

ASIAN DEVELOPMENT BANK

TAR: IND 38496

TECHNICAL ASSISTANCE
(Financed by the Government of Canada)

TO

INDIA

FOR

CAPACITY BUILDING FOR CLEAN DEVELOPMENT MECHANISM

December 2004

CURRENCY EQUIVALENTS

(as of 7 December 2004)

Currency Unit	–	Indian rupee/s (Re/Rs)
Re1.00	=	\$0.0230
\$1.00	=	Rs43.510

ABBREVIATIONS

ADB	–	Asian Development Bank
ALGAS	–	Asia Least-cost Greenhouse Gas Abatement Strategy
CDM	–	clean development mechanism
CER	–	certified emission reduction
CO ₂	–	carbon dioxide
COP	–	Conference of Parties
DMC	–	developing member country
EA	–	Executing Agency
GHG	–	greenhouse gas
GTZ	–	Deutsche Gesellschaft für Technische Zusammenarbeit (German Agency for Technical Cooperation)
MoEF	–	Ministry of Environment and Forests
NCDMA	–	National Clean Development Mechanism Authority
PDD	–	project design document
REACH	–	Renewable Energy, Energy Efficiency, and Climate Change
TA	–	technical assistance
tCO ₂ e	–	tons of CO ₂ equivalent
UNFCCC	–	United Nations Framework Convention on Climate Change

TECHNICAL ASSISTANCE CLASSIFICATION

Targeting Classification	–	Targeted intervention
Sector	–	Energy
Subsector	–	Energy sector development
Theme	–	Environmental sustainability
Subtheme	–	Global and regional transboundary environmental concerns and issues

GLOSSARY

additionality	–	Reductions in GHG emissions that are additional to any that would occur in the absence of a CDM-supported project activity
---------------	---	--

NOTE

In this report, "\$" refers to US dollars.

This report was prepared by A. Sarkar, Finance and Infrastructure Division,
Regional and Sustainable Development Department.

I. INTRODUCTION

1. The Government of India ratified the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC) in August 2002, before the Eighth Annual Conference of Parties (COP-8) to the UNFCCC, held in New Delhi in October-November 2002 and subsequently approved the establishment of the National Clean Development Mechanism Authority (NCDMA) on 2 December 2003. The Government requested the Asian Development Bank (ADB) to provide technical assistance (TA) for capacity building for the clean development mechanism (CDM) in India.¹ The Fact-Finding mission² visited India on 28 July–3 August 2004 to formulate the proposed TA project and reached an understanding with the Government on the goals, purpose, scope, implementation arrangements, cost estimates, financing arrangements, and terms of reference for consultants. The TA framework is in Appendix 1.³

II. ISSUES

2. The increasing level of greenhouse gases (GHGs) in the atmosphere is becoming a significant international environmental challenge, causing global warming and resultant climate changes. Recognizing this potential risk, UNFCCC adopted the Kyoto Protocol in 1997. CDM is one of the three project-based flexible mechanisms that enable a developed country⁴ entity to acquire emission reduction credits from GHG-reducing activities implemented in a developing country at a relatively lower cost. CDM is thus a market-based instrument that allows developed countries to meet their emission reduction commitments while bringing additional financial resources to developing countries to achieve sustainable development.

3. UNFCCC has established elaborate and complex procedures to ensure the environmental integrity of projects that have CDM benefits. Important milestones of these multi-stakeholder procedures include preparation of a CDM project design document (PDD). This needs to be endorsed first by the host country government, indicating that the project will meet the sustainable development criteria. The PDD then needs to be validated by internationally accredited external organizations, called operational entities, to ensure that the project meets the additionality requirements, using baseline information and a methodology for estimating expected GHG emission reduction. The operational entity, acting on behalf of the project developer, submits the PDD to UNFCCC's CDM executive board for registration of the CDM project and approval of proposed emission reduction into certified emission reduction (CER) credits.

4. India is the sixth largest emitter of global GHGs, contributing annually about 1 billion tons of carbon dioxide emissions equivalent (tCO₂e), even though it accounts for only 3% of the total emissions. India's per capita GHG emission (about 1.2 tCO₂e) is one fifth of the global average. An ADB study⁵ shows that, of India's total GHG emissions, carbon dioxide (CO₂) accounts for 35%; methane, for 39%; and nitrous oxide, for 8%. The energy sector is the main emitter of CO₂ (87%); the remainder comes mainly from the cement industry (4%) and land conversion (9%). Livestock accounts for 42% and paddy cultivation for 23% of methane emissions. As significant

¹ The TA concept paper was approved by ADB Vice President, Operations 1, on 23 July 2004.

² The Mission consisted of A. Sarkar, energy specialist, Regional and Sustainable Development Department, Finance and Infrastructure Division (RSFI) (mission leader); and G. Mahajan, environmental specialist, India Resident Mission. R. Nangia, director, RSFI; and S. Tumiwa, energy specialist, South Asia Energy Division, supported the mission from the ADB headquarters.

