

Negotiating the CDM a North–South perspective

Recommendations on the draft
negotiating text for COP-6



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ISBN 81-85419-72-8

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Published by



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Contents

Introduction	1
Host country issues	2
Investor country issues	7
Fungibility with other mechanisms	10
Project implementation criteria	13
Institutional issues	27
Conclusions	31

Preface

Negotiations on the CDM (clean development mechanism) have reached a critical phase, and expectations are high that SBSTA-12 (12th meeting of the Subsidiary Body for Scientific and Technological Advice) and COP-6 (Sixth Session of the Conference of the Parties) would be able to resolve outstanding issues to make this provision of the Kyoto Protocol operational.

But the diversity of views and positions at this stage provide a daunting challenge to negotiators for hammering out agreement early. Solutions that are articulated would have to be based on principles contained in the FCCC (Framework Convention on Climate Change) and the Protocol itself, while at the same time taking fully into account the operational problems likely to arise during implementation. There is clearly a need for intellectual analysis and research to establish a strong basis for any lasting and acceptable agreement.

This is what the Pembina Institute and TERI have attempted on the basis of prolonged study of the process, the implications and inputs of possible texts of the agreement, and their adherence or otherwise to the provisions of the FCCC and the Kyoto Protocol. This effort is the collaborative outcome of work in partnership involving an institution from the North and another from the South, which is symbolic of the need for such partnerships in all climate change related work in general.



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Acknowledgements

This paper is part of a project funded by the Canadian International Development Agency to explore the possible application of the CDM (clean development mechanism) in Asia. Project partners include the International Institute for Sustainable Development in Winnipeg, Canada; TERI, New Delhi, India; and the Pembina Institute for Appropriate Development in Drayton Valley, Canada. Other participants in the project are drawn from the Asian Energy Institute, including representatives from Bangladesh, China, and Indonesia.

This multi-year project is designed to produce several research papers on the CDM.

- A discussion of key outstanding issues related to the implementation of the CDM
- Implementing the CDM: pursuing sustainable development and climate protection
- Country reports outlining key opportunities for the following countries in the CDM: India, China, Bangladesh, Indonesia, and Canada
- A 'how-to guide' for Canadian investors and project developers on the steps required to participate in a CDM project
- Detailed case studies of potential CDM projects in the Asian countries listed above.

The project will also host workshops for prospective CDM project investors and developers. The first of these was held in Canada in May 1999 and another is planned for 2000.

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Mention must also be made of Kim Anderson, Pembina Institute; and Ulka Kelkar, Meena S Janardhan, R Ajith Kumar, T Radhakrishnan, and T P Sankar, TERI, for their contributions to this publication.

Introduction

This paper summarizes the views of TERI and Pembina (The Pembina Institute for Appropriate Development) on several key implementation issues related to the CDM (clean development mechanism). The CDM was established under the Kyoto Protocol to the UNFCCC (United Nations Framework Convention on Climate Change) in late 1997. However, several issues related to the implementation of the CDM continue to be the subject of intense negotiations leading up to COP-6 (sixth session of the Conference of the Parties to the UNFCCC). These issues concern the governance and mechanics of the CDM – and have implications for the environmental effectiveness of the Kyoto Protocol and for its contribution towards sustainable development in developing countries.

At the COP-4 held in Buenos Aires in November 1998, a work programme¹ was adopted for SBSTA (Subsidiary Body for Scientific and Technological Advice) and the SBI (Subsidiary Body for Implementation) to address these unresolved issues. Twenty-two of these were general issues related to the ‘Kyoto mechanisms’ (including the CDM), and 50 related specifically to the CDM .

Since COP-4, various negotiating governments and stakeholders have submitted several position statements, and numerous workshops have been held to discuss issues around the implementation of the CDM. In a document that was recently published by the UNFCCC, different government positions are summarized in the form of negotiating text for the upcoming UNFCCC meetings (UNFCCC Secretariat 2000). This is referred to as the ‘COP-6 negotiators text’ throughout this paper.

This paper does not address all the specific areas listed in the COP-6 negotiators text. It does, however, present a consensus view on a number of important issues that are of interest to Pembina and TERI.

¹ Work Program on Mechanisms (FCCC/CP/1998/L.21; 13 November 1998)

These issues include the following

- capacity building in developing countries,
- equity among developing countries for participation,
- supplementarity of trading to domestic action,
- fungibility among the three Kyoto mechanisms,
- baseline determination,
- project additionality criteria,
- sustainable development criteria,
- role of the Executive Board and COP/MOP (Meeting of the Parties) and other institutional issues, and
- configuration of the adaptation fund and administrative charges.

The discussion of each key issue presented in this paper contains:

- a brief summary of the issue;
- a brief summary of the current negotiating positions of government negotiating groups (i.e. the Umbrella Group,² G77/China, the EU [European Union], the AOSIS [Alliance of Small Island States], etc.) on the issue; and
- recommendations from Pembina and TERI on how negotiators should resolve these issues to further the joint pursuit of sustainable development and climate protection.

Host country issues

Capacity building in developing countries

Issue

The concept and relevance of the CDM is not clearly understood by many developing-country Parties, and, hence they continue to have strong reservations about the CDM. There is an urgent need to create awareness about the CDM at the level of the Parties. For example, many private sector firms in developing countries are generally favourable to and enthusiastic about opportunities emerging due to the CDM. But a large proportion of the sector still lacks awareness and understanding of the opportunities and issues related to the CDM. Several developing countries have identified special needs of less developed countries which include identification of

² The Umbrella Group comprises Australia, Canada, Iceland, Japan, New Zealand, Norway, the Russian Federation, Ukraine, and the USA.

technology needs, assimilation of technology, and capacity building in the selection, design, and evaluation of CDM projects.

Debate

In the negotiating text for COP-6, G77 and China have insisted upon incorporating a capacity-building component in each CDM project. However, there is no specific mention of how this could be achieved.

Although there is consensus on the need to build capacity around the CDM in developing countries, the source of funds for such capacity building and training activities is under debate. Should ODA (official development assistance) funding be allocated for such activities or do the multilateral lending institutions have a role? For example, should the mandate of the GEF (Global Environment Facility) be expanded to include capacity building around the CDM?

Viewpoint

There is already a furore about ODA funding being limited, and there is a fear that allowing ODA funds for capacity building may detract from its original objectives. Pembina and TERI agree that ODA funding must not be used to secure CERs (certified emission reductions) for industrialized countries. However, we believe that if a developing country identifies capacity building around the CDM as a priority, then ODA funds should be eligible for that purpose because it may help to leverage much greater levels of investment from both the public and private sector.

We also believe that the GEF could include capacity building for the CDM under the umbrella of ‘enabling activities’ and, along with the UNFCCC Secretariat, could play an active role in pursuing this task. In addition, multilateral banks and regional development banks could include this component under the umbrella of training activities they normally undertake in member countries.

