

GEF EO Terminal Evaluation Review Form

1. PROJECT DATA				
			Review date:	01/30/10
GEF Project ID:	449		<u>at endorsement</u> (Million US\$)	<u>at completion</u> (Million US\$)
IA/EA Project ID:	1423	GEF financing:	3.93	3.77
Project Name:	Photovoltaic-Based Rural Electrification in Peru	IA/EA own:	-	-
Country:	Peru	Government:	5.64	3.56
		Other*:	1.38	-
		Total Cofinancing	7.02	3.56
Operational Program:	CC 6	Total Project Cost:	10.95	7.33
IA:	UNDP	Dates		
Partners involved:	Ministry of Energy and Mines (MEM)	Effectiveness/ Prodoc Signature (i.e. date project began)		04/14/1999
		Closing Date	Proposed: 4/1/2004	Actual: 12/2007
Prepared by: Ines Angulo	Reviewed by: Neeraj Negi	Duration between effectiveness date and original closing (in months): 60	Duration between effectiveness date and actual closing (in months): 104	Difference between original and actual closing (in months): 44
Author of TE: Johannes (Jan) H.A. van den Akker		TE completion date: 09/2008	TE submission date to GEF EO: 09/17/2009	Difference between TE completion and submission date (in months): 12

* 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 AND KEY FINDINGS

Please refer to document GEF Office of Evaluation Guidelines for terminal evaluation reviews for further definitions of the ratings.

Performance Dimension	Last PIR	IA Terminal Evaluation	IA Evaluation Office evaluations or reviews	GEF EO
2.1a Project outcomes	MU	MS / MU	-	MU
2.1b Sustainability of Outcomes	N/A		-	MU
2.1c Monitoring and evaluation	-	S	-	MS
2.1d Quality of implementation and Execution	NA	NA	NA	MU
2.1e Quality of the evaluation report	N/A	N/A	-	S

2.2 Should the terminal evaluation report for this project be considered a good practice? Why?

Overall this is a good TE which provides a comprehensive analysis of project implementation and well as its results.

2.3 Are there any evaluation findings that require follow-up, such as corruption, reallocation of GEF funds, mismanagement, etc.?

No mention of any such issues.

3. PROJECT OBJECTIVES

3.1 Project Objectives

a. **What were the Global Environmental Objectives of the project? Were there any changes during implementation?**

The project appraisal document describes the GEO as: "to assist the Government of Peru in removing barriers to

sustainable rural electrification using photovoltaic (PV) technology in remote rural areas, thereby reducing the long-term growth of the greenhouse gas (GHG) emissions.

No changes during implementation.

b. What were the Development Objectives of the project? Were there any changes during implementation? (describe and insert tick in appropriate box below, if yes at what level was the change approved (GEFSEC, IA or EA)?)

The DO of this project is to improve the quality of life of the rural population by giving them access to a sustainable source of energy and to “demonstrate the viability of establishing micro enterprises to sell, maintain, and operate the PV systems, as well as create incentives for increased public and private sector investment in PV-based rural electrification”.

The project objectives had to be downsized, and the final components were:

1. Development of a solar energy information system,
2. Developing standards for photovoltaic systems, facilities and certification
3. Selection of target regions and communities to develop installation programs,
4. Analysis and proposal of different models for photovoltaic systems management
5. Installation of photovoltaic systems in selected rural communities
6. Creating and implementing a training program to develop and / or strengthen the skills of stakeholders in the installation, maintenance and operation of PV systems

Overall Environmental Objectives	Project Development Objectives	Project Components	Any other (specify)
		X	

c. If yes, tick applicable reasons for the change (in global environmental objectives and/or development objectives)

Original objectives not sufficiently articulated	Exogenous conditions changed, due to which a change in objectives was needed	Project was restructured because original objectives were over ambitious	Project was restructured because of lack of progress	Any other (specify)
X Poor description of management arrangements in Project Document		X	X Implementation delays at the project start resulting from problems disbursement of co-finance funds.	

