



Technical Assistance

TAR: IND 39106

# Technical Assistance to India for the Uttaranchal Power Sector Capacity Building Project

August 2005

Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 1 August 2005)

Currency Unit	–	Rupees (Re/Rs)
Re1.00	–	\$0.0231
\$1.00	–	Rs43.3800

## ABBREVIATIONS

ADB	–	Asian Development Bank
DEA	–	Department of Economic Affairs
EA	–	executing agency
EMP	–	environmental monitoring plan
HR	–	human resources
IA	–	implementing agency
IPDF	–	Indigenous People's Development Framework
IT	–	information technology
kV	–	kilovolt
kWh	–	kilowatt-hour (1,000 watt-hours)
MOP	–	Ministry of Power
MW	–	megawatt (1,000,000 watts)
O&M	–	operation and maintenance
PIU	–	project implementation unit
PMO	–	project management office
PTCUL	–	Power Transmission Corporation of Uttaranchal, Ltd.
RF	–	resettlement framework
RMU	–	rehabilitation, modernization, and upgrading
RP	–	resettlement plan
SGU	–	State Government of Uttaranchal
SHP	–	small hydropower plant
TA	–	technical assistance
UEID	–	Uttaranchal Energy and Irrigation Department
UJVNL	–	Uttaranchal Jal Vidyut Nigam, Ltd.
UPCL	–	Uttaranchal Power Corporation, Ltd.
UREDA	–	Uttaranchal Renewable Energy Development Agency
v	–	volts

## TECHNICAL ASSISTANCE CLASSIFICATION

<b>Targeting Classification</b>	–	General intervention
<b>Sector</b>	–	Energy
<b>Subsectors</b>	–	Hydropower generation, transmission and distribution
<b>Themes</b>	–	Sustainable economic growth, environmental sustainability
<b>Subthemes</b>	–	Fostering physical infrastructure development, cleaner industrial production [power]

**NOTE**

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

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## I. INTRODUCTION

1. During preparation of the Uttaranchal Power Sector Project, the Government of India (GOI) requested Asian Development Bank (ADB) technical assistance (TA) to accelerate project readiness and facilitate start-up and first-year operations of the project management office (PMO) and project implementation units (PIUs). The Mission reached an understanding with the Government on the rationale, objectives, scope, implementation arrangements, cost estimates, financing plans, and outline terms of reference for the TA.<sup>1</sup> The TA design and monitoring framework is in Appendix 1.

2. Uttaranchal was created on 9 November 2000 by separation from Uttar Pradesh. The state is currently a net importer of electric power, but generates a seasonal surplus and plans to become a net exporter of power by 2010 by expanding hydropower and high-voltage transmission capacity. Hydropower potential is approximately 20,000 megawatts (MW), of which less than 1,200 MW is being used. Total capacity expansion of 10,000 MW is planned from the present through 2018. With the creation of the state, the former State Electricity Board (SEB) was transformed into three state-owned utility companies. Uttaranchal Power Corporation Limited (UPCL) is responsible for distribution at 33 kilovolts (kV) and lower, rural electrification, and power trading.<sup>2</sup> Power Transmission Corporation of Uttaranchal, Ltd. (PTCUL) is responsible for high-voltage transmission lines and substations from 132 kV to 400 kV.<sup>3</sup> Uttaranchal Jal Vidyut Nigam, Ltd. (UJVNL) takes the lead role in developing hydropower projects greater than 1 MW, and manages private sector participation.<sup>4</sup> Private sector participation is open for over 40 hydropower plants (HPP) of less than 25 MW capacity and 13 projects ranging from 25 MW to 100 MW. The Uttaranchal Energy and Irrigation Department (UEID) is the state-level coordinating agency for power sector development. Uttaranchal Electricity Regulatory Commission (UERC), created in 2002, is the independent regulator for the sector. UEID will be the Executing Agency (EA) for the Project. PTCUL and UJVNL will be the Implementing Agencies (IAs).

3. The Project will support the development of sufficient power capacity to meet all in-state demand and achieve a year-round exportable surplus by 2010.<sup>5</sup> Expansion of UJVNL's small hydropower capacity will provide additional power to local grids in the project area, providing direct social and economic benefits to residents. Expansion of PTCUL's state-level transmission grid will (i) improve system reliability; (ii) facilitate intrastate, interstate, and interregional power transfers; (iii) facilitate reduction in overall system losses; (iv) improve utilization of existing and planned power plants; and (v) promote further development of a national electricity market by connecting to the north region grid. Parallel efforts by UPCL for rural electrification and local grid improvements will complement ADB's intervention.