³ The TA first appeared in *ADB Business Opportunities* (Internet edition) on 27 July 2004.

⁴ Also referred to as Annex I country under the Kyoto Protocol.

⁵ ADB. 1998. *Asia Least-cost Greenhouse Gas Abatement Strategy (ALGAS) Report*. Manila.

potential for GHG reduction at low marginal abatement costs is available across energy, transport, forestry, agriculture, and other sectors, India has the potential to play a major role in the global CDM market. The Government has completed major steps after ratification of the Kyoto Protocol and established NCDMA in December 2003,⁶ comprising an interministerial committee, headed by the Ministry of Environment and Forests (MoEF).

5. NCDMA has policy development, regulatory, and promotional roles to create an enabling environment for a competitive CDM market. The authority has set up an efficient, streamlined process for consideration and approval of PDDs within 60 days of submission.⁷ However, CDM is a new field with limited internal capacity within the Government. Although the required central institutional framework is in place, India, like many other developing member countries (DMCs), lacks broad-based capacity for CDM support at all critical levels beyond NCDMA. CDM project identification, evaluation, assessment, and support have not been mainstreamed into other central, state, and local regulatory agencies and ministries. Substantial external effort is required to build their capacity.

6. India has an estimated 200 CDM projects in various phases of preparation. About 30 projects, mostly large-volume energy projects from the industry sector, have been endorsed by NCDMA for further processing by the CDM executive board. Many GHG reduction projects with the potential for becoming high-quality CDM projects are in the nonenergy sectors, at the small-scale rural and municipality levels.⁸ Knowledge of best-practice guidelines for establishing baselines and methodologies for developing PDDs in many such sectors (rural, small-scale industry, coal bed and coal mine methane, municipal landfill gas, forestry, etc.) remain limited. This is exacerbated by the risks perceived by, and lack of awareness among, potential project promoters and local and state-level regulatory bodies.

7. Domestic financial and risk insurance sectors do not understand CDM projects well; thus, few CDM projects have been able to obtain financing, even after approval by NCDMA. Transaction costs, though declining, still remain significant. The CDM market remains dominated by a few entities such as the Prototype Carbon Fund and the Government of the Netherlands' ERUPT/CERUPT⁹ programs, and Indian project developers (sellers of emission reduction credits) have little leverage to influence emission reduction prices.¹⁰

8. The CDM is emerging as a key vehicle of multilateral cooperation to tackle the potential risks of global climate change.¹¹ The CDM is consistent with the objectives of environmental

⁶ The Seventh Annual Conference of Parties to UNFCCC in Marrakech in 2001 decided that parties participating in the CDM should designate a national authority to evaluate, approve, and endorse projects that help achieve sustainable development. NCDMA was established through Cabinet approval on 2 December 2003.

⁷ The interministerial NCDMA meets regularly to evaluate and endorse CDM project proposals.

⁸ At current carbon prices, the impact on the internal rates of return of sales of carbon credits for "traditional" energy projects is minimal (2–4%), making them less attractive to investors than projects that reduce other GHGs (e.g., methane, which is 21 times more potent, in global warming terms, than CO₂).

⁹ ERUPT = emission reduction unit purchasing procurement tender; CERUPT = certified emission reduction unit purchasing procurement tender

¹⁰ Few domestic financial players or market intermediaries provide the debt and/or equity finance to enable CDM projects to be developed and generate emission reduction, particularly for small-scale rural and municipality projects. The possibility of banking the CER credits for later trading cycles and carryovers, even beyond the first commitment period, has been contemplated but not addressed.

¹¹ ADB has been involved in capacity building in CDM in several DMCs since 2002, through its Renewable Energy, Energy Efficiency, and Climate Change (REACH) Program. ADB established a CDM facility in August 2003, which provides risk-free assistance to prepare and process CDM components of ADB's loan projects in DMCs. The facility does not purchase emission reduction credits but helps identify potential buyers of such credits generated by CDM projects, and facilitates their transactions with the DMCs.

protection, which is one of the main elements of ADB's overall operational strategy for assistance to India, described in its Country Strategy and Program (2003-2006). CDM gives India an opportunity to follow the path of sustainable development by providing access to additional resources for adopting technologies that reduce GHG emissions. A developed domestic CDM capacity could ensure India's effective participation in the global carbon market.

9. The Government, in collaboration with multilateral and bilateral development partners,¹² has launched a national CDM strategy. The capacity-building initiatives are creating a local base of CDM expertise, primarily among energy-sector project developers and promoters. The TA interventions will complement the capacity-building initiatives of the Government. Nonenergy components of the CDM market will also be covered, and capacity-building needs of the state, municipality, local, and rural stakeholders and of the financial and risk insurance industry will be addressed. MoEF will establish a CDM development coordination committee to coordinate the activities of various development partners, including ADB.

