

CLEAN DEVELOPMENT MECHANISM FACILITY

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ABBREVIATIONS

ADB	–	Asian Development Bank
CDM	–	clean development mechanism
CO ₂	–	carbon dioxide
DMC	–	developing member country
ER	–	emissions reduction
GHG	–	greenhouse gas
ODA	–	official development assistance
PCF	–	Prototype Carbon Fund
PDD	–	project design document
UNFCCC	–	United Nations Framework Convention on Climate Change

I. INTRODUCTION

1. This paper informs the Board about the establishment of a clean development mechanism (CDM) facility at the Asian Development Bank (ADB). The facility, which will have a pilot phase of 3 years, is being set up as a response to the opportunities offered by the Kyoto Protocol for mobilizing additional resource and technology flows to developing countries to support clean energy projects and other developmental initiatives. The CDM facility is expected to help support national sustainable development goals in developing member countries (DMCs), address global climate change concerns, and assist developed countries to meet their commitments under the Kyoto Protocol to reduce emissions of greenhouse gases (GHGs). The Board has been kept informed of the evolution of the facility through a series of seminars and briefings over the last year.

II. BACKGROUND

A. Climate Change

2. The presence of certain gases, such as carbon dioxide (CO₂), methane, and nitrous oxide, enables the atmosphere to act like a greenhouse, retaining part of the solar heat. The natural greenhouse effect is desirable as it traps part of the incoming solar energy to maintain habitable temperatures on the earth's surface. However, human activities, like burning of fossil fuels, deforestation, agricultural practices, and manufacturing are increasing the concentration of GHGs in the atmosphere and causing an enhanced greenhouse effect resulting in higher global average temperatures. Impacts are likely to include changes in precipitation patterns, increased frequency and intensity of storms surges and hurricanes, changes in vegetation, and a rise in sea level. Developing countries, especially the poor ones, are more vulnerable to these changes given their high dependence on natural resources and their limited capacity—human, financial, and institutional—to adapt to extreme events. Climate changes can have severe adverse impacts on the health and livelihood of the poor.¹ Extreme climate conditions exacerbated by climate change can divert scarce development resources from poverty reduction into disaster recovery.

3. The United Nations Framework Convention on Climate Change (UNFCCC) entered into force in 1994. At the third Conference of the Parties to the UNFCCC in Kyoto in December 1997, the developed countries and economies in transition (Annex B countries)² agreed to reduce their GHG emissions by an average of 5.2% from their 1990 levels during 2008–2012. This agreement is reflected in the Kyoto Protocol, which will enter into force³ with the expected

¹ ADB. 1991. *Global Environmental Studies*. Manila. (Costing \$1,690,000, the regional study covered Bangladesh, India, Indonesia, Malaysia, Pakistan, Philippines, Sri Lanka and Viet Nam, and assisted the eight DMCs in assessing the implications of global changes and in identifying policy options to deal with climate change).

² Developed economies and economies in transition are together referred to as Annex B countries as they are listed in Annex B of the Kyoto Protocol along with the percentage of base year emissions allowable in the first commitment period. In 1992, Annex I of the UNFCCC listed the developed economies and economies in transition. “Annex B” and “Annex I” are often used interchangeably, though there are some differences. For example, Belarus and Turkey are listed in Annex I but not in Annex B; and Croatia, Liechtenstein, Monaco, and Slovenia are listed in Annex B but not Annex I. This paper uses the term “Annex B”.

³ The rules for entry into force of the Kyoto Protocol require 55 Parties to the Convention to ratify (or approve, accept, or accede to) the Protocol, including Annex B Parties accounting for at least 55% of Annex B's CO₂ emissions in 1990. Ratification by the Russia Federation is critical for the Kyoto Protocol to enter into force given the nonparticipation of the United States. Annex B member countries of ADB that have ratified the Kyoto Protocol

ratification by the Russian Federation later this year. The Kyoto Protocol outlines a framework for three cooperative implementation mechanisms: joint implementation, CDM, and emissions trading. Of the three mechanisms, CDM is the only one in which developing countries can participate.

