



## STAP Scientific and Technical screening of the Project Identification Form (PIF)

Date of screening: 09<sup>th</sup> February 2010

Screener: Lev Neretin

Panel member validation by: N.H. Ravindranath

### I. PIF Information

GEF PROJECT ID: **4152**

COUNTRY(IES): **LAO, PDR**

PROJECT TITLE: **RURAL ELECTRIFICATION PHASE II**

GEF AGENCY(IES): **World Bank**

**OTHER EXECUTING PARTNER(S):**

GEF FOCAL AREA (S): **Climate Change**

GEF-4 STRATEGIC PROGRAM(S): **SP-3 (POWER SECTOR POLICY FRAMEWORKS SUPPORTIVE OF RENEWABLE ENERGY AND ENERGY EFFICIENCY); AND S-4 (PROMOTE PRODUCTIVE USES OF RENEWABLE ENERGY)**

NAME OF PARENT PROGRAM/UMBRELLA PROJECT (IF APPLICABLE): **RURAL ELECTRIFICATION APL PROGRAM**

### II. STAP Advisory Response *(see table below for explanation)*

1. Based on this PIF screening, STAP's advisory response to the GEF Secretariat and GEF Agency(ies):  
**Consent**

### III. Further guidance from STAP

1. The project has major two goals - to promote adoption of off-grid renewable energy technologies and to increase the efficiency of energy supply and consumption in the rural electrification programs of Lao, PDR. The focus of the following comments is on the off-grid component of the project (relevant to GEF support) and not on the DSM and EE programs (relevant to the World Bank support). STAP supports the project emphasis on the promotion of off-grid RE based decentralized power systems to meet the rural electricity needs in Lao, PDR and suggests the following issues to be addressed at the CEO endorsement stage.
2. **Technology Package for off-grid power systems:** There is no clarity on the technology package to be used in REP-II. Will it be based on Solar Home Systems or will it cover other renewables such as micro-hydro, biomass power, biogas systems, SPV and etc.? The DSM component may not be of a relevance to the off-grid system given the main goal of the program is to create access to modern energy sources to the rural areas. The energy use per household will be too small to make any major difference to the national GHG emissions through DSM.
3. **Barrier Analysis:** What are the barriers for REP-II implementation based on the experience gained from REP-I and other similar programs implemented in Lao? STAP recommends conducting a systematic barriers analysis taking into account lessons learnt from previous projects. Some of the barriers are listed under item (5).
4. **Baseline Scenario:** What are the current sources of energy for lighting and other end uses in rural areas and the share of fossil fuels? What are the current and projected trends of rural energy sources, consumption and associated GHG emissions? The baseline scenario have to be developed during project preparation.
5. **Viable business models for investments in off-grid RE power systems:** The main goal of GEF support to REP-II seems to be to develop and promote commercial and business models for decentralized systems. The following factors need to be considered when developing business models:
  - Small scale of the power system and lack of economies of scale for commercialization;
  - Dispersed and remote locations of off-grid systems, away from potential demand centers, hence making it expensive to transmit power;

- Likely low demand and low purchasing power in rural areas for any commercial scale operation;
- Financial viability for entrepreneurs have to be demonstrated or the lack thereof mediated;
- Matching the installed capacity to local demand;
- Repayment capacity and appropriate repayment mechanisms introduced;
- Supporting demand for electricity for commercial activities in the area to generate income for the entrepreneurs;
- Clusters of off-grid systems to facilitate economies of scale of operation for the commercial mode of operation, since dispersed and isolated systems are difficult to maintain and operate;
- Guaranteed technical performance of the RE systems;
- Assured service, maintenance and supply of spare parts for the decentralized systems;
- Sale of surplus electricity to the national grid, if the local demand is not adequate.

<i>STAP advisory response</i>	<i>Brief explanation of advisory response and action proposed</i>
<b>1. Consent</b>	STAP acknowledges that on scientific/technical grounds the concept has merit. However, STAP may state its views on the concept emphasising any issues that could be improved and the proponent is invited to approach STAP for advice at any time during the development of the project brief prior to submission for CEO endorsement.
<b>2. Minor revision required.</b>	STAP has identified specific scientific/technical suggestions or opportunities that should be discussed with the proponent as early as possible during development of the project brief. One or more options that remain open to STAP include: <ul style="list-style-type: none"> <li>(i) Opening a dialogue between STAP and the proponent to clarify issues</li> <li>(ii) Setting a review point during early stage project development and agreeing terms of reference for an independent expert to be appointed to conduct this review</li> </ul> The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.
<b>3. Major revision required</b>	STAP proposes significant improvements or has concerns on the grounds of specified major scientific/technical omissions in the concept. If STAP provides this advisory response, a full explanation would also be provided. Normally, a STAP approved review will be mandatory prior to submission of the project brief for CEO endorsement. The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.