It is also our view that ODA funds for building capacity must be new and additional and that do not draw upon existing ODA funding levels already allocated to normal technical projects and developmental work. This should be true whether the funding comes from an individual donor country or a multilateral lending institution.

Equity among developing countries

Issue

The CDM has been proposed as a mechanism to address current inequities between the developing and industrialized countries. Further issues around equity among nations in the non-Annex I group have been raised. Within this group, some countries, in particular the African countries, fear that most CDM activities may be concentrated in a few prominent developing countries.

Debate

Based on experience from the AIJ (activities implemented jointly) pilot, there is debate about whether regional credit shares or quotas should be fixed or whether preferential treatment should be given to the least developed countries under the CDM to ensure a more equitable global distribution of projects. Establishing this type of requirement could have implications for the overall transactional efficiency of the CDM.

In the negotiating text, several countries have emphasized their views on this issue. The emphasis is on implementing the CDM such that the right to development of countries is treated at par, and balanced regional activity is undertaken. Gambia and Senegal are of the view that the CDM should be managed through a multilateral fund, which should be managed by the Executive Board. Further, the Board should select projects and allocate resources. Costa Rica has expressed concern about Parties that are often marginalized by market-based mechanisms, and feels that the Executive Board should take steps to ensure that CDM investments take place in such countries. China too supports the Board's role in arranging funds for projects where necessary. It has further elaborated that mitigation of cost surpluses from CDM projects, arising from the higher costs of undertaking emissions reduction in an Annex I Party as against a non-Annex I Party, should be shared. India and Senegal have argued that CDM should not lead to perpetuation of inequities between developed and developing-country Parties.

The Africa group is of the view that a CDM equity fund should be created to finance CDM activities for addressing imbalances in the regional distribution of CDM activities.

It has also been proposed that Annex II countries should contribute to this fund and CERs generated thereof could be distributed among Annex II countries on the basis of their contributions to this fund. Burkina Faso has proposed that 40% of available money be allocated to eligible African countries.

Some researchers (most notably, Yamin 1998) suggest that CDM projects could be ‘undertaken equally in all UN regions’. The original Brazilian proposal on the clean development fund favoured large emitters among developing countries and stipulated that 90% of the resources were to be used for mitigation projects and the balance was for countries vulnerable to climate change.³

It is argued by others (Sokona et al. 1998) that African nations, given their low level of industrialization and emissions, will have limited access to the types of projects that are generally specified under the CDM. Sokona et al. (1998) argue that the CDM looks only at existing emission reductions rather than at ‘future reductions’ as the economies of these countries diversify. This, however, is debatable, as baselines can be developed to reflect different economic conditions. There are also arguments emerging from Africa that sinks projects should be included in the CDM as a way of making Africa a more attractive region for CDM investment.

Viewpoint

There are no guarantees that the CDM will in fact garner significant attention from the private sector in the industrialized world, as it is the only one GHG (greenhouse gas) mitigation option for companies. Other possibilities include emission reductions within domestic company operations, use of other Kyoto mechanisms, and domestic ‘credit for early action’ programmes.

In the end, the private sector will base its GHG emission reduction investment choices on a number of factors (Stigson 1998)

- total project costs;
- transaction costs for registration and credit creation;
- emission abatement cost (US dollars/tonne);
- contribution to shareholder value (short- and long-term);

³ This 10% share of proceeds from non-compliance fees is the genesis of the Adaptation Fund.

- public relations benefits;
- level of risk; and
- timing of the credit creation period and/or the credit utilization period.

Clearly equity is an important issue, but it is best to match instruments and objectives. The CDM attempts to address the North–South inequity in emissions, builds on the mitigation cost differential, and develops capacity to adapt to climate change. In addressing equity among developing nations and/or intra-country equity, Pembina and TERI have serious doubts and reservations about using the CDM as a possible instrument to alleviate inequities.

It is true that a free market (bilateral) framework for the CDM may not generate projects in a democratic manner. But establishing a quota system based on future production of CERs has practical difficulties. How would CDM quotas be divided? According to the total number of projects? The total amount invested? Quotas are appropriate for something like the Adaptation Fund where there is a distinct ‘pie’ to be shared, but for CDM projects, the basis for allocating quotas is not at all clear.

In the view of Pembina and TERI, forcing a widespread distribution of CDM projects would reduce the total flow of CDM funds. Under a quota system, large unexploited quotas, due to their higher costs relative to countries where quotas have been exhausted, will increase the total costs of emission reductions and make CDM investments less attractive than other emission reduction investment opportunities.

Equity can be addressed using other options. For example, the contribution to the adaptation fund could be directly linked to the level of per capita income in the host country.⁴ This would increase the cost of CDM projects in countries

⁴ An approach based on per capita incomes (in terms of purchasing power parity) could be used to ensure equity. A higher percentage is charged towards the administrative fee and Adaptation Fund for those developing countries with a higher per capita income amongst the non-Annex I countries. Advantages of this approach are that it: addresses the equity concern, and does not get into quota systems, which are difficult to determine given the uncertainty about the total size of the CDM. It also does not preclude inexpensive CDM projects in relatively richer non-Annex I countries. The disadvantage is that more ‘taxation’ of the CDM would mean more complicated modalities, which will restrict the market for CDM, but which are necessary to address the issue of equity.

with a high level of per capita income as against those with low per capita incomes, thus providing an incentive for investments in less developed countries, helping to achieve some level of equity. In addition, indicators such as a ‘genuine performance indicator’ could be used for such an assessment.⁵

More importantly, some of the differences in development must be addressed through facilities like the GEF as well as bilateral ODA. These funds should be increased to support capacity building in less developed countries, making these countries more attractive candidates for CDM investment.

The issue of inequitable access to CDM projects threatens to divide developing countries. This should not divert attention away from other and more effective mechanisms to bridge inequities. For example, transfer of technology is an important provision of the UNFCCC that has not received adequate attention in terms of the evolution of the Kyoto Protocol. The CDM is not exactly ‘transfer of technology’ and is clearly not the only means for achieving this transfer.

Investor country issues

Supplementarity to domestic action

Issue

Article 12 states that industrialized country Parties may use the CERs accruing from a CDM project, ‘... to contribute to compliance with part of their emissions reduction and limitation targets....’ There is a question as to whether or not quantitative caps on the use of all Kyoto mechanisms (including the CDM) should be established, thus forcing industrialized countries to reduce emissions by a specific amount within their national boundaries, instead of relying exclusively on the Kyoto mechanisms.

