

**ASIAN DEVELOPMENT BANK**

**TAR: INO 36556**

**TECHNICAL ASSISTANCE**

(Cofinanced by the Government of the United Kingdom)

**TO THE**

**REPUBLIC OF INDONESIA**

**FOR PREPARING THE**

**LOCAL GRIDS DEVELOPMENT PROJECT**

**December 2003**

## **CURRENCY EQUIVALENTS**

(as of 17 November 2003)

Currency Unit	–	rupiah (Rp)
Rp1.00	=	\$0.000118
\$1.00	=	Rp8,495

## **ABBREVIATIONS**

ADB	–	Asian Development Bank
CDM	–	clean development mechanism
CSP	–	Country Strategy and Program
DGEEU	–	Directorate General for Electricity and Energy Utilization
EIA	–	environmental impact assessment
EIRR	–	economic internal rate of return
FIRR	–	financial internal rate of return
IEE	–	initial environmental examination
kV	–	kilovolt
kWh	–	kilowatt-hours
LARP	–	land acquisition and resettlement plan
PLN	–	Perusahaan Listrik Negara (State Electricity Enterprise)
SBU	–	strategic business unit
SEIA	–	summary environmental impact assessment
SIEE	–	summary initial environmental examination
TA	–	technical assistance

## **NOTE**

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

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## I. INTRODUCTION

1. During the 2002 Country Programming Mission, the Government of Indonesia agreed to include the Local Grids Development Project in the pipeline of projects for assistance in 2004 from the Asian Development Bank (ADB). Accordingly, ADB fielded the Fact-Finding Mission for the technical assistance (TA) for preparing the Local Grids Development Project on 26- 29 May 2003.<sup>1</sup> An understanding was reached with the Government regarding the goals, purpose, scope, implementation arrangements, cost, financing arrangements, and terms of reference of the TA. A preliminary framework is in Appendix 1, and a summary initial poverty and social assessment in Appendix 2.<sup>2</sup>

## II. ISSUES

2. In the wake of the 1997 East Asian financial crisis, the incidence of poverty in Indonesia dramatically surged from 14.7% in early 1997 to a peak of 23.5% in early 1999. However, the data for 2001 and 2002 show a return to the mid-1990s level of around 15%. The Government's poverty reduction strategy focuses on economic recovery, sustained growth, social service delivery, and regional development. Establishing reliable and efficient power generation and supply facilities in the rural areas is an integral part of this strategy.

3. Power supply is essential for economic growth and job creation. A recent paper<sup>3</sup> assessed the correlation coefficient between electricity consumption per capita and gross domestic product per capita. Indonesia has a correlation coefficient of 0.986, which demonstrates a very close relationship between these two variables. Between 1985 and 2000, the average annual energy consumption of industrial customers increased more than three times (241,520 kilowatt-hours [kWh] to 767,150 kWh); that of commercial consumers more than doubled (4,156 kWh to 9,950 kWh); and that of residential consumers remained almost unchanged from 911 kWh to 1,140 kWh. As the Indonesian economy underwent significant structural changes, electricity consumption by industrial and commercial sectors was an important driver of rapid economic growth as the manufacturing sector expanded rapidly during the period, providing 9.2% of employment in 1985 and 12.9% in 2000.<sup>4</sup>

4. Perusahaan Listrik Negara (PLN) has over 31 million customers, of which more than 20 million are in rural areas. The electrification ratio at the household level is now about 54%. The extension of power supply to rural areas has also sharply increased. While only 17% of the villages were electrified in 1985, by 2002 PLN provided power to nearly 80%.

5. Within the framework of the ADB-supported Power Sector Restructuring Program,<sup>5</sup> PLN is being reorganized in accordance with the Government policy of decentralizing decision making to regencies (districts and municipalities) and provinces, so as to establish competitive power generation in Java-Bali under Electricity Law 20/2002. The strategic business units

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<sup>1</sup> The Mission comprised A. Terway, principal energy specialist and project team leader (later replaced as team leader by Y. Zhai, senior energy specialist); A. Hirano, energy specialist (financial analyst); and X. Jia, project economist (poverty reduction).

<sup>2</sup> The TA first appeared in *ADB Business Opportunities* (Internet edition) on 7 April 2003.

