

ASIAN DEVELOPMENT BANK

TAR: NEP 37196

TECHNICAL ASSISTANCE

TO THE

KINGDOM OF NEPAL

FOR

RESTRUCTURING OF NEPAL ELECTRICITY AUTHORITY

December 2004

CURRENCY EQUIVALENTS

(as of 3 November 2004)

Currency Unit	–	Nepalese rupee/s (NRe/NRs)
NRe1.00	=	\$0.0135
\$1.00	=	NRs73.80

ABBREVIATIONS

ADB	–	Asian Development Bank
FY	–	fiscal year
MOWR	–	Ministry of Water Resources
NEA	–	Nepal Electricity Authority
NEPGRID	–	Nepal Power Grid Corporation
NERC	–	Nepal Electricity Regulatory Commission
TA	–	technical assistance
USAID	–	United States Agency for International Development

TECHNICAL ASSISTANCE CLASSIFICATION

Targeting Classification	–	General intervention
Sector	–	Energy
Subsector	–	Energy sector development
Theme	–	Sustainable economic growth and governance
Subtheme	–	Fostering physical infrastructure development

NOTES

- (i) The fiscal year (FY) of the Government and its agencies ends on 15 July. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2004 ends on 15 July 2004.
- (ii) In this report, "\$" refers to US dollars.

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I. INTRODUCTION

1. During the Country Programming Mission of the Asian Development Bank (ADB) in March 2004, His Majesty's Government of Nepal reconfirmed its request to ADB for technical assistance (TA) to continue its support of power sector restructuring in Nepal. The TA is included in the 2004 ADB country assistance program.¹ The TA Fact-Finding Mission was fielded in Nepal from 27 October to 5 November 2004 and reached an understanding with the Government on the objectives, scope, costs, financing plan, implementation arrangements, and outline terms of reference for the TA.² The TA framework is in Appendix 1.

II. ISSUES

2. The power sector in Nepal is dominated by the Nepal Electricity Authority (NEA), a vertically integrated, Government-owned and -controlled utility, with several independent power producers, some of whom also distribute power in areas adjacent to their plants.³ NEA's installed and grid-connected capacity amounts to 402 megawatts (MW) of hydroelectric and 57 MW of peaking thermal power. NEA's operational performance has not been up to international standards: system losses are as high as 23%, power quality is substandard, and its financial position has deteriorated over the past few years. Furthermore, Government domination of the board of directors does not allow the NEA board and senior management to efficiently exercise the authority and responsibility needed to run an industrial enterprise.

3. Nepal's electrification ratio is still very low. Only about one third of the population has access to electricity, and in rural areas, where most people live, access is much lower. Despite the great potential for hydropower, power sector development has been constrained by the small size of Nepal's economy and of the modern industrial and commercial sectors. However, the demand for power has increased steadily, with an annual average growth rate of 8.5% over the past decade, and is forecast to grow at 7.5% annually until 2020. The Tenth Plan [Fiscal Year (FY) 2003–2007] sets out the Government's goal of providing electricity to 55% of the population by FY2007. This requires continuing rapid expansion of electrification in the country.

4. Being a low-income country with a low electrification ratio and limited financial resources in the public sector, Nepal needs to attract more domestic and foreign investment in hydropower development to meet demand. Empirical evidence shows that power sector reform can reduce the cost of delivered electricity by transforming the constituent businesses into commercial enterprises that will seek to cut waste and improve the efficiency of their operations, under pressure either from the market or from the regulator.

5. The Government has recognized that NEA must be unbundled to improve efficiency through competition and commercialization and that an independent regulator must be established to show prospective investors an effectively regulated system operated with good governance. Given the massive challenges Nepal faces—a small market, unstable sociopolitical situation, capital-intensive hydropower resources, and the urgent need to expand rural electrification—a phased approach toward power sector reform is considered suitable to create a sustainable and efficient power industry. The Government has given unambiguous commitments to unbundle NEA and create an effective, independent regulator and an autonomous operator of the transmission and dispatch system.