Debate

The Umbrella Group is strongly pushing for no limits on the use of the Kyoto mechanisms. Ironically, the Canadian government is also asserting that it intends to meet most of its required emissions reductions at home. The remaining negotiating Parties all support quantitative limits on the use of the Kyoto

⁵ For more information on genuine performance indicators, contact the Green Economics Program of Pembina Institute at www.pembina.org/

mechanisms, or at least some form of qualitative limits. The EU is advocating a specific formula that would limit the use of the Kyoto mechanisms. Many of the developing country Parties are also calling for caps.

Some examples of the proposed caps on the use of Kyoto mechanisms are listed in Table 1 below.

Table 1 Examples of proposed caps on the use of Kyoto mechanisms

Country/Block	Proposed cap on net acquisitions from Kyoto mechanisms over five years	Notes
European Union		Base year = 1990 emissions
Formula one	$5\% \times [(base\ year \times 5) + assigned\ amount] / 2$	Assigned amount = permitted emissions for Annex B countries in the first commitment period (2008–2012).
Formula two	$50\% \times [(annual\ actual\ emissions\ in\ any\ year\ between\ 1994-2002 \times 5) - assigned\ amount]$	In both, some flexibility granted for countries which demonstrate significant domestic reductions after 1993.
Saudi Arabia	25%–30% cap	Further clarification required if the percentage is of the assigned amounts.
Costa Rica	25% of the aggregate assigned amount	—
Senegal	Minimum of 40% reductions through domestic action; maximum 35% from the CDM	—
Umbrella Group	No cap	—

Viewpoint

Pembina and TERI believe that a collective quantitative cap should be fixed on the use of all the Kyoto mechanisms by the Annex I Parties for meeting their abatement commitments (TERI 1998). This maximum limit should be set in line with the abatement commitments of the various

countries, and fixed as a percentage of the difference between pre-Kyoto (1990–1997) emissions and Kyoto commitments (i.e., actual reductions) rather than the difference between projected emissions and Kyoto commitments (i.e., virtual reductions) (Figure 1). The EU’s proposed formulas are based on this principle.

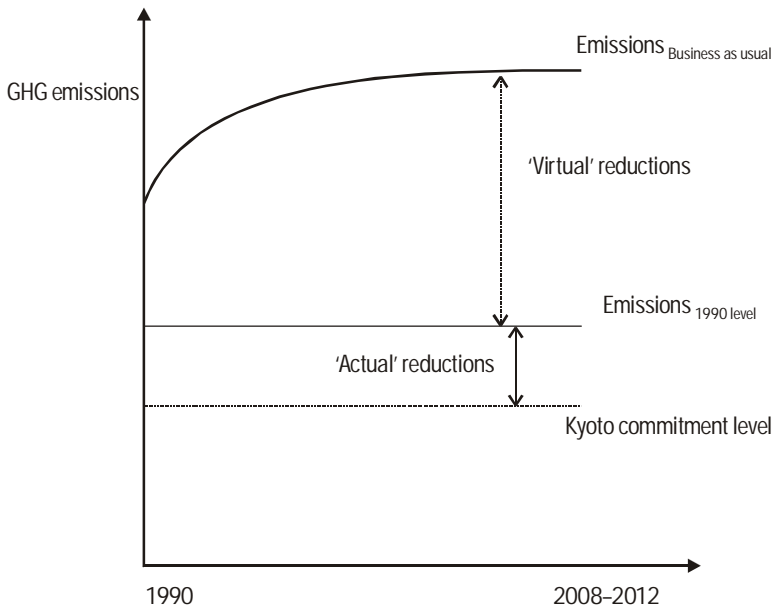


Figure 1 Commitments under the Kyoto Protocol of an Annex I Party

In the view of Pembina and TERI, the formula for determining the level of the cap should reflect the following principles. The formula should:

- be based on Annex B assigned amounts and historical emission levels;
- be based on the principles of accountability and ‘differentiated responsibility’;
- ensure that the onus of mitigation does not shift to developing countries;
- promote domestic efforts and initiate the process for progressive reduction;
- provide incentives for strengthening commitments (for example, the flexibility in achievement could be a function

of the quantum a country agrees to reduce its emissions over the base year, a higher level of emissions reduction giving a greater level of flexibility); and

- restrict the trading of ‘hot air.’

The challenge for negotiators is to determine an appropriate formula for fixing the level of the cap. In the view of Pembina and TERI, the formula should be similar in substance to the second formula proposed by the EU. Rather than focus on base-year emissions to calculate the cap, the focus should be on the difference between actual emission levels in recent years and Kyoto commitments. Accordingly, we support a formula that is based on the difference between actual emission levels in any year between 1990 and 1997 and the Kyoto commitment. This ensures that countries that have the most to do to move from current levels to their Kyoto commitments will have the most access to the Kyoto mechanisms.

Whatever formula is chosen, Pembina and TERI believe that the vast majority of emission reductions must occur at home. We believe that the supplementarity formula should result in limited access to Kyoto mechanisms for 15% to 30% of the difference between their projected emission levels in 2010 and their Kyoto commitments in order to ensure that the majority of emissions reductions are at home.

Tables 2 and 3 illustrate the impact of two different versions of a formula on potential access to the Kyoto Mechanisms for Australia, Canada, and the EU. Table 2 illustrates the difference between the Kyoto targets and (1) 1990 levels, (2) the highest levels between 1990 and 1997, and (3) business-as-usual in 2010. Table 3 illustrates the 50% supplementarity formulae.

Fungibility with other mechanisms

Issue

There is a fine line distinguishing the three Kyoto mechanisms (the CDM, joint implementation, and emissions trading). Therefore, it is important to examine the CDM along with the other two mechanisms, in order to analyse their implications on the commitments of various Parties and the global environment. The process for utilizing credits generated by CDM projects to

Table 2 Information on Canada, Australia, and the EU (European Union)

Parameter	Canada ^a	Australia ^b	EU ^c
Emissions at 1990 level (MT ^d)	601	380	3364
Maximum annual emissions between 1990 and 1997 (based on limited data) (MT)	682 (1997)	402.6 (1995) ^e	3364 (1990)
Emissions in 2010 (business-as-usual) (MT)	764	552	3633
Kyoto targets (%)	–6	+8	–8
Target emissions in 2010 (in accordance with the Protocol) (MT)	565	410	3095
'Actual' reductions required below 1990 levels (MT)	36	0	269
Reductions required below the highest levels between 1990 and 1997 (MT)	117	0	269
'Virtual' reductions required below 2010 levels (MT)	199	142	538

^a Analysis and Modelling Group (1999); ^b Commonwealth of Australia (1997); ^c UNFCCC Secretariat (1998); ^d million tonnes; ^e 1997 emissions data are likely to be higher than 1995, thus, access to Kyoto Mechanisms may be possible, if the 1997 levels are higher than the Kyoto commitment.