<sup>3</sup> Ferguson, R., W. Wilkinson, and R. Hill. 2000. Electricity Use and Economic Development. *Energy Policy* 28, 923–934. Manila: ADB.

<sup>4</sup> ADB. 2003. *Impact Evaluation Study of ADB Assistance to Indonesia Power Sector*. Manila.

<sup>5</sup> ADB. 1999. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of Indonesia for Power Sector Restructuring Program*. Manila. (Loan 1673-INO, approved on 23 March 1999 for \$380 million)

(SBUs) will be progressively responsible for (i) managing day-to-day operations to achieve performance targets; (ii) developing, executing, and managing investment proposals; (iii) preparing and managing the operating and cash budget; and (iv) implementing human resource strategies. The PLN head office will retain control of finances through review and integration of SBU business plans and budget. Reorganization will strengthen PLN's efficiency and capacity in meeting the challenges of achieving 90% electrification by 2020, as required in the Government-issued Blueprint for the Development of National Electricity Industry, 2003- 2020.

6. In accordance with Electricity Law 20/2002, the blueprint also sets the following targets: (i) retail electricity tariff will be raised to an economic tariff level by 2005 and then maintained using an automatic tariff adjustment mechanism; (ii) business will be conducted in an efficient, effective, transparent, and accountable manner, for which competition for generation will be started on trial in Batam in 2004, and a similar market will be started in Java-Madura-Bali in 2007; (iii) with a change in the role of the Government, the Directorate General for Electricity and Energy Utilization (DGEEU) will be the Electricity Authority responsible for policy making, business, and technical regulation; and the Electricity Market Supervisory Board (EMSB) which was established in September 2003, will acquire the capacity for economic regulation and oversight of the unbundled entities; and (iv) the provincial and regional governments<sup>6</sup> will have a greater role in managing power sector issues (new investments in capacity additions and supply, electricity tariffs, conservation, and efficiency improvement), regulating the regional utilities, and preparing of the draft regional electricity master plans.

7. ADB has been active in supporting energy sector development in Indonesia, with 30 projects with a combined value of \$3.44 billion and 37 TA grants totaling over \$13.6 million. The Operation Evaluation Department study (footnote 3) indicates that ADB-financed power sector projects have produced a range of downstream socioeconomic benefits at the local level. The improved power supply increased employment opportunities, stimulated development of new business, and brought easier access to information and technology. The use of electricity also added convenience to people's daily life, including that of the poor. Improved lighting extends the hours for work, education, and recreation. Outdoor illumination livens up community activities and contributes to improved social security. The improved quality of electricity supply to existing consumers in project areas benefited all user groups. The secured power supply also facilitated the development of new industrial estates and tourism industries in some regions.

8. The TA is in line with ADB's energy policy, which requires that projects should be prepared such that the poor account for a major share of beneficiaries—suitable projects are located in poor areas or provinces and include specific poverty-related components such as rural electrification. An ADB policy note on infrastructure and poverty reduction<sup>7</sup> reviewed recent literature and econometric results for the link between physical infrastructure and poverty reduction. The note concludes that rural infrastructure investments (mainly in roads, irrigation, and power supply) can reduce poverty by producing direct and indirect effects. Rural infrastructure investments employ the poor and contribute to improved wages and hence to people's economic welfare. This is the direct income distribution effect. The indirect growth effect is that, higher productivity and expanded employment lead to higher economic growth, which improves the poor's well-being. Another working paper examined growth and poverty reduction in Indonesia<sup>8</sup> and argued that electricity and communication-information variables

<sup>6</sup> There are over 400 district-level governments in Indonesia.

<sup>7</sup> Ali, I., and E. M. Pernia, 2003. Infrastructure and Poverty Reduction—What is the Connection? *ERD Policy Brief Series No. 13*. Manila: ADB.

<sup>8</sup> Balisacan, A., E. M. Pernia, and A. Asra. 2002. Revisiting Growth and Poverty Reduction in Indonesia: What do Subnational Data Show? *ERD Working Paper Series 25*. Manila: ADB.

