

## Terminal Evaluation Review Form, GEF Evaluation Office, APR 2014

### 1. Project Data

Summary project data			
GEF project ID		2812	
GEF Agency project ID		P088940	
GEF Replenishment Phase		GEF - 3	
Lead GEF Agency (include all for joint projects)		World Bank	
Project name		Teacher's Solar Lighting Project	
Country/Countries		Papua New Guinea	
Region		ASIA	
Focal area		Climate Change	
Operational Program or Strategic Priorities/Objectives		6 - Promote Adoption of Renewable Energy by Removing Barriers & Reducing Implementation Costs	
Executing agencies involved		PNG Sustainable Development Program, Ltd.	
NGOs/CBOs involvement		None noted.	
Private sector involvement		The executing agency is a private company with part govt. ownership.	
CEO Endorsement (FSP) /Approval date (MSP)		Jun 13, 2005	
Effectiveness date / project start		Aug 12, 2005	
Expected date of project completion (at start)		2010	
Actual date of project completion		Sep 30 2010	
Project Financing			
		At Endorsement (US \$M)	At Completion (US \$M)
Project Preparation Grant	GEF funding		
	Co-financing		
GEF Project Grant		0.992	0.1637
Co-financing	IA own	0.005	
	Government	0.178 (govt. & PNG Sust. Dev. Program)	
	Other multi- /bi-laterals		
	Private sector	.1176 (Private retailers)	
	NGOs/CSOs	1.9506 (Teachers)	
Total GEF funding		0.992	0.1637
Total Co-financing		1.9506	U/A
Total project funding (GEF grant(s) + co-financing)		2.9426	0.1637
Terminal evaluation/review information			
TE completion date		Oct 11, 2012	
TE submission date		Oct 11, 2012	
Author of TE		Wendy E. Hughes – Task Team Leader (no author specified)	
TER completion date		January 5, 2015	
TER prepared by		Dania M Trespalacios	
TER peer review by (if GEF EO review)		Joshua Schneck	

## 2. Summary of Project Ratings

Criteria	Final PIR	IA Terminal Evaluation	IA Evaluation Office Review	GEF EO Review
Project Outcomes	U	HU	N/R	HU
Sustainability of Outcomes	HU	U	N/R	U
M&E Design	NR	NR	N/R	S
M&E Implementation	MU	MU	N/R	UA
Quality of Implementation	U	NR	N/R	HU
Quality of Execution	U	U	N/R	HU
Quality of the Terminal Evaluation Report	-	-	N/R	MS

## 3. Project Objectives

### 3.1 Global Environmental Objectives of the project:

The Global Environmental Objective is to reduce global carbon emissions by reducing household use of kerosene and diesel fuels, by creating early markets for solar PV household electrification and building the capacity of all market participants to rapidly scale up renewable energy applications in Papua New Guinea. (PD pg. 1)

### 3.2 Development Objectives of the project:

The Development Objective of this project is to improve the lives of rural human services providers by making available affordable, environmentally sound, basic electricity services from renewable energy. This will help improve teacher and health worker retention by reducing isolation (through access to communications) and providing safer and better living conditions (through access to lower-cost, better quality lighting). (PD pg. 1)

The expected outputs of this project include:

- purchase and installation of 2,500 Solar Photovoltaic Panels for teachers in five provinces;
- purchaser training program in place;
- affordable Financial Package for the Purchase of Solar PV lighting kits;
- certified Solar PV catalogue;
- retailers of Solar PV Kits ISO certified and allowed to use PVGAP quality seal; and
- development of national regulations for battery recycling.

(Project Review Sheet pg. 1)

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

There were **no changes** in the Global Environmental and Development Objectives.

#### 4. GEF EO 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.

<b>4.1 Relevance</b>	Rating: <b>Satisfactory</b>
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The project outcomes are consistent with the GEF's Climate Change Focal Area, including Operational Program 6, since it directly contributes to wider use of renewable energy technologies in rural power supply, especially for off-grid household electrification. (PD pg. 3) The project directly contributes to the GEF business plan indicators of Increased Access to Local Sources of Financing (CC2) and to Productive Uses of Renewable Energy (CC4). (PD pg. 1)

