





PROMOTING ENERGY EFFICIENCY IN RESIDENTIAL AND PUBLIC SECTOR IN NIGERIA

TERMINAL EVALUATION FINAL REPORT

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DATE OF THE REPORT: 18 FEBRUARY 2016

ABBREVIATIONS / ACRONYMS	DEFINITION
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CFL	Compact Fluorescent Lamp
CO2	Carbon Dioxide
СРАР	UNDP Country Programme Action Plan
CPC	Consumer Protection Council
ECN	Energy Commission of Nigeria
ECOWAS	Economic Community of West African States
EDAN	Electrical Dealers Association of Nigeria
EE	Energy Efficiency
EESC	Energy Efficiency Steering Committee
FGN / GoN	Federal Government of Nigeria
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIZ	German Agency for International Cooperation
IMDR	Importers, manufacturers, distributors, retailers
LFA	Logical Framework Analysis
M&E	Monitoring and Evaluation
MAN	Manufacturers Association of Nigeria
MEPS	Minimum Energy Performance Standard
NCEEC	National Centre for Energy Efficiency & Conservation
NERC	Nigerian Electricity Regulatory Commission
NOA	National Orientation Agency
PHCN	Power Holding Corporation of Nigeria

PIR	Project Implementation Review
PTFP	Presidential Task Force on Power
S&L	Standards and Labels
SON	Standards Organisation of Nigeria
UNDAF	United Nations Development Action Framework
UNDP	United Nations Development Programme
USD	United States Dollar

Table of Contents

1	EXEC	CUTIVE SUMMARY6	
	1.1	Project Summary Table 6	
	1.2	Project Description7	
	1.3	Evaluation Rating Table9	
	1.4	Summary of Conclusions and Recommendations9	
	1.4.1	Key Conclusions	9
	1.4.2	Key Recommendations	10
2	Intro	duction11	
	2.1	Purposes, Objectives and Scope of the evaluation11	
	2.2	Approach and Methodology12	
	2.2.1	Evaluation Questions	13
	2.3	Project Summary Table15	
	2.4	Limitations of the Evaluation16	
3	Proje	ect Description and Development Context16	
	3.1	Project Start and Duration16	
	3.2	Problems that the Project Sought to Address16	
	3.3	Immediate and Development Objectives of the Project17	
	3.4	Baseline Indicators Established17	
	3.5	Main stakeholders22	
	3.6	Expected Results26	
4	Findi	ngs28	
	4.1	Project Design / Formulation28	
	4.1.1	Analysis of Logical Framework Analysis (LFA) /Results Framework	28
	4.1.2	Assumptions and Risks	29
	4.1.3	Lessons from other Relevant Projects	29
	4.1.4	Planned Stakeholder Participation	30
	4.1.5	Replication Approach	30
	4.1.6	UNDP Comparative Advantage	31
	4.1.7	Linkages between Project and other Interventions within the Sector	31
	4.1.8	Management Arrangements	32
	4.2	Project Implementation	

	4.2.1 Manage	Adaptive Management and Feedback from M&E activities used for Adaptive ment	32
	4.2.2 country,	Partnership Arrangements (with relevant stakeholders involved in the /region)	33
	4.2.3	Project Finance	34
	4.2.4 assessm	Monitoring and evaluation: design at entry (*), implementation (*), and overall nent (*)	37
	4.2.5 overall p	Implementing Agency (UNDP) execution (*) and Executing Agency execution (³ project implementation/ execution (*)	*), 39
	4.3	Project Results40	
	4.3.1	Overall Project Outcome Rating (*)	40
	4.3.2	Relevance (*)	42
	4.3.3	Effectiveness (*)	43
	4.3.4	Efficiency (*)	44
	4.3.5	Country ownership	44
	4.3.6	Mainstreaming	45
	4.3.7	Sustainability*	46
	4.3.8	Impact	48
5	Conc	lusions and Recommendations49	
	5.1	Conclusions49	
	5.1.1	General Conclusions	49
	5.1.2	Project Design / Formulation	49
	5.1.3	Project Implementation	50
	5.1.4	Project results	50
	5.2	Recommendations51	
6	Anne	xes52	
	6.1.1	Itinerary	52
	6.1.2	List of Persons Consulted	52
	6.1.3	Summary of Field Visits	53
	6.1.4	List of documents reviewed	54
	6.1.5	Evaluation Questionnaire	55
	6.1.6	Evaluation Question Matrix	60
	6.1.7	Evaluation Consultant Agreement Form	63
	6.1.8	Evaluation Report Clearance Form	64
	6.1.9	Terms of Reference	65
	6.1.10	GEF Tracking Tool	91

1 EXECUTIVE SUMMARY

1.1 Project Summary Table

Project Summary is shown in Table 1.