B. ADB and Climate Change

4. ADB has for a number of years been active in promoting clean energy initiatives to minimize adverse local and regional impacts. Within the context of the UNFCCC, and in anticipation of Kyoto Protocol implementation, ADB has assisted its DMCs to build capacity to prepare for the opportunities offered by the Kyoto Protocol, and in developing prefeasibility studies for CDM and GHG abatement projects.⁴ In 2001, ADB brought together several trust-fund initiatives provided by the governments of Canada, Denmark, and the Netherlands to launch its renewable energy, energy efficiency, and climate change program. These initiatives are an integral part of ADB's Energy 2000,⁵ ADB's energy policy, which recommends reorientation of the energy sector activities to address regional and global environmental impacts. Assisting DMCs to access and mobilize additional resources for their development-oriented projects that mitigate GHG emissions is the next logical step for ADB.

III. CLEAN DEVELOPMENT MECHANISM

A. The CDM Concept

5. The CDM is a financing instrument defined in Article 12 of the Kyoto Protocol. A project in a developing country that reduces GHG emissions, relative to a baseline project, generates emissions reduction (ER). CDM enables the project owner to sell the ER credits, once they are certified, to an interested buyer. The project owner or seller may be a DMC government or a DMC-based company and the buyer could be an Annex B country or an Annex B-based company with responsibility to reduce emissions at home or through the Kyoto mechanisms or any company that might be interested in buying emission credits for investment, resale, or enhancement of its green image. The benefits of CDM for the developing country are new financial resources, better technology, and achievement of its sustainable development objectives, while the benefit for developed countries is access to less expensive ER opportunities in a developing country. As emissions have the same global effect irrespective of their geographical origin, CDM provides a cost-effective way of addressing the adverse effects of global warming.

6. A CDM project produces a new commodity, ER credits, which can be traded to generate revenue for the project owner. However, as the ER credits are invisible and intangible, their existence needs to be established and verified. For example, a wind power project generates

as of 20 December 2002 are Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, and United Kingdom, accounting for 43.9% of Annex B emissions.

⁴ ADB. 1991. *International Conference on Coal Technologies to Reduce Greenhouse Gas Emission*. Manila. ADB. 1991. *Seminar on Energy Conservation in the Electricity Sector*. Manila. ADB. 1992. *Regional Study on Solar Power*. Manila. ADB. 1994. *A Study of a Least-Cost Greenhouse Gas Abatement Strategy for Asia*. Manila. ADB. 1995. *Workshop on Demand Side Management in the Power Subsector*. Manila. ADB. 1999. *Capacity Building for Implementation of the Kyoto Protocol and the Clean Development Mechanism*. Manila. ADB. 2002. *Technical Assistance to the People's Republic of China for Opportunities for the Clean Development Mechanism in the Energy Sector*. Manila.

⁵ ADB. 2000. *Energy 2000: Review of the Energy Policy of the Asian Development Bank*. Manila.

electricity without emissions of GHGs, while an alternative thermal power plant (baseline) would have produced GHG emissions. The avoided emissions or ER credits once quantified and verified by independent operational entities and certified by the CDM Executive Board have a financial value and can be sold to generate a revenue stream for the project owner. The CDM project would normally also result in improved local environmental conditions and lowering of pollution-related health problems compared with the baseline.

