Technical Assistance Report

Project Number: 41067
December 2007

Republic of the Philippines: Preparing the Rural Electric Cooperatives Development Project

(Financed by the Japan Special Fund)

Asian Development Bank

CURRENCY EQUIVALENTS
(as of 27 November 2007)

Currency Unit	–	peso (₱)
₱1.00	=	$0.0234
$1.00	=	₱42.650

ABBREVIATIONS

ADB	–	Asian Development Bank
NEA	–	National Electrification Administration
PPTA	–	project preparatory technical assistance
TA	–	technical assistance
TransCo	–	National Transmission Corporation
WESM	–	wholesale electricity spot market

TECHNICAL ASSISTANCE CLASSIFICATION

Targeting Classification	–	General intervention
Sector	–	Energy
Subsector	–	Transmission and distribution
Themes	–	Sustainable economic growth, capacity development
Subthemes	–	Fostering physical infrastructure development, developing rural areas, institutional development.

NOTES

(i) The fiscal year (FY) of the Government and its agencies ends on 31 December. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2007 ends on 31 December 2007.

(ii) In this report, "$" refers to US dollars.

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I. INTRODUCTION

1. In line with its poverty reduction program, the Government of the Philippines aims to achieve 100% electrification of villages by 2008. However, the technical and financial capacity of electric cooperatives is still inadequate to ensure quality supply to consumers and expand the service, particularly in the context of deregulated power markets and the wholesale electricity spot market (WESM).

2. The Government asked the Asian Development Bank (ADB) to provide project preparatory technical assistance (TA) to prepare the rural electric cooperatives development project. The Fact-Finding Mission was fielded from 8 to 10 May 2007 and held discussions with officials of the National Electrification Administration (NEA), Department of Energy, and National Economic Development Authority. The Mission reached an understanding with the Government on the impact, outcome, outputs, cost estimates, implementation arrangements, and terms of reference for the TA.[1] The design and monitoring framework is in Appendix 1.

II. ISSUES

3. **Rural Electrification Status.** At the end of 2006, about 95% of barangays[2] in the Philippines had access to electricity. As of December 2006, the country had 36,030 barangays, of which 34,090 received electricity through grid connection or off-grid systems; 1,940 barangays (494 in Luzon, 361 in Visayas, and 1,085 in Mindanao) did not have access to electricity. These barangays are mostly located in isolated and remote areas, and have limited household incomes. These areas are often not considered to be financially viable for electric cooperatives whose technical and financial performance is weak (para. 6).

4. Even in barangays that already have access to electricity, many households have not been able to avail of electricity either due to technical limitations of the electric cooperatives or affordability. The household electrification rate is only 75%, leaving more than 4.39 million households without access to electricity; of these, 4.03 million live in rural areas served by electric cooperatives.

5. **Technical and Financial Constraints of Electric Cooperatives.** Recognizing that rural electrification in many areas of the country was not a viable private sector investment, in 1969 the Government passed legislation creating NEA to pursue total electrification. It mandated NEA, a Government agency, to organize and supervise electric cooperatives for this purpose. Through a combination of loans and subsidies to the 119 electric cooperatives as nonstock, nonprofit, service-oriented entities, NEA financed the setting up of the lines and substations needed to bring power to mostly residential consumers in the Philippine countryside. Each electric cooperative has an average of 200 staff and serves an average of 60,000 customers—mostly residential (about 90%) and concentrated in rural areas. The average monthly consumption per customer is between 60 and 120 kilowatt-hours. Nationally, electric cooperatives account for 58% of all consumers; Manila Electric Company (Meralco), the privately owned distribution utility in Metro Manila, accounts for 33% and other distribution utilities for 9%. In terms of electricity consumption, electric cooperatives account for 24%, while Meralco accounts for 62% and other distribution utilities for 14%.

[1] The TA first appeared in *ADB Business Opportunities* on 28 May 2007.
[2] A unit of administration consisting of 50 to 100 families under an administrator (captain).