Table 1 Project Summary Table

Project Title:	Project Title: Promoting Energy Efficiency in Residential and Public Sector in Nigeria				
GEF PI	roject ID:	3794 (PMIS#)		<u>at endorsement</u> <u>(Million US\$)</u>	<u>at completion</u> (Million US\$)
UNDP PI	roject ID:	4122 (PIMS#) 00075698 (Atlas ID)	GEF financing:	2,667,273	2,645,709
Coι	untry:	Nigeria	Implementing/ Executing Agency own:	107,000 (ECN)	107,000
Re	gion:	Africa	Government:	5,000,000 (NGA) 1,082,796 (ECN)	- 1,082,796
Focal	Area:	Climate Change	Other:	200,000 (UNDP) 819,463 (Cuban	519,596 289,269 (GIZ) 819,463 (Cuban
FA Objec (OP	tives, P/SP):	Conservation and Efficiency/ Transforming GHG Markets	Total co-financing:	7,102,259	2,817,824
Exec Ag	cuting ency:	Energy Commission of Nigeria	Total Project Cost:	9,769,532	5,463,533
	Other	Federal	ProDoc Signature	(date project began):	April 2011
Par invc	rtners blved:	Ministry of Environment, National Centre for Energy Efficiency and Conservation, and Standards Organisation of Nigeria	(Operational) Closing Date:	Proposed: April 2015	Actual: September 2015

1.2 Project Description

PROMOTING ENERGY EFFICIENCY IN RESIDENTIAL AND PUBLIC SECTOR IN NIGERIA project was designed to reduce energy-related CO2 emissions in the residential and public sectors in Nigeria through the introduction of Minimum Energy Performance Standards (MEPS) for new electrical equipment and appliances. It was a four-year project that started in September 2011 and ended in September 2015. This project was funded by Global Environmental Facility (GEF) and supported by UNDP, with Energy Commission of Nigeria (ECN) being the implementing partner. The total budget at the time of inception was approximately USD 1 million though only half a million was actually spent due to unavailability of the co-financing from the Government of Nigeria (GoN).

Power production shortfalls and the poor quality of electricity supply in Nigeria means that the majority of businesses and households rely on alternative forms of electricity, mostly diesel generators as a primary or back-up source of electricity. The country has been unable to keep up with the demand of electricity because the production is unable to catch up with the demand. Coupled with the above, the demand for appliances and end-use equipment continues to grow under the combined cumulative effect of urban population growth and the growth in economic activity.

Reduced energy consumption in the public and residential sector offers two-fold benefits. On the one hand, it allows for a reduced demand improving the availability and reliability of electricity and on the other, it helps in reducing the GHG emissions related to electricity production. In order to reduce demand, many countries in the region have introduced energy efficiency programmes. For consumer products, labelling and minimum energy performance standards (MEPS) have been shown to be highly effective approaches to improve energy efficiency.

Within this context, the promotion of a large scale, concrete, national energy efficiency programme was thought to be a critical demand-side initiative to help reduce the energy consumption of a series of major end-uses, in particular air-conditioners, refrigerators and lighting and this project was designed to address some of these problems.

The project was divided into 4 implementation components (defined as outcomes) with several outputs under each outcome. These are summarised as follows.

Outcome 1: Capacities of all relevant stakeholders at national level regarding the concept, nature and potential of energy efficiency in the residential and public sector are enhanced (or strengthened)

Output 1.1: Energy & GHG savings potential for each main end-user in the residential and public sector validated

Output 1.2: Monitoring and data collection system for end-use sales, energy demand and energy consumption is formalized and implemented.

Output 1.3: Awareness of the political and policy decision makers on end-use energy efficiency options and potential for GHG reductions enhanced

Output 1.4: EE Appliances Codes drafted and approved

Outcome 2: Development of new energy efficiency legal requirements for a series of end-use equipment in Nigeria.