(public telephone, television, post office, and news agents, all of which are supported by power supply) are a proxy for access to technology, which helps to increase the productivity and incomes of the poor. Villages in areas where these services are absent may simply not have an important avenue to raising productivity. Studies suggest that improving access to these services by 10% raises the poor's income by roughly 2%. Therefore, the ADB-supported investment in rural electrification is an efficacious way to promote poverty reduction.

9. The TA is also in line with the Country Strategy and Program (CSP) (2003-2005), approved in October 2002, which proposes to improve the effectiveness of ADB assistance by giving it a sharper geographic focus. ADB's previous operations were often dispersed across the archipelago, based on sector-specific needs as identified by government ministries, which did not allow projects to be grouped in similar locations across sectors. After analyzing each province's poverty, the financial resources of local governments, and human capital development, the CSP recommended a multisector assistance focus in provinces with medium to high poverty and a low financial resource base. The area covering multisector focus includes all of Java (except Jakarta), Lampung, South Sumatra, North Sumatra, West Nusa Tenggara, and Southeast Sulawesi. The TA will prepare an electrification project with a sharper geographic focus to produce a higher overall poverty-reduction impact in those provinces.

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

#### **A. Purpose and Output**

10. The TA will help the Government prepare the Project, which will increase the quantity and quality of rural electricity supply, thus assuring greater economic activities in rural regions, reducing poverty, and providing a better quality of life. The TA will provide the outputs that will help in seeking financing from ADB: technical review of the components; economic, financial, environmental, and social analysis; procurement and implementation plans; and bidding documents for all contract packages. On-the-job training will be conducted during implementation of the TA to ensure technology transfer and strengthening of PLN and DGEEU.

11. The TA will prepare the Local Grids Development Project for rural electrification with the following components: (i) expanding the power distribution network; (ii) implementing mini hydropower plants in Southeast Sulawesi; (iii) preparing new mini hydropower schemes; and (iv) project implementation consulting services. In view of the intended geographical focus and the rural bias of the design of the Project, it is likely to be classified as a poverty intervention. The Project will also promote the use of renewable energy sources in rural areas. The output will include medium (20-kilovolt [kV]) and low-voltage (380 volt [V]) power distribution networks including connections to new consumers; and implementation of grid-based power generation projects that are economically sustainable and use renewable energy sources. No less than 50% of the Project's estimated cost will be for implementing schemes located in provinces identified for multisector focus (para. 9).

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

12. PLN and DGEEU will use internal resources for initial technical project preparation, i.e., for all candidate project components, and they will (i) carry out engineering, and technical justification, and prioritization; (ii) select project components on financial, economic, and social criteria and geographical focus as defined in the CSP; (iii) prepare project cost estimates and financing plan; (iv) develop procurement plans (package list, bidding documents, schedule for

inviting bids, bid evaluation, and finalizing contracts); and (v) obtain statutory clearances and approvals, as applicable, for environmental and social matters.

13. Consulting services will review the work done by PLN and DGEEU and assist in finalizing documentation for ADB approval. They will also prepare (i) the economic justification for the Project, including a least-cost analysis, determination of economic and financial internal rates of returns, risk analysis, and develop monitorable indicators that permit the measurement of project benefits accruing to the poor; (ii) the poverty impact analysis of the project including a distribution analysis of the project benefits, and calculation of poverty impact ratios; (iii) land acquisition and resettlement plans (LARPs), where applicable, using the compensation policy framework and procedural guidelines agreed upon by PLN and ADB and forming part of the 2002 Power Transmission Improvement Sector Project; and (iv) the initial environmental examination (IEE) or environmental impact assessment (EIA), as warranted under ADB's environmental guidelines, and the summary.

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

14. The total cost of the TA is estimated at \$1,253,000 equivalent, comprising \$800,000 in foreign exchange and \$453,000 equivalent in local currency. Financing for the TA will comprise \$593,000 from ADB's TA funding program and cofinancing of \$400,000 on a grant basis to be administered by ADB from the Government of the United Kingdom, to finance the entire foreign exchange cost and \$193,000 equivalent of the local currency cost. The Government of Indonesia will provide the remaining \$260,000 equivalent of the local currency costs. The detailed cost estimates and financing plan are in Appendix 3.