¹ ADB. 2004. *Country Strategy and Program (2005–2009): Nepal*. Manila.

² The TA first appeared in the *ADB Business Opportunities* (Internet edition) on 5 August 2004.

³ Nine independently owned power plants are operating in the country with a total capacity of 144 MW.

6. During the workshop and the tripartite meeting among the Government, ADB and the consultants for an ADB TA⁴ held in November 2004, consensus was reached on a road map for reforms intended to bring about a new power industry managed according to the principles of a commercial enterprise under a strong regulator. The Government has agreed, in principle, to the road map set out under this TA. This reform foresees the unbundling of NEA into four distinct entities of generation, transmission, distribution, and engineering, to be established under the Companies Act, with 100% of the shares initially owned by the Government. The Government and NEA have endorsed the recommended reform of the NEA board of directors as one measure to improve management effectiveness and transparency, and have confirmed that they will begin to draft the operating rules and other documents that will be the foundation for a new board by the end of 2004. The draft documents will need to be reviewed by experts to ensure that they meet the required standards for utility governance.

7. Although the Government has made a series of clear policy commitments to power sector reform, the present legal and regulatory framework does not enable such measures to be undertaken. Legislation to enable the unbundling of NEA and the setting up of an independent regulator is expected to be drafted by February 2005,⁵ and the Government has confirmed that these legislative initiatives will be enacted by May 2005.

8. The United States Agency for International Development (USAID) has provided TA to the Government to set up the Nepal Electricity Regulatory Commission (NERC), an independent regulator, and will continue to assist NERC with training and tariff setting. NERC is expected to become operational in the fourth quarter of 2005, which will allow the Government and NEA enough time to undertake the detailed preparatory work necessary for divestiture and corporatization.

9. The Government has confirmed that priority will be given to creating a transmission company, provisionally called the Nepal Power Grid Corporation (NEPGRID), initially operated as a single buyer, to increase financial transparency and encourage all market players and potential investors. This is expected to help realize the country's abundant hydropower potential and enable export of power to neighboring countries. The Government requested ADB to provide TA in establishing NEPGRID, which will consist of NEA's existing transmission and system operation (dispatch) business unit and of new departments responsible for settlements and investment planning. The Government has agreed to establish a task force with qualified and experienced staff and facilities before fielding the consultants for the TA.

III. THE TECHNICAL ASSISTANCE

A. Purpose and Output

10. The TA will help the Government launch the reform process by establishing NEPGRID. The scope of the TA will include (i) preparatory steps for establishing NEPGRID, (ii) preparation of human resources strategy, (iii) assessment of additional technology and software requirements, (iv) upgrading of NEA grid documents to a grid code suitable for use by all market participants and preparation of the power transmission policy, and (v) preparation of detailed scope of work for financial structure of NEPGRID. The TA will define the new company's distinct

⁴ ADB. 2000. *Technical Assistance to the Kingdom of Nepal for Power Sector Reforms in Nepal*. Manila (TA 3552-NEP).

⁵ USAID has been helping the Government draft the new act to establish NERC and the amendments to relevant acts needed to enable the desired reforms.

roles, functions, and relations with other sector entities, and provide technical experts to review the documents to be prepared by the Government for NEA board reform to improve corporate governance.

B. Methodology and Key Activities

11. By the time the consultants are fielded, the Government will establish a task force, headed by the person designated to become the head of the new NEPGRID. The task force will be composed of managers drawn from NEA's transmission system operation unit and officials from the Ministry of Water Resources (MOWR) and Department of Electricity Development. The consultants' team will work jointly with this task force, continuously involving task force personnel in all the work associated with the TA. The consultants may propose joint working groups, if necessary, to address specific elements of the TA, such as grid code, technology assessment, etc. All of the deliverables in this TA will emerge as being fully "owned" by the task force.

