

ASIAN DEVELOPMENT BANK

TAR: IND 36323

TECHNICAL ASSISTANCE
(Financed by the Japan Special Fund)

TO

INDIA

FOR

BUILDING THE CAPACITY OF

ASSAM ELECTRICITY REGULATORY COMMISSION

January 2003

CURRENCY EQUIVALENTS

(as of 16 December 2002)

Currency Unit	–	rupee/s (Re/Rs)
Re1.00	=	\$0.020759
\$1.00	=	Rs48.17

ABBREVIATIONS

ADB	–	Asian Development Bank
AERC	–	Assam Electricity Regulatory Commission
ASEB	–	Assam State Electricity Board
MW	–	megawatt (1,000 kilowatts)
SERC	–	State electricity regulatory commission
SGA	–	state government of Assam
TA	–	technical assistance

NOTES

- (i) The fiscal year (FY) of the Government ends on 31 March.
- (ii) In this report, "\$" refers to US dollars.

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I. INTRODUCTION

1. During the 2002 India Country Programming Mission, the Government of India requested the Asian Development Bank (ADB) to extend its support beyond the three focal states (Gujarat, Kerala and Madhya Pradesh), and to address the growing interregional disparities. Assam, a key state for economic growth in northeastern India, is facing a serious fiscal crisis. Given the strong commitment of the state government of Assam (SGA) to reform, ADB and the Government of India agreed that technical assistance (TA) and a loan would be provided to support reform of Assam's financial¹ and power sectors.

2. ADB's support aims to improve efficiency and achieve financial viability of the power sector by establishing a legal and regulatory framework conducive to a competitive and commercial business environment, unbundling and corporatizing Assam State Electricity Board (ASEB), and strengthening the transmission and distribution system. For this purpose, a loan² and three TA³ projects are included in ADB's country program for India. The proposed TA is intended to provide capacity-building support and make Assam Electricity Regulatory Commission (AERC) fully functional to ensure independent tariff setting and regulation.

3. An ADB Mission visited Guwahati, the state capital, and Delhi from 8 to 10 November to undertake fact-finding for the TA. The Mission held discussions with SGA, AERC, Government officials, and concerned bilateral aid agencies, and reached an understanding on the objectives, scope, cost, and implementation arrangements of the TA. The TA is included in ADB's 2003 country program for India.⁴

II. ISSUES

4. Assam is a small state with a total population of 26.6 million. It is in the center of northeastern India and is a strategic corridor for Southeast Asia. Assam's per capita income of Rs9,612⁵ is almost two thirds of the national average; 89% of its population are widely scattered in rural areas, and 41% are living below the poverty line. The gross fiscal deficit reached 10% of the state domestic product in FY2000 and is still increasing. Although Assam is blessed with natural resources such as oil, natural gas, and minerals and has thriving tea and rubber plantations, its industry has not grown significantly since independence because law and order problems and ethnic unrest have deterred investments from outside the state. The poor performance of the power sector has also been a major impediment to industrial growth. Per capita electricity consumption at 104 kilowatt-hours (kWh) is less than one third of the national average and is the lowest in India. Therefore, improved power supply at a reasonable cost is essential to revive the state's industry and economy. Equally important is restoring the sector to financial sustainability so that it is no longer a drain on state finances.

¹ A loan, Assam Governance and Public Resource Management, is included in ADB's 2004 country program for India.

² A loan, Assam Power Sector Development Program, (\$200 million) is proposed for 2003 on a stand-by basis.

³ Three TA projects are included in ADB's country program for India: Project Processing Technical Assistance: Assam Power Sector Development Program" (\$800,000, approved on 29 October 2002), Advisory and Operational Technical Assistance (AOTA): Capacity Building of Assam Electricity Regulatory Commission"(\$500,000) for 2003 and AOTA: Restructuring of Assam State Electricity Board" (\$1,000,000) for 2005.

⁴ The TA first appeared in *ADB Business Opportunities* (Internet Edition) on 5 October 2002.

⁵ Estimate for FY2000 at current prices.