## II. ISSUES

4. Uttaranchal was separated from Uttar Pradesh partly to foster quicker development in

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<sup>1</sup> The TA first appeared in *ADB Business Opportunities* (internet edition) on 24 February 2005. The TA was added to the ADB. 2004. *India Country Strategy and Program*. Manila.

<sup>2</sup> Power-generation units are also allowed to engage in power trading as per provisions in the Electricity Act of 2003. Uttaranchal State policy currently allows power trading by Uttaranchal Power Corporation, Ltd. and Uttaranchal Jal Vidyut Nigam, Ltd., with the intention of creating a power trading company in the near future.

<sup>3</sup> Power Grid Corporation India Limited will operate 765-kV lines.

<sup>4</sup> The Uttaranchal Renewable Energy Development Agency (UREDA) takes the lead role for projects of less than 1 MW. UREDA also manages renewable energy projects, including off-grid development, with some support from bilateral funding agencies and nongovernment organizations.

<sup>5</sup> Interstate power sales will utilize lines of Power Grid Corporation of India Ltd.

the mountainous regions of the state. The State Government of Uttaranchal (SGU) has taken a strong leadership position on economic development, identifying power system expansion and tourism development as the pillars of economic growth. There is a comprehensive power sector development strategy and a well-defined sector investment program that is moving from conceptual design toward implementation. There is a substantial endowment of human capital in the form of senior technical staff in the EA and IAs.

5. Along with the noted strengths, there is limited capacity to implement aid agency-funded investments. The state has had very little financial support from external sources, limited primarily to grant-funded TA. The project EA—UEID—has some experience with externally funded projects prior to separation from Uttar Pradesh, but has no experience in implementing ADB loans. Likewise, the IAs (PTCUL and UJVNL) are relatively new companies and have no experience in implementing of ADB loans. There is limited recent experience with large infrastructure projects, and therefore limited adoption of state-of-the-art technologies in project design and execution. Many of the senior technical staff are nearing retirement age; thus, there is an urgent need to develop the next generation of managerial and technical corps, especially in the IAs.

6. On balance, there is a need for capacity building in the EA and IAs to implement the Project. During project preparation and processing, the Government of India and SGU requested additional assistance for project readiness to effectuate advance procurement action, prompt start-up of the PMO and PIUs, and first-year implementation of the Project. The TA will provide “bridging” assistance until consulting services funded by the Project are mobilized.

### **III. THE TECHNICAL ASSISTANCE**

#### **A. Impact and Outcome**

7. The TA will accelerate project readiness, and improve project management and implementation capabilities. Consulting services will build the capacity of the PMO, PIUs, EA, and IAs during the first year of project implementation. TA activities will complement capacity-building activities under part C of the loan Project. The TA will result in improved institutional capacity in the EA and IAs, and will promote technology transfer for project design and implementation.

#### **B. Methodology and Key Activities**

8. The TA will provide services directly to the PMO and PIUs. Consultants will provide direct support for procurement activities, initial implementation of safeguards, and on-the-job orientation on ADB project implementation procedures for PMO and PIU staff. The TA will support formal training activities during the first year of project implementation to build the capacity of the PMO and PIUs.

9. The TA will be conducted in two phases covering a period of about 16 months, beginning 1 September 2005 and ending 31 December 2006. Phase 1 comprises support for PMO and PIU start-up, advance procurement action, and initial implementation of environmental and social safeguards. Phase 1 will last for about 8 months beginning in September 2005, covering the issuance of tenders for the first several contract packages. Phase 2 will overlap with phase 1, beginning in January 2006, and will provide ongoing support for 12 months, covering initial contract awards and disbursements. Reports prepared by the consultants will be integrated into the project monitoring and progress reports to be submitted by the PMO to ADB.

The consultants will ensure that all works and outputs under the TA fully comply with all relevant ADB policies and guidelines.

### **C. Cost and Financing**

10. The total cost of the TA is estimated at \$625,000 equivalent, of which \$260,000 is in foreign exchange and \$365,000 equivalent is in local currency. The Government has requested ADB to finance \$500,000 equivalent, covering the entire foreign exchange cost and \$240,000 equivalent of local currency costs. The TA will be financed on a grant basis by ADB's TA funding program. The Government will finance the balance local currency cost of \$125,000 equivalent. The TA cost estimates and financing plan are presented in Appendix 2.