### **D. Implementation Arrangements**

15. DGEEU will be the Executing Agency (EA) and PLN will be the Implementing Agency for the TA. A steering committee will be established to guide and monitor the project preparatory activities; it will be chaired by DGEEU, and PLN will be the steering committee secretariat, with members from different ministries and agencies, including the Ministry of Finance, Ministry of Cooperatives, Ministry of State-Owned Enterprises, National Development Planning Agency, and concerned provincial/regional government representatives. The Government and PLN will supervise the consulting services. In addition to carrying out the preparatory tasks (para. 11), PLN will (i) provide office space, and full-time professional counterparts to work closely with the consultants; and (ii) coordinate with the various ministries, other external sources, and other stakeholders to collect necessary information and data.

16. The TA will be implemented over 8 months, starting in February 2004 and ending in September 2004. A consulting firm will be selected in accordance with ADB's *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB for engaging domestic consultants. The simplified technical proposal and the quality- and-cost-based selection procedures will be used in selecting the consulting firm. The TA will require 21 person-months of international and 25 person-months of domestic consulting services. The terms of reference for the consultants are in Appendix 4. The consultants will prepare inception, first interim, interim, draft final, and final reports, due 2 weeks, 2 months, 5 months, 7 months, and 8 months, respectively, after the services start. Tripartite meetings will be held in PLN for the presentation and review of the initial, interim, and draft final reports.

17. PLN will carry out its preparatory work related to the various Project components from August 2003 to March 2004.

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

18. The President, acting under the authority delegated by the Board, has approved (i) ADB administering a portion of technical assistance not exceeding the equivalent of \$400,000 to be financed on a grant basis by the Government of the United Kingdom, and (ii) ADB providing the balance not exceeding the equivalent of \$593,000 on a grant basis to the Government of Indonesia for Preparing the Local Grids Development Project and hereby reports this action to the Board.

## PRELIMINARY PROJECT FRAMEWORK

Design Summary	Performance Indicators/Targets <sup>a</sup>	Monitoring Mechanisms	Assumptions and Risks
<b>Goal</b> Accelerated sustainable economic development and poverty reduction through least-cost, reliable, and environmentally sustainable power supply; and private sector participation	Increase electrification ratio and electricity sale to commercial and industrial consumers in project areas  Increase average household expenditure by 10%, and reduce number of households below poverty line by 5%	Country economic and power sector statistics  Sector review	Government's will and commitment  Capital constraints  Sector efficiency  Growing electricity demand
<b>Purpose</b> The technical assistance (TA) will assist the Government to prepare an investment project, which will increase the quantity and quality of rural electricity supply, thus assuring greater economic activities in rural regions; and reducing poverty	Improve power supply reliability and quality  Extend about 0.5 million new consumer connections  Promote the use of renewable energy sources	ADB review missions  TA progress reports  Tripartite meetings	Inadequate information and human resources with appropriate skills mix  Inadequate internal resources of Perusahaan Listrik Negara (PLN) for project preparation  Lack of adequate data
<b>Outputs</b> The technical, least-cost, economic and financial justification for the Project, which will be on the basis of each separable component considering the beneficiary population  Project procurement and implementation plans, and bidding documents for all contract packages  Project administration memorandum, and recommended project monitoring and reporting system  Initial social assessment for each project component, and full or short land acquisition and resettlement plans when there are more than or less than 200	PLN's output to be available by January 2004; and the draft final report of the consultant by June 2004	Project implementation progress report and completion report  Tripartite meetings	Quality of PLN's internal resources for project preparation  Availability and reliability of necessary data and statistics  Weak performance of the consultant





## SUMMARY INITIAL POVERTY AND SOCIAL ASSESMENT

### A. Linkages to the Country Poverty Analysis

Sector identified as a national priority in country poverty analysis?	Yes	Sector identified as a national priority in country poverty partnership agreement?	Yes
<p><b>Contribution of the sector/subsector to reduce poverty in Indonesia:</b></p> <p>The poverty partnership agreement signed in April 2001 states that, in the medium term, poverty reduction development priorities will focus on three major areas of intervention: good growth, human resource development, and good governance.</p> <p>A reliable supply of power is important for attracting commercial and industrial activities, which in turn enable the poor to diversify income sources from increased employment opportunities. The ability of regional governments to promote economic development and improve living standards, therefore, depends on the availability of adequate power supply. Electricity and communication information variables (public telephone, television, post office and news agents, all of which are supported by power supply) are considered as proxy for access to technology, which matter to the incomes of the poor. Villages in areas where these services are absent may simply not have an important means of raising productivity of their assets. Studies suggest that improving access to these services by 10% raises the poor's income by roughly 2%.<sup>1</sup></p> <p>The Local Grids Development Project will increase access to electricity and contribute to economic development and poverty reduction. The geographical focus of the intervention will be provinces with medium to high poverty incidence.</p>			