III. THE TECHNICAL ASSISTANCE

A. Purpose and Output

10. The TA's goal is to reduce GHGs efficiently by implementing CDM projects. The TA's purpose is to provide broad-based capacity-building support to various stakeholders in specific CDM sectors and selected areas to strengthen India's overall position as one of the key players in the evolving international carbon market. The TA will follow a "learning-by-doing" approach: alongside the training activities, real CDM projects will be developed to demonstrate best practices and guidelines. The TA framework is in Appendix 1.

11. The TA will have the following outputs: (i) staff of NCDMA and other relevant central-level stakeholders, and urban local bodies (and municipalities) in selected states, and project developers and promoters trained to assess and evaluate CDM projects using GHG-reducing technologies such as landfill gas capture, waste to energy, etc.; (ii) two best-practice CDM methodologies and PDDs prepared¹³ for these sectors; (iii) an action plan and strategy document developed to replicate CDM projects in municipalities and urban local bodies; (iv) two best-practice CDM methodologies and PDDs prepared, and associated project bundling mechanisms and financial structuring options formulated (in close cooperation with suitable banks) for selected small-scale CDM sectors such as rural (decentralized) energy supply, small-industry clusters, etc.; (v) an operational toolkit and handbook prepared for small-scale CDM projects; (vi) a CDM project appraisal and risk-management toolkit developed for the domestic financial and insurance sector; (vii) staff of selected institutions from the financial and insurance sectors trained in appraisal, risk management, and structuring of CDM projects; and (viii) the feasibility of a dedicated fund for CDM projects assessed and the fund design developed.

12. The capacity-building experience from this TA will be disseminated among stakeholders in other DMCs, which face similar challenges in their CDM markets. The outputs of this TA will be made available on ADB's REACH Program Web site (www.adb.org/reach) and NCDMA's CDM Web site. The toolkits and handbook will be disseminated to project developers, regulatory

¹² These include the German Agency for Technical Cooperation (GTZ), United Nations Development Programme, World Bank, and the governments of Canada and Switzerland. The programs mainly focus on the large-scale industry and forestry. Many bilateral support initiatives have been tied to project CERs being offered exclusively to the funding countries.

¹³ The PDDs prepared under this TA will be ready to be validated by operational entities and thereafter be submitted for approval and registration by the CDM executive board.

bodies, and financial and insurance organizations in India and other DMCs through the REACH Program network.

B. Methodology and Key Activities

13. The TA will be implemented in close coordination with the MoEF and other stakeholders and interested parties, including the private sector, financial institutions, insurance companies, and civil-society organizations. The TA consultant, in close coordination with MoEF, will select focus states, municipalities, and financial and insurance organizations. All training workshops and seminars will be targeted to focus groups and will include a comprehensive evaluation framework to determine their effectiveness. The TA is divided into two components.

14. **Component 1.** This will focus on governmental and regulatory entities (NCDMA and stakeholders at state, urban local body, municipality, and rural levels) and project developers and promoters. Four regional workshops will be conducted in India. The capacity-building approach will include the development of projects, such as landfill methane gas capture; waste to energy; and small-scale activities such as rural decentralized energy supply projects, industry clusters, rural energy plantations, etc. The best-practice CDM projects developed under this TA will address risks and costs of institutionalizing various elements of the CDM cycle (additionality, baselines, monitoring and verification modalities, sustainable development objectives, etc.).

15. **Component 2.** This will help mainstream CDM into the domestic financial and insurance sector. The CDM project appraisal and risk-management toolkit from this TA will help mainstream carbon finance and associated revenue streams into project finance appraisals. Four regional training workshops in India will help build capacity of selected financial institutions (commercial banks, nonbanking financial institutions, rural cooperative banks, etc.) and insurance companies in the area of CDM. One international seminar on carbon markets and financing will be organized.¹⁴ The feasibility of a dedicated fund for CDM projects will be assessed, and its conceptual framework, organizational structure, business plan, and operational guidelines designed.

C. Cost and Financing

16. The total cost of this TA is estimated at \$900,000 equivalent, with a foreign exchange cost of \$425,000 and a local currency cost of \$475,000 equivalent. The Government of Canada will provide \$700,000, consisting of the entire foreign exchange cost of \$425,000 and \$275,000 equivalent of local currency cost from the Canadian Cooperation Fund for Climate Change. The TA will be financed on a grant basis by the Government of Canada, and will be administered by ADB. The Government of India will finance the remaining \$200,000 equivalent of local currency costs, in kind. The TA cost estimate and financing plan are in Appendix 2.

D. Implementation Arrangements

17. MoEF will be the Executing Agency (EA) for the TA and will provide office space and local telephone access. The EA will help the TA consultant identify specific counterparts and facilitate data gathering in urban local bodies, municipalities, and rural areas. The TA consultant

¹⁴ At the international seminar, selected participants from other DMCs in the region will be invited to share the lessons learned and best practices developed under this TA and other similar ADB TAs (e.g., ADB. 2004. *Opportunities for the CDM in the Energy Sector*. Manila [TA-3840 PRC, also cofinanced by the Government of Canada and completed in 2004]).

will organize the workshops and international seminar, which will be designed in coordination with the EA and other multilateral and bilateral development partners. The TA will be implemented over 18 months, from 1 February 2005 to 31 July 2006.