The project is consistent with Papua New Guinea's priorities. Papua New Guinea ratified UNFCCC on March 15, 1993. (PD pg. 2) Provision of lighting in rural Papua New Guinea (PNG) is mostly through diesel or kerosene lamps, which is very expensive. Solar Photovoltaic (PV) electricity, in the form of solar house lighting kits (SHLK), can provide a less-costly, higher-quality and more reliable lighting option than kerosene lighting or dry cell battery lighting. (PD pg. 1) The project concept originated with the Department of Education's Teacher Education and Staff Development Division, and directly responds to an ongoing crisis in teacher retention faced by the national Departments of Education and the various Provincial Divisions of Education. (PD pg. 2) This project enjoys the support and endorsement of all Papua New Guinea's government agencies engaged in rural development and rural education, including the Department of National Planning and Rural Development, the Department of Education, the Department of Environment and Conservation, the Department of Health, the Department of Provincial Affairs, the Department of Treasury, the Department of Petroleum and Energy, and the local governments of the five provinces targeted by the pilot project. The project is fully consistent with Papua New Guinea's Medium Term Development Strategy, both of which stress the importance of maintaining the quantity and quality of primary school teachers at rural district and sub-district levels. (PD pg. 2-3)

<b>4.2 Effectiveness</b>	Rating: <b>Highly Unsatisfactory</b>
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The TE rates the progress to achieving grant objectives as highly unsatisfactory, and the TER reviewer concurs.

By the midterm point of the project in January of 2009, and also by the end of the project, only one solar PV loan was completed (processed in 2008), falling dramatically short of the original goal of 2,500 solar PV loans. (TE pg. 3) By the end of 2008, only 10% of project funds had been disbursed, instead of the planned goal of 90%. (TE pg. 1)

The TE does not comment on the expected outcomes of battery recycling regulations, purchaser training programs, certified catalogues, kits and quality seals, and other expected deliverables. From the TE narrative, it is concluded that that these project components were never realized. The TE explains that a combination of flawed project design and weak implementation impeded the project from “getting off the ground”. (TE pg. 6)

The project outcomes have not been achieved, and the project had little to no effect on the problems it was intended to address. (TE pg. 4) Project effectiveness is rated highly unsatisfactory.

<b>4.3 Efficiency</b>	Rating: <b>Highly Unsatisfactory</b>
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The TE rates the project efficiency as unsatisfactory, but does not provide much supporting evidence or detail for this rating. (TE pg. 7) The project was approved on August 2005, and expected to be completed in 2010. But the project was not effectively launched until 2008. (TE pg. 1) There were significant delays in project implementation. Weak supervision during the first two years of the project meant that starting delays had a significant negative impact on the overall project. (TE pg. 6) The project was closed in 2010, with almost nothing accomplished. Due to the three year delay, and the lack of any substantial accomplishments, efficiency is rated highly unsatisfactory.

<b>4.4 Sustainability</b>	Rating: <b>Unlikely</b>
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The TE rates the arrangements for project sustainability as unsatisfactory, and states that the project’s poor performance has led to no specific follow-up actions. (TE pg. 1, 6) The TE also rates replicability as unlikely, and states that replication should not be attempted unless there is significant further work done on affordability and access to realistic sources of financing. (TE pg. 7)

Risks to the sustainability of project outcomes is further assessed along the following four dimensions:

**Financial Risks – Sustainability Unlikely**

The TE suggests that there are no “realistic” sources of financing. (TE pg. 7) Teachers do not earn sufficient salaries to afford the solar lighting systems, thus they would not borrow loans for these products. (TE pg. 3)

**Socio-political Risks – Sustainability Unable to Assess**

The TE does not provide any information on socio-political risks.

**Environmental Risks- Sustainability Unable to Assess**

The TE does not provide any information on environmental risks

**Institutional Risks – Sustainability Moderately Unlikely**

The demand for solar home systems on the part of teachers has proven very low. There is also a very low demand on the part of retailers to open outlets and provide maintenance and repair services. (TE pg. 3)

The TE does report two positive outcomes that may have contributed to the project’s continued future sustainability: (1)the presence of more solar PV retailers active in the market and the

rise in demand for solar PV, and (2) the improvements in the PNG Teachers Savings and Loan Society’s financial management processes. (TE pg. 1, 6) However, neither of these two outcomes is significant enough to ensure the sustainability of any project activities. Sustainability is rated as unlikely.

## 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?

The original co-financing expected for this project represented 66% of the total expected project cost. However, only 16% of total project funds were actually disbursed, and TE does not assess what the effects of co-financing were on project outcomes and project sustainability.

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?

