GEF EO Terminal Evaluation Review Form

1. PROJECT DATA				
			Review date:	October 2006
GEF Project ID:	424		at endorsement (Million US$)	at completion (Million US$)
IA/EA Project ID:	533	**GEF financing:**	0.744	0.744
Project Name:	Off-grid Electrification Pilot Demonstration Processes, a Component of the Laos Southern Provinces Rural Electrification	IA/EA own:	1.00 (ICR)	1.39 (ICR)
Country:	Lao PDR	Government:		
		Other*:		
		Total Cofinancing	0.812 (JE)	0.812 (JE)
Operational Program:	6	**Total Project Cost:**	1.556 (JE) 1.74 (ICR)	1.556 (JE) 2.13 (ICR)
IA	World Bank	Dates		
Partners involved:	Electricité du Laos' (EdL)	Work Program date		n/a
		CEO Endorsement		11/01/1997
		Effectiveness/ Prodoc Signature (i.e. date project began)		02/09/1998 (JE) 08/12/1998 (ICR)
		Closing Date	Proposed: 12/31/2004 (PMIS) 06/30/2004 (ICR)	Actual: 12/31/2004
Prepared by: Anna	Reviewed by: Aaron	Duration between effectiveness date and original closing: 6 years 10 months (JE) 5 years 11 months (ICR)	Duration between effectiveness date and actual closing: 6 years 10 months (JE) 6 years 5 months (ICR)	Difference between original and actual closing: none (JE) 6 months (ICR)
Author of TE: Jie Tang, Kurt Schenk, Zheng Huang		TE completion date: 5/23/2005	TE submission date to GEF EO: 9/21/2005	Difference between TE completion and submission date: 4 months

* Other is referred to contributions mobilized for the project from other multilateral agencies, bilateral development cooperation agencies, NGOs, the private sector and beneficiaries.

2. SUMMARY OF PROJECT RATINGS

GEF EO Ratings for project impacts (if applicable), outcomes, project monitoring and evaluation, and quality of the terminal evaluation: Highly Satisfactory (HS), Satisfactory (S), Moderately Satisfactory (MS), Moderately Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU), not applicable (N/A) and unable to assess (U/A). GEF EO Ratings for the project sustainability: Highly likely (HL), likely (L), moderately likely (ML), moderately unlikely (MU), unlikely (U), highly unlikely (HU), not applicable (N/A), and unable to assess (U/A).
Please refer to document “Ratings for the achievement of objectives, sustainability of outcomes and impacts, quality of terminal evaluation reports and project M&E systems” for further definitions of the ratings.

	Last PIR (May 2003)	IA Terminal Evaluation	Other IA evaluations if applicable (e.g. IEG)	GEF EO
2.1 Project outcomes	**S**	**S** (HS for GEF component)	**S**	**S**
2.2 Project sustainability	**N/A**	**L**	**L**	**L**
2.3 Monitoring and evaluation	**S**	**N/A**	**N/A**	**U/A**
2.4 Quality of the evaluation report	**N/A**	**N/A**	**S**	**S**

Should this terminal evaluation report be considered a good practice? Why? No. There is no assessment of possible impacts, the assessment of sustainability and the M&E system is incomplete.
Is there a follow up issue mentioned in the TE such as corruption, reallocation of GEF funds, etc.? No.
3. PROJECT OBJECTIVES, EXPECTED AND ACTUAL OUTCOMES

3.1 Project Objectives
• **What are the Global Environmental Objectives? Any changes during implementation?** No. The general objectives are to increase access to electricity in remote, rural areas of Laos, and to demonstrate that renewable energy technologies (micro-hydro mini-grids and solar battery charging) are viable off-grid electrification options to displace diesel power generation. There was no change in the objectives. (Prodoc)
• **What are the Development Objectives? Any changes during implementation?** No. Specific objectives are to (i) establish local institutional, financial and technical capacity for sustainable implementation of off-grid renewable energy (RE) power generation, (ii) install RE demonstration systems, (iii) demonstrate the potential to displace diesel generators with RE systems where possible thus reducing greenhouse gas (GHG) emissions, and (iv) develop the institutional arrangements and scope for a national off-grid rural electrification program incorporating RE technologies. (Prodoc)
3.2 Outcomes and Impacts
• **What were the major project outcomes and impacts as described in the TE?** According to the ICR the GEF financed component (rated as HS) exceeded its physical target of households and ratio of electrification. This off-grid component provided electricity to 6,097 households, 32% greater than the target of 4,600, mainly through solar home systems and micro-hydropower. It provided a successful implementation of stand-alone installations, by means of a hire-purchase arrangement, which allowed villagers who generally cannot afford more than 1 or 2 dollars per month for electricity, and a cost per connection of approximately $ 300, to avail themselves of solar home systems (SHS). In this arrangement, users could choose to lease systems for 5 or 10 years with an up-front payment of about 20 dollars, becoming owners at the end of the period on condition that all payments have been made. Village Electricity Managers (VEM) investing in village hydro (VH) systems, and diesel gensets (GS), paid off the cost of hardware in a similar way, becoming owners after five or ten years of making hire-purchase payments, which so far has operated reliably. Technical assistance to the Ministry of Industry and Handicraft (MIH) included project implementation support to the Off-grid Promotion Secretariat. The TA enabled the newly established Secretariat to perform satisfactorily and with installation rates exceeding initial targets. A second component of TA included investment and system planning. These activities