6. The electric cooperatives can be classified into four categories: (i) creditworthy, financially self-sufficient (about 25% of the 119 electric cooperatives); (ii) partially creditworthy, large size and density with potential efficiency gains (about 10%); (iii) marginal viability, unable to attract private financing at present (about 35%); and (iv) nonviable, operating in low density and disadvantaged areas (about 30%). Based on NEA data, the number of electric cooperatives with operating losses increased from 35 in 2004 to 41 in 2006 (a 17% increase), while those that were unable to cover both operating costs and debt service increased from 62 to 77 (a 24% increase). As of December 2006, 73 electric cooperatives had system losses in excess of 14%, while 18 electric cooperatives had system losses higher than 20%. The Anti-Pilferage Act of 1994 does not allow electric cooperatives to recover system losses in excess of 14% from its consumers. High system losses have contributed to the financial difficulties of electric cooperatives and make up one of the reasons for the high electricity tariff. Since the electricity is mainly used for lighting in rural areas, there is a potential for using efficient lighting (e.g. compact fluorescent light) to reduce the demand and cost.

7. To improve the financial situation of electric cooperatives, the Electric Power Industry Reform Act mandates the Power Sector Assets and Liabilities Management Corporation to assume all outstanding financial obligations of electric cooperatives to NEA and other government agencies incurred as of June 2001 to finance the rural electrification program. Power Sector Assets and Liabilities Management Corporation has absorbed ₱18 billion of electric cooperative loans. NEA has since shown financial turnaround arising from higher revenues and reduced operational expenditures. With the support of Australian Agency for International Development, the Government is undertaking a reform agenda to sustain the corporate recovery of NEA.

8. **Investment Requirements of Electric Cooperatives.** Consistent with the Government's rural electrification program, a total of 6,690 circuit kilometers of distribution lines; 215 new substation units with a total capacity of 1,907 megavolt-amperes; and 83 substation units with a total capacity of 609 megavolt-amperes in the electric cooperative franchise areas in Luzon, Visayas, and Mindanao need to be upgraded, rehabilitated, or revamped in the next 3 years. Necessary information technology software and hardware, as well as kilowatt-hour meters, are essential as they serve as critical components in system loss reduction and load research analysis in the distribution system. Moreover, under the Electric Power Industry Reform Act, the metering equipment of the cooperatives needs to be replaced; the new equipment must be capable of using time-of-use tariffs. These meters will be strategically placed in substation and feeder lines, as well as to all classes of the electric cooperatives' consumer base to potentially harness the benefits of least cost power arising from time-of-use tariffs. About 1.6 million one-phase kilowatt-hour meters and 6,000 three-phase meters are needed. These investments require more than ₱40 billion.

9. The electric cooperatives, as direct clients of the National Transmission Corporation (TransCo), qualify as priority entities in the acquisition of subtransmission lines, which are currently owned by TransCo. Although the strategy for the electric cooperatives to acquire or construct subtransmission lines within their coverage areas to gain leverage in the environment of open access and retail competition is sound, the cooperatives must first conduct a full feasibility study to include benefit-cost analyses pertinent to decision-making prior to acquiring subtransmission assets.

10. Furthermore, under the deregulated environment of the Electric Power Industry Reform Act, NEA is to assist the electric cooperatives in their direct participation in the WESM. NEA is currently developing options to pool/combine contiguous electric cooperatives with a view to

strengthen them as conglomerates to achieve common economic benefits. This will create a consolidated demand that will strengthen confidence among the electric cooperatives with limited or little experience in power pooling and also in dealing with the WESM. Moreover, trading participants in the WESM are faced with risks associated with energy trading. They have to contend with pricing volatility, management of trading volumes, valuation of risks, and organization and control. Therefore NEA and the electric cooperatives must be trained on risk management and mitigation, spot market trading simulations, load forecasting, power supply contract, and pooling/conglomeration strategies.

11. **Rationale for Providing ADB Support**. To support the operations of electric cooperatives and system expansion, NEA makes various credit facilities available to the cooperatives. Currently, in general, the loans have an interest charge of 10% and may have maturities of up to 5 years. NEA has set aside around ₱1.3 billion of internally generated funds for these various facilities. Further, the World Bank established an electric cooperative partial credit guarantee program for system loss reduction and other energy efficiency investments of the cooperatives. Such loan guarantees are targeted at electric cooperatives for which commercial lenders are willing to take part of the credit risk. In addition, the partial credit guarantee program offers grant assistance for the cost of preparing the feasibility study and assistance in seeking Energy Regulatory Commission approval for the capital expenditure application.