18. A project implementation unit will be located in the office of the EA, which will assign a senior staff member as the project manager and a counterpart team from NCDMA to work with the TA consultant. The project manager will regularly monitor the consultant's work, in close coordination with ADB. The EA will establish a steering committee comprising senior officials from the Government, and representatives from the NCDMA interministerial committee, private sector, and civil-society organizations. The steering committee—the apex body that will convey and interpret the Government's views and generally oversee TA implementation—will meet at least quarterly. Meeting minutes will be recorded and circulated to ADB and members of NCDMA. The EA will nominate the project manager and establish the steering committee before the TA consultants are mobilized and fielded. The team leader of the TA consultants will be responsible for overall coordination between consultants, the Government, ADB, and the steering committee.

19. The TA will require a consulting team of international and domestic consultants. About 12 person-months of international and 39 person-months of domestic consulting services are envisaged. The international consultants should have extensive experience in CDM policy, regulatory, and market development. They should have demonstrated expertise in areas of (i) climate change policy formulation and international negotiations, (ii) multisector CDM project development and processing, (iii) project-level financial and economic analysis, (iv) institutional development, and (v) financial risk management and fund structuring. International consultants will collaborate with and supplement the skills of domestic consultants, who will have similar expertise and be familiar with Indian conditions and institutional structures. The outline terms of reference for consulting services are in Appendix 3. ADB will engage a consulting firm or a consortium of firms in accordance with ADB's *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB for the engagement of domestic consultants. Consultants will be recruited following the submission of full technical proposals under the quality- and cost-based selection method. Procurement of any equipment under the TA will follow ADB's *Guidelines on Procurement*.

20. The consultants will submit their inception report (a detailed work program with specific timetable for important tasks), interim report, and a draft final report by the end of month 1, 6, and 14, respectively, after their services start. Other deliverable reports will be submitted in accordance with milestones to be confirmed when the TA starts. The consultants will prepare monthly status and progress reports for the specific scopes of work. Tripartite meetings among representatives from the EA, ADB, and TA consultants will be held in India to discuss the inception, interim, and draft final reports. Within 1 month of the tripartite meeting for the draft final report, the consultants will submit a final report, incorporating comments received from the Government and ADB.

IV. THE PRESIDENT'S DECISION

21. The President, acting under the authority delegated by the Board, has approved ADB administering technical assistance not exceeding the equivalent of \$700,000 to the Government of India to be financed on a grant basis by the Government of Canada for Capacity Building for Clean Development Mechanism, and hereby reports this action to the Board.

TECHNICAL ASSISTANCE FRAMEWORK

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
<p>Goal</p> <p>Efficient reduction of GHGs through implementation of CDM projects in India</p>	<p>Reduction in rate of growth of GHG emissions at national level and in focal states</p> <p>Specific reduction of GHG emissions in CDM projects</p>	<p>Annual statistical reports of NCDMA and MoEF</p> <p>UNFCCC's CDM executive board statistics and monitoring data</p>	
<p>Purpose</p> <p>Provide broad-based institutional development, technical, and training support for capacity building of various stakeholders in specific CDM sectors and selected areas, through a "learning-by-doing" approach.</p>	<p>Increased number of CDM projects developed and implemented, targeting municipality, urban local bodies, rural, and small-scale sectors</p> <p>Increased number of CDM projects assessed and evaluated by policy and regulatory institutions in the focal states, at the municipality, urban local body, and rural levels</p> <p>Increased number (and share) of CDM projects in target sectors, which are approved by NCDMA and CDM executive board and implemented</p> <p>Increased number of CDM projects appraised, processed, and financed by domestic financial sector</p> <p>Increased number of CDM projects where domestic risk insurance sector is involved in mitigating project risks</p>	<p>Data from workshop reports on number of stakeholders trained in target sectors and areas, from NCDMA, state, urban, municipality, and rural level entities, and financial and insurance organizations</p> <p>NCDMA statistics on number of PDDs developed, approved, and implemented in target sectors and states, and their financing and risk-mitigation sources</p> <p>UNFCCC's CDM executive board statistics</p>	<p>Assumptions</p> <p>Stakeholders' and participants' ability to absorb the skill set offered by the training</p> <p>Counterpart interest and willingness to participate at the local, municipality, and rural levels</p> <p>Counterpart interest in the financial and insurance sectors</p> <p>Risks</p> <p>Lack of adequate participation from financial and insurance sectors</p> <p>Inadequate capacity to absorb training at the level of all stakeholders</p> <p>Regime of low prices being offered for emissions reduction from CDM projects</p>
<p>Outputs</p> <p>1. Two best-practice PDDs for CDM projects at the urban local body and municipality levels</p>	<p>High quality, replicable best-practice PDDs for developing CDM projects at</p>	<p>ADB review missions</p> <p>Monitoring by NCDMA</p>	<p>Assumptions</p> <p>Strong TA ownership and continued</p>