Output 2.1: National testing center established and certification procedures to promote energy efficiency defined

Output 2.2: Pilot program to test launched and appropriate energy efficiency schemes such as energy labels finalized

Output 2.3: National labeling content and format is designed, tested, validated and adopted

Output 2.4: A relevant multiyear timetable to assure a coherent implementation established

OUTCOME 3: Training of professional stakeholders and public outreach activities & enforcement of the new energy efficiency legislation

Output 3.1: The energy efficiency requirement (through Codes, Standards, Labels or a combination of them) are duly enforced, deeply transforming the end-use market

Output 3.2: The new regulations are understood and adopted by local importers, manufacturers, distributors and the retail chain.

Output 3.3: Energy efficiency becomes priority in the purchase of any equipment.

Output 3.4: Impact of the new energy efficiency measures/legislation are monitored

Outcome 4: Transform the lighting market: promotion of energy savings lamps

Output 4.1: A large scale pilot campaign for energy efficient lamps completed. A minimum of 1 million CFLs disseminated in households, commercial and public services in partnership with Government of Cuba.

Output 4.2: Financial incentives provided to pro-active local importers and traders to sell EE lighting products

Output 4.3: compact fluorescent lamps are recycled for the elimination of mercury according to international best practices

There is a fifth outcome which is related to project management and monitoring and evaluation.

1.3 Evaluation Rating Table

The summary of the evaluation ratings is given in Table 2.

Evaluation Ratings:				
1. Monitoring and Evaluation	Rating	2. IA & EA Execution	Rating	
M&E design at entry	Moderately Satisfactory	Quality of UNDP Implementation – Implementing Agency (IA)	Satisfactory	
M&E Plan Implementation	Moderately atisfactory	Quality of Execution - Executing Agency (EA)	Satisfactory	
Overall quality of M&E	Overall quality of M&E Moderately Overall quality of Implementation / Execution Satisfactory Satisfactory Satisfactory		Satisfactory	
3. Assessment of Outcomes	Rating	4. Sustainability	Rating	
Relevance	Relevant	Financial resources	Moderately Likely	
Effectiveness	Satisfactory	Socio-political	Moderately Likely	
Efficiency	Highly Satisfactory	Institutional framework and governance	Likely	
Overall Project Outcome Rating	Satisfactory	Environmental	Likely	
		Overall likelihood of sustainability	Moderately Likely	

Table 2 Summary of Evaluation Ratings

1.4 Summary of Conclusions and Recommendations

1.4.1 Key Conclusions

• The project "PROMOTING ENERGY EFFICIENCY IN RESIDENTIAL AND PUBLIC SECTOR IN NIGERIA" has achieved significant results even though there were some aspects of the project that could be improved.

- One of the most notable outcomes of the project is the setting up and adoption of MEPS in lighting and refrigeration products by the Standards Organisation of Nigeria (SON) and Nigeria Customs Service.
- Stakeholder participation was one of the strong points of this project with stakeholders having been consulted at every stage of the project. In fact, stakeholders have implemented several aspects of the project.
- Project Finance was one of the aspects of the project that did not go according to the original plan. The main issue was the co-finance from the government which was not available as originally promised, affecting the outputs.
- The project has been successful in achieving its objectives considering that almost half of the total budget (US\$5 mil GoN co-finance) was not available.
- Awareness about energy efficiency is important as enforcement of performance standards will only achieve desired results if the consumer is well aware of the benefits of using energy efficiency appliances.

1.4.2 Key Recommendations

- 1. The Government of Nigeria needs to support SON and needs to provide necessary funding in order to maintain and enhance S&L implementation.
- 2. Organisations such as the Consumer Protection Council (CPC) should continue and consolidate awareness campaigns to target the relevant stakeholders after the end of the project to achieve the desired results of adoption of energy efficient appliances.
- 3. Capacity building across the sector and stakeholder groups in the areas such as consumer behaviour in relation to use of appliances, manufacturers and suppliers of appliances on MEPS and S&L, and institutional capacity in implementing MEPS and other standards need to continue in order to ensure sustainability.
- 4. Roles and responsibilities of the National Centre for Energy Efficiency and Conservation (NCEEC) and SON need to be clearly defined in terms of who does what so that efforts are not duplicated and SON benefits from NCEEC's expertise.
- 5. Monitoring / project reporting for future projects run by UNDP needs to identify challenges and shortcomings in the project as well as reporting positive progress.
- 6. For future UNDP projects, the Logical Framework needs to be designed so that all indicators and targets are clearly defined and suitable and realistic means of verification are chosen and detailed.
- 7. A stakeholders meeting should be organised by ECN after the terminal evaluation to discuss the way forward for future activities.
- 8. UNDP should carry out a study in order to quantify and detail the impacts of the project.