### **D. Implementation Arrangements**

11. The Executing Agency for the TA will be the Uttaranchal Energy and Irrigation Department, which will appoint a senior staff member as the TA project director and counterpart staff in the PMO. The TA will provide services to the PMO established under UEID leadership, which comprises representatives of SGU, PTCUL, and UJVNL. The PMO will coordinate with all government and nongovernment stakeholders.

12. The TA will finance the services of international and domestic consultants who will be engaged by ADB in accordance with its *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB for engaging domestic consultants. Individual consultants will be recruited using the direct selection method. Equipment will be procured for PMO and PIU operations following ADB's *Guidelines for Procurement* or other procedures acceptable to ADB. Equipment will be transferred to the PMO and PIUs at the end of the implementation period.

13. International consultants will be engaged for a total of 10 person-months, and domestic consultants for 32 person-months. The scope of work and terms of reference for consulting services are presented in Appendix 3.

14. The consulting team will comprise experts in (i) ADB's procurement procedures; (ii) contract administration and management; (iii) accounting, cost control, and financial management (including disbursement according to ADB procedures); (iv) implementation of environmental management programs for high-voltage transmission and small hydropower systems; (v) implementation of programs mitigating social impact including land acquisition and resettlement; (vi) power system planning, design, construction, and commissioning; (vii) project appraisal including financial and economic analyses using ADB procedures and guidelines; (viii) human resource (HR) development and planning; and (ix) information technology (IT) for electronic procurement, financial management, a project management office (PMO) and project implementation unit (PIU) operations, and long-term project management. Individual consultants will be recruited on direct selection basis.

## **IV. THE PRESIDENT'S DECISION**

15. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$500,000 on a grant basis to the Government of India for the Uttaranchal Power Sector Capacity Building Project, and hereby reports this action to the Board.

## DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<b>Impact</b> Accelerate project readiness, improve project management and implementation capabilities	Fully functional PMO and PIUs by December 2006	Policy dialogue and project progress reports, and review missions	
<b>Outcome</b> The TA will support advance procurement action, implementation of safeguards, and first year of overall operations of the PMO and PIU.	First-year contract awards and disbursement targets fully achieved	Project progress reports, including ICB packages issued for tender, contract awards, and disbursements	<b>Assumption</b> <ul style="list-style-type: none"> <li>Consultants are mobilized in a timely manner.</li> </ul> <b>Risk</b> <ul style="list-style-type: none"> <li>There are delays in appointing qualified personnel to PMO and PIUs.</li> </ul>
<b>Outputs</b> Advance procurement support Initial safeguards implementation Project management Long-term human resource development Information technology Corporate development	Nine ICB packages issued by end of March 2006, eight contract awards and initial disbursement by end of 2006 All necessary regulatory approvals received before contract award and disbursement Fully staffed and functional PMO and PIUs by December 2006 Long-term human resource development plans implemented by December 2006	Policy dialogue, implementation progress report, TA and loan review missions Review of tender documents Payment certificates for contracts Review of project accounts Corporate reports and project progress reports from PTCUL and UJVNL, with details in implementing human resources development plan	<b>Assumptions</b> <ul style="list-style-type: none"> <li>SGU, UEID, PTCUL, and UJVNL appoint adequate personnel in a timely manner.</li> <li>Qualified consultants are mobilized in a timely manner.</li> </ul> <b>Risks</b> <ul style="list-style-type: none"> <li>Regulatory approval for right-of-way in forest areas is not obtained on time.</li> <li>Land acquisition and resettlement are not completed on time.</li> </ul>
<b>Activities with Milestones</b> 1.1 Preparation of pre-qualification documents, bid specifications, invitations to bid, bid evaluation reports, contract awards, and disbursements through December 2006 1.2 Procurement of IT software and hardware for PMO and PIU operations by mid-2006 1.3 Long-term human resource development plans and strategies updated by December 2006			<b>Inputs</b> <ul style="list-style-type: none"> <li>ADB: \$500,000</li> <li>Government: \$125,000</li> </ul>

ICB = international competitive bidding, IT = information technology, PIU = project implementation unit, PMO = project management office, PTCUL = Power Transmission Corporation of Uttarakhand Ltd., SGU = State Government of Uttarakhand, TA = technical assistance, UEID = Uttarakhand Energy and Irrigation Department, UJVNL = Uttarakhand Jal Vidyut Nigam Ltd.

