Introduction

Brief description of objectives and scope of Bank off-grid electrification project

Background

The objectives of the Off-Grid Component are to: i) establish local institutional, financial, and technical capacity for sustainable implementation of rural diesel and renewable energy systems; ii) reduce greenhouse gas emissions by displacing diesel generators with renewable energy systems where it is possible; iii) implement small diesel systems where there is no ready alternative to the use of these systems, or as a temporary measure while implementing a micro-hydro power project; and iv) identify and develop the objectives, institutional arrangements and scope for a national Off-Grid Rural Electrification Program.

1. The Off-Grid Component will pilot a new approach to electrification which relies heavily on participation of the rural communities, with the Utility providing training, installation, leasing, and other support services. The Component will be undertaken by a newly created Off-Grid Electrification Unit within the Utility (OGEU). The Project Director would be responsible for oversight of both the Grid and Off-Grid components of the Project. The OGEU would assume four major functions: Promotion, Outreach and Community Organization; Off-Grid System Design, Installation, Operation, and Maintenance; Monitoring and Evaluation; and Financial Analysis, leasing. The OGEU would be staffed by three to five full-time Utility employees. Additional expertise from other Utility units as well as international consultants would be used as required. The SPRE Project would provide an Off-Grid Project Advisor whose primary function is to assist in development of the institutional and technical capabilities in Utility and other stakeholders. The Off-Grid Project Advisor would provide full-time support for the first year of the Project. Additional international consultants would be retained on an as-needed basis. A Rural Electrification Committee (REC), with members from Utility, ministries, and other potential stakeholders would be created to review and approve projects prepared by village organizations or private sector with the assistance of OGEU.

2. Sustainability of off-grid projects would be sought through: i) maximizing involvement of the private sector as well as beneficiaries; ii) operating the off-grid systems on a full-cost-recovery basis; (iii) defining and strengthening appropriate institutional and financial mechanisms; and (iv) developing designs to minimize costs. About 20 solar battery charging stations, 6 micro-hydro stations, and 20 diesel stations will be installed under the Off-Grid Component. It is expected that most of these sites will be operated as local cooperatives; however, a private sector entrepreneur, local NGO, or other group may also operate stations where appropriate.

3. For Off-Grid Component implementation, the OGEU will:

i) solicit interest in participation in the Off-Grid Component from Utility provincial offices as well as local authorities;
ii) select the provinces to be included in the Pilot on the basis of the local interest as well as potential market as indicated by the Utility/ESMAP Rural Household Energy Survey;
iii) with the cooperation of the local authorities, identify candidate Pilot project villages in the selected provinces;
iv) visit candidate villages to assess their interest in participating in the Pilot and, for interested villages, conduct preliminary institutional, technical and socio-economic surveys;
v) assist candidate villages in local organization in determining the desired system type and preparation of business plan (technical design, financing and management plan, cost recovery structure, etc.; to simplify the business development plan process standard form for business plan will be developed);
vi) assist project proposers in submission to the REC;
vii) assist implementation of approved projects by providing procurement assistance, installation assistance, and training for local operators
viii) prepare and submit leasing contracts for signature by the Utility and project operator
ix) arrange for payment in accordance with leasing contract
x) monitor operations to assess progress, identify problems, document lessons learned
xi) identify and seek corrective measures for emerging problems,
xii) host periodic meetings of pilot project operators to share experiences, promote problem solving among peers
xiii) work with Utility management and Ministry officials in preparation of a National Off-Grid Electrification project

Objective
4. The objective of this consulting assignment is to help Utility create a sustainable Off-Grid Electrification Program. This consists of i) a trained, experienced staff, complemented by capable local private sector expertise; ii) a successful pilot Off-Grid electrification effort demonstrating viable, cost-effective technology and institutional arrangements; iii) a training program sufficient to support the needs of an expanding Off-Grid Electrification Program; and iv) an implementation plan for an Off-Grid Electrification Program.

Scope of Work
5. The Project Advisor will assist Utility in all phases of Off-Grid Component implementation. The Project Advisor should be well versed in institutional and community level capacity building and have experience in off-grid electrification. In addition, the Project Advisor should have some of the expertise required to complete the specific activities listed below. The Project Advisor will assist Utility in acquiring additional expertise on a short-term consulting basis when required. For this reason, the Project Advisor should have a good knowledge of international consulting expertise in off-grid systems. Training is an integral part of the Project Advisor’s assignment as well as that of the short-term consultants. The Project Advisor will take all possible opportunities for both informal and formal training of Utility staff and will ensure that short-term consultants do so as well. The aim is to create over the five year project period a professional local Off-Grid Electrification staff capable of implementing an expanded program.
6. The Project Advisor role will include, but not be limited to, assistance to Utility in the following areas:

7. **Project Promotion, Village Identification and Screening** - Promotion of the project to provincial and local Utility staff. Selection of target provinces. Project promotion to villages. Screening of villages which have expressed interest in participation and selection of candidate villages. To facilitate screening, the Project Advisor will assist the OGEU in preparation of site review criteria and methodology incorporating, but not limited to: i) renewable energy resource availability, ii) load characteristics, including productive loads, iii) technical match of potentially applicable technology to the application, iv) institutional/managerial ability of the beneficiaries, v) financial viability, vi) prospects for grid service, vii) local willingness and ability to pay, viii) local willingness to participate in the scheme, etc.