2 INTRODUCTION

2.1 Purposes, Objectives and Scope of the evaluation

The purposes of the Terminal Evaluation of the project "PROMOTING ENERGY EFFICIENCY IN RESIDENTIAL AND PUBLIC SECTOR IN NIGERIA" are many fold. They are to:

- add to promote accountability and transparency, and to assess and disclose the extent of project accomplishments.
- synthesize lessons that can help to improve the selection, design and implementation of future GEF financed UNDP activities.
- provide feedback on issues that are recurrent across the UNDP portfolio and need attention, and on improvements regarding previously identified issues.
- contribute to the overall assessment of results in achieving GEF strategic objectives aimed at global environmental benefits.
- gauge the extent of project convergence with other UN and UNDP priorities, including harmonization with other UN Development Assistance Framework (UNDAF) and UNDP Country Programme Action Plan (CPAP) outcomes and outputs.

The main **objective** of the terminal evaluation (TE) is to assess whether the project has achieved or is likely to achieve the project objectives. The evaluation is required to assess the project performance against the five evaluation criteria: **relevance**, **effectiveness**, **efficiency**, **sustainability and impact**.

Criteria	Definition ¹
Relevance	The extent to which the objectives of a development intervention are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donors' policies.
Effectiveness	The extent to which the development intervention's

The definitions of the evaluation criteria to be assessed are given below:

¹ Mostly based on the UNDP-GEF TE Guidelines

	objectives were achieved, or are expected to be achieved	
Efficiency	A measure of how economically the resources and inputs (funds, expertise, time) are converted to results	
Sustainability	The likelihood of continued benefits after the project ends.	
Impact	Verifiable improvements in ecological status and verifiable reductions in stress on ecological systems	

The TE is also expected to draw lessons and develop recommendations that may help in improving the selection, enhancing the design and implementation of similar future projects and activities in the country, improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

The scope of the evaluation covers an assessment and analysis of the relevance, effectiveness, efficiency, sustainability, and impact of the project, covering areas such as project design, monitoring and evaluation, attainment of outcomes, implementing partner and executing agency execution, management arrangements, work planning, finance and co-finance, stakeholder engagement, reporting, communications, etc.

2.2 Approach and Methodology

The Terminal Evaluation was undertaken in a participatory manner in which the key stakeholders were consulted throughout the evaluation process. The evaluation was guided by the key evaluation criteria mentioned earlier.

The TE assessed if the corresponding programmed activities were carried out for the outputs contemplated in the logical framework for the project. The evaluation used a variety of methods to ensure an evaluation based on qualitative and quantitative information and on sources such as desk studies, literature review, individual interviews and direct observation.

The independent in-depth evaluation used the three main tools for the evaluation: Review of Documents, Interviews with Project Team and Stakeholders, and Observations in the field. The evaluation used a participatory approach integrating semi-structured interviews with stakeholders building on a desk review of project documents.

The interviews included Energy Efficiency Steering Committee (EESC) members, relevant project staff, focal points, government officials and institutional partners. This constituted most of the key stakeholders. The visits included all the field and project sites and no sampling was necessary. The list of stakeholders consulted and the project sites visited are provided in Annex 6.1.2.

The following are the key questions used during the evaluation – these questions were used as the basis of conversations and observations, and were not necessarily asked in their form presented here. The detailed Evaluation Question Matrix is presented in Annex 6.1.6.

GENERAL Questions:

- 1. What is your responsibility area with respect to the EE Nigeria project?
- 2. What activities have you and your organization been directly involved with?
- 3. How long have you been working for or cooperating with the project?
- 4. Who are your primary counterparts and/or colleagues in the project?

PROJECT DESIGN (Relevance):

How does the project relate to the main objectives of the GEF focal area, and to the environment and development priorities at the local, regional and national levels?

- 1. How would you describe the project objectives?
- 2. Did the project objectives change during the course of the project?
- 3. How do the project objectives and purpose match your organisation's objectives?

PROJECT IMPLEMENTATION (Effectiveness):

To what extent have the expected outcomes and objectives of the project been achieved?