12. However, these facilities are inadequate to meet the cooperatives' investment requirements particularly those nonviable electric cooperatives. As the existing facilities are mainly aimed at viable electric cooperatives, further financing facilities need to be put in place to finance critical investments, particularly those of poorer cooperatives. The TA will critically review and validate the electric cooperatives' investment requirements and prepare an ADB project through NEA to assist nonviable electric cooperatives in improving their technical and financial capacity to make electricity accessible to new consumers.

13. The TA is consistent with ADB's country and strategy program[3] and ongoing support to power sector restructuring. In December 2006, ADB approved the Power Sector Development Program[4] with a primary objective of creating a competitive power sector by privatizing National Power Corporation's generation assets and offering concession of TransCo's assets. The creditworthiness of the electricity off-takers, particularly of the electric cooperatives, has been one factor affecting private investors' interest in the generation assets of National Power Corporation. The TA and ensuing project will provide the needed public sector support to these electric cooperatives to improve operating efficiency and prepare these electric cooperatives to participate in the WESM. Therefore, the proposed project to strengthen electric cooperatives is a timely public sector operation to support ongoing power sector restructuring.

III. THE TECHNICAL ASSISTANCE

A. Impact and Outcome

14. The TA will contribute to ensuring a sustainable, efficient, and secure power supply in rural areas of the country. As the outcome of the TA, the scope of the resulting project together with the mitigation measures for environmental and social impacts, and financing and

[3] ADB. 2005. *Country Strategy and Program Update (2005–2007): Philippines*. Manila.
[4] ADB. 2006. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of the Philippines for the Power Sector Development Program.* Manila.

implementation arrangements will be prepared. The resulting project will consolidate and strengthen the technical and financial capacity of the electric cooperatives particularly those nonviable ones to provide efficient, adequate, and reliable electric service at reasonable electricity rates.

B. Methodology and Key Activities

15. The TA will study the feasibility and determine the investment and institutional strengthening requirements of the electric cooperatives in the following areas:

(i) distribution system upgrading and improvement of energy efficiency (rehabilitation and upgrading substations/lines; efficient lighting),
(ii) acquisition of TransCo's subtransmission assets,
(iii) readiness of electric cooperatives to participate in wholesale electricity market (computerization, metering), and
(iv) options for credit enhancement mechanism including provision of partial credit guarantee and aggregation of power purchases by electric cooperatives and providing training to the cooperatives for WESM trading.

16. ADB will use the final TA outputs in considering the provision of a loan to NEA to meet the investment requirements of electric cooperatives. The TA will produce the following outputs:

(i) assessment of financial and technical capacity and investment requirements of the electric cooperatives in the next 5 years and required credit enhancement to participate in WESM, and selection of components suitable for ADB financing;
(ii) assessment of NEA's financial and technical capacity to channel ADB's assistance to finance investment requirements of electric cooperatives;
(iii) assessment of procurement, environment, and social safeguard policies of NEA and electric cooperatives; and appropriate recommendations in accordance with ADB policies;
(iv) project cost estimates, financing options, which may include local currency financing, nonsovereign borrowing, multitranche financing facility, partial credit guarantee, etc.;
(v) economic and financial analyses of the selected project components, including analyses of alternatives, rate of return, sensitivity, and risk;
(vi) confirmation of the environmental categorization of the project, and if necessary, an initial environmental evaluation for the project, including a summary initial environmental evaluation; and
(vii) social and poverty analysis and impact assessment of the proposed project, including land acquisition and resettlement plans, and indigenous peoples development plans, if required.

17. In accordance with ADB's *Environment Policy* (2002) and *Environment Assessment Guidelines* (2003), the TA will confirm the project categorization and prepare an appropriate environment document as required. To ensure compliance with ADB's social safeguard policies in *Involuntary Resettlement* (1995), *Policy on Indigenous Peoples* (1998), and *Gender and Development* (1998), the TA will assess the resettlement and other impacts arising from the project components and include these impacts and remedial measures in the resettlement plan. The summary initial poverty and social analysis is in Appendix 2.