C. Cost and Financing

12. The total cost of the TA is estimated at \$510,000 equivalent, consisting of \$306,000 in foreign exchange and \$204,000 equivalent in local currency. ADB will finance \$400,000 equivalent, covering the entire foreign exchange cost and \$94,000 equivalent of the local currency cost. The TA will be financed on a grant basis by ADB's TA funding program. The Government will contribute the balance of the local currency cost equivalent to \$110,000 in kind for office space and facilities, counterpart staff, local transportation, and administrative and secretarial support. The cost estimates and financing plan are in Appendix 2.

D. Implementation Arrangements

13. MOWR, which has the overall responsibility for restructuring the power industry, will be the Executing Agency for the TA. A TA steering committee to be chaired by the secretary, MOWR, will be appointed before the consultants are fielded, to guide and supervise the TA. The steering committee will comprise senior Government officials from the Ministry of Finance, National Planning Commission, MOWR, and Department of Electricity Development, as well as senior staff of NEA and representatives from the private sector. MOWR will provide the team of consultants office accommodation and facilities and transport within Nepal, free of charge, and make arrangements to assist the consultants in data gathering, preliminary analysis, and report writing. The entire work, including report writing, will be done in Nepal to maximize transfer of knowledge. The consulting firm will make its own arrangements for personal computers for producing reports. A study tour will be organized for the steering committee members to visit transmission companies in two neighboring countries that have unbundled a vertically integrated utility.

14. The TA will require about 8 person-months of input from an international consulting firm with expertise in establishing new grid-operating companies in developing countries, and in managing power utility corporations. The international consultants will be supported by domestic consultants (22 person-months) with expertise in transmission system structure and operations, asset valuation, human resources and utility management. An international consulting firm will be selected in accordance with biodata technical proposals, following the *Guidelines on the Use of Consultants by Asian Development Bank and its Borrowers* and other arrangements satisfactory to ADB for engagement of domestic consultants. ADB's quality- and cost-based

method will be applied to select the firm. The outline terms of reference for the TA are in Appendix 3.

15. Consulting services are expected to begin in March 2005 and be completed within 9 months. The consultants will submit various reports simultaneously to the Government and ADB. An inception report with initial findings and proposed action plan for conducting the study will be submitted within 1 month after services start. Within 3 weeks of the receipt of the inception report, a tripartite meeting among the Government, ADB and the consultants will be convened in Kathmandu to discuss the report. An interim report will be submitted within 5 months and a draft final report within 8 months after services start. These reports will be reviewed at a tripartite meeting in Kathmandu. The consultants will organize a workshop in Kathmandu, inviting various stakeholders to discuss the draft final report. The final report will be submitted within 3 weeks after the tripartite review of the draft final report.

IV. THE PRESIDENT'S DECISION

16. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$400,000 on a grant basis to the Government of Nepal for the Restructuring of Nepal Electricity Authority, and hereby reports this action to the Board.

TECHNICAL ASSISTANCE FRAMEWORK

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
Goal <ul style="list-style-type: none"> • Increased efficiency in Nepal power sector and increased electrification ratio 	<ul style="list-style-type: none"> • Electrification ratio increased to 55% by 2007 	<ul style="list-style-type: none"> • National statistics 	
Purpose <ul style="list-style-type: none"> • Corporatization of transmission unit of Nepal Electricity Authority (NEA) • Improvement of corporate governance of NEA board 	<ul style="list-style-type: none"> • Establishment of Nepal Power Grid Corporation (NEPGRID) in 2006 • New NEA board structure 	<ul style="list-style-type: none"> • Memorandum of Association and Articles of Associations of NEPGRID • NEA board charter 	Assumptions <ul style="list-style-type: none"> • Continued political will to reform power sector • Establishment of the independent Nepal Electricity Regulatory Commission (NERC) in 2005 • Sociopolitical stability • Sufficient investment in power sector from public and private sectors
Outputs <ul style="list-style-type: none"> • Detailed plan for establishment of NEPGRID • Human resources strategy • List of additional hardware and software requirements • Grid code and transmission policy • Proposed financial and financial management structure of NEPGRID • NEA's new board documents 	<ul style="list-style-type: none"> • Inception report by April 2005 • Interim report by July 2005 • Draft final report by October 2005 	<ul style="list-style-type: none"> • TA progress report and completion report • Back-to-office reports of ADB TA review missions • Outcome of tripartite meetings and workshop 	Assumptions <ul style="list-style-type: none"> • Timely enactment of legislation for creation of NEPGRID and NEA board reform • Availability of funds for implementing reforms • Adequate capacity of the Government to implement reforms Risk <ul style="list-style-type: none"> • Delay in establishment and functioning of NERC
Activities <ul style="list-style-type: none"> • Identify preparatory work for establishment of NEPGRID • Review and prepare human resources strategies • Review existing hardware and software to identify additional requirements • Review existing grid document and upgrade to grid code; prepare national transmission policy • Review status and work needed to meet financial 	<ul style="list-style-type: none"> • TA commencement date: March 2005. • TA completion date: November 2005. 	<ul style="list-style-type: none"> • TA progress report and completion report • Back-to-office reports by ADB TA review missions • Outcome of tripartite meetings and workshop 	Assumption <ul style="list-style-type: none"> • Timely recruitment of TA consultants and implementation of TA Risk <ul style="list-style-type: none"> • Weak management of TA