Table 3 Demonstration of 50% complementarity models

Parameter	Canada	Australia	EU
Approach 1			
50% of annual reductions between 1990 levels and Kyoto Protocol targets (MT ^a)	18	0	135
Approach 2			
50% of annual reductions highest levels between 1990 and 1997 and Kyoto Protocol targets (MT)	59	0	135
Proportion of "Virtual" reductions from Kyoto mechanisms (difference between 2010 business-as-usual emissions and 2010 Kyoto targets) with the first approach (%)	9	0	25
Proportion of 'Virtual' reductions from Kyoto Mechanisms with the second approach (%)	29	0	25

^a million tonnes

meet regulatory obligations, and if permitted, converting them to other Kyoto mechanism commodities (e.g. the issue of fungibility of credits) has not been resolved.

Debate

The CDM is more contentious than the JI (joint implementation) between Annex I Parties and ET (emissions trading), as it involves transfer of credits from countries that do not have abatement commitments (TERI 1998). The CDM has gained importance as it comes into force early and allows for banking of emissions, unlike the other two mechanisms. Owing to the uncertainties involved with its operational modalities, as well as abundance of ‘hot air’ in EIT (economies in transition), it is sometimes felt that CDM project activities may be limited. Further, some argue that CERs acquired through CDM projects cannot be treated as a commodity that can be traded further in secondary markets.

The opposite view is that whatever the mechanism through which emission reductions are acquired, they are at par with each other. Specifically, China and India have strong reservations on fungibility, while Poland, Chile, and the AOSIS have argued for complete fungibility. Further, the AOSIS and Republic of Korea suggest that complete fungibility between AAUs (assigned amounts), ERUs (emission reduction units), and CERs should be within a framework of rules and procedures to be elaborated by the COP/MOP that ensure environmental equivalence among the three.

Viewpoint

Under the CDM, the general understanding has been that the CERs would emanate from projects undertaken between Annex I and non-Annex I Parties. However, it can be conceived that CERs arise also from unilaterally implemented projects driven by the expectations of returns on CERs and/or from projects involving South–South cooperation. Such CERs could either be banked by the non-Annex I Parties for any eventual use or would find an outlet in the international emissions trading market. A similar argument would also apply for ERUs from JI projects. As such, principles and modalities of all the three mechanisms would have to be in consonance with each other.

A secondary market in the CERs and the ERUs is very likely, as Parties/entities may need to acquire or dispose ERUs, as a prior estimation of these may not be exact. Proceeding on the assumption that ERUs and CERs are completely fungible, a legal entity in an Annex I country may find that it has a surplus of carbon credits. Under such a scenario it can trade with other legal entities within the country. Such a trade needs the sanction of the concerned country government. Surpluses or deficits at the national level need to be corrected through trade with other nations. All such trade will have to be registered with the national body monitoring national level implementation. It is necessary to ensure that such trade or secondary markets do not conflict with the caps specified for the nations. It is necessary to ascertain that only those exchanges of credits that are finally used towards meeting commitments are included as credits acquired, and only these have to be below the specified ceiling for acquisition of credits (supplemental to domestic action).

Project implementation criteria

This Section provides a commentary on project implementation rules. The first part of the section deals with definitions for project baselines for quantifying emissions reductions, while the rest of the section deals with project eligibility criteria that must be met in order for projects to be recognized under the CDM as a generator of CERs.

Baseline issues

Issue

The emission reductions certified under a CDM project are equal to the difference between project ‘baseline’ emissions and the actual emissions that occur after a project has been implemented. Emissions baselines can be estimated, or defined, on the following scales.

- Sectoral (e.g. all electricity generation facilities in an interconnected system or trading market)
- Corporate (e.g. all electricity generation facilities owned by a company) or
- Project level (e.g. an electricity generation facility or several distinct facilities).

Determining emission reduction levels requires

- a clear definition of the project boundaries;
- the development of an emissions baseline for the project; and
- the measurement, verification, and certification of actual emission levels once the project has been implemented.

Defining project boundaries involves delineating the physical and temporal boundaries that contain the facility or community that currently emits GHGs. The boundaries should be selected to minimize the potential for emission ‘leakage’. Leakage occurs when an emission reduction from a project directly or indirectly causes an emission increase at another location or time. In essence, there is a loss of emission reduction benefits due to factors beyond the project site and the time of its implementation.

An emissions baseline is an estimate of what emission levels would have been in the absence of the project (i.e. under regular business practices within the boundaries set by the project) or an estimate obtained through a generalized methodology that applies to a specific class of projects.

Finally, to ensure that emissions reductions are stated accurately, they should only be recognized after they have actually occurred. CER credits will be awarded for project activities on an annual basis.

Debate

In the COP-6 negotiators text, there is a reasonable amount of agreement on the application of emission baselines. Many of the parties agree that both project-specific and multi-project or standardized baselines could be used. Baselines are defined by the Umbrella Group and the AOSIS as given below (UNFCCC Secretariat 2000, p. 56).

- A project-specific baseline establishes the emissions that would occur in the absence of a particular project activity. Emissions resulting from a project activity would be compared to the project-specific baseline to calculate net reductions resulting from the project activity.
- A multi-project baseline establishes a performance standard (based on emissions) for a sector or source category for a specific geographic area that represents what would occur in the absence of a particular project activity. Emissions resulting from a project activity within the same

sector or source category and same geographic area would be compared to the multi-project baseline to calculate net reductions resulting from the project activity.

China opposes standardized baselines by stating that, ‘only project-by-project, not sector or country baselines shall be applied to CDM projects’. In contrast, Switzerland supports an emphasis on standardized baselines:

Baselines are to be defined on a project-specific basis, but may be partly or entirely based on aggregate or standardized values (benchmarks) that have been previously approved through a process defined [in the baseline reference manual].

Viewpoint

The Pembina Institute and TERI believe that the standardized baseline approach will require a substantial debate and resolution on international standards for different emitting activities. Thus, in the short term, it will be more practical to apply project-specific baselines. We support the following principles.

- Project-specific baselines are appropriate in the early stages of the CDM to facilitate project activities. In general, project-specific baselines should strive to maximize accuracy and transparency and minimize transaction costs.
- Standardized approaches are appropriate for defining baselines for those projects where a substantial amount of experience has been gained on the technology or system being applied, and/or several other applications have been made. These approaches could aid in the reduction of transaction costs, provided that accuracy and transparency are not jeopardized.

Project-specific baselines should be consistent with: (1) the prevailing standards of environmental protection in the country involved; (2) existing business practices within the particular industry sector; (3) prominent technologies and resources; and (4) trends and changes in these standards, practices, technologies, and resources. Project baselines should also incorporate the same assumptions as those used for assessing project additionality (see the section on ‘Additionality’ below).