C. Cost and Financing

18. The total cost of the TA is estimated to be $786,000 equivalent. The Government has requested that ADB provides $550,000. The TA will be financed on a grant basis by the Japan Special Fund, funded by the Government of Japan. NEA will contribute the remaining $236,000 equivalent in kind, including office accommodation in Manila, counterpart staff remuneration, and secretarial support. NEA assured the availability of counterpart services, facilities, and funds by the TA's expected commencement date. Details of the cost estimates and financing plan are in Appendix 3. The Government and NEA have been informed that approval of the TA does not commit ADB to finance any ensuing project.

D. Implementation Arrangements

19. NEA will be the Executing Agency for the TA and will work in close collaboration with the electric cooperatives and other relevant government agencies. NEA will assign a project coordinator prior to contract negotiations, and counterpart staff to work with the consultants.

20. The TA will be implemented over 8 months, from January 2008 to August 2008. ADB will engage a consulting firm in accordance with the *Guidelines on the Use of Consultants* dated February 2007, as amended from time to time. The simplified technical proposal and quality-and-cost-based selection procedures will be used in selecting the consulting firm. The TA will require 12 person-months of international and 32 person-months of national consulting services. The consultant team will comprise (i) an international power specialist (team leader) with extensive experience in rural electrification (8 person-months), (ii) an international project financing specialist (4 person-months), (iii) a national energy economist (8 person-months), (iv) a national financial analyst (8 person-months), (v) a national social development specialist (8 person-months), (vi) a national information technology specialist (6 person-months), and (vii) a national environment specialist (2 person months). The outline terms of reference for the consultants are in Appendix 4. The consultants will prepare inception, interim, draft final, and final reports, due in 4 weeks, 5 months, 7 months, and 8 months, respectively, after the services start. Tripartite meetings of the NEA, consultant, and ADB will be held for the presentation and review of the initial, interim, and draft final reports.

21. The TA final report will be disseminated to the public in accordance with ADB's *Public Communications Policy*.[5]

22. All computer models, databases, and training materials developed by the consultants including office equipment purchased during the TA will be transferred to NEA upon completion of the TA, and thereafter will remain the property of the Government. The copyright of any materials, software systems, or databases developed by the ADB TA consultants belongs to ADB and will remain with ADB.

IV. THE PRESIDENT'S DECISION

23. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of $550,000 on a grant basis to the Government of the Philippines for preparing the Rural Electric Cooperatives Development Project, and hereby reports this action to the Board.

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[5] ADB. 2005. *The Public Communications Policy of the Asian Development Bank: Disclosure and Exchange of Information.* Manila.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
Impact Strengthening of institutional, technical, and financial capacity of electric cooperatives to provide affordable electricity to poor rural households	100% electrification of barangays by the end of 2008 100% household electrification by 2020	Department of Energy's Energy Development Plan NEA's annual report	**Assumption** • Rural electrification is a priority for the Government with adequate public sector financing to rural electric cooperatives
Outcome Project design agreed by the Borrower and ADB	Memorandum of Understanding between ADB and the Government on the project design upon completion of the TA	Consultant's final report Back-to-office report of fact-finding mission for the project	**Risk** • The electricity tariff is inadequate to ensure project feasibility
Outputs 1. Investment requirements of rural cooperatives assessed 2. Project scope and components designed 3. Economic and financial feasibility determined 4. Social and environmental impact mitigation plans prepared	Investment requirements submitted to Government and ADB by May 2008 (interim report) Project scope and components for ADB financing submitted to Government and ADB by May 2008 (interim report) Project scope and components submitted to Government and ADB by May 2008 (interim report) Poverty and social analysis and summary EIA submitted to Government and ADB by August 2008 (draft final report)	TA progress reports Back-to-office reports of review missions Minutes of the tripartite meetings	**Assumptions** • Harmonization of donors' support to the rural electrification program • NEA's institutional and financial capacity is adequate to implement ADB project
Activities with Milestones 1.1 Assess financial and technical capacity and investment requirements of the electric cooperatives in the next 5 years as part of interim report by May 2008 2.1 Recommend the scope of the project for ADB financing and project implementation arrangement as part of interim report submitted to the Government and ADB by May 2008 3.1 Determine the economic and financial viability of the project including calculation of economic internal rate of return and financial internal rate of			**Inputs** • ADB: $0.550 million Consulting services: $0.420 million Workshops and equipment: $0.090 million Contingencies: $0.040 million