are considered highly satisfactory as the recommendations and system tools have been widely adopted in the Department of Energy (DoE) of the MIH.

4. GEF EVALUATION OFFICE ASSESSMENT

4.1 Outcomes

A Relevance **Rating: S**

- **In retrospect, were the project's outcomes consistent with the focal areas/operational program strategies? Explain**

The project's outcomes are consistent with OP6 strategies. The project increased access to electricity in remote, rural areas of Laos, through an innovative delivery system. It demonstrated that renewable energy technologies can be viable.

B Effectiveness **Rating: HS**

- **Are the project outcomes as described in the TE commensurable with the expected outcomes (as described in the project document) and the problems the project was intended to address (i.e. original or modified project objectives)?**

According to the ICR the project exceeded its target for the number of households electrified of 4,600. The technologies are proven, and the hire-purchase model derived a very high rate of payments from operational customers.

C Efficiency (cost-effectiveness) **Rating: S**

- **Include an assessment of outcomes and impacts in relation to inputs, costs, and implementation times based on the following questions: Was the project cost – effective? How does the cost-time Vs. outcomes compare to other similar projects? Was the project implementation delayed due to any bureaucratic, administrative or political problems and did that affect cost-effectiveness?**

Although some implementation delays occurred, the targets for off-grid electrification were surpassed. According to the ICR the project closed 6 months later than expected due to delays in the procurement and delivery of goods for the off-grid electrification, which delayed the completion of that component.

Significant cost savings (25.6%) from effective management were achieved during implementation of the World Bank financed components of the Laos Southern Provinces Rural Electrification Project (SPRE) allowing expansion of the Off-grid Electrification financed by GEF.

Other adjustments were made during project implementation through the use of project costs savings including procurement of an additional 800 solar home systems (SHS), to enhance the sustainability and building capacity of the off-grid program, and additional goods and services in support of the off-grid program.

The financial internal rates of return (FIRR) for the off-grid SHS activity at ICR departed largely away from estimation at appraisal mainly because the actual cost of this pilot program was much higher than estimation at appraisal. The business model for the off-grid electrification by SHSs was set-up and refined during the piloting process, and the cost of the supply chain (from MIH to Provincial Energy Service Companies (PESCOs) to Village Electricity Managers (VEMs) to customers) could not possibly be well estimated at appraisal, nor the cost of international consultants for technical assistance in setting up and implementation of this business model, which was proved successful in achieving the project development objectives. The reason for the much higher economic rates of return than those financial rates is due largely to the consumer surplus. Basically, only the supplier surplus is captured in the financial benefit.

D Impacts

- **Has the project achieved impacts or is it likely that outcomes will lead to the expected impacts?**

The ICR and the IEG reports do not describe impacts in terms of avoided GHG emissions beyond stating that environmental benefits are deemed minor and negligible. An assessment of impacts is missing.

4.2 Likelihood of sustainability. Using the following sustainability criteria, include an assessment of **risks** to sustainability of project outcomes and impacts based on the information presented in the TE.

