

<Note: Most unserved communities when given the responsibility of choosing energy supply invariably choose grid extension because of lack of information on other possibilities. Through workshops held in each of the site of 4 community organizations, local residents are provided simple but important information on various possible local energy options>.

Terms of Reference

Community Energy Supply Options Capacity Building Activity

Background

<Brief country background. Brief description of objectives and scope of Bank off grid rural electrification project>

Objective

The objective of this consultant assignment is to provide the sufficient technical, economic and other information and basic analytical tools that would enable them to properly compare all possible electricity supply options and make intelligent decisions concerning their unserved communities. Although the workshop contents will be tailored to each community organization based on the consultant's analysis of resources and demand specific to the studied communities, it must be stressed that the ultimate purpose is not to recommend certain decisions or courses of action but simply to produce highly informed and competent decision-makers.

Scope of Work

The main vehicle for capacity building and training the community organizations in evaluating electricity supply options are workshops and field visits that would be conducted over a period of about 3 months in four initial community organizations. The total number of workshops could be more than four, depending on the actual number of unelectrified communities in each community organization and the need to locate the workshop venues strategically. The workshop model will be refined as the activity progresses. The final model, along with supporting content materials and evaluation tools that were developed, will be used to organize similar workshops in the remaining 9 priority community organizations during the implementation of the Project.

Specifically, the consultant will:

- a) Identify unelectrified communities in each *mancomunidad* that are clearly off grid, i.e., too far from main grid and/or not in the utility's medium term program for line extension.
- b) Make a *preliminary* analysis of alternative localized power supply systems feasible for these communities: isolated diesel, systems based on renewable energy technologies (RETs), hydro, hybrids and others, considering availability of energy resources locally. Match demand with resources availability by collecting available information on population, income, existing livelihood activities and potential productive loads. Special attention should be paid to identifying communal and productive applications and analyzing how they could complement the electrification objective. The main results of the analysis are *conceptual* technical designs of the identified decentralized supply

- options and *estimates* of installed costs and costs of generation. These will be compared with the estimated costs of the grid-extension option.
- c) Where significant hydro resources exist, make a *preliminary* determination of the possibility of clustering several communities into one minigrid powered by a hydropower plant. As with the localized alternatives discussed in item b), collect available information on population, income, existing livelihood activities and potential productive loads. Special attention should be paid to identifying communal and productive applications and analyzing how they could complement the electrification objective.
 - d) Investigate possible financing sources (local funds, FIS, etc) and conceptualize possible financing arrangements for these types of projects.
 - e) Develop a detailed awareness campaign and capacity building plan for the 4 target *community organizations*: how many workshops, where exactly to hold them to enable coverage of several communities per workshop, who should be the participants, etc.
 - f) Develop the contents of a workshop one day or more in length: topics; level of presentation and appropriate visual aids to capture attention of different types of local audience; handout materials, and others. The topics must include, among others, discussions of:
 - present energy situation of the studied communities: types of cooking and lighting fuels; household fuel expenditures; prospects for the utility's line extension, etc
 - alternative decentralized power supply options in the studied communities: resources and technologies; cost comparisons
 - possible financing arrangements; tariff-setting and cost recovery planning
 - how community-based O & M of decentralized systems is organized;
 - training on basic tools for conceptualizing electricity supply options and estimating costs; information on how to obtain technical assistance
 - how to prepare project proposals; how and where to submit them for consideration
 - g) For the option of clustering several communities into one minigrid powered by a hydropower plant, the workshop topics could include:
 - basic description of the technology and resources requirement
 - basic description of micro hydro development, operation and administration, and maintenance
 - promoting productive uses of electricity in hydro projects to maximize resource utilization
 - importance of linking micro hydro projects with watershed management; role of the communities, etc
 - h) In consultation with the Bank team and officials of the four *community organizations*, select the final venues and conduct the workshops. All the workshops should be completed within 3 months of holding the first one. In each workshop, the consultant should provide a survey form to all participants to obtain their comments and suggestions. Based on the feedbacks, the contents of the subsequent workshop should be refined, as needed.
 - i) Based on the results of the activity, develop a plan to institutionalize the long-term process of providing information and assistance to the remaining communities and the *community organizations* that would enable them to identify appropriate electrification options, make intelligent decisions and execute the follow-up actions needed. This consultant task includes: identifying the most appropriate agency to administer and supervise the

process; defining the organizational requirement an skills mix; providing the Unit with the proper tools and materials for the training and assistance programs; assessing the budget requirements and recommending possible sources of financing.

Outputs (Deliverables)

1. Conduct of at least 4 training workshops and technical visits in the 4 *community organizations*.
2. An Activity Completion Report submitted to the Bank containing the results of the consultant assignment, including: a report on the results of each workshop, documentation on the site visits and analysis of electrification options for the studied communities, and other materials prepared for the workshops.

Timetable and Budget

The consultant assignment will be executed over a total period of six months, commencing from the contract signing. The total budget is up to \$40,000 inclusive of all fees, travel and other expenses. The funds will be released as follows:

- 10% or \$4,000 upon contract signing;
- 40% or \$16,000 upon submission of a progress report containing details of preparation and plans for conduct of Workshop No. 1;
- 25% or \$ 10,000 upon submission of a progress report describing the results, including expenditures, of all workshops held so far, and containing details of preparation and plans for conduct of the last workshop;
- 20% or \$8,000 upon submission the draft final report of the assignment;
- 5% or \$2,000 upon submission of an acceptable final report, incorporating all comments and revisions on the draft.