Continued on next page

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
2. An action plan and strategy document for replication of CDM projects in municipalities and urban local bodies	the urban local body, municipality, and rural levels Pragmatic action plan and strategy document, and implementation of its various elements for replication of	and project implementation unit Inception report Interim report Draft final report	support by EA and NCDMA Good consultation and active stakeholder participation
3. Two best-practice PDDs for CDM projects in small-scale sectors, including rural areas, along with sector-specific bundling framework and financial structuring mechanisms	CDM projects in municipalities and urban local bodies High quality, replicable best-practice PDDs for CDM projects in small-scale sectors, including rural areas, along with sector-specific bundling framework and financial structuring mechanisms	Tripartite meetings between representatives from EA, ADB and TA consultant Number of PDDs developed using best-practice guidelines	Active counterpart participation in design, selection, organization, etc. Consultants' ability to deliver on time Counterpart interest of project developers/promoters Satisfactory consultant performance
4. An operational toolkit and handbook for CDM project implementation in small-scale sectors, including rural areas.	Informative, well-prepared and user-friendly operational handbook and toolkit and its application in small-scale sectors, including rural areas, to develop CDM projects	Number of PDDs developed using operational toolkit for small-scale sectors	EA assistance in obtaining necessary government clearances and information in a timely manner
5. CDM project appraisal and risk analysis and management toolkit for financial and insurance sectors	Extensive use of CDM project appraisal and risk analysis and management toolkit by financial and insurance sectors for financing new CDM projects	Number of CDM projects appraised by the target financial and insurance sectors using the toolkit	Risks Poor consultant performance Non-availability of adequate and high quality sector-specific data and information.
6. Feasibility design for a dedicated fund for CDM projects	A market-tested design for a dedicated fund for CDM projects	Implementation of the fund by some financial institutions	Lack of adequate participation from financial and insurance sectors
7. Eight workshops and one international seminar for training purposes	Workshops and seminars well attended by relevant staff	Number of stakeholders trained in target sectors and areas from NCDMA, state, urban, municipality, and rural level entities, and financial and insurance organizations	
8. Dissemination of results of the TA to relevant stakeholders within and outside India	All project outputs (including training materials) shared through the REACH program Web site and NCDMA's CDM website Reports shared with relevant institutions in the financial and insurance sector in India and other DMCs	Review of REACH Program and NCDMA's CDM Web sites	

Continued on next page

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
<p>Activities</p> <ol style="list-style-type: none"> 1. Component 1 2. (i) Provide capacity building, including organizing four regional workshops and training programs, involving NCDMA and other CDM policy/regulatory stakeholders at state, urban local bodies, and municipality 3. (ii) Prepare PDDs for selected projects in two municipalities to demonstrate best practices 4. (iii) Develop a comprehensive action plan and strategy document for replicating CDM projects in these sectors 5. (iv) Formulate CDM best-practice methodologies, prepare two PDDs, and develop sector-specific bundling framework and financial structuring mechanisms for small-scale CDM sectors, in close cooperation with suitable banks 6. (v) Prepare an operational toolkit and handbook capturing all development and implementation aspects 7. Component 2 8. (i) Develop a CDM project appraisal and risk management and analysis tool kit for financial and insurance sectors 9. (ii) Assess feasibility and develop design, including conceptual framework, organizational structure, business plan, and operational guidelines, for a dedicated fund for CDM projects 10. (iii) Organize four regional workshops and an international seminar on carbon markets and financing 	<p>Proper planning and sequencing of activities</p> <p>Timely completion of activities</p> <p>Systematically selected focus areas and sectors</p> <p>Good assessment of background knowledge</p> <p>Well-prepared reports and PDDs</p> <p>Well-attended workshops</p> <p>Consultations with NCDMA and other relevant stakeholders</p> <p>Effective application of "learning-by-doing" approach</p>	<p>Meetings with consultants</p> <p>Review mission reports</p> <p>Feedback provided by EA and project implementation unit</p> <p>Inception report</p> <p>Interim report</p> <p>Draft final report</p> <p>Tripartite meetings between representatives from EA, ADB and TA consultant</p> <p>Workshop and seminar reports</p>	<p>Assumptions</p> <p>Availability of adequate data</p> <p>Risks</p> <p>Late consultant recruitment</p> <p>Poor consultant performance</p>
<p>Inputs</p> <ol style="list-style-type: none"> 1. Consultants 2. Total cost 3. Financing 	<p>12 person-months of international and 39 person-months of domestic consulting services</p> <p>Estimated total cost of \$900,000 equivalent, comprising \$425,000 in foreign exchange and \$475,000 in local currency</p> <p>Government of Canada through ADB: \$700,000 equivalent on a grant basis.</p>	<p>Contracts award, ADB project disbursement documents, and TA outputs</p> <p>Implementation monitoring by ADB and the Government</p> <p>TA paper approval by the President of ADB</p> <p>Review missions and periodic reports</p>	<p>Assumptions</p> <p>Timely recruitment of capable consultants with requisite skills mix and expertise</p> <p>Domestic consultants' ability to provide required expertise and support</p> <p>Timely approval of the TA</p> <p>Counterpart support and facilities, and</p>