**COST ESTIMATES AND FINANCING PLAN**

(\$'000)

Item	Foreign Exchange	Local Currency	Total Cost
<b>A. Asian Development Bank Financing<sup>a</sup></b>			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants	210	0	210
ii. Domestic Consultants	0	160	160
b. International and Local Travel			
i. International	15	0	15
ii. Domestic	0	15	15
c. Reports and Communications	5	5	10
2. Equipment—Computers, Printers, Software, etc.	0	15	15
3. Training, Seminars, and Conferences	0	25	25
4. Representative for Contract Negotiations	0	0	0
5. Contingencies	30	20	50
<b>Subtotal (A)</b>	<b>260</b>	<b>240</b>	<b>500</b>
<b>B. Government Financing</b>			
1. Office Accommodation	0	25	25
2. Remuneration and Per Diem of Counterpart Staff	0	60	60
3. Others	0	40	40
<b>Subtotal (B)</b>	<b>0</b>	<b>125</b>	<b>125</b>
<b>Total</b>	<b>260</b>	<b>365</b>	<b>625</b>

0 = magnitude zero.

<sup>a</sup> Financed by the Asian Development Bank's technical assistance funding program.

Source: Asian Development Bank estimates.

## OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

1. Consulting services will be provided by international (10 person-months) and domestic (32 person-months) consultants. Individual consultants will be recruited in accordance with the Asian Development Bank's (ADB) *Guidelines on the Use of Consultants*, and other procedures acceptable to ADB for selecting and engaging of domestic consultants. The scope of work and terms of reference follow.

### A. Phase 1: Advance Procurement and Initial Implementation of Safeguards

2. Phase 1 requires consulting services to support (i) implementation of design, construction, and commissioning of transmission lines, substations, small hydropower plants (SHP), and the rehabilitation, modernization, and upgrading (RMU); (ii) preparation of subproject appraisal report for the candidate (noncore) subprojects; (iii) implementation of environmental and social safeguards issues; and (iv) acquisition and installation of project-related IT, including hardware and software.

3. The consultants will review technical specifications and bid documents for goods to be procured under international competitive bidding procedures, assist in evaluating bids and preparing bid evaluation reports to be submitted to ADB, and provide expertise in subproject plant design and project management. They will assist in supervising construction, testing, and commissioning of project-financed equipment. The consultants will also coordinate training programs and will provide on-the-job training. Domestic consultants will assist the international consultants and focus on the SHP, RMU, and transmission subproject design and construction efforts, as well as implementation of safeguards.

#### 1. Advance Procurement Support (one procurement specialist, international, 6 person-months)

4. The procurement specialist requires detailed, up-to-date knowledge of ADB procurement procedures for international competitive bidding, including turnkey contracts. Recent experience in ADB project implementation, preferably with power sector projects in India, is mandatory. The specialist will be responsible for the following tasks:

- (i) Assist Power Transmission Corporation of Uttaranchal (PTCUL) and Uttaranchal Jal Vidyut Nigam Limited (UJVNL) to prepare and complete technical design, including bill of quantities, for all subprojects.
- (ii) Provide on-the-job training in ADB procurement procedures.
- (iii) Prepare bidding documents for all subprojects following ADB's procurement procedures, and utilizing standard bidding documents and guidelines.
- (iv) Evaluate bids and prepare bid evaluation reports, including recommendations for contract awards.
- (v) Prepare necessary documentation for contract signing, mobilization, and withdrawal applications.
- (vi) Establish a computerized project monitoring program for all project components, using appropriate off-the-shelf software packages.
- (vii) Assist Uttaranchal Energy and Irrigation Department (UEID), PTCUL, and UJVNL in developing appropriate HR capacity, for near-term (3–5 years) PMO operations.