### B. Poverty Analysis

### Proposed Classification: PI

<p><b>What type of poverty analysis is needed?</b></p> <p>Poverty analysis will make use of existing surveys and national, provincial, and regency data combined with consultations in the field. The analysis will assess direct impact and indirect impacts, and macroeconomic effects. To the extent possible, the study will include gender as a specific socioeconomic group across poverty status. When a poor household is newly connected to the power grid, it will intuitively start paying for electricity consumption, which may reduce household savings if the household was doing without the service, e.g., using kerosene lamps that provide less light and for fewer hours; not listening to radio or television broadcast. However, greater access to technology will gradually increase productivity. The technical assistance will examine and combine consumer base data and poverty data for specific target regencies to establish a poverty profile of consumers as primary beneficiaries, and their consumption patterns.</p> <p>The analysis will include a review of the impact of development aspects, interlinking the projected effects of increased power supply with sector growth patterns, employment, and poverty in the target regencies. It will use data from the Central Bureau of Statistics (BPS). The analysis will assess the impacts of planned development on absorption of unskilled versus skilled labor and implications for income and income source diversification. The analysis will particularly assess effects in production activities, the ability of the poor to benefit from job opportunities, and sustainability of poverty reduction effects. To the extent possible, the analysis will discern the effects of employment opportunities on gender. The analysis will also assess the causality between power demand and economic growth, sector growth patterns, and the effects on poverty reduction.</p> <p>The poverty analysis will identify monitorable proxy indicators for assessing the poverty impact of the proposed Project.</p>
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<sup>1</sup> Balisacan A., E. M. Pernia, and A. Asra. 2002. Revisiting Growth and Poverty Reduction in Indonesia: What do Subnational Data Show? *ERD Working Paper Series 25*. Manila: ADB.

**C. Participation Process****Stakeholder analysis:**

The stakeholder analysis will be an integral part of the economic (distribution analysis), poverty, and resettlement assessments. The stakeholder analysis under the economic and poverty assessments will include surveys, consultation workshops, and assessment of the distribution of expected costs and benefits.

**Participation strategy required: Yes**

**D. Potential Issues**

<b>Subject</b>	<b>Significant, Not Significant, Uncertain, None</b>	<b>Strategy to Address Issues</b>	<b>Plan Required</b>
<b>Resettlement</b>	Uncertain. The number of affected persons will be different in different components.	To be identified by the consultant	Full land acquisition and resettlement plans will be prepared where needed.
<b>Gender</b>	None		No
<b>Affordability</b>	None		No
<b>Labor</b>	None		No
<b>Indigenous People</b>	Uncertain	To be identified by the consultant	Indigenous people development plan will be prepared, if needed.
<b>Other Risks/ Vulnerabilities</b>	Uncertain	To be identified by the consultant	Not known

**COST ESTIMATES AND FINANCING PLAN**  
(\\$)

Item	Foreign Exchange	Local Currency	Total Cost
<b>A. Asian Development Bank<sup>a</sup> and Government of the United Kingdom Financing</b>			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants	525,000	0	525,000
ii. Domestic Consultants	0	113,000	113,000
b. International and Local Travel	60,000	25,000	85,000
c. Reports and Communications	6,000	0	6,000
2. Miscellaneous Administrative Support	0	5,000	5,000
3. Data Collection, Training and Consultation	65,000	15,000	80,000
4. Equipment <sup>b</sup> for Data Collection and Processing	50,000	15,000	65,000
5. Representative for Contract Negotiations	4,000	0	4,000
6. Contingencies	90,000	20,000	110,000
<b>Subtotal (A)</b>	<b>800,000</b>	<b>193,000</b>	<b>993,000</b>
<b>B. Government Financing</b>			
1. Office Accommodation and Transport	0	40,000	40,000
2. Remuneration and Per Diem of Counterpart Staff	0	120,000	120,000
3. Preparation of Project Documents		40,000	40,000
4. Translation, Secretariat, and Office Supplies	0	30,000	30,000
5. Contingencies	0	30,000	30,000
<b>Subtotal (B)</b>	<b>0</b>	<b>260,000</b>	<b>260,000</b>
<b>Total</b>	<b>800,000</b>	<b>453,000</b>	<b>1,253,000</b>

<sup>a</sup> Financed by ADB's TA funding program.

