDM has its origin in the UNFCCC (United Nations, 1992). The key player in negotiations was the US, which tried to utilize the market mechanism as much as possible. Integration of the sustainable "clean" development to the market-driven cost-effectiveness was incorporated in the US proposal (US Delegation, 1997; AGBM, 1997a) and figured out in the original concept of Clean Development Fund (CDF) proposal by Brazil (AGBM, 1997) at the end of AGBM (Ad-Hoc Group on Berlin Mandate) negotiation process toward adoption of the Kyoto Protocol (United Nations, 1997).

The objective of the paper is to look forward and consider the role and implications of CDM in the future international climate regime development, by lessons learned through historical development concerning CDM.

## 2. Joint Implementation under the UNFCCC

### 2.1. Joint Implementation to bring market mechanisms into climate mitigation

It is well known that the concept of "joint implementation (JI)" in the UNFCCC (United Nations, 1992) is the origin of CDM. Joint implementation in the UNFCCC is specified in the Article 4.2 and Article 3.3 as (*italicized* by the author):

> 4.2 (a) ... These Parties may *implement* such policies and measures *jointly* with other Parties and may assist other Parties in contributing to the achievement of the objective of the Convention ...;
>
> 4.2 (b) ... each of these Parties shall communicate ... detailed information on its policies and measures ..., with the aim of returning individually or *jointly* to their 1990 levels these anthropogenic emissions of carbon dioxide and other greenhouse gases ...;
>
> 4.2 (d) ... The Conference of the Parties, at its first session, shall also take decisions regarding criteria for *joint implementation* as indicated in subparagraph (a) above.

> 3.3 The Parties should take precautionary measures ..., taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, .... Efforts to address climate change may be carried out *cooperatively* by interested Parties.

It was amazing that even without the quantified targets, the UNFCCC had embedded all important elements to utilize the market (to be specified in the Kyoto Protocol) including its conceptual basis as the JI and operational basis as the emissions monitoring and reporting framework in such an early stage.

The original economic concept of the JI was introduced by Norway and the Netherlands. However, it was the former Bush administration of the US that strongly proposed to incorporate this "JI" in the text of the UNFCCC in such an early stage. It was well recognized by the US negotiators that the market-based instruments would be playing the key role for letting the US firms engage in climate mitigation domestically and also internationally in the future.[1] Historically, the US Environment Protection Agency is on the way to design its $SO_2$ allowance trading scheme under the Acid Rain Program (EPA, 2002) based on the lessons learned from pioneering emissions trading programs at that time.

## 2.2. Activities Implemented Jointly under the pilot phase

The original concept of the JI was broad including emissions trading and the "bubble" in the text of the Convention. However, the criteria specified in the Article 4.2 (d) above were recognized as those for project-based mechanism.

In the preparatory negotiations at the Intergovernmental Negotiating Committee (INC) under the chairmanship of Raúl Estrada-Oyuela (Argentina)—who chaired the AGBM process for negotiation of the Kyoto Protocol—just before the COP 1 in Berlin, the negotiators were not able to agree on such criteria because of the lack of common understanding on the concept and distrust toward the industrialized countries by developing countries.

Finally, the negotiators decided to start "Activities Implemented Jointly (AIJ)" under the pilot phase at the COP 1 (Decision 5/CP.1) in Berlin, Germany in 1995. The principles agreed in Berlin was

[1] Based on the personal communication with Robert Reinstein, the chief negotiator of the Department of State in the UNFCCC negotiations.

- AIJ between Annex I and non-Annex I Parties will not be seen as the fulfilment of the current commitments of Annex I Parties under Article 4.2 (b) of the Convention;
- AIJ are supplemental, and should only be treated as a subsidiary means of achieving the objective of the Convention;
- AIJ in no way modify the commitments of each Party under the Convention;
- no credits shall accrue to any Party as a result of GHG emissions reduced or sequestered during the pilot phase from AIJ.

And the COP 1 decided to have the comprehensive review of the pilot phase in order to take a conclusive decision on the pilot phase and the progression beyond that, no later than the year 2000 (Dixon, 1990). It was premature to fill the gap to agree on the Kyoto-type JI concept at the stage of COP 1 between developed and developing countries, in addition to the ambiguous conceptual understanding of JI without the quantified targets.