- 1. Were the project objectives achieved?
- 2. Did the project make a positive impact on the community what?

3. Has the institutional capacity and awareness, and information on EE for appliances increased?

4. Have there been improvements made by the Government in the National EE policy and regulatory framework?

PROJECT IMPLEMENTATION (Efficiency):

Was the project implemented efficiently, in line with international and national norms and standards?

1. Do you think the money that went into the effort was worth it? Do the ends justify the means?

2. Were the project funds well managed?

3. Was there good coordination and cooperation among the participants involved in the community project?

4. Did the project implementation team remain the same or was there a lot of staff turnover?

5. Were the activities carried out timely and according to work plans?

6. Are you aware of any financial, legal or other project implementation concerns with respect to the activities?

7. If you could start over again, would you implement the project differently? How?

PROJECT IMPACT (Impact):

Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status?

1. What has happened as a consequence of the project?

- 2. What practical improvements have there been as a result?
- 3. Can the project impacts be quantified?
- 4. How many people have directly benefited from the project activities?

5. Did the pilot project help to influence environmental and development policies programmes and plans in the country?

PROJECT IMPACT (Sustainability):

To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results?

1. Is the project effort continuing after the end of GEF funding / end of the project?

2. Who will take a lead in continuing this work? Is there an enough commitment from them?

3. Have any of the project efforts been replicated (or starting to replicate) in other communities?

4. Are there efforts under way to find new sources of funding to continue and expand the activities that were started under this project and not yet finished?

5. Were there public awareness and outreach efforts? And how effective was the project in attracting public attention?

The evaluation team have used ratings for each of the criteria for the project based on the findings of the analysis.

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undp p	roject ID:	4122 (PIMS#) 00075698 (Atlas ID)	GEF financing:	2,667,273	2,645,709
Со	untry:	Nigeria	Implementing/ Executing Agency own:	107,000 (ECN)	107,000
R	egion:	Africa	Government:	5,000,000 (NGA)	-
		Amca		1,082,796 (ECN)	1,082,796
Focal	Area:		Other:	200,000 (UNDP)	519,596
		Climate			289,269 (GIZ)
		Change		819,463 (Cuban Embassy)	819,463 (Cuban Embassy)
FA Objec (Ol	ctives, P/SP):	Conservation and Efficiency/ Transforming GHG Markets	Total co-financing:	7,102,259	2,817,824
Exe Ag	cuting Jency:	Energy Commission of Nigeria	Total Project Cost:	9,769,532	5,463,533
	Other	Federal	ProDoc Signature	(date project began):	April 2011
Pa	rtners	Ministry of	(Operational) Closing	Proposed:	Actual:
	orvea.	National Centre for Energy Efficiency and Conservation, and Standards Organisation of Nigeria	Date:	April 2015	September 2015

2.3 Project Summary Table

2.4 Limitations of the Evaluation

Even though many key stakeholders were visited, it was not possible to meet some of the stakeholders such as Electrical Dealers Association of Nigeria (EDAN) and Manufacturers Association of Nigeria (MAN) due to availability issues and hence their perspectives could not be incorporated in the report.

3 PROJECT DESCRIPTION AND DEVELOPMENT CONTEXT

3.1 Project Start and Duration

While the project officially started in April 2011 (Project Document was signed on the 11th of April 2011), the effective start month was September 2011 and the Inception Workshop was organized in May 2011. The end of the project was planned to be April 2015 but the project end date was postponed until September 2015 because of the late start of the project (according to a Steering Committee meeting report).

3.2 Problems that the Project Sought to Address

The project was designed to reduce energy-related CO₂ emissions in residential and public sectors in Nigeria through the introduction of Minimum Energy Performance Standards (MEPS) for new equipment and appliances.

Power production shortfalls and the poor quality of electricity supply in Nigeria means that the majority of businesses and households rely on alternative forms of electricity, mostly diesel generators as a primary or back-up source of electricity. The country has been unable to keep up with the demand of electricity because the production is unable to catch up with the demand. Coupled with the above, the demand for appliances and end-use equipment continues to grow under the combined cumulative effect of urban population growth and the growth in economic activity.

