Terminal Evaluation Review form, GEF Independent Evaluation Office, APR 2016

1. Project Data

Summary project data			
GEF project ID		2607	
GEF Agency project ID		P090110	
GEF Replenishment Phase		GEF-3	
Lead GEF Agency (include all for joint projects)		World Bank	
Project name		Rural Electrification	
Country/Countries		Peru	
Region		Latin America	
Focal area		Climate Change	
Operational Program or Strategic Priorities/Objectives		OP6, CC-2, CC-3, CC-4	
Executing agencies involved		Ministry of Energy and Mines (MEM)	
NGOs/CBOs involvement		NA	
Private sector involvement		Private energy companies – as beneficiaries and key stakeholders.	
CEO Endorsement (FSP) /Approval date (MSP)		March 2006	
Effectiveness date / project start		August 2006	
Expected date of project completion (at start)		December 2011	
Actual date of project completion		September 2012	
Project Financing			
		At Endorsement (US $M)* (figures are for full project, including rural electrification component)	**At Completion (US $M)** (figures are for full project, including rural electrification component)
Project Preparation Grant	GEF funding	0.35	0.35
	Co-financing	0	0
GEF Project Grant		10.00	3.71
Co-financing	IA own	50.00	49.34
	Government	51.45	49.39
	Other multi- /bi-laterals	0	0
	Private sector	33.50	29.25
	NGOs/CSOs	0	0
Total GEF funding		10.35	4.06
Total Co-financing		134.95	127.98
Total project funding (GEF grant(s) + co-financing)		145.30	132.04
Terminal evaluation/review information			
TE completion date		December 2013	
Author of TE		Enrique Crousillat	
TER completion date		December 26, 2016	
TER prepared by		Caroline Laroche	
TER peer review by (if GEF IEO review)		Molly Watts	

* CEO endorsement document not available – executive summary costs used for this section.

2. Summary of Project Ratings

Criteria	Final PIR	IA Terminal Evaluation	IA Evaluation Office Review	GEF IEO Review
Project Outcomes	MS	MS	-	MU
Sustainability of Outcomes		L(low risk)	-	ML
M&E Design		NA	-	MS
M&E Implementation		NA	-	MS
Quality of Implementation		MS	-	MS
Quality of Execution		MS	-	MS
Quality of the Terminal Evaluation Report		--	--	MS

3. Project Objectives

3.1 Global Environmental Objectives of the project:

The project's global environmental objective is "to achieve greenhouse gas emissions through use of renewable energy in rural areas for provision of electricity" (PD p.4). More than six million people in the predominantly poor rural areas of Peru do not have access to electricity. The Government of Peru wants to remediate to this situation, and improve electricity coverage using renewable sources insofar as possible.

3.2 Development Objectives of the project:

The objective of the project is "to provide sustainable and efficient electricity services to rural consumers" (PD p.4). This will be achieved by focusing on the following outcomes[1]:

1. Technical Assistance for Bottom up Provision of Rural Electrification
2. Pilot Program for Productive Uses of Electricity
3. Small Hydro Financing Facility

(PD pp.4-7)

The overall project includes a large rural electrification component, to which the GEF is not contributing. As part of this TER, this component will not be discussed. The GEF's participation to the project focuses on the "integration of renewable energy options, including support for small and mini hydro grids, solar and wind systems into all activities of the proposed Project and the future legal and regulatory framework" (PD p.2).

[1] Only project outcomes for which a GEF grant was provided have been listed here. The overall project includes an additional outcome on rural electrification to which the GEF is not contributing.

3.3 Were there any **changes** in the Global Environmental Objectives, Development Objectives, or other activities during implementation?

> Component 3 of the project (Small Hydro Financing Facility), for which half the GEF grant was earmarked, was cancelled after a new policy for renewable energy offering a highly competitive financing option for small hydropower plants was enacted in Peru (ICR p.7).“While the Project made a significant effort to implement this Facility, MEM ultimately concluded in September 2012 that the component could not be implemented and the funds were cancelled (…) Prior to cancellation, the Project tried several options for its implementation, including hiring a qualified company to act as a Fund Manager and, subsequently, a set of specialists to promote the Facility. “ (ICR p.5)

4. GEF IEO assessment of Outcomes and Sustainability

Please refer to the GEF Terminal Evaluation Review Guidelines for detail on the criteria for ratings.