There were significant delays in project implementation. This five year project was approved in 2005, and expected to be completed in 2010. The GEF Grant Agreement was signed on 12 August 2005 between the World Bank and PNG SEL, yet the project was not effectively launched until 30 July 2008. (TE pg. 1) Weak supervision during the first two years of the project meant that starting delays had a significant negative impact on the overall project. (TE pg. 6)

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:

Unable to assess. The TE reports that the project was designed with little input from the Government. (TE pg. 6) However, the Project Document states that various government agencies supported the project, and provides letters signed by 3 government Departments, SEL and TSL expressing support for the project. (PD pg. 43-54)

## 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: <b>Satisfactory</b>
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The TE does not rate M&E Design. This TER rates M&E Design as satisfactory. The Project Document prescribes a quarterly project management reporting cycle, with annual financial and management audits, and biannual reports from the executing agency. The PD describes what kinds of M&E activities will be performed by the project participants, including TSL, participating SHLK retailers and purchasers, the Department of Environment, and the Project Management Unit. The PD includes a Project Log Frame that lists indicators for the project's outcomes and outputs, and the means of verification of these. (PD pg. 23) The Project Implementation Plan notes in 6 month intervals in which project activities are expected to be completed. (PD pg. 33) The PD considers the baseline for several project components. (PD pg. 30) Funds and a time frame was designated for a mid-term evaluation, though no final evaluation is mentioned. (PD pg. 19, 36)

It seems that the M&E plan at entry is mostly practicable and sufficient, with parties and funds designated for data collection and reporting, indicators and timelines specified. The TE does not comment on the design of M&E systems. Evidence from the Project Document suggests that M&E Design is satisfactory.

<b>6.2 M&amp;E Implementation</b>	Rating: <b>Unable to assess</b>
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There were 3 PIRs completed during 2007 and 2010, as well as a midterm review and a final evaluation. The TE does not rate M&E Implementation, and comments on it only once, in discussing that it was the responsibility of the executing agency. (TE pg. 3) There is insufficient information to assess the quality of M&E implementation.

## 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.

<b>7.1 Quality of Project Implementation</b>	Rating: <b>Highly unsatisfactory</b>
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Although the TE does not directly rate the quality of the World Bank's performance, it mentions that World Bank supervision was weak, and rates the overall progress of the implementation of activities as highly unsatisfactory. (TE pg. 2) The TE rates project management, financial management, and procurement as unsatisfactory or moderately unsatisfactory. (TE pg. 5) The TE notes that the project had significant and unsatisfactory shortcomings both in its design and execution. (TE pg. 1)

The TE notes that the World Bank's limited involvement in project planning and in the understanding of the project was noticeable even during project preparation. (TE pg. 3) A lack of sufficient data and/or assessment of the "on the ground" situation led to a weak design. (TE pg. 6) The World Bank had a poor understanding of the target beneficiary market: the project

aimed for teachers to borrow from their credit union to pay for new solar lighting systems, but teachers were largely over-borrowed, and did not earn sufficient salaries to afford the lighting systems. (TE pg. 3)

It seems the World Bank did not apply previous lessons learned. The World Bank relied on PNG's Teacher Savings and Loan Society (TSL) to provide loans for purchasing SolarPV systems, but it gave the responsibility of marketing, promotion, technical support and M&E to PNG's Sustainable Energy Limited (SEL). Previous IFC experience of working directly with commercial lending institutions suggests that the institution itself needs to take on these responsibilities. (TE pg. 3) The TE observes that the project outputs were unlikely to be achieved in the original project schedule of 5 years because of the significant capacity building needed in both SEL and TS. (TE pg. 3) It seems the World Bank did not consider the challenges of this lack of capacity, or did not plan for them accordingly.

There are two lessons given in the TE: (1) undertake realistic assessment of demand, affordability and implementation capacity during project preparation, and (2) engage the appropriate government departments. (TE pg. 7) Both of these lessons indicate poor planning and preparation on the part of the World Bank.

The World Bank's supervision was weak from project start through the midterm review. The Bank's weak supervision is particularly unexpected because the project's original risk rating was substantial, due to the uncertainty of the success of the new technology and the unknown interest of its potential retailers, and because of the lack of capacity of the executing agency and its partners. This high risk situation merited particularly close initial supervision, not the opposite. Weak supervision during the first two years of the project meant that starting delays had a significant negative impact on the overall project. (TE pg. 6)

The TE reports that poor and problematic project preparation and design, and unsatisfactory project supervision and support from the start of the project, resulted in a complete failure to achieve any project activities. Thus, the quality of project implementation is rated highly unsatisfactory.