return as part of interim report submitted to the Government and ADB by May 2008 4.1 Undertake stakeholder consultations and assess the environmental and resettlement impacts of the Project and prepare summary EIA and mitigation plans as part of draft final report submitted to the Government and ADB by August 2008	• NEA: $0.236 million (in kind) Office accommodation and transport: $0.080 million Counterpart staff and studies: $0.136 million Communication: $0.020 million

ADB = Asian Development Bank, EIA = environmental impact assessment, NEA = National Electrification Administration, TA = technical assistance.

INITIAL POVERTY AND SOCIAL ANALYSIS

Country/Project Title:	Philippines: Preparing the Rural Electric Cooperatives Development Project		
Lending/Financing Modality:	Project	Department/ Division:	Southeast Asia Department Infrastructure Division

I. POVERTY ISSUES

A. Linkages to the National Poverty Reduction Strategy and Country Partnership Strategy

Provision of electricity throughout the country is one of the key tasks of the Government's Medium-Term Development Strategy. In line with its poverty reduction program, the Government of the Philippines aims to achieve 100% electrification of villages by 2008. However, the technical and financial capacity of electric cooperatives is still inadequate to ensure quality supply to consumers and expand the service, particularly in the context of deregulated power markets and the wholesale electricity spot market (WESM). The project will improve the technical and financial capacities of electric cooperatives that will provide electricity to rural households.

B. Targeting Classification

1. Select the targeting classification of the project:

☒ General Intervention ☐ Individual or Household (TI-H); ☐Geographic (TI-G); ☐Non-Income MDGs (TI-M1, M2, etc.)

2. Explain the basis for the targeting classification:
   As electricity is an input to most economic processes, it is an important component of economic development that is essential for poverty reduction. The PPTA will prepare an investment project to meet the electricity demand thus promoting economic growth in the country.

C. Poverty Analysis

1. If the project is classified as TI-H, or if it is policy-based, what type of poverty impact analysis is needed?
   Not applicable.

2. What resources are allocated in the PPTA/due diligence?
   A national social development analyst (8 person-months) is envisaged to undertake relevant poverty analysis.

3. If GI, is there any opportunity for pro-poor design (e.g., social inclusion subcomponents, cross subsidy, pro-poor governance, and pro-poor growth)?
   Yes, the TA and ensuing project will target the nonviable rural electric cooperatives to provide quality and affordable electricity to consumers. The poor consumers will benefit from subsidized lifeline rates and efficient lighting.

II. SOCIAL DEVELOPMENT ISSUES

A. Initial Social Analysis

Based on existing information:

1. Who are the potential primary beneficiaries of the project? How do the poor and the socially excluded benefit from the project?
   The TA and ensuing project will target the nonviable rural electric cooperatives to provide quality and affordable electricity to poor consumers.

2. What are the potential needs of beneficiaries in relation to the proposed project?
   With access to electricity, the poor will enjoy better education, communication, health, comfort, convenience, and productivity.

3. What are the potential constraints in accessing the proposed benefits and services, and how will the project address them?
   The main constraint is the affordability of consumers. The project will improve the operational efficiency of rural electric cooperatives to lower the cost of provision of electricity. Furthermore, the poor consumers will benefit from subsidized lifeline rates.

B. Consultation and Participation

1. Indicate the potential initial stakeholders.
   The potential stakeholders include the National Electrification Administration (NEA), rural electric cooperatives and the electricity consumers and community-based organizations.

2. What type of consultation and participation (C&P) is required during the PPTA or project processing (e.g., workshops, community mobilization, involvement of nongovernment organizations and community-based organizations, etc.)?
   Consultation workshops will be organized with stakeholders during the TA to help in the project design and prepare a participation, consultation, and disclosure strategy for the project loan.

