Note: This TOR describes work to be carried out by an NGO to oversee over a one year period the establishment and operation of 7 solar battery charging stations (SBCS) in a remote area populated by indigenous people. Technical design and construction of the stations are under separate TORs.

Consultant Terms of reference
Preparation, Administration, Monitoring and Evaluation of the Solar Battery Charging Stations Subproject

Background

<Brief description and objectives of Bank rural electrification project. Description of SBCS component.>

Objective

The subproject administrator (SA) will prepare the subject communities, assist the technical company that shall provide the stations and associated equipment with site and operator selection, participate in training of local operators and start-up of the charging businesses, and monitor and evaluate the performance of the subproject for a period of one year from start-up of the stations.

Scope of Work

Task 1. Design of financing and user payment scheme. The objective of this task is to determine the likely number of clients per station, and design a payment and financing scheme for charging and purchase of replacement batteries that will be affordable to clients, provide sufficient incentive to the operators and maximize chances for sustainable operation. This information will need to be developed prior to consultations with the communities (Task 2 below). The main basis for analysis are past market studies of the region and technical/operational information on similar battery charging stations elsewhere.

From these materials, the SA must: determine ability and willingness to pay for battery charging service. Estimate fraction of the population that is likely to sign up for the battery charging scheme. Examine likely O & M costs for the stations and determine appropriate charging fees. Determine appropriate cost sharing of initial battery to be provided (percent government subsidy and percent user contribution). Examine payment options for charging service (e.g., per service or per month) and for purchase of future replacement batteries (e.g., factored into charging fee or monthly fees put in escrow, etc). Determine how microfinancing could be provided for battery purchase; examine options of providing microfinance services directly to individual clients or to the community organizations. Identify, through talks with potential micro-finance institutions, the most suitable microfinance provider or providers to the target communities.

Task 2. Site preparation and consultations. This involves consultations by the SA with the local residents and community leaders in the 7 sites to:

a) promote the subproject, explain its purpose, its costs and benefits, cost-sharing arrangements between the government and users, criteria for selecting stations sites and local operators, how the stations will be operated and maintained.

b) select six (6) appropriate stations sites and their local operators, considering physical and operational criteria for site selection, as well as the opinion of community leaders. The
physical consideration is the need to build the station at a location where, to the extent possible, household clients travel only a short distance to bring their batteries for charging. The operational consideration is to locate the stations near or at the existing place of work or business of a potential operator (e.g., owner of a pulperia, teacher at a school, etc). Only where there is no such possibility will the SA consider selecting an operator with no existing occupation.

c) solicit in-kind and other contributions from the communities, such as labor for setting up the stations. The object is to invoke a sense of community ownership of the stations. The agreements made should be obtained in writing, as much as possible.

The SA may need to make more than one promotional/consultation visit to each site to ensure full community awareness and support. After consultations are concluded, an initial list of potential household clients for each station will be drawn up.

**Task 3. Cooperation with Technical Equipment Provider (TEP).** Through international competitive bidding, the Government counterpart agency will select the TEP which, based on specifications to be provided by the agency, will design and build the stations, and supply the initial batteries, lamps and wiring for individual households. The TEP will also provide training in operation and maintenance to the selected local operators and battery users, supervise the station start-up and initial charging activities, and install wiring and lamps to clients who have signed up. The SA will:

a) provide the TEP with full information on the selected locations of the stations.

b) Work with the TEP to prepare the training course for operators and the user manuals for battery charging clients. While the TEP is responsible for the technical contents of the training course, the SA is responsible for providing other content materials, such as development of simple business plans, bookkeeping, and other skills in business operation. On the user manual, which must be in the local language, the SA will provide inputs on how the instructions could be made a simple as possible.

c) Participate in the actual conduct of the training courses. The courses are: training for selected operators on O & M of the stations, wiring of client houses, business operation skills; training for battery users.

d) Assist the TEP during installation of the stations at the chosen sites, by providing coordination with the communities.

e) Observe/assist in the start up of operation of the stations.

The SA will provide the the Government counterpart agency with periodic reports of the progress of the equipment installations and training courses conducted by the TEP at the sites.

**Task 4. Monitoring and Evaluation.** The SA will monitor and evaluate subproject performance for a period of one year from the date of start up of the stations. The objectives are to collect information on:

a) _technical performance of the stations and batteries:_ number of days in month when no charging could be made due to insufficient solar radiation; condition of discharged batteries brought to station; failure, if any, of any station part or equipment; actual period of battery use before need for replacement, etc.

b) _operation of the charging service business:_ number of batteries charged per month; hours needed to charge each battery; fees collected or not collected; sufficiency or insufficiency of fees as compensation to operator; adequacy of financing arrangements; growth or reduction of client base over time; problems reported/observed with batteries and house wirings, etc.
c) *customer satisfaction:* adequacy of battery service for lighting and other needs; maintenance problems; adequacy of provided financing; affordability of charging fees, etc.

The above and other information to be collected will be put by the agency in a convenient reporting format. The SA will visit each station at least once a month during the contract year to make first-hand observations and collect needed information. Mid-term and Year-end consultations: At the end of the sixth month, the SA will convene a meeting with leaders and residents in each site to discuss their experience so far, listen to complaints and note suggestions for improvements. The consultations will be repeated on the twelfth month. The agency will be represented in each consultation meeting.

**Outputs and deliverables**

a) A report on the recommended financing and user payment scheme (Task 1 results)
b) A report on the results of consultations with the community, including agreements made for local contribution (Task 2)
c) A report on the physical installations achieved by the TEP and the design and results of the training courses, including copies of the prepared course materials and battery user manuals (Task 3)
d) Monthly progress reports, in the agreed format, plus a report on the results of the mid-term consultations (Task 4)
e) A final report summarizing the genesis and experiences of the subproject, the observations and findings of a year of monitoring, a critical evaluation of the overall results, conclusions and recommendations (Task 4).

**Special Qualifications of the Subproject Administrator**

The SA may be an NGO or private entity with extensive first-hand knowledge of the socio-economic and cultural characteristics of the region where the stations will be located. At appropriate points in time, the SA must obtain, if not existing within its organization, the services of at least one technical specialist familiar with solar PV and batteries, and at least one socio-economist or social assessment specialist, to help in the above-described tasks. These specialists must participate in the final evaluation of the subproject and the preparation of the final report.

**Budget and payment schedule**

The total budget for the assignment is $50,000 which will be provided in a lump-sum contract covering all fees and expenses of the selected SA. The payment schedule will be as follows:

- 10% or $5,000 upon signing of the contract;
- 15% or $7,500 upon submission and acceptance of results of Task 1;
- 15% or $7,500 upon submission and acceptance of results of Task 2;
- 15% or $7,500 upon submission and acceptance of results of Task 3;
- 15% or $7,500 upon submission and acceptance of results of mid-term review;
- 20% or $10,000 upon submission of draft final report
- 10% or $10,000 upon submission and acceptance of final report, incorporating all comments made by the Government counterpart agency and the Bank on the draft.