B. The CDM Process

7. Since the ER credits are invisible and intangible, their existence needs to be established and verified. At the seventh Conference of the Parties in November 2001, the Parties agreed on the basic rules for the functioning of the CDM. It is necessary to ascertain that a CDM project will lead to emissions below those that would have occurred in the absence of the CDM project activity. This requires the establishment of a baseline emissions scenario without the proposed CDM project. At this Conference of the Parties, an executive board was established to approve methodologies for baselines, monitoring plans, and project boundaries; accredit operational entities; and develop and maintain the CDM registry. The CDM Executive Board comprises representatives from the Parties to the Kyoto Protocol with one member from each of the five United Nations regional groups, two members from Annex B countries, two members from non-Annex B countries, and one member from small-island developing states. The adequacy of the baseline and the ER potential is validated by accredited operating entities. Projects starting in 2000 and beyond are eligible to earn ER credits under the CDM if they lead to real, measurable, and long-term GHG reductions. The most common form of "trading" expected is through purchase agreements.⁶

8. Participation of a developing country in the CDM is on a voluntary basis and the government of such country must first confirm whether the project contributes to its sustainable development objectives. Recognizing that many renewable energy projects could be small-scale projects and in order to reduce the higher transactions costs associated with small-scale projects, simplified modalities are being developed for such projects.

III. RATIONALE AND JUSTIFICATION FOR A FACILITY AT ADB

9. The CDM is a "win-win" solution that helps promote sustainable development in ADB's DMCs by accelerating the penetration of cleaner energy production and use, efficient resource utilization, and conservation of natural resources. CDM activities yield local as well as global environmental benefits and the mechanism ensures compensation to DMCs for their initiatives. However, the CDM is a new financial instrument that internalizes global environmental benefits into the market mechanism; this results in a new and complex process in the initial stages, with DMCs being least equipped to participate in this innovative and beneficial mechanism. The developed country parties inclined to participate in the CDM are hesitant to transact in a new area with DMCs given their own limited or lack of experience with the CDM. During the inception years of the CDM, the market is underdeveloped and imperfect. These factors necessitate a role for ADB best achieved through the establishment of the CDM facility focusing exclusively on acquiring expertise and specialization in the CDM and assisting its member countries to benefit from the CDM. Further, the CDM will assist in promoting ADB's objectives of cleaner energy and sustainable development in its DMCs. The CDM facility, with a group focusing on the CDM, would be best equipped to advise ADB departments and parties concerned about the

⁶ Other forms of support can be through equity investments in projects or loans to be repaid through exchange of ER credits.

rapidly developing operating rules and procedures related to the CDM. Incorporating the CDM would enable DMCs to access additional resources for their cleaner initiatives that would yield global environmental benefits. For donor member country parties, ADB's involvement in CDM projects will ensure adequate quality and encourage them to participate in the CDM and in meeting their Kyoto Protocol commitments.

10. The rationale for establishing a CDM facility flows from a number of factors: (i) the CDM offers a new source of funding for sustainable development projects with special focus on DMCs; (ii) substantial synergies exist between ADB's objectives of sustainable growth and promotion of clean energy projects and the objectives of the CDM; (iii) ADB has a portfolio of projects that can yield a significant quantity of ER credits and thus CDM will help DMCs seize this opportunity to internalize positive environmental externalities into financial gains; (iv) the CDM enables the integration of global environmental issues into projects; (v) DMCs require support to participate in and benefit from the ER market, which is still in the developmental stage and thus necessitates intervention by ADB; and (vi) ADB needs to build its capacity to assist stakeholders in accessing the CDM. Some of these are discussed in the following paragraphs.

A. Mobilizing Additional Resources for DMCs

11. ADB has been financing a large number of projects that reduce GHG emission. GHG reduction was incorporated in the economic analysis for some projects, but in the absence of a carbon market or mechanism such as the CDM under the Kyoto Protocol, these benefits did not translate into an enhanced revenue stream for the DMC.⁷ GHG abatement in DMCs without the CDM does not generate additional financial benefits from potential ER or improve overall returns. The CDM provides one of the few opportunities for ADB to actively integrate global environmental issues into the processing of investment projects and thus bring additional resources to its DMCs. The CDM facility and ADB will help to create and nurture the nascent ER market and to increase the flow of resources to DMCs for sustainable development.