However, although CDM and Article 6 project activities under the Kyoto Protocol are being implemented at present, the negotiators could not complete this *pilot* phase. The sixth synthesis report of the AIJ (FCCC/SBSTA/2002/8) indicated that 157 projects are registered with the participation of 54 Parties, with 74 % of the total host countries in the non-Annex I region (SBSTA, 2002).

## 3. The US Proposal for the Kyoto Protocol

### 3.1. The US domestic situation behind the negotiations

A few years before COP 1, the Clinton administration, following the former Bush administration, struggled to develop the US Climate Change Action Plan (CCAP) in 1993. As the so-called Btu (British thermal unit)-tax proposal—broad based energy tax proportional to its energy content—was rejected by the Congress, the Clinton administration was not in situation to enforce strong measures domestically. The CCAP resulted to be a plan based on voluntary measures by the entities, and provided the basis of the current US climate policy to date.

Moreover, just before the COP 3, the Senate adopted the so-called Byrd-Hagel Resolution in June 1997. It tried to restrain the administration by stating that the Kyoto Protocol (or any subsequent international climate change agreement) should not "(a) mandate new

commitments to limit or reduce GHG emissions for the Annex I Parties, unless the Protocol also mandates new specific scheduled commitments to limit or reduce GHG emissions for developing country Parties within the same compliance period, or (b) would result in serious harm to the economy of the US . . . "

Under such domestic conditions, the only and ultimate instruments the Clinton/Gore administration can rely on—in order to agree on some quantified target—were the market-based instruments such as emissions trading and joint implementation, bearing the breathtaking success of the US $SO_2$ allowance trading program in mind.

### 3.2. The US Proposal

The US Proposal for the Protocol submitted in February 1997 and its small modification in FCCC/AGBM/1997/MISC.1/Add.4 (AGBM, 1997a) revealed what the US wanted under such domestic situations. Apparently, the most remarkable element in the proposal is to include *emissions trading* in its Article 6 and the relevant institutional framework to support it (so-called Articles 5, 7 and 8 elements in the Kyoto Protocol).

As for the project-based mechanism, the US proposal says:

**Article 7**
**Joint Implementation**

1. Any Party that is neither in Annex A nor B may generate tonnes of carbon equivalent emissions allowed through projects that meet the criteria set forth in paragraph 2.
2. In addition to any criteria adopted by the Parties to this Protocol, the following criteria shall apply to projects:
   (a) Projects must be compatible with and supportive of national environment and development priorities and strategies, as well as contribute to cost-effectiveness in achieving global benefits;
   (b) Projects must provide a reduction in emissions that is additional to any that would otherwise occur.
3. [Additional provisions to be added on calculation, measurement, monitoring, verification, review, reporting]
4. Any Party that generates tonnes of carbon equivalent emissions allowed consistent with this Article may:
   (a) hold such tonnes of carbon equivalent emissions allowed; or
   (b) transfer any portion thereof to any Party.

5. An Annex A or Annex B Party may acquire tonnes of carbon equivalent emissions allowed under this Article for the purpose of meeting its obligations under Article 2, provided it is in compliance with its obligations under Article 3 (Measurement and Reporting).

6. Any Party that is neither in Annex A nor Annex B that generates or acquires tonnes of carbon equivalent emissions allowed under this Article shall notify the Secretariat annually of the quantity, origin, and destination of such tonnes.

Here, Annex A and B Parties in the proposal are those in Annex I Parties to the Convention and other opt-in non-Annex I Parties.

It is interesting that this project-based mechanism with transferable credits—Joint Implementation—in the US proposal is effective only between Parties with targets and those without targets (Article 7.1). In other words, in the US proposal, a project-based mechanism is not applied for projects between capped countries. Only emissions trading (Article 6 in the US proposal) is allowed for these countries. It can be recognized that the JI concept in the Kyoto Protocol (Article 6 in the Kyoto Protocol) is a subspecies of emissions trading with transfer of the allowances triggered by a project implementation.

Another characteristic feature of the JI in the US proposal is that it emphasizes the national environment and development priorities and strategies of the host country (Article 7.2 (a)). In this regard, it is almost the same as CDM under the Kyoto Protocol in its context.

### 3.3. JI concept in the Kyoto negotiations

Although the JI concept in the US proposal—supported by many industrialized countries—was almost the same as CDM, and emphasized its *win-win* nature as an equitable benefit-sharing mechanism between participating countries with the experiences of the AIJ pilot (especially under the US Initiative on Joint Implementation (USIJI)) by the US, it was rejected strongly by the developing countries in the AGBM negotiations (Depledge, 2000).