Relevance can receive either a Satisfactory or Unsatisfactory rating. For Effectiveness and Cost efficiency, a six point rating scale is used (Highly Satisfactory to Highly Unsatisfactory), or Unable to Assess. Sustainability ratings are assessed on a four-point scale: Likely=no or negligible risk; Moderately Likely=low risk; Moderately Unlikely=substantial risks; Unlikely=high risk. In assessing a Sustainability rating please note if, and to what degree, sustainability of project outcomes is threatened by financial, sociopolitical, institutional/governance, or environmental factors.

Please justify ratings in the space below each box.

4.1 **Relevance**	Rating: **Satisfactory**

The ICR rates the project as relevant. This TER rates relevance as satisfactory due to the project’s good alignment with both Peruvian national priorities and GEF priorities under the climate change focal area.

Since the late 1990s, Peru has been making substantial investments in rural electrification – about $40-50 million per year (PD p.1). In its 2004 rural electrification plan, Peru reiterated its commitment to reducing the electrification gap, “aiming to increase rural coverage from 30 per cent to 75 per cent by 2013” (PD p.1). This would be achieved by developing a rural electrification framework that “would increase economic efficiency in the sector and attract broader participation and financing from communities, regional governments and electricity service providers“ (PD p.1). In addition, the PD reports that “interest in Congress is broad-based, reflected by passage of two laws on Rural Electrification in 2002 and 2005” (p.13).

The project is also consistent with the GEF operational program 6 (Promoting the adoption of renewable energy by removing barriers and reducing Implementation costs) as well as with GEF strategic priorities CC-2, CC-3 and CC-4. Indeed, the GEF contribution to the project aims to create norms and regulations for renewable energy provision, create a renewable energy financing facility, and develop a pilot program to increase income generation using renewable energy. (PD p.3)

4.2 **Effectiveness**	Rating: **Moderately Unsatisfactory**

The ICR rates effectiveness of the project in achieving its global environmental objective as moderately unsatisfactory. This TER rates it as moderately unsatisfactory acknowledging the effectiveness of the technical assistance provided and that of the pilot program to promote productive uses of energy. Below, we look at all three project components.

1. Technical Assistance for Bottom up Provision of Rural Electrification

The technical assistance supported by the project enabled OSINERGMIN (Peru's energy regulatory agency) to adopt the first national photovoltaic (PV) tariff for regulated service and to make PV system users eligible for the cross-subsidy to small electricity consumers. Thanks to the project, "the provision of electricity through PV systems is now regulated at the national level based on a cost-recovery tariff for a quality service that is complemented by a cross subsidy for low income customers" (ICR p. 12). This is an important supporting framework that will help provide service to households that cannot be reached by conventional grid extension.

2. Pilot Program for Productive Uses of Electricity

The pilot program to promote productive uses of electricity was also completed satisfactorily. As part of the pilot, the project helped families and enterprises "adopt electricity and use equipment to process rice, cereals, coffee, cocoa, baked goods, meat products, milk, wood and metal products and handicrafts, and to pump water for expanded agricultural production and processing" (ICR p.15). According to the ICR, "the assistance to rural producers to adopt electricity using equipment further increased access and sustainability" and "this component was highly successful in meeting or surpassing all its targets" (ICR p.14). For instance, as a result of the project, 21,111 new enterprises and families had adopted electricity using the equipment supplied as part of the project, and an additional 19,107 MWh of electricity had been consumed for productive uses.

3. Small Hydro Financing Facility

The hydroelectric financing facility component was cancelled.

4.3 **Efficiency**	Rating: **Satisfactory**

The ICR rates efficiency as satisfactory. This TER agrees with this rating due to the good overall financial management of the project.