B. Market Development

12. An important feature of the carbon market developed so far is that most of the transactions are forward contracts made by few buyers of ER credits with payments either to be made in advance or upon delivery. The present market is dominated by a few large buyers of ER credits and thus there is a lack of competition. This may adversely impact the development of ER markets and the overall financial benefits to ER sellers, which largely would be developing countries. Prospective growth in the ER markets will make the CDM a potentially powerful financial instrument for mobilizing additional resources for GHG abatement projects. At present, the ER market is not well developed and ADB can play a valuable role in bridging the gap between potential buyers and sellers of ER credits so as to ensure a fair return to participating DMCs in their GHG abatement initiatives. ADB's CDM facility will assist in generating market information for buyers and sellers and thus assist the development of a mature and robust market with more market participants.

C. Positive Experience of the World Bank

13. The World Bank has taken the lead in this area by establishing the Prototype Carbon Fund (PCF) in 1999 with the operational objectives of mitigating climate change, aspiring to promote the World Bank's tenet of sustainable development, to demonstrate the possibilities of public-private partnerships, and to offer a "learning-by-doing" opportunity to its stakeholders.

⁷ For example, an estimated 2.2 million tons of CO₂ equivalent reduction is expected per year. ADB. 1999. *Loan to the People's Republic of China for the Shanxi Environment Improvement Project*. Manila.

The PCF was established by the World Bank as a separate legal entity and includes six participating countries⁸ and 17 large energy or energy related companies,⁹ and invests contributions made by its member companies and governments in projects designed to produce ER fully consistent with the Kyoto Protocol. Contributors, or "participants" in the PCF, will receive a pro rata share of the verified and certified ER depending on their contribution levels in the PCF. The size of the PCF was increased to \$180 million in May 2000, and unless agreed otherwise it will operate until 31 December 2012. By the end of August 2002, the PCF had negotiated 14 ER transactions totaling \$35 million and developed a project pipeline of 26 proposals valued at \$106 million.

14. In 2002, the World Bank launched the new \$100 million Community Development Carbon Fund initiative to provide finance for reducing GHG emissions, to small-scale projects in small developing countries and rural areas of all developing countries in exchange for ER credits. In addition to these funds, the World Bank, International Finance Corporation, and Corporacion Andina de Fomento, a multilateral Latin American development bank, have entered into separate agreements with the Government of the Netherlands to deliver ER credits.

D. CDM Facility's Unique Function

15. ADB's CDM facility expects to fulfill a unique function in three ways: First, the CDM facility will assist the operational departments in working with DMCs or sellers of ER credits. The facility will assist DMCs through a complex process to obtain certified credits. Advice on use of the CDM is not as yet available on an institutionalized basis. Very few developers of ER projects are aware of the potential value of their ER, and most are not informed about the CDM process and options for approaching an ER buyer. At present most advice and technical assistance available to DMCs is supported by buyers.

16. Second, until now, DMCs do not have access to a market for ER credits and the CDM facility will fill in an important gap. The CDM facility will allow sellers to explore multiple offers from buyers and select the most appropriate one. Without the CDM facility, this option is not available to DMCs. All other trade initiatives so far are driven by buyers of ER credits, either individually or through multilateral financial institutions.

17. Finally, sellers do not have adequate information on the demand and supply of ER credits, prices, etc.; and the CDM facility will undertake the task of providing market intelligence to all. The CDM facility will work as an information exchange that will be useful for sellers and buyers.

18. ADB's focus on developing markets for ER credits with a large number of potential buyers and sellers will provide an alternative window of opportunities for DMCs to maximize financial gains.

E. Complexity of CDM Process

19. Unless ADB staff and DMCs are assisted in this task by specialists, it will be difficult to tap benefits offered through the Kyoto Protocol. The CDM process is quite complex and includes five major steps, as follows:

⁸ Canada, Finland, Japan, the Netherlands, Norway, and Sweden.