It was not certain whether the JI between Annex I and non-Annex I Parties were seriously opposed, emotionally objected, or recognized as a tactics in the negotiation in the Group of 77 and China. In the negotiations through to Kyoto, this item had been one of the deadlocks without any possible solution, until the Chairman Estrada picked up the Clean Development Fund proposal raised by Brazil as the alternative of JI between Annex I and non-Annex I Parties (Grubb, *et.al.*, 1999).

## 4. CDF: Clean Development Fund

### 4.1. Brazilian proposal

In FCCC/AGBM/1997/MISC.1/Add.3, Brazil released its package of proposals[2] at the end of May 1997 (AGBM, 1997b).

The Clean Development Fund (CDF) concept in the proposal has some important elements as follows (in the explanatory text attached to the proposal):

- ... a feedback mechanism by which the departure by a Party from its commitment to maintain its emissions below a ceiling results in an obligation to compensate such departure by other means, such that the net effect will constitute a positive contribution to the global mitigation of climate change;
- ..., in the case of emissions above the ceiling, a compulsory contribution to a non-Annex I clean development fund to be managed by the financial mechanism of the Convention for the promotion of mitigation measures in non-Annex I Parties. ...;
- The proposed scale is equivalent to 10 US dollars per ton of carbon avoided which, according to some estimates, is a value likely to promote the implementation of non-regret measures by non-Annex I Parties;
- ... Annex I Parties be allowed to use this difference as a measure in trading effective emissions among themselves, that is, a Party that, over an evaluation period, reports effective emissions above its ceiling may compensate this by "purchasing", at a market value, an equivalent number of effective emissions, in GtCy, from another Party that has reported effective emissions below its ceiling.

The important fact is that this is proposed by a developing country (Brazil).

### 4.2. Analysis of the CDF proposal

Taking a close look at the CDF proposal, we can find many interesting ideas embedded, such as (a) financial penalty for non-compliance of

[2] Brazilian proposal included a scientific and methodological aspects for allocating emission targets based on the contribution of each country to temperature rise. This item was not put on the table of negotiations in the end as a promising candidate. However, it remains on the agenda to be discussed as a research item of the SBSTA and the COP to date.

the Annex I Parties, (b) ear-marked financial mechanism for mitigation projects in non-Annex I Parties, (c) penalty level: US$ 10/tC determined by promoting level of no regret options, and (d) link to the emissions trading (although developing countries opposed to the concept of emissions trading, in principle).

We find a number of its similarities to CDM, however, the biggest difference was that CDF concept includes financial penalties on Annex I Parties for non-compliance. Therefore, it was unrealistic for Annex I Parties to accept such a concept. On the other hand, this was supported by non-Annex I Parties, appreciated as a proposal made by a non-Annex I Party (Brazil).

## 5. Clean Development Mechanism

### 5.1. Miraculous interpretation of the CDF

Through the behind-the-door negotiations—maybe backed by the previous groundwork laid by the US negotiators—, the CDF concept drastically opened the door to a consensus in the second week's Committee of the Whole (CoW) session—final stage of the AGBM process—at the COP 3.

The CDF capitalizes on the money from Annex I Parties—by implementing the mitigation projects in non-Annex I Parties—to compensate for the excess emissions above the target level. On the reverse side of the coin, an Annex I Party can spend money in implementing the mitigation projects in non-Annex I Parties and, by using such reductions, the Annex I Party can comply with the target.

These two are very similar. However, this innovative interpretation allows the CDF concept to be transformed into a *mechanism* promoting the market-based investment, instead of penalizing the Annex I Parties financially (Grubb, *et al.*, 1999).

### 5.2. CDM as the win-win mechanism

Finally, CDM was agreed at the CoW/COP 3 as the "Kyoto surprise", filling the gap between Annex I and non-Annex I Parties. The intrinsic nature of the mechanism as a win-win solution—fostered from the original JI concept in the Convention—was widely recognized by both Annex I and non-Annex I Parties.

Two objectives of CDM were specified in the Article 12.2 of the Kyoto Protocol as:

> The purpose of the clean development mechanism shall be to assist Parties not included in Annex I in achieving sustainable de-

velopment 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 under Article 3.