Reduced energy consumption in the public and residential sector offers two-fold benefits. On the one hand, it allows for a reduced demand improving the availability and reliability of electricity and on the other, it helps in reducing the GHG emissions related to electricity production. In order to reduce demand, many countries in the region have introduced energy efficiency programmes. For consumer products, labelling and minimum energy performance standards (MEPS) have been shown to be highly effective approaches to improve energy efficiency. Many barriers, however, prevent the implementation of a labelling and minimum energy performance standards program and the penetration of higher efficiency appliances in Nigeria. Some of the barriers are:

- Limited or lack of awareness of the potential of energy efficiency and its importance
- Very limited knowledge in government agencies on how to implement MEPS and Labelling

- Limited capacity in developing and implementing the legal frameworks for energy efficiency of appliances
- Lack of research and data on energy usage

Within this context, the promotion of a large scale, concrete, national energy efficiency programme is a critical demand side initiative to help reduce the energy consumption of a series of major end-uses, in particular air-conditioners, refrigerators and lighting and this project aims to address this problem.

3.3 Immediate and Development Objectives of the Project

According to the Logical Framework for the project, the ultimate objective of the project is:

"To improve the energy efficiency of appliances in Nigeria, especially in the residential and public sector, through the introduction of an EE legislation and Standards & Labels."

3.4 Baseline Indicators Established

The Project Document describes the Project Outcomes, **a number of outputs** under each Outcome, the indicators of the achievement of the individual outputs and outcomes and the baseline at the project inception. This is part of the Logical Framework analysis for the project. This is presented in Table 3.

Table 3 Baseline Indicators

Strategy	Indicators	Baseline
Project Objective: To improve the energy efficiency of appliances in Nigeria, especially in the residential and public sector, through the introduction of an EE legislation and standards & labels	 Reduction in electricity used Reduction in CO₂ emissions Increased number of appliances with EE standards & labels MEPS adhered to in government procurements Importers, manufacturers, distributors, retailers (IMDR) and consumers adopt EE practices 	 Very few appliances have incorporated EE standards and labels Govt. procurement programs in public sector do not specify minimum EE performance standards IMDR professionals and engineers and consumers do not understand basic EE principles
Outcome 1: Capacities of all relevant stakeholders at national level regarding the concept, nature and potential of energy efficiency in the residential and public sector are enhanced (or strengthened)	 EE Appliance Unit at NCEEC fully functional All key stakeholders (Politicians, lawmakers, Govt. agencies, Consumer Support Organisations, IMDR professionals) trained in EE principles EE being considered in public and household procurements Increased number of EE appliances in domestic market Increase awareness on EE concept among policy makers, legislators and civil society 	 No EE regulatory or institutional framework Limited S&L for appliances Influx of inefficient secondhand appliances into Nigerian market Influx of substandard appliances into the domestic market Dominant use of incandescent light bulbs and other inefficient appliances
Output 1.1: Energy & GHG savings potential for each main end-users in the residential and public sector validated	Inventory of baseline data from sale and import sources	Limited inventory on baseline data (sale volume, GHG emission, energy rating and consumption)

Strategy	Indicators	Baseline
Output 1.2: Monitoring and data collection system for end-use sales, energy demand and energy consumption is formalized and implemented.	Baseline data (brand, energy rating, electricity consumption, GHG emissions) from individual households and public building surveyed and monitored	Lack of clear validated baseline at the household and public building level
Output 1.3: Awareness of the political and policy decision-makers on end-use energy efficiency options and potentials for GHG reductions enhanced	 Politicians and lawmakers trained in EE policy and legislations and benefits Intensified campaign for EE appliances by govt. officials 	Lack of understanding of the social, economic and environmental benefits of EE demand side practices
Output 1.4: EE Appliances Codes drafted and approved	Drafting and submission of EE Appliances Code	No EE regulations currently exist in for appliances design, manufacturing and import
Outcome 2: Development of new energy efficiency legal requirements for a series of end-use equipment in Nigeria.	Draft application decrees necessary to make the EE Appliances Code mandatory	No regulatory framework exists to mandate EE Appliances Code
Output 2.1: National testing center established and certification procedures to promote energy efficiency defined	Testing center established	Lack of international accredited testing center
Output 2.2: Pilot program to test launched and appropriate energy efficiency schemes such as energy labels finalized	 Testing and measurement of energy consumption in sample appliances Minimum energy performance standards set for appliances 	Very limited data on the applicability of international EE standards and labels
Output 2.3: National labeling content and format is designed, tested, validated and adopted	Design of S&L accepted and adopted	Lack of clear S&L in Nigeria
Output 2.4: A relevant multiyear timetable to assure a coherent implementation established	 Acceptance of the S&L by the market Timely reporting and monitoring of the project 	No review on the effectiveness of the S&L in the market