Project baseline definitions may vary with respect to their permanence. For example, a baseline could be considered constant over the life of the project, providing certainty to investors by essentially guaranteeing an emission reduction into the future. These static baselines do not change over time; the parameters that define the emission factors and activity levels are permanently set over the life of the project. Dynamic baselines often incorporate factors such as capital stock turnover, autonomous (non-financially driven) technology efficiency improvements, consumer preferences, interest rates, inflation, and trade considerations. They are adjusted as new information as those factors become available. Pembina and TERI believe that standardized project baselines must be dynamic because static baselines fail to reflect changes that would naturally occur in the absence of the project. In the short run, project-specific baselines may have to be static in the interest of practicality.

Standardized baselines specify a benchmark, which is a realistic standard for the emissions intensity of an activity that must be improved upon in order to generate a valid emission reduction. Benchmarks should reflect the conditions in the sector and country of application.

Additionality

Issue

Section 5(c) of Article 12 of the Kyoto Protocol requires that CDM projects meet an additionality criterion. This means that CDM projects must demonstrate that they have produced real and incremental emission reductions that would not have occurred in the absence of the CDM. Without additionality, there is no guarantee that CDM projects will create incremental environmental benefits, contribute toward incremental sustainable development in the host country, or contribute toward the ultimate objective of stabilizing atmospheric GHG concentrations. If a CDM project is not additional, it means that the CDM did not cause it to happen, and that it would have occurred for other reasons – financial benefits, in response to a legal requirement, as a result of entrepreneurial activities, or other reasons. In fact, a non-additional project actually makes the environment worse off than would have been the case if the project had not taken

place. Table 4 illustrates how a non-additional project actually increases emissions.

Debate

While there is strong support for the concept of additionality for the CDM, there is a significant debate in the COP-6 negotiators text on how to implement additionality. Some negotiating Parties have argued that it is too difficult to apply in practice. As such, they are advocating for a narrow application of additionality to CDM projects. The Umbrella Group for example, believes that rules on additionality should be limited to ‘emissions additionality’ and ‘financial additionality’ such that ODA funds are not used for CDM project investments.

In contrast, negotiating Parties such as Costa Rica are calling for stringent and detailed additionality criteria. In fact, a proposal from the Chairman includes a more elaborate definition of additionality (UNFCCC 2000, p. 54)

Table 4 Demonstration of environmental impacts of non-additional and additional project activities and credit certification

Greenhouse gas emissions	Industrialized country emissions	Developing country emissions	Total emissions
Historic emissions	1000	1000	2000
Future emissions in the absence of the CDM; here the industrialized country is required under the Kyoto Protocol to reduce emissions to 900 kt (kilotonnes) within its own country and emissions fall to 900 kt as a result of ongoing activities within the developing country.	900	900	1800
Future emissions when the industrialized country receives the CERs for investing in 100 kt of non-additional (business-as-usual) reductions in the developing country; the environment loses	1000	900	1900
Future emissions when the industrialized country receives the CERs for investing in 100 kt of additional (beyond business-as-usual) reductions in the developing country; the environment is no worse off.	1000	800	1800

A project is additional if it achieves [emissions] [environmental], financial, investment and technology additionality:

- *[Emissions] [environmental] additionality is achieved if emissions are reduced below [or removals by sinks are increased beyond] those that would occur in the absence of the validated project. Since the validated baseline is defined as the GHG emissions [or removals by sinks] in the absence of the project, emissions reductions from [or removals by sinks beyond] the baseline are additional.*
- *Financial additionality is achieved if project funding [is additional to] [does not result in a diversion of] the ODA, the GEF, and other financial commitments of the developed country Parties and other systems of cooperation.*
- *Investment additionality is achieved if the value of the CERs significantly improves the financial and/or commercial viability of the project.*
- *Technology additionality is achieved if the technology used for the project is the best available for the circumstances for the host Party.*

Viewpoint

Pembina and TERI support a broad application of additionality in line with the proposal from the Chairman⁶ and the position of Costa Rica. We have also developed a mechanism for assessing project additionality that may be appropriate for overcoming the practicality issues introduced by sceptical negotiating Parties. Initially, we believe additionality must be assessed on a project-by-project basis. We have proposed a separate assessment of five different factors of additionality and a mechanism for integrating those factors into an overall conclusion on additionality. Some of these factors can, and should, be incorporated into the structure of the project baseline. Other factors need to be considered separately.

Emissions additionality

Emissions additionality is required to ensure that a CDM project results in net reductions in atmospheric GHG emissions

⁶ Pembina Institute and TERI position on GHG 'sink' projects is that these projects should be excluded from the CDM until a broad international consensus is developed on definitions and methodologies for addressing these activities.

within a predetermined project boundary. This is synonymous with the ‘real’ criterion that is required under Section 5(b) of Article 12 of the Kyoto Protocol or ‘environmental additionality’ used by some negotiating Parties.

To assess emissions additionality, an emission reduction project must demonstrate the following characteristics.

- The actual emissions that result after a project has been implemented are lower than emissions that would have resulted in the absence of the project activity.
- The amount of GHG emission reduction is calculated on a net basis, taking into consideration any shifting, increases, or decreases of GHG emissions elsewhere within the project boundary defined. Shifting the GHG emissions upstream to activities such as resource exploration and extraction, processing, and transportation, or downstream to significant decommissioning, reclamation, or waste disposal activities, constitutes a form of leakage.
- The ownership of the resulting GHG emission reductions are clear and have been distributed and accounted for, only once between all of the players who may be involved in upstream or downstream activities related to the reduction activity (i.e. there is no double counting).

Financial additionality

Financial additionality is required to ensure that CDM projects result in an increase in the transfer of financial resources to developing countries and are not simply a new label on existing financial transfers for the ODA. In general, funding for the implementation of a CDM project cannot be drawn from ODA budgets of industrialized country governments.

Project implementation funding must come from the private sector or from non-ODA budgets of governments. This does not imply that ODA funds have no role to play in facilitating the CDM. In fact, industrialized countries should be encouraged to use their ODA funds to support institutional and technical capacity-building efforts in developing countries as well as feasibility studies and design work related to general categories of CDM projects. Specific CDM projects should not, however, be funded through the ODA.

Regulatory additionality

Regulatory additionality is required to ensure that CDM projects do not produce CERs for activities that would have been mandated by law or regulation, either directly or indirectly. Regulatory-additional projects cannot simply be a response to a requirement to comply with local, regional, provincial/state, or federal/national laws and regulations. Flexibility is required when applying this consideration in the context of certain countries that have formal regulations on the environment that are not followed or enforced. In these cases, it is incorrect to assume that an action required by regulation would have occurred anyway. Indeed, a company that took steps to comply with a regulation may be at a competitive disadvantage if those regulations are not enforced across the sector. Projects under the CDM that enable emitters to conform with unenforced and abused regulations can, therefore, have a significant incremental environmental benefit.