⁹ The 17 corporations participating in the PCF are British Petroleum, United Kingdom; Chubu Electric Power Co., Japan; Chugoku Electric Power Co., Japan; Deutsche Bank, Germany; Electrabel, Belgium; Fortum, Finland; Gaz de France, France; Kyushu Electric Power Co., Japan; Mitsubishi Corp., Japan; Mitsui & Co. Ltd., Japan; Norsk Hydro, Norway; RaboBank, the Netherlands; RWE, Germany; Shikoku Electric Power Co., Japan; Statoil, Norway; Tohoku Electric Power Co., Japan; and Tokyo Electric Power Co., Japan.

- (i) **Project identification.** The CDM facility will assist the operations departments to undertake a preliminary assessment of projects and identify projects with GHG abatement potential. Necessary government or other clearances will be obtained to proceed further. If the seller is interested in the CDM project activity, a brief project identification note will be prepared. Next, potential buyers will be invited to express interest in offering a commitment to pay for the development costs of the CDM and for purchasing an agreed quantity of ERs. Alternatively, the seller might want to pay for the development costs of the CDM and later approach buyers.
- (ii) **Project development.** The second step relates to project development. This entails demonstrating and estimating the GHG abatement potential of the project using an appropriate baseline, developing a monitoring and verification plan that will be implemented during the operation of the project to determine actual ER credits generated by the project, and development of the project design document.¹⁰
- (iii) **Validation and registration.** The project design document developed in (ii) is validated by an independent accredited entity or designated operational entity and submitted for registration to the CDM Executive Board.¹¹
- (iv) **Monitoring, verification, and certification of ER credits.** During the operation of the project, the ERs generated are measured according to the monitoring and verification plan and verified by an independent and accredited designated operational entity.¹²
- (v) **Issuance of ER credits.** The CDM Executive Board certifies the verified ERs that can be transferred to the buyer in case of an existing purchase agreement or traded in the ER market at prevailing prices.

20. The CDM facility will assist ADB staff and DMCs in processing a CDM project. The CDM facility, through the operations departments, will assist the DMCs in CDM project activity identification, development and validation, and registration (steps (i), (ii) and (iii)). The Appendix presents the various steps in the CDM process.

21. A preliminary review of ADB's pipeline of projects for the next 3 years indicates about 40 projects that could have CDM potential for saving over 20 million tons of CO₂. Additional CO₂ can be saved in a few ADB projects implemented since 2000. ADB does not have the resources or staff skills required to screen these proposals and provide assistance to DMCs to determine whether candidate projects should be investigated for their CDM potential.

¹⁰ This document needs to be submitted to the CDM Executive Board after validation by a designated independent party.

¹¹ The overall supervision of the CDM is entrusted to the CDM Executive Board, under the authority and guidance of the Conference of the Parties to the UNFCCC/Meeting of the Parties to the Kyoto Protocol. The Executive Board makes recommendations on further modalities and procedures for the CDM; approves new methodologies related to baselines, monitoring plans, and project boundaries; and is responsible for the accreditation of operational entities and for the review of accreditation standards. Once the CDM facility is operational, the Executive Board will develop and maintain the CDM registry, and address issues relating to observance of modalities and procedures for the CDM by project participants and/or operational entities.

¹² Under normal circumstances the designated operational entity at the validation and certification stages are different.

F. Demand for ER Credits

22. At present the carbon market is estimated to range from 1.3 billion tons to 3.5 billion tons of CO₂ without the participation of Australia and the United States (US). A parallel ER market is expected to develop in the US in response to domestic policy and voluntary initiatives of some industries. The current buyers are the World Bank's PCF, the Government of the Netherlands, and other Annex B countries, as well as private sector companies like British Petroleum. Some ER transfer transactions have been completed, though these are yet to obtain the CDM Executive Board's approval to be registered as CDM projects. Price information on these transactions is limited: prices available for PCF agreements are in the range of \$1.4 to \$3.5 per ton of CO₂, whereas the Government of the Netherlands pays about \$4 per ton of CO₂.