3. What level of participation is envisaged for project design?
   ☒ Information sharing ☒ Consultation ☐ Collaborative decision making ☐ Empowerment

4. Will a C&P plan be prepared? ☒ Yes ☐ No

C. Gender and Development

1. What are the key gender issues in the sector/subsector that are likely to be relevant to this project/program?
   There are no specific gender concerns. The provision of electricity will benefit all population including women.

2. Does the proposed project/program have the potential to promote gender equality and/or women's empowerment by improving women's access to and use of opportunities, services, resources, assets, and participation in decision making? ☐ Yes ☒ No The provision of electricity will benefit all population regardless of gender.

3. Could the proposed project have an adverse impact on women and/or girls or to widen gender inequality?
   ☐ Yes ☒ No The provision of electricity will benefit all population regardless of gender.

III. SOCIAL SAFEGUARD ISSUES AND OTHER SOCIAL RISKS

Issue	Nature of Social Issue	Significant/Limited/ No Impact/Not Known	Plan or Other Action Required
Involuntary Resettlement	Upgrading of distribution system may involve some involuntary resettlement	Limited	☐ Full Plan ☒ Short Plan ☒ Resettlement Framework ☐ No Action ☐ Uncertain
Indigenous Peoples	The TA consultant will assess if there is any issues with indigenous people	Not known	☐ Plan ☐ Other Action ☐ Indigenous Peoples Framework ☐ No Action ☒ Uncertain
Labor ☐ Employment Opportunities ☐ Labor Retrenchment ☐ Core Labor Standards	No labor issues	No impact	☐ Plan ☐ Other Action ☒ No Action ☐ Uncertain
Affordability	The electricity tariff should be affordable to rural poor. Lifeline tariff will be available for low consumption poor residential customers	Significant	☒ Action ☐ No Action ☐ Uncertain

Issue	Nature of Social Issue	Significant/Limited/ No Impact/Not Known	Plan or Other Action Required
Other Risks and/or Vulnerabilities ☐ HIV/AIDS ☐ Human Trafficking ☐ Others (conflict, political instability, etc.), please specify	None	No impact	☐ Plan ☐ Other Action ☒ No Action ☐ Uncertain

IV. PPTA/DUE DILIGENCE RESOURCE REQUIREMENT

1. Do the TOR for the PPTA (or other due diligence) include poverty, social and gender analysis and the relevant specialist/s?
   ☒ Yes ☐ No

2. Are resources (consultants, survey budget, and workshop) allocated for conducting poverty, social and/or gender analysis, and C&P during the PPTA/due diligence? ☒ Yes ☐ No

PPTA = project preparatory technical assistance.

COST ESTIMATES AND FINANCING PLAN
($'000)

Item	Total Cost
A. Asian Development Bank Financing[a]	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants	242.0
ii. National Consultants	135.0
b. International and Local Travel	40.0
c. Reports and Communications	3.0
2. Equipment[b]	50.0
3. Training, Seminars, and Conferences	
a. Facilitators	10.0
b. Training Program	30.0
4. Surveys	—
5. Miscellaneous Administration and Support Costs	—
6. Representative for Contract Negotiations	—
7. Contingencies	40.0
Subtotal (A)	**550.0**
B. National Electrification Administration Financing	
1. Office Accommodation	80.0
2. Counterpart Staff and Studies	136.0
3. Communications	20.0
Subtotal (B)	**236.0**
Total	**786.0**

— = not applicable.
[a] Financed by the Japan Special Fund funded by the Government of Japan.
[b] Computer hardware and software will be procured for data collection and data processing.
Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

1. The technical assistance (TA) will study the feasibility and determine the investment and institutional strengthening requirements of the electric cooperatives that are suitable for Asian Development Bank (ADB) financing in the following areas:

(i) upgrading of distribution system and improvement of energy efficiency (rehabilitation and upgrading substations/lines);
(ii) acquisition of National Transmission Corporation's (TransCo) subtransmission assets;
(iii) readiness of electric cooperatives to participate in the wholesale electricity market (computerization, metering); and
(iv) options for aggregating power purchases of electric cooperatives, and provision of training to National Electrification Administration (NEA) and electric cooperatives for wholesale electricity spot market (WESM) trading.