Accordingly, CDM projects should be considered regulatory-additional if they

- clearly exceed the regulated standard;
- meet a regulated standard that is clearly not enforced or met; or
- meet an enforced regulated standard in a manner that is much less carbon-intensive than the typical approach used to meet the regulation.

Technology additionality

Technology additionality is required to ensure that CDM projects lead to the transfer of high-quality technology to developing countries and do not result in the dumping of old, second-hand technologies into developing-country markets. Technology-additional projects should advance the development and commercialization of new, environmentally efficient technologies or management practices with very substantial reductions in the GHG intensity of an emitting activity in the region where the project is implemented. In developing countries, projects should use the best available technology standards or practices, in terms of emissions rates, for the sector in that country.

Specific considerations for the assessment of technology additionality include the following factors.

- An assessment of commercially available technologies or practices for the product or service being affected by the CDM project, in order to determine the relative emissions intensity of the technology or practice being applied to the project relative to available alternatives
- An assessment of the market penetration and appropriateness of technologies and practices in the region.

Investment additionality

Investment additionality is required to ensure that the CDM does not provide CERs to the thousands of projects implemented every day as a result of standard business investment decisions in developing countries that also happen to reduce GHG emissions. An investment additional project is one that would not have happened under normal business practices; that is, the investment is beyond the norm in the region or sector of application. This consideration includes both financial and non-financial aspects. Again, the issue relates back to the question ‘has this CDM project enabled an incremental reduction of GHG emissions over and above business-as-usual patterns?’

In the short term, the assessment of investment additionality will be subjective. In the long term, quantitative methodologies for assessing investment additionality may be developed for the CDM.

Some quantitative indicators could include one or more of the following.

- Transactions costs of planning for and developing the project, including the costs of complying with regulations and accessing government permitting of components of the project, addressing stakeholder requirements, arranging financing, transferring technology, developing markets, or other aspects.
- Risk profile of the investment relative to ‘business-as-usual’ investments, with due consideration given to potential changes in interest rates, market demand, regulatory regime, ownership guarantees, and other factors.
- Rate-of-return or profit characteristics of the project.

This criterion does not preclude projects that are financially profitable. Many profitable investments are not undertaken because of other financial and non-financial barriers to the advancement of technologies and practices that reduce or

sequester GHG emissions. Identifying and overcoming these barriers can help to demonstrate the additionality of a project. For example, many proven, cost-effective and widely beneficial energy-efficiency-technologies and management practices are not being realized because of non-financial barriers; these include split responsibilities between landlords and tenants of buildings,⁷ lack of information, lack of interest in energy issues, and lack of technological literacy. A project may be additional if it identifies barriers that block activities to reduce GHG emissions and takes significant steps to overcome these barriers.

Operationalizing additionality

What process should be used to operationalize the assessment of these five considerations to render a judgement about additionality? Pembina and TERI believe that the first two (i.e. emissions and financial additionality) are absolutely mandatory as they affect the integrity of emissions reductions and sustainable development the most. The other three need to be assessed, but it may not be necessary to demonstrate all of them to pass an additionality test. We suggest that at least two of the three should be met to demonstrate additionality. Figure 2 summarizes the process proposed to review and assess the additionality of projects under the CDM.

To the extent possible, the assumptions made in determining project additionality should be reflected when constructing the emissions baseline. For example, the baseline should reflect the appropriate emissions boundary required to assess emissions additionality. Moreover, the baseline should reflect regulatory requirements and technology norms to facilitate an assessment of regulatory and technology additionality. It will be necessary for the operational entities identified under the CDM to assess the baseline to ensure that these factors are accurately reflected. Other additionality criteria cannot always be reflected in a baseline. An assessment of financial and investment additionalities will often require an examination of additional information specific to the project as well as an understanding of barriers that had to be overcome in moving forward.

⁷ The landlord is responsible for capital investments required to implement energy efficiency, but the tenant usually receives the benefits of those investments through lower energy bills.

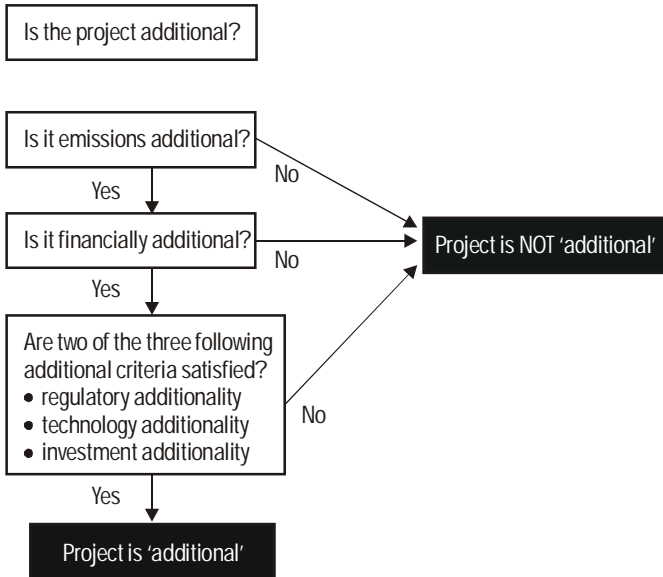


Figure 2 Procedure for operationalizing additionality

Under the methodology proposed by Pembina and TERI, a project can fail the investment additionality test and still be considered additional if it meets all the other criteria discussed. Conversely, the investment additionality criterion provides an opportunity for project investors and developers to make the case that their project is additional even if it failed to meet one of the other criteria (regulatory or technology) identified above.

Overall, the desired outcome of assessing additionality is to minimize transaction costs and maximize the environmental effectiveness of emission reduction activities.

Sustainable development

Issue

One of the purposes of the CDM is to assist developing countries in achieving their own sustainable development objectives. Section 2 of Article 12 of the Kyoto Protocol outlines the importance of projects contributing to the ‘sustainable development’ objectives of developing countries. A key unresolved issue is how those objectives can be translated into project approval mechanisms.

Debate

Some broad international criteria are likely to be required to help operationalize sustainable development objectives. Such criteria may have implications for the types of projects that would be allowed under the CDM because there are projects that clearly reduce GHG emissions but are inconsistent with the concept of sustainable development.

The various opinions related to the issue of setting criteria for sustainable development show a consensus on the primacy of host country Parties on this matter. There are minor variations in that countries such as Poland and Uzbekistan while agreeing to this primacy, opine that the criteria should be based on procedures developed by United Nations Environment Programme and the Commission on Sustainable Development. The AOSIS Parties have argued for international guidelines and indicators to be developed by Parties to meet the sustainable development objectives of the Protocol. The EU has pointed out the need to ensure that the sustainable development criteria should be consistent with other relevant international agreements relating to sustainable development to which the Parties are signatories.