IV. THE CDM FACILITY

A. Objective

23. The objective of the CDM facility is to assist DMCs to benefit from the CDM in achieving sustainable and pro-poor development. This will be achieved by facilitating access to additional resources available through the CDM for projects that contribute to sustainable development in DMCs and abate GHG emissions. In the absence of a mature ER market, the CDM facility will endeavor to bridge the gap between buyers and sellers, ensuring a fair return to DMCs for their GHG abatement initiatives. The operation of the CDM facility will help develop a robust ER market and strengthen the market position of DMCs.

B. Functions of the CDM Facility

24. The CDM facility will assist DMCs in sourcing funds for ER, assist in processing CDM requirements for projects, and provide information and advice on the emerging ER market. The CDM facility will carry out three main functions: (i) assist DMCs, through ADB operations departments, in sourcing funds for ER; (ii) assist in processing CDM requirements for identified projects including small-scale CDM projects through private sector operations or other intermediaries; (iii) and provide information and advice on the emerging ER markets. The CDM facility will prepare guidelines and manuals on CDM project processing, including a draft model ER purchase agreement. In addition, to assist small countries and DMCs with a relatively low capacity to access CDM resources, the CDM facility might explore the establishment of a separate revolving fund that would provide financial support to process ER credits from relevant projects in such countries. Upon the successful implementation of such projects, the initial project development costs could be returned to the revolving fund.

C. Operational Modalities of the CDM Facility

25. The CDM facility will support operations departments in identifying projects with CDM potential and evaluate the likelihood of their meeting the eligibility criteria for CDM projects, as well as in undertaking a preliminary risk assessment. The CDM facility will provide all necessary support to the operations departments for the CDM component—from project identification, project development and validation, and registration of the CDM project activity. All projects proposed for CDM will require the approval of the DMC government. The projects for which ER credits are sought will be designed to be compatible with and supportive of the national environment and development priorities of the DMC and ADB's country strategy and program. The CDM facility, upon the request of the seller, can assist in finding a buyer at the project identification phase. At this stage the project is open to all interested buyers. The CDM facility will assist in further processing the project and in developing the project design document for

validation by the operational entity and the subsequent registration of the project. On validation and registration with the CDM Executive Board for projects where buyers have been identified, the CDM facility will help develop the principal terms for the ER purchase agreement that will include the ER credit unit price per ton of carbon dioxide equivalent, the quantity of yearly ER credits, duration of the agreement, total value of the agreement, terms of payment, etc. This ER purchase agreement will be a separate legal agreement from the loan agreement for the ADB project.

26. Initially the ER credits are expected to come from projects in ADB's pipeline. However, CDM ER credits could also originate in the private sector, or local development banks or bilateral agencies could suggest projects that will generate ER credits. In all cases, the transfer of ER credits will be consistent with the rules and criteria, if any, adopted by DMCs regarding the CDM, as well as of procedures adopted by the parties to the Kyoto Protocol. The transactions and contract for ER credits will be between the buyer and seller. The ER credits will be sold or transferred as they are generated and certified over the life of the project. The CDM facility will operate on a nonexclusive basis, with participation open to all interested parties from ADB member countries.

1. Sectoral Coverage

27. Projects may be drawn from a broad range of technologies and processes in energy, industry, agro-forestry, urban services, and transport that generate ER and contribute to sustainable development in the DMC. ER credits could be obtained for projects

- (i) in industry through improved processes for fertilizer, cement, and aluminum manufacturing;
- (ii) such as methane recovery from waste disposal sites, sanitary landfills, and wastewater treatment plants;
- (iii) in agriculture from improved rice cultivation practices, livestock management, and manure and fertilizer utilization;
- (iv) for reforestation and afforestation, when the methodology for such projects is developed and accepted by the parties to the Kyoto Protocol.