4. GEF EVALUATION OFFICE ASSESSMENT OF OUTCOMES AND SUSTAINABILITY

4.1.1 Outcomes (Relevance can receive either a satisfactory rating or a unsatisfactory rating. For effectiveness and cost efficiency a six point scale 6= HS to 1 = HU will be used)

a. Relevance	Rating: S
Project results are very relevant to Peru’s goals of increasing levels of access to electrification since it contributed to increase the coefficient of national electrification, taking photovoltaic electrical energy to 22,500 inhabitants, whom will benefit with better quality lighting. Results are also relevant to GEF climate change OP6 goals since PVs are a sustainable, clean and renewable source of energy.	
b. Effectiveness	Rating: MU
The project had the following achievements:	
<ul style="list-style-type: none"> •Developed the first database of solar resource (Atlas) and geographic information system of PV systems at the national level. •Strengthened national laboratories under contract testing, specific projects and workshops to institutionalize the process of certification of components and PV installations; •Developed regulations and technical standards; •Developed manuals for installation, and maintenance for users; •Installed 4,224 photovoltaic systems in the regions of Cajamarca, Loreto, Ucayali and Pasco, 20 wind-photovoltaic systems in the Cajamarca region and a system for productive use in the Puno region, based on a socioeconomic study of the area. 	
But the TE clearly states that not all components were implemented in an effective manner, and that some of them were	

particularly weak. These components included the installation of PVs (for which the end target had to be drastically reduced after an assessment of project progress), the promotion of financial mechanisms for PV installment (the project only promoted a government-based mechanism and failed to test other options), the creation of a legal framework for RE (the project had the unrealistic goal to achieve this in its first year of implementation), the involvement of relevant stakeholders in order to promote PV systems (project implementation was too centralized), and introducing a sustainable system of administration for the PVs (the contract between the MEM and Consortium Isofotón (Spain) – Schonimex (Perú) was broken due to a contractual controversy).

c. Efficiency (cost-effectiveness)

Rating: U

The project not only suffered from major delays and had to extend its duration to almost double the original planned time, but it also had to reduce and downsize its original targets due to an overambitious project document. Although a large part of the project activities were put in place during the last year of implementation (for example the installation of PVs), the MEM and the supplier had problems which resulted in the cancellation of the contract and caused a negative effect on the project's efficiency.

4.1.2 Impacts: summarize the achieved intended or unintended impacts of the project.

Although it is certain that this Project contributes with environmental management and sustainable development, its impact in terms of volume as far as the reduction of GHG emissions is not significant. According to estimations, the installation of 4,224 PV modules between October and December 2008, will avoid GHG emissions in the order of 140,000 metric tons of CO₂ over 20 years.

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. Use a four point scale (4= Likely (no or negligible risk); 3= Moderately Likely (low risk); 2= Moderately Unlikely (substantial risks) to 1= Unlikely (High risk)). The ratings should be given taking into account both the probability of a risk materializing and the anticipated magnitude of its effect on the continuance of project benefits.

a. Financial resources

Rating: MU

Most of the progress towards results was done near the closing of the project (particularly the final year), so there was no time to test or monitor the financial sustainability of the PV systems installed or of their administration. Since the project was not able to validate the efficiency of the PV systems in a longer term, the possibilities of increasing the interest of other stakeholders, such as the private sector, to invest in this technology have been seriously limited.

b. Socio political

Rating: L

The National Electricity Plan appears to provide a role for rural electrification PV systems with involvement of provincial and local government, power companies, and other government entities.

c. Institutional framework and governance

Rating: MU

The breakdown of the contract between the supplier and the Ministry for administration of PV system poses a risk, since the required two year administration period for these systems will no longer occur. The national agency ADINELSA is now in charge of system administration, but it is not at all clear that this agency has the capacity or motivation to adequately support the complex PV system administration.

d. Environmental

Rating: L

No environmental risks mentioned.

4.3 Catalytic role

a. Production of a public good

The project installed 4,224 photovoltaic systems in the regions of Cajamarca, Loreto, Ucayali and Pasco, 20 wind-photovoltaic systems in the Cajamarca region and a system for productive use in the Puno region, based on a socioeconomic study of the area. It is calculated that these RE systems will avoid GHG emissions in the order of 140,000 metric tons of CO₂ over 20 years

Regarding the regulatory objectives, the project contributed to the formulation of the National Program for Rural Electricity and its related Law in 2006.

b. Demonstration

The project was able to implement two pilot projects "Productive Photovoltaic System" and "pilot project on Hybrid Systems (Photovoltaic and Wind)", but since they both started operation just before project closure, the TE could not provide any information on their achievements.

c. Replication

No mention of any replication in the TE. On the other hand, the last PIR states that "the administration model used in this project will be adapted to the EURO-SOLAR program, which has a different objective, oriented to deliver basic services of health and education (health centers and rural school) to communities. Similarly, this model will be applied to the "Programa Masivo 1" consisting of the installation of 20,000 PV modules".