Continued on next page

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
4. Counterpart contribution	Government's contribution (in kind): \$200,000 equivalent		funds to meet local currency costs Risks Inaccuracy of cost estimates Delayed recruitment and mobilization of consultants

ADB = Asian Development Bank; CDM = clean development mechanism; DMC = developing member country; EA = Executing Agency; GHG = greenhouse gas; MoEF = Ministry of Environment and Forests; NCDMA = National Clean Development Mechanism Authority; OE = operational entity; PDD = project design document; REACH = Renewable Energy, Energy Efficiency, and Climate Change; TA = technical assistance; UNFCCC = United Nations Framework Convention on Climate Change.

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Foreign Exchange	Local Currency	Total Cost
A. Government of Canada Financing^a			
1. Consultants ^b			
a. Remuneration and Per Diem			
i. International Consultants	240.0	0.0	240.0
ii. Domestic Consultants	0.0	175.0	175.0
b. International and Local Travel	30.0	15.0	45.0
c. Reports and Communications ^c	15.0	5.0	20.0
2. Equipment ^d	30.0	0.0	30.0
3. Training, Seminars, and Conferences			
a. Facilitators	20.0	10.0	30.0
b. Training Program	25.0	40.0	65.0
4. Representative for Contract Negotiation	5.0	0.0	5.0
5. Contingencies	60.0	30.0	90.0
Subtotal (A)	425.0	275.0	700.0
B. Government of India Financing^e			
1. Office Accommodation	0.0	105.0	105.0
2. Remuneration and Per Diem of Counterpart Staff	0.0	15.0	15.0
3. Local Travel and Transport ^f	0.0	10.0	10.0
4. Secretarial Support and Office Services ^f	0.0	5.0	5.0
5. Office Equipment	0.0	10.0	10.0
6. Other ^g	0.0	55.0	55.0
Subtotal (B)	0.0	200.0	200.0
Total (A + B)	425.0	475.0	900.0

^a Administered by the Asian Development Bank (ADB).

^b If specific projects require them, a few individual consultants may be recruited to supplement the efforts of the consulting firm. In this case, the estimated cost of individual consultants will be deducted from the total available consulting funds, when the consulting firm's contract is negotiated.

^c Includes preparation of handbook and toolkits.

^d Includes office equipment (computer, printers, projector, etc.) and relevant computer software.

^e Government of India financing through contributions in kind.

^f For the project implementation unit, counterpart team, and project manager at the Ministry of Environment and Forests.

^g To provide for contingencies and unforeseen expenses.

Source: ADB estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. Consulting Services

1. A consulting team of international and domestic consultants, with extensive experience in areas of clean development mechanism (CDM) policy, regulatory, and market development, and also having demonstrated expertise in areas of (i) climate change policy formulation and international negotiations, (ii) multisector CDM project development and processing, (iii) project-level financial and economic analysis, (iv) institutional development, and (v) financial risk management and fund structuring, will be required for this technical assistance (TA). The domestic consultants will be familiar with Indian conditions and institutional structures. International consultants will be required to collaborate with and supplement the skills of domestic consultants. About 12 person-months of international and 39 person-months of domestic consulting services are envisaged.

2. The consulting team will provide the following services: (i) Give capacity-building support to staff of National Clean Development Mechanism Authority (NCDMA), other relevant central- and state-level stakeholders in selected states, and project developers and promoters for assessing and evaluating CDM projects using landfill gas capture, waste to energy, etc. (ii) Develop two best-practice CDM methodologies and prepare project design documents (PDDs)¹ for these sectors. (iii) Formulate an action plan and strategy document for replication of CDM projects in municipalities and urban local bodies. (iv) Develop two best-practice CDM methodologies and prepare PDDs¹ and associated project bundling mechanisms and financial structuring options (in close cooperation with suitable banks) for selected small-scale CDM sectors. (v) Develop an operational toolkit and handbook for small-scale CDM projects. (vi) Develop a CDM project appraisal and risk-management toolkit for domestic financial and insurance sector. (vii) Extend capacity-building support to selected entities in the financial and risk insurance sectors, in areas of appraisal, risk management, and structuring of CDM projects. (viii) Assess the feasibility of a dedicated fund for CDM projects and design the fund. (ix) Organize workshops and seminar.