2. Institutional Arrangements

28. The CDM facility will be operated within the Regional and Sustainable Development Department (RSDD) under the responsibility of the Director, Finance and Infrastructure Division (RSFI). It will be guided by an ADB-wide steering committee, consisting of operations departments, as well as supporting departments and offices such as the Office of the General Counsel and the Office of Cofinancing Operations. The CDM facility will operate in close cooperation with the project team in developing the CDM component of each project being processed by the operations department.

29. As the CDM will be a new area of operation for ADB and accessing CDM resources for relevant projects requires additional and new types of processing, the establishment of a small group with the requisite expertise will be necessary. Specialist consultants, with expertise in finance, economics, legal matters, and technical issues, will be engaged by ADB in accordance with its *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB for their engagement.

3. Costs and Cost Recovery

30. The CDM facility will operate on the basis of cost recovery where full costs of CDM advice will be internalized in the project design and these costs will either be borne by the project developer or the buyers of the ER credits. This is necessary in light of the Kyoto Protocol requirements that projects accessing CDM should not result in diversion of official development assistance.¹³ This will be done by establishing a cost center within ADB for the CDM facility and instituting a system of accounting for all costs for this operation.¹⁴ However, during the first year of operations before the first deals are made, the CDM facility will be financed by ADB's administrative budget at an estimated total cost of \$800,000. Of this amount, about \$200,000 will be met through reallocation of budgetary resources in 2003.

4. Monitoring and Review

31. During the pilot phase of 3 years, the role and function of the CDM facility will be reviewed annually in the light of developments in the ER market and the relevance of its continued operation. At the end of the pilot phase, a detailed assessment will be made to determine in what form, if any, the CDM facility should continue. A system of performance indicators (including the number of CDM projects facilitated, and the quantity of ER for which the CDM facility provided assistance) to assess outcomes and impacts (including the impact on the ER market in Asia, and participation by smaller DMCs in the ER market) will be designed and put in place to monitor performance of the CDM facility.