## 2. Social Safeguards Implementation (one domestic expert, 6 person-months)

5. The social safeguards/resettlement specialist requires detailed, up-to-date knowledge of Government of India and ADB safeguard policies and procedures, particularly for land acquisition and resettlement. Recent experience in ADB project implementation in India is mandatory. The specific tasks are as follows:

- (i) Ensure that subproject-specific social mitigating measures are incorporated into the contract documents.
- (ii) Orient PMO staff on safeguard measures including implementation of resettlement framework (RF), resettlement plan (RP), and indigenous people's development framework (IPDF) if necessary.
- (iii) Assist the PMO in identifying and recruiting of external monitoring agencies, and orient the selected external monitoring staff.
- (iv) Supervise and evaluate the implementation of social mitigation and monitoring measures as specified in the RF, RP, and IPDF.
- (v) Update the RF and prepare RPs as necessary for additional subprojects appraised after loan approval.
- (vi) Monitor and supervise resettlement and other activities to mitigate social impact as defined in the RP, RF, and the IPDF, if necessary.
- (vii) Train PMO, PTCUL, and UJVNL staff responsible for design and implementation of social safeguards measures in all subprojects (e.g., ISO 18000).

## 3. Environmental Management Specialist (one domestic expert, 6 person-months)

6. The environmental management specialist requires detailed, up-to-date knowledge of Government of India and ADB environmental policies and procedures, including clearances for land acquisition, transmission right-of-way (forest) clearance, environmental monitoring and reporting requirements. Working knowledge and recent experience in implementing an environmental monitoring plan (EMP) in India is required. The specialist will accomplish these tasks:

- (i) Ensure that subproject-specific environmental mitigating measures are incorporated into the contract documents.
- (ii) Orient PMO staff on safeguard measures including implementation of EMP, RP, and IPDF if necessary.
- (iii) Supervise and evaluate the implementation of environmental mitigating and monitoring measures as specified in the EMP.
- (iv) Update the EMP as necessary, including supplemental environmental assessments, for additional subprojects appraised after loan approval.
- (v) Train PMO, PTCUL, and UJVNL staff responsible on design and implementation of environmental safeguard measures in all subprojects (e.g., ISO 14000).

## 4. Technical Adviser (one domestic expert , 6 person-months)

7. The technical adviser requires up-to-date knowledge of the national and state governments of India power sector policies and procedures, including planning, design, clearances for land acquisition, transmission right-of-way (forest) clearance. Familiarity with

ADB project implementation procedures is desired. A working knowledge of the Uttaranchal power sector program is required. The specialist will be responsible for the following tasks:

- (i) Serve as overall knowledge resource to the PMO and PIUs for guidance on procurement packages, implementation of environmental and social safeguards, bid evaluation, and contract awards.
- (ii) Assist consultants and new staff of the PMO and PIUs to become familiar with conceptual project design and construction issues for other power sector projects in Uttaranchal.
- (iii) Advise and assist in setting-up project management systems in the PMO and PIU.
- (iv) Facilitate interaction between consultants and the State Government of Uttaranchal (SGU), UEID, PTCUL, UJVNL, and other government agencies as needed.
- (v) Assist in preparing and reviewing project reports for submission to SGU, national Government, and ADB.

## **B. Phase 2: Project Management and Corporate Development**

8. Power sector operations are shifting to fully commercial operations. Newly created entities such as PTCUL, UJVNL, and Uttaranchal Power Corporation, Ltd. (UPCL) are expected to adjust their operations from those of traditional state-owned utilities—with the objective of creating employment—to those of competitive businesses with the objective of optimizing shareholder value. Two general business models are applicable: (i) a full-service utility, with internal human and technical resources for planning and development, technical design, project management, financial management, and environmental and social safeguards management; or (ii) an asset management-type company with minimum professional staff required to build and operate the core business; in this model, design and construction services are partly outsourced utilizing turnkey engineering, procurement, and construction (EPC) contracts, and routine operations are partly outsourced utilizing operation and maintenance (O&M) contracts with performance guarantees. Either model is valid,<sup>1</sup> and variations to suit local conditions would be expected.

9. Consulting services will include the following key activities:

- (i) Assist the PMO and PIU in procurement and safeguards implementation activities initiated in phase 1, with expanded project management scope as outlined below.
- (ii) Assist PTCUL and UJVNL in developing and implementing long-term (5-15 years) HR policies appropriate to their evolving business models and core operations.
- (iii) Assist PTCUL and UJVNL in developing an IT strategy; and in design, installation, and initial operations of the IT systems necessary to support long-term business operations.