These are almost the same as Article 2 (a) and 5 of the US proposal. The transferability of the credits is mentioned both in the US proposal and Brazilian proposal.

The international fora spent a lot of resources and time for negotiation to attain mutual understanding on the common concept by both sides. The CDM can be recognized as the fruit of such efforts, and may bridge the developing and developed worlds through the *joint* implementation of mitigation projects.

## 6. CDM in the Marrakech Negotiations and Beyond

### 6.1. Keeping credibility of the mechanism

As CDM appeared at the end of Kyoto negotiation, the negotiation process after COP 3 was to fill the gap of interpretations of CDM and establish the credible institutional framework of the Kyoto regime as a whole.

The international fora had been struggling until they reached the consensus of the Marrakech Accords as the "Rule Book". The biggest obstacle was the withdrawal of the US in March 2001 by new Bush administration. It was just after the failure in reaching agreements at the COP 6 in The Hague. Despite such disturbance, the COP succeeded in reaching the Bonn Agreements as the core elements of the rules and modalities, and finalized the rules in the form of the Marrakech Accords in November 2001. The international efforts for more than 10 years did keep the momentum.

In the after-Kyoto negotiations, the international fora were facing a big challenge to design how to operate such a huge institutional framework. There had been no experiences to operate market-based mechanisms of GHGs under governmental or inter-governmental jurisdictions. The Article 5, 7 and 8 elements such as GHG inventory preparation with the report and review processes are based on the scheme already operationalized under the Convention framework.

As CDM is the mechanism between capped and non-capped countries, the emission *reductions* are to be determined under the standardized institutional framework, such as the CDM Executive Board (supervision) and the Operational Entities (validation of CDM projects and verification/certification of the reductions).

After establishment of the CDM Executive Board at the COP 7, the Board has continued to design the detailed operational rules and procedures of CDM. In 2003, the first Operational Entity is expected to be designated at COP 9 (Milan, Italy) in December.

The approval process of the new baseline and monitoring methodologies has started in March, 2003. In its first round, no methodologies are approved immediately. This may be recognized that the CDM Executive Board (and the Methodology Panel under it) tries to keep environmental integrity stringently.

Although CDM has undergone its long concept-building processes, and was introduced lastly in the Kyoto negotiations, it is the front-runner of the Kyoto regime today, highly expected by both Annex I and non-Annex I Parties as a win-win opportunity.

### 6.2. Development of Commitments

The biggest political issue we are facing after operationalizing the Kyoto regime is how to design the post-2012 scheme. One of them is the commitments of Annex I Parties in the 2nd Commitment Period. This may need tough negotiations, however, other issue concerning the *participation* of developing countries and the US may be more difficult.

The history of the development of consensus building concerning CDM may give us good lessons learned in this context. The key concepts are the *utilizing the market* and the *co-benefits* other than climate mitigation.

For the US, especially, business opportunities through the new framework may be the biggest incentive to be on the side of other industrialized countries. For developing countries, win-win nature of the market-based mechanisms is expected to be understood through the experiences of CDM projects step-by-step.

The institutional arrangement to promote 'participation' has a lot of channels. As shown in the history of CDM, proper choice of instruments (including the process to propose them) is the key to get successful outcomes. For the post-2012 scheme, "Amendment of the UNFCCC" can be a solution as an alternative to expanding the Kyoto Parties, for example. As we see in the history, the UNFCCC has already been ratified by 188 Parties including the US and most developing countries, includes commitments for every country, incorporates the 'JI' concept and GHG inventory system in it, so can be developed to some Kyoto-like framework if some sort of quantified targets (which can be classified into the income levels) are set.

In any case, it is important to seek channels to get mutual understanding from every Party step by step.

## 7. Concluding Remarks

We have seen the history of getting to CDM over the ten year process of climate negotiations.

The biggest obstacle in the negotiations is the gap between developed and developing countries in many aspects. As we have seen, CDM has played an important role for mutual understanding in its developing process. Moreover, we see huge expectations of potential fruits by both countries in the future.

Now we are facing to the implementation stage of CDM; the success of CDM will bring the success of international climate mitigation efforts in a cost-effective manner bringing mutual understanding and benefits. This can open a door for future development of the international climate framework in the future.

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*Address for Offprints:*
Climate Experts
Isshiki 1433-3, Hayama, Kanagawa 240-0111
Japan