5. Risks and Uncertainties

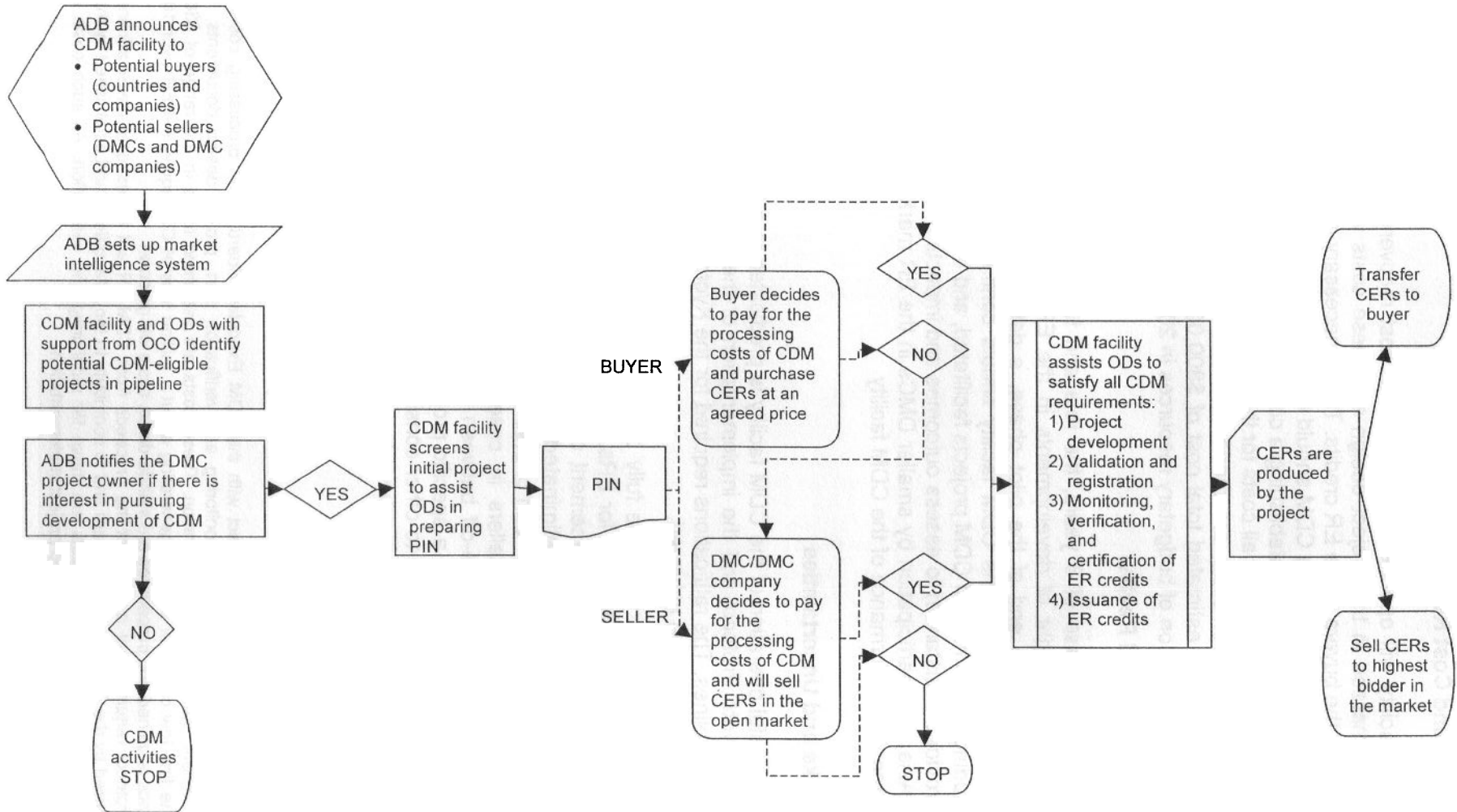
32. The successful operation of the CDM facility is predicated to a large extent on the entry into force of the Kyoto Protocol and the implementation of the CDM in accordance with the Kyoto Protocol guidelines. The ratifications required for the Kyoto Protocol to enter into force by the end of 2003 are likely to be achieved.

31. The market for ERs is yet to be fully developed and the risks associated with these relate to the price of and the demand for ERs. CDM projects already processed by the CDM facility are at risk in case of nonenforcement or if the price of ER collapses. These risks are borne by the seller and could be eliminated or reduced if the sellers enter into a prior arrangement to sell their ER credits or part of their ER credits in a futures market. However, this could be a disadvantage to the sellers in case of higher future ER prices. The project proponents have to weigh the trade-off between risk and certainty in their decision-making. Another risk at the project level is if a specific project fails to qualify as a CDM project or the main project is not implemented due to other considerations. In such a scenario, the party that bears the CDM development costs faces the risk.

¹³ Prior to registration of a CDM-eligible project with the CDM Executive Board, CDM processing costs will be incurred for preparing baseline studies, monitoring and verification plan, project design documents, the ER purchase agreement, validation, and registration. These costs are estimated to be in the range of \$300,000–400,000 for the first few cases for projects generating about 1 million tons of CO₂ equivalent ER over 10 years. Once experience is gained and procedures are standardized, costs will go down.

¹⁴ The Kyoto Protocol requires that a share of the proceeds from CDM ER will be used to cover administrative expenses incurred by the CDM Executive Board and to contribute to the Adaptation Fund established by the Kyoto Protocol. Other Kyoto Protocol-related costs are those for monitoring and verification. All such costs are not discussed here as these are incurred during project implementation.

THE CLEAN DEVELOPMENT MECHANISM PROCESS



CDM = clean development mechanism; CERs = certified emissions reduction credits; DMC = developing member country; ER = emissions reduction; OD = operating department; OCO = Office of Cofinancing Operations; and PIN = project identification number.