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Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
requirements of NEPGRID • Review draft NEA board documents			
Inputs • Consultants • The Ministry of Water Resources' internal resources	• 8 person-months of international consulting services and 22 person-months of domestic consulting services • ADB TA grant of \$400,000 • In-kind contribution of \$110,000 by the Government	• Proposals by consultants • Contractor negotiation minutes	Assumption • Counterpart staff and budget available on time Risk • Weak performance by consultants

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Foreign Exchange	Local Currency	Total Cost
A. Asian Development Bank (ADB) Financing^a			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants ^b	200.0	0.0	200.0
ii. Domestic Consultants ^c	0.0	66.0	66.0
b. International and Local Travel	30.0	10.0	40.0
c. Reports and Communications	10.0	0.0	10.0
2. Workshops, Seminars, and Training	30.0	0.0	30.0
3. Representative for Contract Negotiations	3.0	0.0	3.0
4. Contingencies	33.0	18.0	51.0
Subtotal (A)	306.0	94.0	400.0
B. Government of Nepal Financing			
1. Office Accommodation ^d and Transport	0.0	30.0	30.0
2. Remuneration and Per Diem of Counterpart Staff	0.0	70.0	70.0
3. Other	0.0	10.0	10.0
Subtotal (B)	0.0	110.0	110.0
Total	306.0	204.0	510.0

^a Financed by ADB's technical assistance funding program.

^b Assuming 8 person-months of international consultants at \$25,000 per month.

^c Assuming 22 person-months of domestic consultants at \$3,000 per month.

^d Includes office facilities and local communication.

Source: ADB estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTING SERVICES

1. The Government of Nepal has decided that within the process of unbundling the Nepal Electricity Authority (NEA), priority will be given to prepare for the separation of NEA's Transmission and System Operation business unit into a new, independent, publicly owned corporation provisionally called the Nepal Power Grid Corporation (NEPGRID).

2. The Ministry of Water Resources (MOWR), in consultation with NEA, will draft the corporate governance documents needed for NEA board reform, including (i) qualifications standards and nomination process for director, (ii) stockholder communications with directors, (iii) director's responsibilities, (iv) director's access to management and independent advisors as necessary, (v) director's compensation; (vi) orientation and ongoing training of director, (vii) annual performance of the board, and (viii) board operating rules and committee structure and directives. These documents need to be reviewed to bring the NEA board into conformity with modern governance practices for large corporations and to eliminate direct Government involvement in NEA operations and management. The consultants will work closely with MOWR and NEA in this area.

3. The consulting firm will appoint one of the international consultants as team leader, who will also serve as a technical expert and be responsible for the overall management of the study. The team leader will coordinate the TA among all the Government agencies concerned, ADB, and other development partners to ensure smooth implementation and non-duplication of work, and will ultimately be responsible for all deliverables of the TA study. The team leader will also closely coordinate with the consulting teams of other relevant studies, including the ADB TA for Rural Electrification and Renewable Energy Project.