5. The power sector of Assam is facing a serious crisis because of poor performance of ASEB, a vertically integrated utility, fully owned by SGA. ASEB has an installed capacity of 574.5 megawatts (MW) comprising 572.5 MW of thermal and 2 MW of hydro power. Of the thermal capacity, 300 MW is not operational due to costly fuel, design problems, and inadequate maintenance. The result is a plant load factor of 15% compared with the national average of 70%. ASEB's own system meets only 120 MW of the total peak demand of 594 MW. The deficiency is being met by purchasing power from central power sector utilities and neighboring states. Transmission and distribution losses are estimated at 40% due to lack of investment and maintenance and nontechnical losses. Because of the low plant load factor and high transmission and distribution losses, power supply in Assam costs about Rs5.9 per kWh, which is the highest in all Indian states. Because the average retail tariff covers only 62% of the cost, ASEB accumulated losses of Rs44 billion as of March 2002. ASEB has not been able to meet its operating cash requirements, and posted an operating cash deficit of Rs2.5 billion in FY2002.

6. In March 2001, SGA signed a memorandum of understanding with the central Government and committed itself to reforming its power sector to provide good quality power to all the people in the state and to achieve commercial viability so that it can finance its investment needs and stop depending on budgetary subsidies. Following on the memorandum, SGA and ASEB have initiated some reform action in areas such as policy and regulatory framework, efficiency improvement, financial restructuring, and human resource management. A new power sector policy, which has been submitted to the cabinet, describes development objectives, strategies for sector reform and capital investment, and the role of the government in sector development. This policy aims to promote unbundling of ASEB into generation, transmission, and distribution companies to be incorporated under the Indian Companies Act and will become a basis for a reform act of the state. SGA targets the second quarter of 2003 for enactment of the reform act. A legal and regulatory expert who has been engaged under an ADB project TA⁶ (legal and regulatory expert) is supporting SGA in drafting the reform act.

7. As required by the memorandum of understanding, AERC was constituted as a one-person commission in August 2001 based on Electricity Regulatory Commissions Act 1998. AERC will play a critical role in the power sector reform, particularly because it ensures a mechanism where tariff setting will be insulated from political interference and will consider for the interest of consumers and the electricity industry. With no permanent staff as chairman and an insufficient operating budget, however, AERC had not been functional till recently. As the sector reform became a major policy agenda and realizing that strengthening AERC was imperative to keep the reform on track, SGA agreed to provide three permanent officers with expertise in engineering, finance, and accounting, two advisors on an assignment basis, and office space. However, due to the limited number of permanent staff and lack of senior members other than the chairman, AERC is not ready to receive full capacity building support from international consultants.

8. Presently, the immediate task of AERC is reviewing the first tariff petition recently filed by ASEB. However, none of the current AERC staff has experience in tariff regulation and sufficient knowledge in accounting and finance, which are essential skills in handling tariff issues. SGA, therefore, will provide a short-term domestic consultancy for hands-on support for the first tariff review. At the same time, basic training is needed immediately in computer skills and finance and accounting, the function of a regulator, regulatory issues prevailing in the other Indian states undertaking reform.

⁶ TA 3957-IND: Assam Power Sector Development Program

9. As the reform program progresses, AERC will need to discharge a large spectrum of functions including determining tariffs and corresponding performance norms, issuing licenses, and ensuring a nondiscriminatory and commercial business environment. Due to its critical role in sector reform, there is a risk that AERC could be a bottleneck unless it functions properly. Therefore, SGA needs to undertake full responsibility for making AERC fully functional, with sufficient autonomy before major regulatory issues emerge. SGA is of the opinion that AERC will not be able to fully play its challenging regulatory role for the reform with its current institutional capacity. SGA, therefore, plans to reconstitute AERC under a state reform act to convert it from a one-person commission to one with at least three persons, with a new managerial and organization structure and more permanent staff⁷. Once sufficiently staffed so that it can absorb skills transfer through technical assistance, AERC will need a full range of capacity-building support from a team of international consultants so that it can properly address the reform objectives and provide a measure of confidence for investments in the sector.