<b>7.2 Quality of Project Execution</b>	Rating: <b>Highly Unsatisfactory</b>
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The executing agency for this project is PNG Sustainable Development Program Ltd. (PNGSDP), a private company with part Government ownership. PNGSDP delegated project execution to their energy subsidiary, PNG Sustainable Energy Limited (PNG SEL), which would also house the Management Unit (PMU) responsible for the management of the project. (PD pg. 10-11) The project also designated Papua New Guinea's Teachers Savings and Loan Society (TSL) as a financial intermediary, which would be responsible for directly offering loans to teachers for the purchase of solar PV systems. (PD pg. 11)

The TE reports that there was weak institutional support and communication between SEL and the World Bank. (TE pg. 3) SEL was unfamiliar with the World Bank's procurement, procedures and guidelines, and suffered from high staff turnover. Apparently, communication between SEL, the World Bank, the Department of Education and TSL were weak, and relationships presented challenges for implementation.

The project relied on TSL for providing loans, but TSL's management information system (MIS) was insufficiently equipped to handle this responsibility. This caused extensive delays in implementation as a new MIS was designed and installed, and staff was trained, before any loans could be processed, or even before the project could be formally publicly launched. As a result, the start of project activities were delayed by three years, from 2005 to 2008. At least one positive result of this project is the increased capacity and functioning MIS of TSL. (TE pg. 1)

The TE rates the performance of the implementing agency as weak. (TE pg. 1) It is clear that SEL did not communicate effectively with either the World Bank or TSL, and that TSL was poorly prepared to implement this project. Thus, the quality of project execution is rated highly unsatisfactory.

## 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.

There were no changes in environmental stress or environmental status.

**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.

There were no changes in human well being.

**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 TE reports the following changes in capacity:
  - There are more solar PV retailers active in the market and their business is growing. Demand for solar PV is high. (TE pg. 1)



- The project contributed to some improvements in the PNG Teachers Savings and Loan Society's financial management processes. (TE pg. 6)

b) Governance – There were no changes in governance reported by the TE.

**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.

The TE does not report any unintended impacts.

**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.

The TE does not report any GEF initiatives adopted at scale.

## 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 TE lists the following lessons learned:

- Realistic evaluation of the costs and benefits, implementation capabilities and actual demand for such a program should be undertaken prior to launching any similar project. (TE pg. 6)

9.2 Briefly describe the recommendations given in the terminal evaluation.

The TE lists two recommendations. One given to stakeholders: Undertake realistic assessment of demand, affordability and implementation capacity during project preparation. The second is given to the World Bank management: Engage the appropriate government departments (Department of Planning and Monitoring, Department of Petroleum and Energy) in future efforts to expand access to electricity. (TE pg. 7)

## 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 EO 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 TE reports the relevant outcomes and impacts of the project, and reports on the achievements of objectives.	HS
To what extent is the report internally consistent, the evidence presented complete and convincing, and ratings well substantiated?	The TE is internally consistent, and the ratings are well supported. However, the TE could have provided more evidence to support the ratings, particularly since the project was so unsuccessful. There is one area in which the TE does not appear consistent: it states that the project was designed with little input from the Government. (TE pg. 6) However, the Project Document provides copies of letters signed by 3 government Departments, SEL and TSL expressing support for the project. (PD pg. 43-54) Also, the TE does not rate M&E implementation.	MS
To what extent does the report properly assess project sustainability and/or project exit strategy?	The TE comments on project sustainability, original risks, and risks at the end of the project. But there is no information on exit strategy.	MS
To what extent are the lessons learned supported by the evidence presented and are they comprehensive?	The lessons learned are supported by the evidence. However, the TE could provide more information on why such clear lessons were not immediately grasped by the implementing agency.	S
Does the report include the actual project costs (total and per activity) and actual co-financing used?	The TE reports on actual project costs, but does not report on co-financing, and does not report on co-financing.	MU
Assess the quality of the report's evaluation of project M&E systems:	The TE does not discuss or evaluate the project's M&E system, and mentions M&E only once in passing.	HU
<b>Overall TE Rating</b>		<b>MS</b>

$$0.3 \times (a + b) + 0.1 \times (c + d + e + f) = 0.3(10) + 0.1(13) = 3 + 1.3 = 4.3 \sim MS$$

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

No other sources of information were used in the preparation of this TE, other than the Project Document, the Project Review Sheet, the TE, and PIRs.