d. Scaling up

No mention of any scaling up

4.4 Assessment of processes and factors affecting attainment of project outcomes and sustainability.

<p>a. Co-financing. To what extent was the reported cofinancing (or proposed cofinancing) essential to achievement of GEF objectives? Were components supported by cofinancing well integrated into the project? If there was a difference in the level of expected co-financing and actual co-financing, then what were the reasons for it? Did the extent of materialization of co-financing affect project's outcomes and/or sustainability? If it did, then in what ways and through what causal linkages?</p>
<p>Co-financing was essential for the achievement of the installation of the PV systems, which was one of the main components of this project. Delays in disbursement of co-finance had a serious negative effect on the implementation and due to them the installation could only be done during the final 2 years of the project. As a result, the sustainability of this component could not be ensured by the project.</p>
<p>b. Delays. If there were delays in project implementation and completion, then what were the reasons for it? Did the delay affect the project's outcomes and/or sustainability? If it did, then in what ways and through what causal linkages?</p>
<p>This project experienced serious delays that caused the extension of project duration from 5 to approximately 8 years. According to the TE, these delays were mainly caused by weaknesses in the design of the project and by problems with its implementation.</p> <p>For example, the project started a year late (2000) due to the need to finalize the required paperwork and agreements by the government. The unstable political situation during 2000-2001 meant 3 changes of government administrations and of the Executive Director of the project as well. This, coupled with the absence of a rural electrification policy contributed to inaction during 2000-2003, as a small disbursement of counterpart funds were an essential component for implementing the installation of the PVs.</p>
<p>c. Country Ownership. Assess the extent to which country ownership has affected project outcomes and sustainability? Describe the ways in which it affected outcomes and sustainability highlighting the causal links.</p>
<p>Country ownership was a major factor resulting in serious delays in the implementation of the project. After the resignation of President Fujimori (1990 --2000), came an interim period (president Valentín Paniagua, 2000-2001), during which the decision on the contribution of counterpart funding by the MEM was suspended. The disbursement of counterpart funds was essential for the implementation of component 5 (installation of 1000-1500 PVs). In 2001 president Alejandro Toledo came to power and his new government suspended the process of PV systems acquisition on the grounds that he wanted to review the project management model. Several months after it was decided to maintain the original model and the project was able to receive disbursements of government cofinance.</p>

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

<p>a. M&E design at Entry Rating (six point scale): S</p>
<p>The project document describes the M&E and supervision activities and the roles and reporting responsibilities of each actor. The project logframe included verifiable indicators for all outcomes and outputs.</p>
<p>b. M&E plan Implementation Rating (six point scale): MS</p>
<p>The TE concludes that the information presented in the PIRs was very comprehensive, and that the PIU followed the project Logframe for monitoring purposes. On the other hand, it mentions that the information generated by the M&E system was not necessarily used during implementation to help solve the various problems that were encountered.</p>
<p>b.1 Was sufficient funding provided for M&E in the budget included in the project document?</p> <p>According to the project appraisal document the planned budget for M&E and coordination was \$720,000, which represents approximately 7% of the total budget.</p>
<p>b.2a Was sufficient and timely funding provided for M&E during project implementation?</p> <p>The TE does not provide any information on whether funding was an issue for the implementation of the M&E system.</p>
<p>b.2b To what extent did the project monitoring system provided real time feed back? Was the information that was provided used effectively? What factors affected the use of information provided by the project monitoring system?</p> <p>The TE finds that a weakness of the project was that it did not follow-up on recommendations identified during the supervision missions (an exception was the re-assessment of the project following the mid-term review).</p>
<p>b.3 Can the project M&E system (or an aspect of the project M&E system) be considered a good practice? If so, explain why.</p> <p>No. Although it appears that, in general, monitoring of project indicators was followed, the TE mentions that recommendations coming from project supervision and evaluation missions and reports were not taken into account during implementation.</p>

4.6 Assessment of Quality of Implementation and Execution

<p>a. Overall Quality of Implementation and Execution (on a six point scale): MU</p>
<p>b. Overall Quality of Implementation – for IA (on a six point scale): MU</p>
<p>Briefly describe and assess performance on issues such as quality of the project design, focus on results, adequacy of supervision inputs and processes, quality of risk management, candor and realism in supervision reporting, and suitability of the chosen executing agencies for project execution.</p>

The quality of project design was poor and resulted in serious project delays. The project document does not include a clear description or a diagnosis identifying the conditions required for PVs to be a sustainable option including the model (s) of management. Therefore, the list of barriers that are presented in the Project Document are very general and do not emerge from an analysis of previous similar experiences in Peru.

The TE praises the candor and realism in supervision reporting, but is critical of UNDPs lack of involvement in the project to ensure that the necessary corrective actions were actually implemented.

c. Quality of Execution – for Executing Agencies¹ (rating on a 6 point scale) U

Briefly describe and assess performance on issues such as focus on results, adequacy of management inputs and processes, quality of risk management, and candor and realism in reporting by the executive agency.