III. THE TECHNICAL ASSISTANCE

A. Purpose and Output

10. The TA will assist AERC to develop its operational standards and procedures and build up its institutional capacity to handle regulatory matters effectively and efficiently so as to promote the power sector reform of the state of Assam. The TA's objective will be considered achieved when AERC becomes fully able to make timely regulatory decisions that are consistent with the reform objective. The TA framework of the TA is in Appendix 1.

B. Methodology and Key Activities

11. Given AERC's lack of absorptive capacity, the TA will be implemented in two phases. In phase 1, the TA will focus on basic training of working level staff of the current AERC as well as SGA officials who will be involved in the sector reform and routinely deal with AERC staff. In this phase, key activities will be (i) local training courses in finance, accounting, and other areas relevant to electricity regulation; (ii) visits to regulatory commissions of other Indian states; and (iii) seminars and workshops in Assam. In parallel to this, the legal and regulatory expert will review the framing of regulations related to the general conduct of AERC's affairs and discharge of its functions to ensure that AERC functions in a transparent manner.

12. Phase 2 will start once ADB considers AERC properly staffed under the reform act, and able to receive full technical assistance. A team of international consultants will undertake full capacity-building support. Key activities will include (i) developing tariff principles and procedures; (ii) supporting a review of tariff proposals; (iii) developing technical codes,

⁷ The autonomy of a state electricity regulatory commission (SERC) can be strengthened and more transparency in appointment of its members will be ensured if it is constituted under a state reform act rather than the Electricity Regulatory Commissions Act 1998 (SERC Act). As the SERC Act is a central government law, a state government may choose not to constitute a SERC. Even after the constitution of a SERC, the state government can at any time issue notification terminating its continuation. Furthermore, the SERC Act has no detailed provision regarding the qualification, status, condition of appointment of members of a SERC, which are considered essential to ensure sufficient autonomy and independence.

performance standards, and supply and safety regulations; (iv) developing customer service codes and standards; and (v) providing training⁸ and operational support.

C. Cost and Financing

13. The total cost of the TA is estimated at \$625,000 equivalent, consisting of \$445,600 in foreign exchange and \$179,400 in local currency equivalent. ADB will finance the entire foreign exchange cost of \$445,600 and \$54,400 of the local currency cost for a total of \$500,000 equivalent. The TA will be financed on a grant basis by the Japan Special Fund, funded by the Government of Japan. SGA will finance the remaining local currency cost of \$125,000 in kind, consisting of various services indicated in para. 15. The detailed cost estimates are in Appendix 2.

D. Implementation Arrangements

14. The Department of Power of SGA will be the principal Executing Agency and AERC will be the Implementing Agency. In phase 1, SGA and AERC will jointly prepare and submit to ADB a proposal for training programs, seminars and workshops, and visits to other regulatory commissions in India for funding under the TA. SGA and AERC will implement these activities without support from consultants. Phase 2 will be implemented by a team of international consultants including a technical expert (3.5 person-months), a tariff and commercial expert (4.0 person-months), and a human resource and institutional development expert (2.5 person-months). One of the experts will be designated as team leader and will be responsible for preparing the consolidated reports. The consultants will closely collaborate with the legal and regulatory expert, who will review the existing business codes and internal regulations of AERC and propose necessary changes. ADB will select and engage the consultants in accordance with ADB's *Guidelines on the Use of Consultants*. For selecting a consulting firm, the quality and cost-based selection method with the simplified technical proposal will be used. The terms of reference are in Appendix 3.

15. AERC will provide office accommodation, local communication facilities, and other administrative support including travel arrangements within Assam for the consultants. SGA and AERC will provide all available reports and information related to power sector reforms. The TA budget provides for purchase of minimum office equipment to be conducted by SGA in accordance with ADB's *Guidelines for Procurement* and other arrangements satisfactory to ADB.