The ICR describes a very professional financial management for the project:

> "Overall, financial management arrangements were satisfactory. Centralization of project administration in the hands of qualified and experienced staff, combined with stability of key staff

and utilization of the Financial Administration Integrated System (SIAF), led to satisfactory financial management arrangements. The Project consistently provided timely and reliable financial information. Audits did not identify reportable conditions and unqualified opinions were submitted. Furthermore, financial monitoring reports (currently called IFRs) were delivered in timely fashion and recommendations were implemented on an ongoing basis. " (ICR p.10)

According to the ICR, despite some of the initial project delays, the project was delivered as planned (except for the small hydro financing component). The ICR estimates the economic rate of return of the overall project to be about 21.3%, which is in line with what was expected at the inception stage (ICR p.16). This assessment is applicable to the project as a whole, and is not specific to the GEF components of the project.

4.4 **Sustainability**	Rating: **Moderately Likely**

The ICR does not rate sustainability, but describes risks for the project as low. Similarly, this TER rates sustainability as moderately likely as there do not appear to be any risks threatening the sustainability of the gains made as a result of the project.

Financial Risks – Unable to Assess Sustainability

The ICR provides very little information on the financial outlook of the GEF components of the project. In any case, gains made as part of the project should not require important funds to maintain.

Socio-political Risks – Sustainability Likely

The sustainability of the "promotion of productive uses of electricity" project component will depend "on the continued operation of producers" (ICR p.11). Fortunately, and contributing to ensuring sustainability, "the NGOs and the distribution companies involved in this component have a long-term commitment in the areas, and have also demonstrated that they will continue to support productive users of electricity as part of their regular development activities" (ICR p.11).

Generally, the Government of Peru remains committed to rural electrification using renewable energy, as demonstrated in its 2013-2022 rural electrification plan and in the 2009 Renewable Energy plan.

Institutional Risks – Sustainability Moderately Likely

According to the ICR, "the technical assistance for rural electrification and renewable energy development does not require explicit post-completion measures since it has been absorbed by the MEM and many of the tools and studies developed are in active use" (ICR p.10). The institutional support necessary to maintain project gains therefore appears to be in place.

However, the ICR reports that the MEM is planning a "massive plan to auction and install hundreds of thousands of PV systems within a very short period" (ICR p.11, which is thus casting doubts on the future use of the Project's PV model, as well as on the sustainability of MEM's ambitious plan" (ICR p.11).

Environmental Risks – Sustainability Likely

There are no reported or known environmental risks to this project. Environmental sustainability is therefore rated as likely.

5. Processes and factors affecting attainment of project outcomes

5.1 Co-financing. To what extent was the reported co-financing essential to the achievement of GEF objectives? 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 so, in what ways and through what causal linkages?

> Materialized co-financing was almost equal to expected co-financing. As a result, co-financing levels did not influence project outcomes. Co-financing came from the IBRD ($49 million), the Government of Peru ($49 million) and electricity service provision companies ($29 million). Final co-financing use figures describing which project components co-financing has been used towards are not available, but the PD shows that most co-financing was going to be used for the rural electrification project component not funded by the GEF. It is therefore unclear the extent to which these large sums of co-financing contributed to the outcomes supported by the GEF project.

5.2 Project extensions and/or 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 so, in what ways and through what causal linkages?

> The project was extended twice, first In January 2011, and second in September 2012. The project finally closed in June 2013. The need for extensions was due to the delays incurred when establishing a tariff for households with photovoltaic electricity systems.

5.3 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:

> The ICR describes government support for the project as having been "strong and consistent" (ICR p.6), largely due to the project's good alignment with the national development strategy.

6. Assessment of project's Monitoring and Evaluation system

Ratings are assessed on a six point scale: Highly Satisfactory=no shortcomings in this M&E component; Satisfactory=minor shortcomings in this M&E component; Moderately Satisfactory=moderate shortcomings in this M&E component; Moderately Unsatisfactory=significant shortcomings in this M&E component; Unsatisfactory=major shortcomings in this M&E component; Highly Unsatisfactory=there were no project M&E systems.

Please justify ratings in the space below each box.

6.1 **M&E Design at entry**	Rating: **Moderately Satisfactory**

The ICR does not rate M&E design at entry, but describes project M&E as having been "in general satisfactory" (ICR p.9). This TER rates M&E design at entry as moderately satisfactory as the project document did not describe the M&E framework in great detail, but the indicators chosen were satisfactory.