A Financial resources	Rating: ML
According to the ICR the cost recovery performance was satisfactory, with prices set at semi-commercial levels, with face-value subsidy at 4%, 14%, 18%, and 29% for 20W, 30W, 40W and 50W solar home system respectively, and at 21% and 31% for diesel gensets and village hydro respectively. Customer satisfaction was high and reliability of electricity supply was satisfactory, as indicated by the lack of defaults on repayments by customers and interviews of the Task Team's field visit. In the five provinces where private companies were licensed as Provincial Energy Service Companies (PESCOs), the overall repayment rate (customers and all intermediary bodies) was 98% with one month. The 2% shortfall was mostly due to permitted postponement of payment to a succeeding month. One PESCO was not performing satisfactory and its contract was terminated and the customers were taken over by a well performed PESCO. Also the support that the follow-up WB project will provide to off-grid electrification contributes to sustainability. Financially, the off-grid component has found that the private sector in Lao PDR is unwilling to make long-term capital investments, although it will contribute working capital. The TE does not discuss the financing of the subsidy after the project is completed. If the subsidies are not sustainable there could be a significant risk to financial sustainability.	
B Socio political	**Rating: L**
According to the ICR the Government's goal to increase electrification for the entire country including to connect 75% of rural families to the grid by 2020, and to help at least another 15% to receive off-grid electricity by that time contributes to the sustainability of the project's outcomes. The project used a participatory approach that allowed for a careful choice by villagers of which individual in the village would become the electricity business managers, the establishment of a village electricity committee, and individual households to freely choose either opt out of the program or to become subscribers. Implementation was primarily driven by the beneficiary. They had choices of sizes of system and options of hire-purchase contracts. The beneficiary also participated in supply of spare parts, maintenance of operational SHS, and collection of payments under the hire-purchase contracts.	
C Institutional framework and governance	**Rating: L**
According to the ICR the delivery system involved the private sector--Provincial Energy Service Companies (PESCO) and VEMs--as implementing bodies. It proved to be sustainable on the grounds that it generated surpluses over and above the costs of supervision, management, and the costs of incentives to these intermediary bodies to cover field planning, installation, and maintenance costs. Also the satisfactory performance of MIH in implementing the project and the support that the follow-up WB project will provide to off-grid electrification contributes to sustainability.	
D Environmental	**Rating: U/A**
There is no assessment of the reduction of GHG emissions in the ICR.	

Provide only ratings for the sustainability of outcomes based on the information in the TE:

A Financial resources	**Rating: L**
B Socio political	**Rating: L**
C Institutional framework and governance	**Rating: L**
D Environmental	**Rating: U/A**

4.3 Catalytic role

1. Production of a public good - New approach: a business model delivering electricity to rural households using proven technologies, hire-for-purchase agreements and subsidies was

developed. It involves private provincial energy service companies (PESCOS) and village-level electricity associations (VEMs). The supply chain is from MIH to PESCOs to VEMs to customers.
2. Demonstration - The project is a pilot demonstration that developed the business model using a participatory approach for the off-grid component of the World Bank Laos Southern Provinces Rural Electrification Project (SPRE).
3. Replication - No replication is mentioned in the ICR, but the business model could be used in other parts of Laos and other countries with adjustments to local conditions.
4. Scaling up The Government (Department of Energy (DoE) of the Ministry of Industry and Handicraft (MIH)) took over the implementation of the off-grid component in late 2001 and has adopted the delivery model and system tools.

4.4 Assessment of the project's monitoring and evaluation system based on the information in the TE

A. In retrospection, was the M&E plan at entry practicable and sufficient? (Sufficient and practical indicators were identified, timely baseline, targets were created, effective use of data collection, analysis systems including studies and reports, and practical organization and logistics in terms of what, who, when for the M&E activities) Rating: U/A
The only information in the ICR on the M&E plan is that the design of the project was sound and it included clearly stated off-grid rural energy electrification targets and key performance indicators. For the off-grid component according to the ICR, three key dimensions were developed during the piloting process, namely (a) quality assurance, to establish a mechanism to assure reliability and customer satisfaction in the long term; (b) majority uptake, to ensure that most households in each village (as opposed to a small elite of better-off families) receive electricity supply as a result of their village subscribing to the off-grid program; and (c) social and economic benefits, to ensure that off-grid electricity help its subscribers to become better off, in terms of quality of life, and economic opportunity. This was accomplished by paying particular attention to the design of payment schedules under the hire-purchase arrangement, and the delivery model.
B. Did the project M&E system operate throughout the project? How was M&E information used during the project? Did it allow for tracking of progress towards projects objectives? Did the project provide proper training for parties responsible for M&E activities to ensure data will continue to be collected and used after project closure? Rating: U/A
For the implementation of the off-grid program, realignment was made through amendment of the IDA Credit Agreement and the related Subsidiary Loan Agreement in late 2001 to include a lead role at the national level for Department of Energy (DoE) of MIH, thus transferring primary responsibility for this component from EdL to MIH, and relieving EdL from the financial pressure of the off-grid investments that would be taken out from the on-lending arrangements. During the transition period EdL's Off-Grid Unit maintained its critical implementation role.
C. Was M&E sufficiently budgeted and was it properly funded during implementation? Rating: U/A
There are no figures available in the ICR. It does mention that agreement has been reached with IDA for future monitoring of the Project for both the on-grid and off-grid components, which can be undertaken during supervision of the follow-on SPRE2 project.
Can the project M&E system be considered a good practice? No. It needs more emphasis on the GEF financed component in line with GEF Terminal Evaluation guidelines.