A. International Consultants

1. Power Engineer and Rural Electrification Specialist (team leader, 8 person-months)

2. As the team leader, the specialist will undertake the following tasks:

(i) Coordinate TA implementation, including training activities, and ensure timely delivery of all tasks by team members.
(ii) Lead consultation and discussions with the electric cooperatives, NEA, and other concerned agencies, including other financing institutions active in the financing of rural electric cooperatives, to ensure the harmonization of the ADB TA with other existing and proposed assistance.
(iii) On the basis of the Government's reform agenda for NEA's corporate recovery, review and assess NEA's institutional, financial and technical capacity to deliver services to electric cooperatives.
(iv) Assess financial and technical capacity and investment requirements of the electric cooperatives in the next 5 years (including system upgrading and acquisition of subtransmission lines) and required credit enhancement to participate in WESM, and selection of components suitable for ADB financing.
(v) Assess the potential demand reduction and cost savings with the use of compact fluorescent light.
(vi) Define the scope of the ensuing loan project (including if the project will take a sector approach); components, cost estimates, financing plan, and implementation arrangements and prepare a participation, consultation, and disclosure strategy for the project loan.
(vii) In coordination with the national consultants, determine the environmental categorization of the project and the likely social impact including resettlement, and ensure adequate analysis and plans are prepared.
(viii) Prepare a project framework according to ADB standards.
(ix) Review and improve the organization of procurement within NEA and electric cooperatives including the competitive bidding process, procedures, methodology for bid evaluation, and contract negotiations.

(x) Review project implementation arrangements of NEA and electric cooperatives, and confirm that the supervision and monitoring provisions are in accordance with good utility practices.
(xi) Define and conduct relevant training courses for NEA and electric cooperatives.
(xii) Assess electric cooperatives' load forecasting capacity and make relevant recommendations if this function should be outsourced.
(xiii) Study possible use of an independent metering agency (including franchising meter reading and billing) as allowed under the Electric Power Industry Reform Act.

2. Project Financing Specialist (4 person-months)

3. In accordance with the ADB paper, *Financing Instruments and Modalities—Flexibility in Development Finance* (2007), the project financing specialist will have the following tasks:

(i) Assess the financial and technical capacity and investment requirements of the electric cooperatives in the next 5 years and the required credit enhancement to participate in WESM, and select components suitable for ADB financing.
(ii) On the basis of the Government's reform agenda for NEA's corporate recovery, assess NEA's financial and technical capacity to channel ADB's assistance to finance investment requirements of electric cooperatives.
(iii) Assess NEA's financial performance and projections (balance sheet, income statement, and cash flow), and calculate critical financial ratios.
(iv) In consultation with NEA and oversight agencies such as the Department of Finance, National Economic Development Authority, and Department of Energy, propose a financing plan, taking into account ADB's innovation and efficiency initiatives (multitranche financing, nonsovereign public sector financing, partial credit guarantee, and local currency facilities).
(v) Determine the project's financial internal rate of return and carry out sensitivity analyses; determine the weighted average cost of capital and recommend appropriate financial covenants for the project.
(vi) Review and improve the financial management and control system within NEA and electric cooperatives (including the internal and external audit procedures).
(vii) Recommend appropriate financial covenants including financial performance indicators for the project.

B. National Consultants

1. Energy Economist (8 person-months)

4. The energy economist will assist the team leader and undertake the following tasks:

(i) In coordination with social development specialist, analyze access to electricity, affordability, consumption, and lifeline tariffs.
(ii) Review power and energy demand forecasts in the franchise areas of electric cooperatives.
(iii) Collect and review electric cooperatives' investment plans and propose components for ADB financing.
(iv) Assessment of the economic benefits with the use of compact fluorescent light in households.
(v) In coordination with the social development specialist, conduct sample surveys regarding electricity uses in selected beneficiary villages using the methodology

described in ADB. 2002. *Measuring Willingness to Pay for Electricity.* Economics and Research Department Technical Note Series No. 3. Manila.

(vi) Conduct an economic evaluation of the proposed project, including benefit-cost analysis and using a net present value approach based on a discounted cash-flow analysis; and compute the economic rate of return for the project.