Several developing countries are calling for the CDM to prioritize energy-efficiency and renewable energy projects. A block of Latin American countries want to see tree planting and sustainable forest management included as eligible projects, while other countries want to exclude certain types of technologies. The main rationale for including or excluding certain types of projects is to ensure that the ‘sustainable development’ objectives of non-Annex-I countries are met. The AOSIS, for example, is calling for an exclusion of all forms of nuclear energy in the CDM.

Viewpoint

Detailed and specific sustainable development criteria under the CDM will be defined on a national basis in each participating developing country. Presumably, these objectives would be publicly stated and documented to maintain the transparency of regulations associated with the CDM and to uphold any consensus on global sustainable development objectives related to GHG management.

Undoubtedly the sustainable development criterion would be specific to a country and, thus, will be defined individually by countries based on their priorities, needs, and natural resource endowments. However, an international consensus on some general principles of sustainable development should be followed by all countries.

The Host Party's definition should be the last word, that is, non-Annex I Parties should promote as those activities to be implemented under CDM that match their own perceptions of sustainable development. However, some common indicators would also have to be developed at the global level to guide the overall process.

The authors believe that low-impact renewable energy projects clearly are compatible with the CDM. We also believe that consumer energy-efficiency projects are compatible, as are projects that improve the efficiency of energy production and use in existing supply facilities. We would expect the vast majority of CDM projects to focus on these emissions reduction opportunities. Pembina strongly believes that the waste management challenges and risks associated with nuclear power means that nuclear power projects should not be allowed to proceed under the CDM. On a similar line, the environmental and social impacts of large reservoir storage hydroelectric projects will limit their appropriateness for the CDM.

We recognize, however, that circumstances may exist where fossil fuel projects should be considered in the short term. We believe such projects may be eligible under the CDM if

- the project proponent clearly demonstrates that consumer needs could not have been produced from renewable energy sources or freed up through energy-efficiency initiatives in a reasonably cost-effective manner;
- the project utilizes the lowest carbon-intensity fossil-fuel available – with natural gas preferred;
- the project uses the best available technology for fossil fuel generated electricity in terms of the emissions intensity per unit of electricity production; and
- the project includes steps to mitigate local air quality, resource mining, and waste management impacts.

There are also some significant technical challenges in measuring removals of GHGs from the atmosphere through

carbon sequestration, and no international agreement exists on the methodologies that can be used to estimate the potential benefits to the atmosphere associated with carbon sequestration projects. Also, there exists uncertainty about the permanency of such CERs. As such, it is proposed that GHG ‘sink’ projects should be excluded from the CDM until a broad international consensus is developed on definitions and methodologies for addressing these activities. Until that time, carbon sequestration projects will not meet this mandatory CDM project eligibility criterion

Developing countries have not yet identified specific sustainable development objectives related to the CDM. Nonetheless, Pembina and TERI believe that the following principles should be followed in defining sustainable development criteria.

- Projects must be free of local opposition and must not impose burdens on local communities that cause those communities to oppose the project.
- Projects must be free of environmental burden shifting. They must not result in reduced GHG emissions at the expense of increased environmental impacts in other areas (e.g. air quality emissions, toxic wastes, land-use degradation, etc.).
- Projects must provide multiple social and economic benefits such as enhanced local economic development, job creation, the alleviation of poverty, and the introduction of new eco-efficient products and services into the economy.
- Projects that provide multiple environmental benefits (e.g. improved local air quality, maintenance or expansion of green space or forested areas, improved water quality) will be preferred.

Industrialized countries should also develop their own sustainable development criteria that would need to be met before they would grant approval to a CDM project of which they are a party. This is important to ensure that project credits (CERs) imported into their country are compatible with the sustainable development objectives of the industrialized countries and to help maintain public support for the CDM in industrialized countries.

Institutional issues

Executive Board and COP/MOP

Issue

Section 4 of Article 12 states that the CDM will be under the authority and guidance of the Parties to the Kyoto Protocol (COP/MOP), and would be supervised by an Executive Board of the CDM, the structure of which will be defined in the future. This raises the important issue of the governance of the CDM. Several models could be considered.

Debate

What would be the composition and functions of the Executive Board and what would be the role of the COP/MOP for the CDM? This Board could consist only of non-Annex I Parties, on the basis that responsibility for overseeing the functioning of the CDM should rest with the countries where the projects would be implemented in line with their sustainable development objectives. The other option could be a board consisting of only Annex I Parties, the rationale being that since it is the Annex I Parties that have the emissions limitation and reduction targets, they are entitled to the driver's seat. A variant of both these extremes would be some kind of joint or mixed composition, as the one evolved for the GEF.

Further, there is considerable ambiguity about the exact functions of the Executive Board and whether its role should be limited to that of an overall administrator and regulator, in contrast to the provision in Article 12 of the Protocol, which calls for 'assistance in arranging funding of certified project activities as necessary.'

Viewpoint

The CDM will be subject to the authority and guidance of the COP serving as the MOP and be supervised by an Executive Board. This Board for the CDM has to specify rules and regulations with respect to additionality, verification, monitoring, and certification of the emission reductions. Emissions reductions resulting from CDM projects need to be certified by operational entities to be designated by the Executive Board.

The Board should have equal representation from the developed and developing countries. It should be small in size, which may be difficult to achieve. It would be worthwhile to have a representative from the GEF, in light of the experience accumulated under the GEF. Further, representatives from the private sector on the Board would ensure a dilution of North–South politicization of issues. Representatives from NGOs (non-governmental organizations) could be elected too (Grubb et al. 1999).

The Executive Board's main task should be to establish the rules and regulations required to ensure the environmental effectiveness of CDM projects. Therefore, the Board will have to clarify criteria to determine baselines and to assess additionality. It also has to designate independent monitoring, verification, and certification agencies that can assess each project. Finally, it must register all certified emissions reduction units.

Operational entities

Issue

There are two basic issues regarding the operational entities that would be involved in the process

- identification, designation, accreditation, and overall monitoring of operational entities; and
- clarification of the legal responsibilities of all parties in the CDM, including buyers, sellers, brokers, institutions, and governments.

Debate

One view is that international bodies be involved in monitoring, verification, as also certification of CERs. Developing-country institutions may not possess the wherewithal to undertake this function. Further, rather than developing such multifarious institutions in all developing countries, it will be economical to have limited entities responsible for this function. The other view is that the services of an international monitoring, verification, and certification agency may turn out to be an expensive proposition, implying that developing-country institutions/agencies at the national level undertake this task.

Viewpoint

There is a clearly a need to ensure that monitoring agencies are separate from the verification and certification agencies.