16. The TA will be completed in about 20 months, from February 2003 to September 2004. In phase 1, AERC and SGA staffs visiting regulatory commissions and participating in workshops and seminars outside Assam will prepare and submit a brief report to ADB. Phase 2 is expected to start in June 2003. An inception report outlining the consultant's approach and methodology for the phase 2 will be prepared within 3 weeks of the start of work and will be discussed at a tripartite meeting to be attended by representatives of AERC, SGA, ADB, the TA consultants and the legal and regulatory expert. A progress report will be prepared quarterly. The progress report will include a report on workshops and seminars held during the 3-month period. A draft final report will be prepared 12 months after the start of work. Each report will be discussed at a tripartite meeting. The final report will be submitted within 1 month after the draft final report is discussed in a tripartite meeting. The consultants and ASEB will organize

⁸ Training to be provided in the first phase will continue in the second phase with support of the consultants.

workshops and seminars during TA implementation to disseminate information on the reform program to other stakeholders.

IV. THE PRESIDENT'S DECISION

17. 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 Building the Capacity of Assam Electricity Regulatory Commission, and hereby reports this action to the Board.

TECHNICAL ASSISTANCE FRAMEWORK

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
<p>Goal Establish competitive, commercially managed, financially viable, and efficient power sector</p> <p>Purpose Develop appropriate regulatory framework and strengthen capacity of Assam Electricity Regulatory Commission (AERC) to effectively address the sector reform issues</p> <p>Outputs Basic training for AERC staff</p> <p>Regulatory codes and standards</p> <p>Hands-on support in applying of the codes and standards</p>	<p>No load shedding</p> <p>No delay in electrical connection for those who want electricity</p> <p>Address regulatory issues consistent with the objectives of the sector reform</p> <p>Training in accounting, finance, and other major areas relevant to sector regulation, completed by April 2003</p> <p>All necessary codes and standards developed and notified by December 2003</p> <p>Tariff award and other orders required for sector reform</p>	<p>System operations report</p> <p>Notification of regulatory rules and standards</p> <p>Timing and contents of regulatory orders</p> <p>Technical assistance reports (inception, mid-term, draft final, and final)</p> <p>Inception meeting and tripartite meetings</p> <p>Regular consultation with AERC and state government of Assam (SGA)</p>	<p>Political will</p> <p>Institutional capacity of all agencies central to the reform</p> <p>Lack of capacity in developing appropriate rules and standards consistent with the reform objectives</p> <p>Lack of understanding of the reform objectives</p> <p>Failure to staff AERC with sufficient number of permanent officers</p> <p>Lack of absorptive capacity of AERC staff</p>

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
<p>Activities</p> <p>Phase 1</p> <p>Provide basic training through (i) local training courses in finance, accounting, and other areas relevant to electricity regulation; (ii) visits to regulatory commissions of other Indian states; and (iii) short-term training programs and workshops in Assam</p> <p>Phase 2</p> <p>Develop tariff principle and procedures</p>	<p>In-depth understanding of power sector regulatory issues and operations of the regulator</p> <p>Acquisition of basic skills in accounting and finance</p> <p>Tariff principles and procedures developed by September 2003</p> <p>Uniform systems of accounts, performance reporting and model application formats for tariff submissions developed by September 2003</p>	<p>Technical assistance reports (inception, mid-term, draft final, and final)</p> <p>Inception meeting and tripartite meetings</p> <p>Regular consultation with AERC and SGA</p>	

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
<p>Develop of technical codes and standards</p> <p>Develop customer service standards</p> <p>Support training and operations</p>	<p>Grid codes, metering codes, operational performance standards, and other technical codes and standards developed by December 2003</p> <p>A mechanism for adequate data collection and processing, customer service codes, and customer service standards developed by December 2003</p> <p>Second tariff award by September 2003</p> <p>Third tariff award by September 2004</p> <p>Other regulatory orders pertaining to unbundling of Assam State electricity Board</p>		