4. The consulting firm will provide experts with relevant experience in establishing new grid-operating companies in developing countries, human resources management, finance and accounting, power utility corporate management, and experts with knowledge of NEA's transmission system and operation.

5. In close collaboration with MOWR and the task force to be established by the Government to create NEPGRID, the consultants will undertake, but not be limited to, the following tasks:

A. Preparatory Steps for the Establishment of NEPGRID

6. The consultants will:

- (i) review the consultant report prepared under the ADB TA on Power Sector Reforms in Nepal¹ and other relevant studies and reports on power sector reforms in Nepal;
- (ii) identify steps to establish NEPGRID, and prepare a detailed time schedule;
- (iii) identify legal steps to transfer assets and personnel from NEA to NEPGRID, and draft the necessary legal documents;

¹ ADB. 2000. *Technical Assistance to the Kingdom of Nepal for Power Sector Reforms in Nepal*. Manila (TA3552-NEP, \$800,000 approved on 29 November 2000).

- (iv) design an effective organizational and management structure for NEPGRID and define its relationship with other entities in the power sector;
- (v) establish performance criteria and develop a draft business plan for NEPGRID;
- (vi) propose a transparent, rule-based business structure for NEPGRID, including draft dispatch criteria with distinct business functions with separate accounting in the transmission and power trading businesses; and
- (vii) prepare draft operating rules for the settlement department, which will be responsible for payments to generators and invoicing to NEA's distribution and consumer service business unit.

B. Human Resources Strategy

7. The consultants will:

- (i) develop a realistic staffing plan for NEPGRID with balanced gender consideration and assess NEA's existing staffing capabilities;
- (ii) prepare draft job descriptions and qualification requirements for key positions of NEPGRID;
- (iii) propose a salary structure suitable for NEPGRID;
- (iv) identify bottlenecks in transfer of employees from NEA to NEPGRID and propose solutions, taking into account various issues, including labor issues;
- (v) recommend candidates for transfer from NEA to NEPGRID and identify any positions for which staff will have to be recruited; and
- (vi) identify training requirements for NEPGRID positions, if any.

C. Assessment of Technology and Software

8. The consultants will:

- (i) review the asset studies undertaken by NEA and examine its dispatch and transmission control technology;
- (ii) determine additional technology and software requirements, if any; and
- (iii) specify any need to upgrade the system for NEPGRID to carry out intended market functions.

D. Upgrading of NEA Grid Document and Preparation of National Transmission Policy

9. The consultants will:

- (i) review NEA's existing grid document that was prepared with assistance from the United States Agency for International Development (USAID);
- (ii) upgrade the grid document to a grid code suitable for use by all market participants; and
- (iii) review the existing transmission policy in Nepal and prepare or review a national transmission policy suitable for operation of NEPGRID.

E. NEPGRID Financial and Financial Management Structure

10. The consultants will:

- (i) review the status of the financial and financial management structure, systems, and business processes of NEA's Transmission and Systems Operations business unit, and identify assets and liabilities, existing contracts and obligations, and investment needs;
- (ii) review the output of NEA's asset valuation that is being carried out by Ernst & Young, India; and
- (iii) prepare a detailed scope of work for all of the required work related to asset and liability transfers from NEA to NEPGRID.

F. Review of NEA Board Documents

11. The consultants will:

- (i) review the draft NEA board documents prepared by MOWR to assess whether they fully meet international governance standards for power utilities;
- (ii) identify any gaps in the draft documents and recommend measures to fill them;
- (iii) review the NEA Act and Regulations to identify required improvements and suggest necessary clauses or provisions related to the NEA board, if any;
- (iv) guide MOWR and NEA in forming committees on (a) audit, (b) directors and corporate governance, (c) compensation, and (d) finance; and
- (v) recommend other committees such as strategic planning and restructuring, human resources, and ethics, if appropriate.