(vii) Develop specific measurement indicators of energy efficiency improvement as a result of project implementation, and consider if the follow-up loan project can be eligible for ADB's energy efficiency initiative of the clean energy program.

2. Financial Analyst (8 person-months)

5. The financial analyst will undertake the following tasks:

(i) Collect data and assist the international consultant in assessing NEA's financial performance and projections, calculating critical financial ratios, and defining the assumptions used for the financial projections.

(ii) Conduct financial analyses by comparing with- and without-project scenarios.

(iii) Determine the project's financial internal rate of return.

(iv) Prepare preliminary cash-flow projections for the project, including all relevant financial benefits and costs; subject them to a financial benefit-cost analysis, and compute the financial internal rate of return for the project.

(v) Assist the international financial specialist in recommending appropriate financial covenants including financial performance indicators for the project.

(vi) Collect data and assist the international financial specialist in reviewing the financial management and control system within NEA.

3. Social Development Specialist (8 person-months)

6. The social development specialist will undertake the following tasks:

(i) Collect and review existing studies and data on poverty reduction in relation to the power sector, and prepare a socioeconomic and poverty profile of the primary project beneficiaries.

(ii) In coordination with energy economist, collect and review data on electricity affordability, consumption, and lifeline tariffs.

(iii) In coordination with the energy economist, conduct sample surveys regarding electricity uses in selected beneficiary villages using the methodology described in ADB. 2002. *Measuring Willingness to Pay for Electricity.* Economics and Research Department Technical Note Series No. 3. Manila.

(iv) Prepare poverty and social analysis in accordance with ADB's *Handbook on Poverty and Social Analysis* (2001).

(v) Conduct stakeholder consultation meetings and stakeholder analysis.

(vi) Assist in preparing initial involuntary resettlement impact screening checklists and a detailed resettlement framework if required.

(vii) Collect and review existing regulations pertaining to land acquisition and resettlement, and indigenous people issues; and assist in collecting other information as needed.

(viii) Based on the requirements of ADB's involuntary resettlement policy as detailed in ADB's *Handbook on Resettlement* (1998) and project team instructions, prepare resettlement plans for each subproject/component with involuntary resettlement impacts involving electric cooperatives to be assisted for the core project. For other electric cooperatives that may apply for ADB funding during project implementation, a resettlement framework may also be prepared.

(ix) Validate the presence of indigenous people among the potential beneficiaries and those who will be affected by the project due to land acquisition, changes in land use, or restricted access to land. If the project will potentially involve and affect areas that are part of ancestral domains or have ancestral domain claims, recommend measures to enhance benefits and minimize adverse impacts on indigenous cultural communities. Provide adequate coverage for investigations and consultations with indigenous people in relation to potential impacts/possible enhancement of project benefits. Prepare an indigenous peoples development plan in accordance with ADB's *Policy on Indigenous Peoples* (1998) and based on the requirements of the Philippines Indigenous Peoples Rights Act.

4. Environment Specialist (2 person-months)

7. The environment specialist will undertake the following tasks:

(i) Collect and review existing studies and data on environmental status in relation to the proposed project components.
(ii) Identify environmentally sensitive issues of the project and recommend environment categorization.
(iii) Review the environment policy of NEA and the electric cooperatives, and assess their institutional capacity for managing environmental impacts of the project.
(iv) Based on the findings of items (ii) and (iii), prepare an appropriate environment document, i.e., an initial environmental examination or environmental impact assessment and its summary, or capacity building to improve environment management capacity of NEA and the electric cooperatives in accordance with ADB's *Environment Policy* (2002) and *Environment Assessment Guidelines* (2003). Undertake public consultations and document the results in the environmental document as appropriate.

5. Information Technology Specialist (6 person-months**)**

8. The information technology specialist will undertake the following tasks:

(i) Review and assess the information technology requirement of electric cooperatives in consideration of application of time-of-use rates, participation in the WESM, and retail competition.
(ii) Assist the team leader in defining the project component concerning information technology requirements.
(iii) Design procurement specifications for information technology equipment.
(iv) Design and conduct information technology-related training for staff of NEA and the electric cooperatives.