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<sup>1</sup> Examples of the traditional utility are the Los Angeles Department of Water and Power (LADWP), the Southern Company (US), and the Electricity Generating Authority of Thailand (EGAT), which have remained competitive in a rapidly evolving regulatory environment. Examples of the asset management company are the international arm of Electricite de France (EdF), and independent power producers such as the US-based AES Corporation and CALPINE Company.

**1. Project Management** (two project implementation specialists, one international, [4 person-months]; and one domestic, [8 person-months])

10. The specialists require detailed, up-to-date knowledge of ADB project implementation systems including procurement and disbursement. Recent experience in ADB project implementation is required, preferably with power sector projects in India or other South Asian countries. The international specialist will take the lead role in establishing the PMO project management system, through the following specific tasks:

- (i) Establish project management systems compatible with ADB implementation requirements including (a) tracking and control of prequalification, bid solicitation, analysis of proposals, and contract awards; (b) project accounting, including withdrawal and disbursement procedures, internal financial controls, and preparation of project accounts; (c) preparation of monitoring and progress reports.
- (ii) Train and orient domestic counterpart and other specialists (consultants and staff from UEID and the implementing agencies [IAs]) on project implementation procedures and project management systems.
- (iii) Assist in initial project implementation as necessary in conformance with the Terms of Reference (TOR) of the domestic counterpart specialist listed in para. 11.

11. The domestic specialist will assume responsibility for sustaining project management activities through the end of phase 2, and will perform additional tasks as follows:

- (i) Visit subproject sites at regular intervals; monitor progress and advise on main construction activities; submit reports to the PMO and ADB, with details of progress and recommendations for any corrective actions needed to improve construction progress.
- (ii) Review the main equipment manufacturers' drawings and calculations to check arrangements for optimized O&M, and check compliance with contract specifications.
- (iii) Review the procurement and delivery program for each supply contract financed by ADB to ensure compatibility and timely coordination with other contracts and civil works.
- (iv) Develop and implement applicable required procedures ensuring adequate control of manufacturing, factory tests, delivery, and acceptance of materials and equipment. Assist in unpacking and checking the materials and equipment, urging delivery of delayed components, and making claims.
- (v) Assist in preparing and periodically updating overall project disbursement schedule, financial statements, and physical target accomplishment.
- (vi) Assist in reviewing the SHP, RMU, and transmission system commissioning tests, and trial operation plans.

**2. Long-Term Human Resource Development** (one HR specialist, domestic, 4 person-months)

12. The HR specialist requires detailed, up-to-date knowledge of ADB procurement procedures for international competitive bidding, including turnkey contracts. Recent experience

in ADB project implementation is mandatory, preferably with power sector projects in India. The specific tasks follow:

- (i) Assist PTCUL and UJVNL to define HR management policies, covering recruitment, training, evaluation, promotion/separation, compensation, etc. Prepare and document the associated HR work processes to implement those policies.
- (ii) Based on the initial HR report (June 2005), recommend a final organizational structure for PTCUL, and define the roles and responsibilities of each organizational unit. Prepare similar recommendations for UJVNL based on its current organizational structure and operations.
- (iii) Determine the HR needs for each of the principal work processes. Prepare job descriptions for the positions identified, and associated grading scheme and pay scales. Assess the suitability of existing personnel for the various positions identified.
- (iv) Develop and conduct a training plan to enhance the capacity of existing personnel to fill any unmet HR needs of the companies.
- (v) Prepare a transition plan to move from the current to the proposed organizational structure, defining how personnel will be moved into the new structure and positions.
- (vi) Prepare a project management and delivery structure that maximizes ownership by and transfer of skills to counterparts, and establishes the desired organizational culture within each new company.

### **3. Information Technology** (one IT specialist, domestic, 2 person-months)

13. The specialist requires detailed, up-to-date knowledge of ADB project implementation systems including procurement and disbursement. Recent experience in ADB project implementation is mandatory, preferably with power sector projects in India. The specialist will accomplish these tasks:

- (i) Review current IT systems, strategies, and needs of the PMO, PIUs, PTCUL, UJVNL, and UEID.
- (ii) Identify critical, immediate IT needs for PMO and PIUs, and develop hardware and software specifications for the required systems.
- (iii) Prepare functional specifications for IT suitable for PTCUL and UJVNL to improve business processes within the companies, particularly for financial management, management reporting, procurement and contract management, and environmental and social safeguards implementation.
- (iv) Assist in procuring IT systems, supervise installation and start-up, and give on-the-job training in system operations to PMO and PIU staff.