<sup>b</sup> Survey instruments, computers, scanners, printers and photocopiers procured will be turned over to the Directorate General for Electricity and Energy Utilization upon completion of the TA.

Source: Asian Development Bank estimates.

## DETAILED TERMS OF REFERENCE FOR CONSULTING SERVICES

1. The consultant team will have the following outputs:
  - (i) the technical, least-cost, economic and financial justification for the Project, which will be based on each component;
  - (ii) project procurement and implementation plans, and bidding documents;
  - (iii) project administration memorandum, and recommended project monitoring and reporting system;
  - (iv) initial social assessment (ISA) for each project component, and full land acquisition and resettlement plans (LARPs) when there are more than 200 affected persons (or 100 indigenous people), or a short one for less than 200;
  - (v) rapid environmental checklist for each project component, and the initial environmental examination (IEE) and summary IEE (SIEE) for project components, or environmental impact assessment (EIA) and summary EIA (SEIA); and
  - (vi) draft terms of reference and cost estimates of the consulting services.

### A. International Consultants

1. **Energy Economist and Poverty Specialist** (team leader, 6 person-months)
2. The international consultants will have expertise in economics, power/energy, financing, resettlement, and the environment.
3. The tasks will include the following:
  - (i) Lead consultation with Directorate General for Electricity and Energy Utilization (DGEEU), Perusahaan Listrik Negara (PLN), concerned provincial/regional governments, and other steering committee members from different ministries and agencies, including the Ministry of Finance, Ministry of Cooperatives, Ministry of State-Owned Enterprises, and National Development Planning Agency.
  - (ii) Conduct an economic evaluation by making a least-cost analysis, calculating the economic internal rate of return, and conducting sensitivity and risk analysis in accordance with the *Handbook for Integrating Risk Analysis in the Economic Analysis of Projects of the Asian Development Bank* (ADB).
  - (iii) Analyze the economic subsidies involved in the current tariff structure and the extent of cross-subsidization between major consumer groups and regions; and review the appropriateness of the existing lifeline tariff block.
  - (iv) Prepare a poverty impact analysis of the project, conduct a distribution analysis of net project benefits, and calculate the poverty impact ratio in accordance with ADB's *Handbook for Integrating Poverty Impact in Economic Analysis for Projects*.
  - (v) Identify direct and indirect monitorable indicators that link the intervention of the Project with poverty reduction.
  - (vi) Recommend appropriate procedures for benefit monitoring and evaluation in terms of ADB's *Guidelines for Benefit Monitoring and Evaluation*, and identify monitorable indicators for assessing the project benefits.
  - (vii) Prepare a project framework, according to ADB standards.

- (viii) Prepare a socioeconomic and poverty profile of primary project beneficiaries in the target provinces.
- (ix) Analyze access to electricity, affordability, consumption levels, and consumer satisfaction across socioeconomic groups in the target provinces; conduct demand projections in the with- and without-project scenarios.
- (x) Conduct sample surveys regarding electricity uses in selected beneficiary villages using the methodology described in ADB Economics and Research Department Technical Note Series No. 3 *Measuring Willingness to Pay for Electricity*.
- (xi) Review the feasibility reports of renewable energy-based power generation schemes components, particularly the critical design assumptions.
- (xii) Analyze sector growth impacts of the proposed Project on the country level and on the poor, and review bottlenecks in poverty reduction.