3. The consulting team will ensure that all works and outputs under the TA fully comply with all relevant Asian Development Bank (ADB) policies and guidelines. The consultants will be expected to be familiar with ADB's guidelines for technical, financial, and economic analysis, as well as social safeguards. For all workshops and seminars, a comprehensive evaluation framework will be developed and used by the TA consultant, to determine their effectiveness.

B. Scope of Work

1. International Consultants

a. Climate Change Policy and CDM Market Development Specialist-Team Leader (4.5 person-months)

4. The responsibilities of the consultant will include, but not necessarily be limited to, the following:

- (i) Prepare a comprehensive framework for the capacity building support in the area of CDM, with emphasis on specific sectors covered under the TA objectives.

¹ The PDDs prepared under this TA will be ready to be validated by operational entities and thereafter be submitted for approval and registration by the CDM executive board.

- (ii) Use the framework and information gathered to develop a strategy to overcome market and nonmarket barriers to financial sector support and promotion of CDM projects in target sectors.
- (iii) Assess the feasibility of implementing CDM policies, rules, and regulations with regard to institutional responsibilities, mechanisms, and financial resources.
- (iv) Review criteria (including size, sector, location, financing arrangements, etc.) developed by the CDM project development specialist for financing projects.
- (v) Select projects for developing PDDs to demonstrate the potential for widespread adoption of CDM projects in targeted sectors in Component 1, taking into consideration the institutional, financial, economic, technological, and environmental priorities of the Indian Government and the financial community.
- (vi) Provide directions and support to the development of best-practice PDDs.
- (vii) Formulate a comprehensive action plan and strategy document for the widespread replication of CDM projects in the sectors under Component 1.
- (viii) Review the work of the CDM fund development and investment specialist for the feasibility design of a dedicated fund for CDM projects (component 2).
- (ix) Provide directions for the regional training workshops and international seminar.²
- (x) Provide overall coordination between other consultants and the Government, ADB, steering committee, and other stakeholders.

b. CDM Fund Development and Investment Specialist
(3.0 person-months)

5. The specialist will do the following:

- (i) Assess the barriers, implications, and opportunities in the domestic financial and insurance sectors for participation in CDM projects, taking into account the growing cooperation among international agencies. Assess the feasibility of supporting selected CDM projects and subprojects in the TA's focus areas, according to various existing financing mechanisms.
- (ii) Determine the appropriate criteria (size, sector, location, financing arrangements) for selecting various enterprises as potential areas for CDM support. Assess the technical aspects of typical projects, financing requirements, and risks.
- (iii) Develop the framework, organizational structure, and business plan for a fund for CDM projects, and design its operational and management guidelines.
- (iv) Develop a CDM project appraisal, risk management, and analysis toolkit for use by the financial and insurance sectors for mainstreaming CDM.
- (v) Help the CDM project development specialist develop a project bundling framework and financial structuring mechanisms (in close cooperation with financial sector) for specific small-scale CDM sectors targeted under this TA.

c. CDM Project Development Specialist (3.0 person-months)

6. The specialist will do the following:

- (i) Identify CDM projects for support by the domestic financial sector. Assess existing incentives, and, if necessary, propose new ones to motivate government;

² The regional training workshops will be held in India. At the international seminar, selected participants will be invited from other DMCs in the region to share the lessons learned and best practices developed under this TA and similar ADB TAs (such as ADB. 2004. *Opportunities for the CDM in the Energy Sector*. Manila [TA-3840 PRC, also co-financed by the Government of Canada, and completed in 2004]).

- industry; and the financial sector (rural banks, cooperative banks, and commercial banks) to develop and promote CDM projects.
- (ii) Prepare at least four CDM PDDs and address the CDM project development risks and transaction costs in institutionalizing different elements of CDM regulations and project cycle for prequalifying selected projects in sectors relevant to these entities.
 - (iii) Conduct or evaluate project financial analysis using ADB's financial guidelines.
 - (iv) For small-scale rural CDM projects, develop sector-specific project bundling framework and financial structuring mechanisms, in close cooperation with suitable banks (such as commercial banks, rural cooperative banks, etc.) with the help of CDM fund development and investment specialist.
 - (v) Develop an operational toolkit and handbook capturing all preparatory and implementation aspects of CDM projects in small-scale sectors.

d. Institutional Analyst (1.5 person-months)

7. The analyst will do the following:

- (i) Assess the feasibility of implementing CDM projects with regard to (a) institutional responsibilities, mechanisms, and resources; and (b) financing issues. Assess the role of government in and barriers to promoting CDM projects through private enterprises in identified sectors.
- (ii) Outline a workable institutional mechanism for assessing investment proposals, and identify potential sources of funding, including multilateral and bilateral development organizations, particularly for small-scale CDM projects. Help the team leader and team develop four CDM PDDs and other outputs.