8. **Village Organization** - Creation within the candidate villages of an organization capable of sustainably operating an off-grid system.

9. **Design Review and Approval** - All systems installed under the Off-Grid Component must meet baseline criteria for technical quality, safety, reliability, and efficiency. These will be based on standards prepared with the assistance of the Project Advisor. Specifications for low cost mini-grids will be prepared with funding from a PHRD grant. Draft specifications for Solar Battery Charging Stations, Solar Home Systems, and Micro-Hydro Stations also are available. The Project Advisor will assist Utility in reviewing and revising as appropriate these draft specifications and also preparing draft specifications for Diesel Stations. The Project Advisor also will assist Utility in modifying the specifications from time to time as required.

10. **Subproject Design** - The project design will be the responsibility of the village cooperative or other project proposer. However, the OGEU, with assistance of the Project Advisor, will provide extensive assistance in its preparation.

11. **Business Plan Development** - The business plan will be prepared by the village cooperative or other project proposer with extensive assistance from the OGEU. The business plan will be based on templates created by the OGEU, with assistance of the Project Advisor, from similar projects in other countries. Business plans will include details of: project organization and management; financing (including local cash and in-kind contributions, local government contribution, Utility leasing, etc); technical design; procurement plan; implementation schedule; etc.

12. **Rural Electrification Committee Creation and Operation** - The Project Advisor will facilitate the creation and operation of the REC as needed. The aim will be to establish an independent, competent, and efficient committee capable of quickly reviewing project proposals and approving them as appropriate.

13. **Institutional Organization/Community Development** - The Project Advisor will assist Utility in training of local operators in areas required for successful operation including, but not limited to: i) basic management and accounting; ii) customer relations; iii) operation and maintenance; iv) billing; etc.
14. **Training** - Training will be required by Utility, private sector, and local operator staff in most areas of project implementation including: design, procurement, installation, operation, maintenance, village organization, business practices, etc. The Project Advisor will offer training in subject areas where he/she is qualified, and will assist Utility in securing qualified trainers for other areas.

15. **Procurement Oversight** - The Project Advisor will assist Utility staff in procurement of goods, works and services under the Off-Grid Component, ensuring compliance with specifications as well as Utility and World Bank procurement guidelines. This includes both preparation of bidding documents as well as inspection of shipments, works, services, etc.

16. **Installation Supervision** - Utility will assist with system installation in accordance with the approved business plans. However, since Utility will have a financial stake in each system, Utility will provide construction supervision in all cases, especially for micro-hydro systems. Initially, the Project Advisor will act as the Senior Installation Supervisor. During the course of the ST&RE Project, this responsibility will be transferred to Utility staff.

17. **Preparation of Standard Agreement** - The Project Advisor will assist Utility and a lawyer in preparing a standard hire-purchase agreement for the off-grid systems. The hire-purchase agreement, between Utility and the system operator, will set the contractual terms under which the systems are given to the operators.

18. **Monitoring and Evaluation** The Project Advisor will collaborate with OGEU staff in drafting a monitoring and evaluation (M&E) plan for the Off-Grid Component. The M&E Plan will cover technical, financial, social, and institutional issues relevant to the long-term sustainability of a national Off-Grid Electrification Program. It will take into account the limited budget available for this activity.

19. **Implementation Plan Preparation** - The Project Advisor will assist the Off-Grid Project Manager in preparation of an implementation plan for an Off-Grid Rural Electrification Program. The implementation plan would form the basis of a potential follow-on investment project.

**Schedule, Location of Work, and Reporting Requirements**

20. The Project Advisor will report to the Utility Off-Grid Project Manager. For the first year of the Project, the Project Advisor will be stationed full-time in the country, and be available for internal travel as needed. For the remaining four years, the Project Advisor will spend about three one-month periods each year in the country.

**Qualifications**

21. The Project Advisor should have:

- strong background in community organization and institutional capacity building
- experience with off-grid project development in a developing country, preferably in implementation of micro-hydro projects.
- excellent communication and organizational skills
Terms of Reference
Off-Grid Component Project Advisor

- knowledge of how to secure international consulting expertise in relevant areas
- willingness to live in Laos

Estimated budget: $400,000