## 2. Power Transmission Specialist (4 person-months)

### 4. The tasks will include the following:

- (i) Review power and energy demand forecasts linked to each component of the Project and technical justification of the Project.
- (ii) Review the network analysis to ensure that the load flows and bus bar voltages have been calculated and are expected to be within the acceptable range.
- (iii) Review the layout drawings of the proposed substations (new or extension of existing) and ensure that adequate safety features have been incorporated.
- (iv) Determine if the route survey has been completed for the proposed transmission lines (new or upgrade of existing) and if all required information related to procurement and acquisition of land and right-of-way has been collected.
- (v) Confirm that the bidding documents are in accordance with ADB's standard bidding documents, the clauses related to special conditions of contract are complete, and the qualifying requirements specified in the instruction to bidders are appropriate.
- (vi) Review and improve the organization of procurement within PLN, including write-ups regarding the competitive bidding process, procedures, methodology for bid evaluation and contract negotiations.
- (vii) Review the project implementation plan and confirm that the supervision and monitoring provisions are in accordance with good utility practices.
- (viii) Review and improve the organization of implementation within PLN.

## 3. Financial Specialist (3 person-months)

### 5. In accordance with the *Guidelines for the Financial Governance and Management of Investment Projects Financed by the Asian Development Bank in 2002*, the tasks will include the following:

- (i) Project a financing plan proposed by PLN, including the annual disbursement profile in close coordination with the international power transmission specialist.
- (ii) Obtain and assess PLN's financial performance and projections (balance sheet, income statement, and cash flow for 2001–2010); calculate critical financial ratios.

- (iii) Conduct project financial analyses by comparing with- and without-Project scenarios, in close coordination with the international power transmission specialist.
- (iv) Determine the project financial internal rate of return and carry out sensitivity analyses; determine the weighted average cost of capital in accordance with the *Guidelines* and recommend appropriate financial covenants for the Project.
- (v) Review and improve the financial management and control system within PLN and compare it with good accounting practice in Indonesia (including the internal and external audit procedures).

#### **4. Social and Resettlement Specialist (5 person-months)**

6. The tasks will include the following:

- (i) Assist PLN in establishing a social development unit to be fully involved in project preparation and implementation.
- (ii) Ensure that all subproject areas affected by mini hydro schemes, or medium- and low-voltage lines, are the object of a preliminary visual survey; and train, as needed, the domestic resettlement specialist.
- (iii) Contribute to the preparation of a poverty and social analysis report in accordance with ADB's *Handbook on Poverty and Social Analysis*.
- (iv) Based on the requirements of ADB's involuntary resettlement policy as detailed in ADB's *Handbook on Resettlement* and project team instructions, review and update the compensation policy framework/procedural guidelines already available in PLN and prepare initial involuntary resettlement impact screening checklists and a detailed resettlement framework for the proposed Project.
- (v) For each subproject, prepare a full or short LARP based on detailed technical design provided by PLN and ADB's *Handbook on Resettlement*.
- (vi) Supervise the training of the teams responsible for the impacts surveys, ensure the quality of surveys and impacts valuation, and prepare the questionnaires for the socioeconomic census of the affected peoples (APs).
- (vii) Supervise the translation of each LARP into Bahasa and the preparation of an information pamphlet in Bahasa summarizing each LARP and ensuring that all are distributed to the respective kecamatan and APs.
- (viii) Based on the ADB indigenous peoples policy and project team instructions, prepare, if needed, an indigenous peoples development framework and a stand-alone indigenous peoples development plan for each relevant subproject.

#### **5. Environment Specialist (3 person-months)**

7. The tasks will include the following:

- (i) Prepare a rapid environmental assessment checklist for each project component, and identify the need for an IEE or an EIA based on ADB's *Environmental Policy*, 2002 and its associated procedures.
- (ii) Review the environmental reports prepared by the Government and identify the Government's regulatory requirements for environmental assessment.
- (iii) Identify and fill up the information gap between the Government's environment reports and ADB's requirements for environmental assessment for the Project.
- (iv) Identify environmentally sensitive issues of the Project, if any, and recommend mitigating measures and an environmental management plan.

- (v) Assist PLN to conduct public consultations based on Government procedures.
- (vi) Prepare a SIEE for each project component based on ADB's *Environmental Assessment Requirements* (1998) and its procedures.
- (vii) Identify the need for an EIA or specific environmental study and prepare terms of reference for the EIA, or the environmental study for ADB approval, and prepare the EIA and a SEIA, or the specific study, if warranted.
- (viii) To access concessional financing for project implementation, evaluate options that are linked to its global environmental benefits.
- (ix) Determine the clean development mechanism (CDM) potential for the transmission component of the Project and develop the appropriate baseline documentation; propose an appropriate monitoring and verification plan.
- (x) Determine the eligibility of the renewable energy components of the Project for small-scale CDM and work closely with PLN to develop the institutional capacity to maximize benefits from CDM.