The M&E plan presented in the project document (PD p.12) is very short, stating that project indicators will be collected and reported against by the PMU, and that "comprehensive monitoring and evaluation arrangements will be implemented, that are consistent with GEF guidelines and requirements for measurement and evaluation" (PD p.12). The project indicators specified in the project's Results Framework and Monitoring section (PD p.26) are simple and few, but straightforward, measurable and verifiable. On the other hand, the indicators are also very broad, and do not allow to track all relevant project outcomes and outputs.

6.2 **M&E Implementation**	Rating: **Moderately Satisfactory**

The ICR does not rate M&E implementation for the project, but describes project M&E as having been "in general satisfactory" (ICR p.9). This TER rates it as moderately satisfactory as all planned M&E activities appear to have been conducted as planned.

The ICR mentions that the project "included a monitoring team that maintained accurate measures of the Project indicators, and provided additional information that is useful for analyzing impact" and "supplied to the Bank semester progress reports, including an update of results indicators and results of surveys of beneficiaries" (ICR p.9). PIRs have been produced every year, and a mid-term evaluation was completed for the project. No independent terminal evaluation was done, rather the project management completed an implementation completion and results report.

No information is available regarding the extent to which M&E information was used for adaptive management.

7. Assessment of project implementation and execution

Quality of Implementation includes the quality of project design, as well as the quality of supervision and assistance provided by implementing agency(s) to execution agencies throughout project implementation. Quality of Execution covers the effectiveness of the executing agency(s) in performing its roles and responsibilities. In both instances, the focus is upon factors that are largely within the control of the respective implementing and executing agency(s). A six point rating scale is used (Highly Satisfactory to Highly Unsatisfactory), or Unable to Assess.

Please justify ratings in the space below each box.

7.1 **Quality of Project Implementation**	Rating: **Moderately Satisfactory**

The implementing agency for this project was the World Bank. In the ICR, the World Bank's quality of implementation for this project is rated as moderately satisfactory. This TER agrees with this rating and also rates project implementation as moderately satisfactory.

The ICR describes the World Bank's performance as project implementer quite succinctly:

> "The Bank actively supervised the Project, frequently reengaging with new government authorities following changes at the presidential and ministerial levels. Support was attained from new authorities and efforts were made to accelerate project execution as much as possible. Fiduciary and safeguard aspects operated smoothly, and according to interviews with the implementing agencies, the technical advice of the Bank team was generally considered valuable. Restructuring was carried out a number of times to adjust implementation arrangements to changing circumstances, and to extend the Project by a total of 18 months. There were some shortcomings with respect to early detection of problems with late payments for rights of way by distribution companies, especially Hidrandina and Electrocentro, and the inability to re-allocate the funds for the Small Hydro Facility when this was cancelled. Also, lack of consistency in the criteria for rating the Project's performance may have caused some confusion." (ICR p.20)

7.2 **Quality of Project Execution**	Rating: **Moderately Satisfactory**

The executing agency for this project was the Peruvian Ministry of Energy and Mines (MEM). In the ICR, the MEM's quality of execution for this project is rated as moderately satisfactory. This TER also rates it as moderately satisfactory due to delays that affected the GEF components of the project.

First, and as mentioned above, the MEM implemented the 'productive uses' and photovoltaic project components late, which "meant that these activities ran up against the closing date of the Project and determined the need for a first extension to ensure the achievement of the Project's development objectives" (ICR p.8).

Similarly, while there was generally good continuity of staff until 2008, there were severe delays in replacing key staff starting in 2009, which "contributed to weaker Project implementation during the last two years of the Project" (ICR p.20).

No additional information is available about the way in which the MEM supported project execution.

8. Assessment of Project Impacts

Note - In instances where information on any impact related topic is not provided in the terminal evaluations, the reviewer should indicate in the relevant sections below that this is indeed the case and identify the information gaps. When providing information on topics related to impact, please cite the page number of the terminal evaluation from where the information is sourced.

8.1 Environmental Change. Describe the changes in environmental stress and environmental status that occurred by the end of the project. Include both quantitative and qualitative changes documented, sources of information for these changes, and how project activities contributed to or hindered these changes. Also include how contextual factors have contributed to or hindered these changes.