2. Domestic Consultants

a. CDM Financing Specialist (9 person-months)

8. The specialist will do the following:

- (i) Collect and document all information related to government incentives and other relevant initiatives and activities that may influence the development and financing of CDM. Provide a concise summary, including key historic information, with reference to the financial and insurance sector.
- (ii) Develop background material on financing issues related to CDM, particularly considering circumstances unique to India.
- (iii) Help the international consultants develop framework, operational, and management guidelines for the fund.
- (iv) Help the international consultants develop a CDM project risk management and project appraisal toolkit for use by the financial and insurance sectors.

b. CDM Project Development Specialist (9 person-months)

9. The specialist will help the international consultants and team leader do the following:

- (i) Collect data and any information related to CDM that may be required to fulfill their terms of reference.

- (ii) Develop best-practice CDM projects in rural and municipality and urban local bodies of selected states.
- (iii) Prepare PDDs and institutionalize different elements of CDM regulations and project cycle for prequalifying selected projects in relevant sectors.
- (iv) Conduct or review project financial analysis, using ADB guidelines.
- (v) For small-scale rural CDM projects, help the international CDM project development specialist identify suitable banks (such as commercial banks, rural cooperative banks, etc.) develop sector-specific project bundling framework and financial structuring mechanisms.
- (vi) Develop an operational toolkit and handbook capturing all preparatory and implementation aspects of CDM projects in small-scale sectors.

c. CDM Policy Expert (6 person-months)

10. The expert will do the following:

- (i) Help the international consultants collect data and any information related to CDM that may be required to fulfill their terms of reference. Provide a critical review of the international consultants' work—paying careful attention to the applicability of all criteria used and all recommendations made for policies, activities, and projects to encourage CDM.
- (ii) Provide a write-up of policy issues related to CDM and financing issues, particularly considering circumstances unique to India.
- (iii) Help evaluate PDDs with respect to initiatives that would further implementation of government policy, and financial sector's adoption of CDM.

d. Financial Sector Analyst (6 person-months)

11. The analyst will do the following:

- (i) Help the international consultants collect data and other information related to CDM that may be required to fulfill their terms of reference.
- (ii) Work with the international fund and investment specialist to collect and document all information about the domestic financial and insurance sectors and government incentives and other relevant initiatives that may influence the development and financing of CDM. Provide a concise summary including key historic information, with reference to the financial and insurance sector.
- (iii) Assist the domestic CDM financing specialist develop background material on financing issues related to CDM, considering circumstances unique to India.
- (iv) Help the international fund and investment specialist analyze issues pertaining to the design of the CDM fund and its operational and management guidelines.

e. Institutional Expert (5 person-months)

12. The expert will do the following:

- (i) Before the counterpart international consultants are fielded, collect and document all information related to government policies and other relevant initiatives and activities that may influence the development and promotion of CDM. Provide a concise summary, and key institutional aspects of the NCDMA.

- (ii) Help the team leader formulate an action plan and strategy document for the widespread replication of CDM projects in the sectors (under component 1).

f. Legal Expert (4 person-months)

13. The expert will do the following:

- (i) Help the international consultants collect data and any information on legal aspects required to fulfill their terms of reference.
- (ii) Provide a critical review of the international consultants' work—paying careful attention to the applicability of all criteria used and all recommendations made for policies, activities, and projects to encourage CDM projects.
- (iii) Review the legal aspects of preparing draft rules and regulations to enable the financial sector to promote CDM projects.
- (iv) Help the international fund and investment specialist develop legal requirements pertaining to the framework of the fund for CDM projects.

C. Deliverable Outputs

14. The TA consultant will provide the following deliverables and corresponding reports:

- (i) two best-practice PDDs for selected CDM projects at the urban local body/ municipality level in selected states, and another two best-practice PDDs for selected CDM projects in small-scale CDM sectors, including rural areas of selected states, along with sector-specific bundling framework and financial structuring mechanisms;
- (ii) an action plan and strategy document for replication of CDM projects in municipalities and urban local bodies;
- (iii) an operational toolkit and handbook for CDM project implementation in small-scale sectors, including rural areas;
- (iv) CDM appraisal and risk-management toolkit for financial and insurance sectors;
- (v) feasibility assessment and design for a dedicated fund for CDM projects; and
- (vi) proceedings and reports of regional training workshops and international seminar

D. Reporting Requirements and Other Responsibilities

15. The consultants will submit three bound copies and two electronic copies each of the following reports to the EA and ADB: (i) an inception report (a detailed work program with specific timetable for important tasks) due at the end of the first month after services start; (ii) an interim report with the findings of the required studies, analyses, models, and reports covered in both components, due 6 months after the project start-up; (iii) a draft final report with similar coverage, due 14 months after services start; and (iv) other deliverable reports in accordance with the milestones to be confirmed at TA commencement.

16. The TA team leader will be responsible for coordination with the project manager at the EA and between international and domestic consultants, Government, steering committee, ADB, and other stakeholders. The consultants will prepare monthly status and progress reports for the specific scopes of work, which will also highlight issues that could become critical for the timely completion of the TA. Within 1 month of the tripartite meeting for the draft final report, the consultants will submit a final report incorporating comments received from the Government and ADB.