## B. Domestic Consultants

8. The domestic consultants will have expertise in energy, procurement, the environment, poverty and social analysis and resettlement.

### 1. Transmission Specialist (5 person-months)

9. The tasks will include the following:

- (i) Collect and review design and feasibility reports for the components proposed for the Project.
- (ii) Based on the locations of all components and using local knowledge, identify potential concerns in project implementation.
- (iii) Document and collect national standards and guidelines applicable to the design, procurement, and construction of the Project.
- (iv) Assist the international power transmission specialist in collecting data and documents and carrying out the analysis, as required.

### 2. Procurement Specialist (2 person-month)

10. The tasks will include the following:

- (i) Review the project components in close coordination with the international power transmission specialist.
- (ii) Review the project cost estimates prepared by PLN, including the annual capital expenditure profile linked to the project implementation schedule.
- (iii) Collect and review bidding documents for the Project; ensure that the formatting follows with ADB's *Guidelines for Procurement*.
- (iv) Assist the international power transmission specialist in collecting data related to project costs and procurement.

### 3. Environment Specialist (6 person-months)

11. The tasks will include the following:



- (i) Collect and review existing studies and data on environmental impacts in relation to the proposed project components.
- (ii) Assist the international environment specialist in preparing a rapid environmental assessment checklist for each project component.
- (iii) Assist in identifying environmentally sensitive issues of the Project and recommend mitigating measures and an environmental management plan.
- (iv) Assist PLN to conduct public consultation twice, based on the Government's procedures and ADB's requirements.

#### **4. Financial, Poverty and Social Data Analyst (4 person-months)**

12. The tasks will include the following:

- (i) Assist the international financial specialist in reviewing the project financing plan proposed by PLN, including the annual disbursement profile.
- (ii) Collect data and assist the international financial specialist in assessing PLN's financial performance and projections, calculating critical financial ratios, and defining the assumptions used for the financial projections.
- (iii) Assist the international financial specialist in conducting financial analyses by comparing with- and without-project scenarios.
- (iv) Assist the international financial specialist in determining the project financial internal rate of return.
- (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 PLN.
- (vii) Assist the international economic and poverty specialist and the domestic poverty specialist in analyzing data related to poverty and distribution of project benefits.
- (viii) Assist the international social and resettlement specialist, and the domestic resettlement specialist in analyzing data related to project-affected persons.

#### **5. Poverty Specialist (3 person-months)**

13. The tasks will include the following:

- (i) Collect and review existing studies and data on poverty reduction in relation to the power sector, and assist in preparing a socioeconomic and poverty profile of the primary project beneficiaries.
- (ii) Collect and review data on electricity, affordability, consumption levels, and consumer satisfaction across socioeconomic groups in the target provinces.
- (iii) Collect and review national and provincial development plans, assist in analyzing the interlinkage with increased power demand, and implications for sector change and employment generation for the poor.
- (iv) Conduct stakeholder consultation meetings and stakeholder analysis.
- (v) Assist in preparing distribution analysis and calculating the poverty impact ratio.
- (vi) Assist the international economic and poverty specialist in collecting necessary data and carrying out the analysis, as required.

#### **6. Resettlement Specialist (5 person-months)**

14. The tasks will include the following:

- (i) Assist, as required, the international social and resettlement specialist in organizing field-based acquisition and resettlement tasks.
- (ii) Assist in preparing initial involuntary resettlement impact screening checklists and a detailed resettlement framework.
- (iii) Assist, as required, in preparing and translating into Bahasa census questionnaires and needed documents.
- (iv) Collect and review existing regulations pertaining to land acquisition and resettlement and indigenous people issues and assist in collecting other information as needed.
- (v) Liaise intensively with survey teams and subproject management offices to ensure the timely execution of field-based tasks.
- (vi) Assist, as needed, in collecting data and preparing the poverty and social analysis report.