The project implementation arrangements have been poor and have been a major cause of project delays. Despite the improvements made by the executing agency towards the end of the project, it is clear that implementation weaknesses have been a major cause of lower achievements of the project.

The project management was highly centralized. The Project Implementation Unit (PIU) did not have autonomy within the MEM and, therefore, it encountered difficulties when trying to manage in an adaptive manner, or correct and redirect the components and activities according to circumstances. The pace of project implementation was severely affected by the fact that the MEM staff member designated as the Deputy National Director was the de facto project coordinator, despite that a project coordinator was recruited as part of the project’s team in 2006.

The PIU also showed limited capacity to carry out the necessary biddings for the installment and administration of the PVs. The planned bids were declared null and void, according to the last PIR, the evaluation subsequent to the process determined that that the decisive factors for which the bidders did not appear was the responsibility of the project administration.

5. LESSONS AND RECOMMENDATIONS

Assess the project lessons and recommendations as described in the TE

a. Briefly describe the key lessons, good practice or approaches mentioned in the terminal evaluation report that could have application for other GEF projects

- It is very difficult to revert bad or weak management arrangements once the project starts. UNDP made significant efforts to speed up project implementation but the executing agency’s response capacity was extremely low. Bad management arrangements create perverse incentives that are almost impossible to remove. Agencies should pay careful attention to suitable management arrangements during the project’s formulation stage.
- The execution unit of a capacity building project must have staff with knowledge related to: technology and the conditions for sustainability; the legal and regulatory needs of grant mechanisms (Models of Management); and policy coordination with stakeholders and the various committees.
- The project management unit must have sufficient autonomy within the bureaucratic apparatus of the counterparty to adapt to changing circumstances and make decisions and commitments, without disregarding the general policy determined by the Government and UNDP guidelines.
- The project design should take into account past experience of the country or in similar countries. Projects must be developed with openness and invitation to discuss and receive input and advice from key actors and institutions with experience in implementation of electrification and renewable energy. It should be ensured that the project has adequate priority at the national level in order to guarantee counterpart funds for the maintenance and sustainability of the project results.

b. Briefly describe the recommendations given in the terminal evaluation

- UNDP should have a closer monitoring and supervision of activities, contributing ideas and suggestions. When it finds insurmountable obstacles in the implementation of a project and is unable to reach a compromise with the counterparty, UNDP should not be afraid to withhold funds or, as a last option, to consider canceling the project.
- The MEM should have more flexible criteria in awarding contracts. In general, it is recommended that the MEM have more flexibility in identifying opportunities for electrification and management models, adapting to local socioeconomic and cultural circumstances. It should also consider to not only install individual PV systems, but to extend it to communal systems for medical clinics and schools (in coordination with other ministries such as Health or Education) and to productive uses. This will also require better interaction with regional and local authorities in the Regional Directorate of the MEM itself.

¹ Executing Agencies for this section would mean those agencies that are executing the project in the field. For any given project this will exclude Executing Agencies that are implementing the project under expanded opportunities – for projects approved under the expanded opportunities procedure the respective executing agency will be treated as an implementing agency.

6. QUALITY OF THE TERMINAL EVALUATION REPORT

6.1 Comments on the summary of project ratings and terminal evaluation findings based on other information sources such as GEF EO field visits, other evaluations, etc.

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 document GEF Office of Evaluation Guidelines for terminal evaluations review for further definitions of the ratings. Please briefly explain each rating.

6.2 Quality of the terminal evaluation report	Ratings
a. To what extent does the report contain an assessment of relevant outcomes and impacts of the project and the achievement of the objectives?	S
b. To what extent the report is internally consistent, the evidence is complete/convincing and the IA ratings have been substantiated? Are there any major evidence gaps?	S
c. To what extent does the report properly assess project sustainability and /or a project exit strategy? The section of the TE dealing with sustainability does not provide a complete assessment of this issue, but information regarding sustainability is included in other sections of the report.	MS
d. To what extent are the lessons learned supported by the evidence presented and are they comprehensive? Lessons included in the TE are supported by the evidence presented.	S
e. Does the report include the actual project costs (total and per activity) and actual co-financing used? The TE includes the required information but the assessment of the use of the budget is not	MS
f. Assess the quality of the reports evaluation of project M&E systems? The assessment included in the TE is not comprehensive, and only includes information related to the PIRs, not of the M&E system in itself.	U

7. SOURCES OF INFORMATION FOR THE PRERATATION OF THE TERMINAL EVALUTION REVIEW REPORT EXCLUDING PIRs, TERMINAL EVALUATIONS, PAD.