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Foreign Exchange	Local Currency	Total Cost
A. Asian Development Bank Financing^a			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants	317.5	0.0	317.5
ii. Domestic Consultants	0.0	0.0	0.0
b. International and Local Travel	60.0	0.0	60.0
c. Reports and Communications	5.0	10.0	15.0
2. Equipment	0.0	5.0 ^b	5.0
3. Training, Seminars, and Conferences			
a. Facilitators	0.0	7.5	7.5
b. Training Program	0.0	12.5	12.5
4. Surveys	0.0	0.0	0.0
5. Miscellaneous Administration and Support Costs	0.0	0.0	0.0
6. Representatives for Contract Negotiations	5.0	0.0	5.0
7. Contingencies	58.1	19.4	77.5
Subtotal (A)	445.6	54.4	500.0
B. Government Financing			
1. Office Accommodation and Transport	0.0	30.0	30.0
2. Remuneration and Per Diem of Counterpart Staff	0.0	55.0	55.0
3. Others	0.0	40.0	40.0
Subtotal (B)	0.0	125.0	125.0
Total	445.6	179.4	625.0

^a Financed by the Japan Special Fund funded by the Government of Japan.

^b Includes computers, printers, and photocopiers.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

1. Consulting services will be needed in four areas. The tasks of the experts (in parentheses) for each area are described in the following sections:

A. Tariff Principles and Procedures (Tariff and Commercial Expert)

2. The tariff and commercial expert will undertake these tasks:

- (i) Develop principles and procedures covering the following issues:
 - (a) financial performance targets,
 - (b) revenue requirement determination,
 - (c) structuring tariffs toward full cost recovery and minimization of cross-subsidy,
 - (d) targeting and delivering subsidies, and
 - (e) incentive-based regulation with particular reference to incentivising loss-reductions
- (ii) Support Assam Electricity Regulatory Commission (AERC) in reviewing tariff proposals and awarding tariff revisions.
- (iii) Develop uniform systems of accounts, performance reporting and model application formats for tariff submissions.
- (iv) Assist AERC in interpreting and operationalizing the new regulations. This will include (a) providing reference cases pertaining to application of the regulations, and (b) suggesting modifications of the regulations considering experience gained in their application.
- (v) Serve as a resource person for in-house seminars and workshop organized by the human resource and institutional development expert.

B. Development of Technical Codes and Standards (Technical Expert)

3. In collaboration with the legal and regulatory experts for ADB's TA Assam Power Sector Development Program, the technical expert will undertake the following tasks:

- (i) Will review the technical codes and standards in force in other states in India and abroad and adapt such codes and standards for application by AERC. If appropriate codes and standards do not exist, prepare new ones including but not limited to:
 - (a) grid, distribution and metering codes;
 - (b) interconnection codes;
 - (c) operational performance standards in transmission and distribution;
 - (d) system security standards;
 - (e) supply regulations;
 - (f) safety regulations;
 - (g) power system planning standards;
 - (h) sharing of assets and common facilities;
 - (i) captive plant regulation

- (ii) Assist AERC in interpreting and operationalizing the new regulations. This will include (a) providing reference cases pertaining to the application of the regulations, and (b) suggesting modifications of the regulations considering experience gained in their application.
- (iii) Serve as a resource person for in-house seminars and workshop organized by the human resource and institutional development expert.

C. Customer Service Standard (Human Resource and Institutional Development Expert)

4. In consultation with the technical expert and the tariff and commercial expert, the consultant will undertake the following:

- (i) Set up a mechanism for adequate collection and processing of data on customer services to be published by AERC.
- (ii) Develop customer service codes covering applications for connection, bill payments, consumer rights, and procedures for handling complaints, etc.
- (iii) Develop customer service standards.

D. Training and Operational Support (Human Resource and Institutional Development Expert)

5. Jointly with the technical expert and tariff and commercial expert, the consultant will (i) prepare and implement a training program for key officers and employees of AERC, including (a) in-house training and workshops to understand and apply the new regulations in Guwahati (include staff from other power sector entities); (b) visits by AERC staff to other power sector regulators in India; (c) seminars and conferences on power sector regulations; and (ii) develop simple computer-based management information system.