Drawing on an analogy from the financial sector, the monitoring function could be akin to internal audits which could be undertaken by local (national) bodies. However verification and certification would necessarily be undertaken by independent agencies akin to the mandatory external auditing of accounts for firms. This role could be undertaken by designated national/international agencies. In either case accreditation of both monitoring, verification, and certification agencies would be granted by the Executive Board. The rules and procedures that these agencies follow will have to be elucidated by the Board.

Adaptation fund and administrative charges

Issue

Article 12 states that ‘a share of the proceeds from the certified project activities is used to cover administrative expenses as well as to assist the developing-country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation’. However, it does not indicate clearly how the ‘adaptation in the developing countries’ would be defined or how this ‘share’ of proceeds is to be fixed and collected. Often, this contribution in the form of ‘share of proceeds’ to the Adaptation Fund has been referred to as a tax on CDM (Siniscalco et al. 1998, TERI 1998). This adaptation funding mechanism is still undeveloped.

Debate

The key questions are: ‘how much of the proceeds should go towards administrative charges?’ and ‘should the JI and IET mechanisms also contribute toward adaptation funding?’ China has expressed the need that a share of the proceeds generated by CDM should be allocated to meet costs of adaptation. It has also called for a formal institution of a CDM adaptation fund, institutional and organizational aspects of which require further elaboration.

Some have suggested that contributions to the fund from CDM activities could be structured in the form of a ‘user fee’ on transactions or a share of the CERs created. The collection of these proceeds could depend on rent-sharing mechanisms and, in such a scenario, these expenses would most likely be shifted to the host Parties, contingent upon the bargaining power of the partners. Some opinions of the

Parties as expressed in the negotiating text are summarized in Table 5.

Table 5 Opinions of Parties regarding the Adaptation Fund

Country	Recommendation for contributions to the Adaptation Fund
The Umbrella Group, the European Union, Republic of Korea, Switzerland	Certain percentage of CERs generated by a registered project activity
Poland	Certain percentage of value of CERs issued
India	A stipulated percentage of differential of costs incurred by Annex I Party in a developing country and cost of domestic action.
China	Surcharge levied on CERs acquired by Annex I country; level of surcharge to be decided by the COP/MOP
Saudi Arabia	Certain percentage of value of each CDM project

Some Parties are of the view that there should be a limit on the share of proceeds generated and that it should not be greater than three per cent of the market value of CERs. Further, the Umbrella Group and China have expressed the need to restrict diversion of proceeds for administrative expenses, to ensure that bulk of these are allocated for adaptation. South Africa, in fact has suggested allocation of 10% of the proceeds to administrative expenses, 20% to the Adaptation Fund, and 30% to the host country for meeting its sustainable development objectives.

In addition, some have suggested that the adaptation fee will reduce the relative attractiveness of the CDM as against other Kyoto mechanisms, hence the suggestion that to provide a level playing field, all three mechanisms should contribute to the Adaptation Fund. In contrast some opine that the CDM has already been given an advantage in the early start that has been bestowed on it, thus skewing the balance among the mechanisms.

Viewpoint

Pembina and TERI agree that proceeds collection should not inequitably burden developing-country Parties and should

not decrease the relative attractiveness of the CDM as an emission reduction investment possibility. We believe that contribution of a share of proceeds for adaptation only from CDM activities would put the mechanism at a disadvantage as against the other two Kyoto mechanisms. Thus, an equal part of the proceeds from each mechanism (not only the CDM) should be used collectively to address vulnerability and adaptation in developing countries. There should also be a provision to ensure that the burden of these costs is not shifted to the host Parties in the case of the CDM. One way of ensuring this would be to levy the charge on the utilization of credits rather than on their generation (TERI 1998). In other words, when the Annex I Parties are using the credits obtained from all three Kyoto mechanisms at the time of the first budget period, they would give a levy to the Adaptation Fund.

As financing of adaptation measures is an important issue, the adaptation fund should be separate from the CDM. However, the Executive Board of the CDM could function as the Executive Board for the fund as well. The fund should include penalties from non-compliance, as would be agreed under the Protocol. The Executive Board or the FCCC Secretariat could identify the implementing agencies for this purpose. These could be the World Bank, the United Nations Environment Programme, and the United Nations Development Programme as in the case of GEF.

Conclusions

There are several key issues that are being debated upon in the climate change negotiations. Resolution of different positions on some of the key issues of debate (for example, supplementarity, equity, additionality, and contribution to the adaptation fund, etc.) is still very distant. COP-6 will hopefully clarify some of those issues. Pembina and TERI have presented their perspectives on these issues with an eye toward identifying potential compromises on some issues which negotiators may want to consider.

Our most significant conclusions include the following.

- Include a cap on the use of the Kyoto mechanisms that is based on the difference between actual emissions levels and the Kyoto commitment.

- Include incentives for investments in countries that are less developed and which have not traditionally been recipients of foreign investment (i.e., Africa). Fixing regional quotas will not resolve the issue of intra-regional distribution of CERs.
- Establish strong but flexible project additionality criteria, which include emissions, regulatory, financial, technology, and investment considerations.
- Broad international guidelines on sustainable development need to be established. The specific national sustainable development project eligibility criteria to be defined by developing-country governments under the overall international framework.

The CDM has the potential of being a powerful and effective financial instrument in addressing the ultimate objective of the FCCC. It is a new mechanism with several associated issues yet to be resolved. The way forward is to identify a set of minimum basic rules to operationalize the CDM. Over time, additional research results and more informed analysis can be incorporated in the CDM rules to enhance its effectiveness in achieving a more sustainable world.

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About TERI

A unique developing-country institution with a global vision and a local focus, TERI was established in 1974. TERI's research activities in the fields of energy, environment, and sustainable development are based on the firm belief that efficient utilization of energy, sustainable use of natural resources, large-scale adoption of renewable energy technologies, and reduction of all forms of waste would move the process of development towards the goal of sustainability.

TERI is deeply committed to every aspect of sustainable development, and undertakes scientific and policy research that attempts to integrate developing-country concerns in the search for effective and equitable solutions to global environmental challenges. Project activities in TERI focus on formulating local- and national-level strategies to suggesting global solutions for critical energy- and environment-related issues.

TERI is driven by a philosophy that emphasizes and assigns primacy to enterprise in government, industry, and individual actions for sustainable development.

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About the Pembina Institute for Appropriate Development

The Pembina Institute for Appropriate Development is an independent, citizen-based organization involved in environmental education, research, public policy development, and corporate environmental management services. Its mandate is to research, develop, and promote policies and programmes that lead to environmental protection, resource conservation, and environmentally sound and sustainable resource management. Incorporated in 1985, the Institute's main office is in Drayton Valley, Alberta, Canada, with other offices in Calgary and Ottawa, and research associates in other locations across Canada.

For more information on the Pembina Institute's work, please visit our web site at www.pembina.org, or contact:

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