4.5 Lessons

Project lessons as described in the TE

What lessons mentioned in the TE that can be considered a good practice or approaches to avoid and could have application for other GEF projects?
According to the ICR the key lessons from the project are:

- The existing delivery model for off-grid electrification could be further improved with a streamlined middle-man arrangement to reduce associated cost, and introduction of a monitoring and evaluation system for quality of services, and incentives based on performance.

- Lower-income households are unable to benefit as much from grid and off-grid rural electrification as better-off families do. As the results of the socio-economic survey conducted for this project show, while electricity use can significantly reduce the monthly energy expense of low- (and other) income households, the poor make little use of electrification because of a lack of disposable income. This may be the case even where costly, participatory approaches are adopted for off-grid electrification. Electrification may therefore contribute to increasing the gap between the wealthy and the poor. (from IEG)

- The strong bias towards the use of SHS technology should be countered by a more aggressive effort towards technology diversity in off-grid solutions.

- Some income generation activities linked with SHS electrification were found in remote villages, including family business for the supply of spare parts, sewing shops working in evening hours etc. More aggressive effort towards income generation would promote affordability thus enhance financial sustainability and social benefits of rural electrification projects.

- Problems which largely arose out of OPS's position as a government office, such as delay in centralized procurement, lack of effectiveness in management of non-performing PESCOs, could be overcome through contracting out the OPS' daily operational functions for the off-grid program.

4.6 Quality of the evaluation report Provide a number rating 1-6 to each criteria based on: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, and Highly Unsatisfactory = 1. Please refer to the "Criteria for the assessment of the quality of terminal evaluation reports" in the document "Ratings for the achievement of objectives, sustainability of outcomes and impacts, quality of terminal evaluation reports and project M&E systems" for further definitions of the ratings.

4.6.1 Comments on the summary of project ratings and terminal evaluation findings
In some cases the GEF Evaluation Office may have independent information collected for example, through a field visit or independent evaluators working for the Office. If additional relevant independent information has been collected that affect the ratings of this project, included in this section. This can include information that may affect the assessment and ratings of sustainability, outcomes, project M&E systems, etc.
None.

4.6.2 Quality of terminal evaluation report	**Ratings**
A. Does the report contain an assessment of relevant outcomes and impacts of the project and the achievement of the objectives? Assessment of impacts is missing.	**S**
B. Is the report internally consistent, is the evidence complete/convincing and are the IA ratings substantiated? Needs more information specifically on the GEF-financed component.	**S**
C. Does the report properly assess project sustainability and /or a project exit strategy? Needs more information specifically on the GEF-financed component. Also more information on the financial sustainability in light of the continuation of subsidies for solar home system, diesel gensets, and village hydro systems.	**MS**

D. Are the lessons learned supported by the evidence presented and are they comprehensive? Yes, but lessons are more in the nature of findings than lessons.	**MS**
E. Does the report include the actual project costs (total and per activity) and actual co-financing used? Yes, but the figures are different from PMIS and the JE database.	**S**
F. Does the report present an assessment of project M&E systems? M&E is mentioned in several sections of the ICR including an annex of indicators for future monitoring, but the system is not properly assessed.	**U**

4.7 Is a technical assessment of the project impacts described in the TE recommended? Please place an "X" in the appropriate box and explain below.	**Yes: X**	**No:**

Explain: According to IEG an assessment would achieve the following:

- Provide the Bank with important lessons from successful renewable energy-based off-grid electrification in a poor IDA country that could be applicable to the Bank's current renewable energy scale-up program and efforts to promote renewables, particularly in Africa.
- More carefully assess to what extent is EDL's financial weakness a risk to the otherwise positive development outcomes of the project.
- Assist in updating findings and lessons on rural electrification based on more recent projects.

In addition, a technical assessment is recommended to account for GHG reductions actually achieved, and to assess the financial sustainability of the project's subsidies solar home system, diesel gensets, and village hydro systems.

4.8 Sources of information for the preparation of the TE review in addition to the TE (if any)

MSP Project Brief, 2003 PSR, IEG ICR Review.