> According to the ICR, the production of about 5,626 metric tons of CO_2 has been avoided over the lifetime of the systems put in place by the project. (ICR p.24)

8.2 Socioeconomic change. Describe any changes in human well-being (income, education, health, community relationships, etc.) that occurred by the end of the project. Include both quantitative and qualitative changes documented, sources of information for these changes, and how project activities contributed to or hindered these changes. Also include how contextual factors have contributed to or hindered these changes.

> In the 'productive uses promotion' component of the project, 30 percent of the beneficiaries were women nationwide, and 50 percent in the highlands. According to the ICR, the project "was effective in reaching women producers. The result came naturally as women entrepreneurs are represented in a broad range of productive activities and play a significant role in areas of production such as baked goods, milk production, ceramics, and textiles " (ICR p.18).

8.3 Capacity and governance changes. Describe notable changes in capacities and governance that can lead to large-scale action (both mass and legislative) bringing about positive environmental change. "Capacities" include awareness, knowledge, skills, infrastructure, and environmental monitoring systems, among others. "Governance" refers to decision-making processes, structures and systems, including access to and use of information, and thus would include laws, administrative bodies, trust-building and conflict resolution processes, information-sharing systems, etc. Indicate how project activities contributed to/ hindered these changes, as well as how contextual factors have influenced these changes.

> a) Capacities
>
> The pilot program conducted as part of the project helped families and enterprises "to adopt electricity and use equipment to process rice, cereals, coffee, cocoa, baked goods, meat products, milk, wood and metal products and handicrafts, and to pump water for expanded agricultural production and processing" (ICR p.15).
>
> b) Governance
>
> The GEF components of the project contributed to the development of renewable energy governance in Peru by establishing a national tariff for PV electricity supply to rural households.

8.4 Unintended impacts. Describe any impacts not targeted by the project, whether positive or negative, affecting either ecological or social aspects. Indicate the factors that contributed to these unintended impacts occurring.

Not unintended impacts were reported as part of the project.

8.5 Adoption of GEF initiatives at scale. Identify any initiatives (e.g. technologies, approaches, financing instruments, implementing bodies, legal frameworks, information systems) that have been mainstreamed, replicated and/or scaled up by government and other stakeholders by project end. Include the extent to which this broader adoption has taken place, e.g. if plans and resources have been established but no actual adoption has taken place, or if market change and large-scale environmental benefits have begun to occur. Indicate how project activities and other contextual factors contributed to these taking place. If broader adoption has not taken place as expected, indicate which factors (both project-related and contextual) have hindered this from happening.

No replication of the GEF project components has taken place as of yet, and the ICR does not describe any clear plans for replication going forward.

9. Lessons and recommendations

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

The report presents the following lessons learned:

1. **Scaling-up Rural Electrification brings about pressures on the financial situation of distribution utilities, and the power sector as a whole, which requires regulatory action**. A significant effort in expanding electricity services to remote and costly areas, may entail structural changes in the electricity market that require a revision or update of the regulatory regime. The slow progress of the Second RE project is evidence of this constraint. A more frequent revision of the tariff regime that responds to the structural changes caused by rapid expansion in coverage – the increase in rural customers, their growing share in the consumer base, and the higher costs of distribution as coverage is expanded– is required to ensure the sustainability of the rural electrification effort.

2. **The potential conflict between the long-term nature of Rural Electrification and short-term political objectives requires a sustained commitment and understanding of authorities to avoid distortions in programs' design and implementation.** In the Peruvian case the Project has been under constant pressures from –and comparisons with– a larger public RE program that tended to prioritize short-term outcomes above sustainability objectives. Furthermore, current GoP plans for a massive and quick development of PV systems may jeopardize the future of the Project's sustainable PV model. This may be an unavoidable threat that requires the understanding and long-term commitment of the Central Government, as well as building alliances with those interested in a sustainable RE program: local Governments, distribution utilities, and other

local/regional stakeholders. The early involvement and empowerment of these stakeholders could be an effective way to achieve greater sustainability.

3. **A Rural Electrification program that engages distribution companies from the early stage and is complemented by a regulatory framework that targets barriers to development and provides the right incentives is likely to defeat the 'common wisdom' that distribution companies are not interested in rural electrification**. The Project's approach to involve distribution companies from the early stages of grid-extensions sub-projects proved to be instrumental in gaining the companies' ownership, a better design and ensuring their financial contribution. Also, the incorporation of isolated PV systems into the power sector regulatory framework, complemented by reliable funding for subsidies, provided the required assurances to service providers and distribution companies to engage in the PV systems business.

4. **Promotion of Productive Uses of Electricity can be a highly beneficial component of a RE project, particularly in middle income countries where a critical mass of entrepreneurs is present.** The Project's promotion of productive uses was innovative, important and highly beneficial, as it engaged NGOs with recognized presence in the field and its technical assistance and financial support was tailored to each case. The distribution companies, who were initially reticent, were able to understand the benefits from supporting productive uses of electricity for their load management. The benefits of a well designed technical assistance and investment support provided by the Project were multiple: (a) extending the benefits of rural electrification to both communities and electricity companies; (b) actively involving a considerable number of women; (c) improving the relationship between the client and the electricity company; (d) helping create awareness of Project activities; and (e) building capacity of communities, individuals and NGOs to improve livelihoods through use of electricity. The DGER's policies now recognize that the promotion of productive uses of electricity is key to achieving long term development impacts of rural electrification.

5. **Safeguard issues need to be addressed thoroughly at an early stage and incorporated into the project design in order to minimize negative and/or irreversible impacts.** The effective identification of social and environmental impacts, and the pertinent safeguards, should be matter of an early and thorough assessment and incorporated into the design of bids and contracts, including the explicit definition of all parties' responsibilities in meeting safeguard requirements. In particular, right of way payments should be explicitly defined in both the subsidy contract and the construction contract, and included in the construction contractor's responsibilities and costs.

6. **A precise definition of Key Performance Indicators and the accurate estimation of values, as well as a flexible use of them, are requirements for an effective and smooth monitoring and evaluation.** The definition of "connections" lacked precision at Project preparation and the values of some indicators needed to be adjusted. The inflexible practice of not adjusting indicators, even when technically justifiable, prevented a more effective and accurate monitoring and evaluation

of the project. In the PAD of the Second RE Project, the definition of the PDO was separated from the achievement of key indicators, the definition of connections was clarified and more realistic targets were estimated for the indicators values were estimated conservatively, taking into account the most recent experience and factors of uncertainty such as exchange rate changes and inflation.

(ICR pp.21-22)

9.2 Briefly describe the recommendations given in the terminal evaluation.

The report does not make any additional recommendations outside of the those included in the 'lessons learned' section.

10. Quality of the Terminal Evaluation Report

A six point rating scale is used for each sub-criteria and overall rating of the terminal evaluation report (Highly Satisfactory to Highly Unsatisfactory)

Criteria	**GEF IEO comments**	Rating
To what extent does the report contain an assessment of relevant outcomes and impacts of the project and the achievement of the objectives?	The report adequately assesses project outcomes, but the discussion of impact could have been more systematic and thorough.	**MS**
To what extent is the report internally consistent, the evidence presented complete and convincing, and ratings well substantiated?	The report is consistent and the evidence presented is convincing, but certain topics are only superficially discussed, including the performance of the executing agency and M&E implementation.	**MS**
To what extent does the report properly assess project sustainability and/or project exit strategy?	The report mentions sustainability, but a thorough and complete discussion is not provided.	**MU**
To what extent are the lessons learned supported by the evidence presented and are they comprehensive?	Lessons learned are supported by the evidence and appear comprehensive.	**S**
Does the report include the actual project costs (total and per activity) and actual co-financing used?	The report includes actual total project costs and co-financing use, but does not report on costs per activity.	**MU**
Assess the quality of the report's evaluation of project M&E systems:	The report only provides basic information about the M&E activities that took place during the project.	**MU**
Overall TE Rating		**MS**

11. Note any additional sources of information used in the preparation of the terminal evaluation report (excluding PIRs, TEs, and PADs).

No additional sources of information were used in the preparation of this TER.