Strategy	Indicators	Baseline
OUTCOME 3: Training of professional stakeholders and public outreach activities & enforcement of the new energy efficiency legislation	Number of demonstration projectsNumber of professionals trained	Limited availability of EE technical information and training
Output 3.1: The energy efficiency requirement (through Codes, Standards, Labels or a combination of them) are duly enforced, deeply transforming the end-use market	 Number of municipal agencies trained and able to enforce EE Code Application legislations in place to empower municipal agencies 	Municipal code enforcement agencies do not enforce any EE appliance standards
Output 3.2: The new regulations are understood and adopted by local importers, manufacturers, distributors and the retail chain.	 Mobilization and outreach plan Workshops and national EE events EE housing certification program Number of professionals receiving technical EE training 	Poor development of EE concept among Nigerian stakeholders
Output 3.3: Energy efficiency becomes priority in the purchase of any equipment.	 Increase in the sale of EE appliances Proliferation of EE appliances Availability of EE brochure 	 EE benefits are not considered in the purchase of appliances Dearth of information on EE products EE concept poorly understood
Output 3.4: Impact of the new energy efficiency measures/legislation are monitored	 Timely reporting and monitoring of the project % non-compliant products 	NoneLack of data on non-compliant products
Outcome 4: Transform the lighting market: promotion of energy savings lamps	 Increase sale of CFLs Baseline data for developing Carbon project Different types of monetary incentive schemes High penetration of EE bulbs in the Nigeria system 	 No concrete plan to scale up the promotion of CFL project Lack of incentives to promote EE products Low penetration of EE lighting

Strategy	Indicators	Baseline			
Output 4.1: A large scale pilot campaign for energy efficient lamps completed. A minimum of million CFLs disseminated in households, commercial and public services in partnership with Government of Cuba.	 CFL promoted in the residential and public sector Clear implementation and monitoring plan 	 Slow rate of CFLs penetration and adopted by the residential and public sector Lack of clear implementation plan 			
Output 4.2: Financial incentives provided to pro-active local importers and traders to sell EE lighting products	 Carbon project for the mainstreaming of CFL High acceptance of importers to import EE appliances 	No financial incentives for the mainstreaming of EE products			
Output 4.3: compact fluorescent lamps are recycled for the elimination of mercury according to international best practices	Feasibility study on the viability of a lamp recycling facility in Nigeria	 No lamp recycling facility site No supporting infrastructure for lamp recycling 			
Outcome 5: Project management	Overall project management and coordination	Government agencies have experience in managing donor projects, but they lack with EE projects			
Output 5.1: Project management and implementation support	 Project objectives and deliverables Alignment of sectoral policies with objectives of EE project 	Lack of clear project implementation and monitoring plan			

3.5 Main stakeholders

UNDP is the GEF Agency for the project and the Energy Commission of Nigeria (ECN) is the implementing partner of the project.

The Project Document conducted a comprehensive stakeholder analysis identifying a long list of stakeholders likely to be involved or interested in the project. The main stakeholders that were actively involved during the project implementation period are shown in Table 4.

Table 4: List	of Main	Stakeholders
---------------	---------	--------------

Institution / Stakeholder Group	Description	Role in the Project			
Federal Ministry of Environment	GEF Focal Point	Implementing Partner / Executing Agency, National Project Director and Co-funder			
Energy Commission of Nigeria (ECN)	ECN was established in 1979 and is now under the Ministry of Science and Technology. The Commission is in charge of the strategic planning and co-ordination of national policies in the field of energy. ECN is also responsible for establishing strategies regarding energy efficiency and conservation and renewable energy.	ECN is the executing agency for this project and is responsible for all the deliverables of this project.			
Standards Organisation of Nigeria (SON)	The Standards Organisation of Nigeria was set up by Act No. 56 of 1971 and is vested with the responsibility of preparing standards for products and processes and for ensuring compliance with Federal Government policies on Standards Metrology and Quality Assurance of both locally manufactured and imported products and services in Nigeria.	SON is one of the key stakeholders of the project. The SON is in charge of preparing standards for products and processes and in ensuring compliance of both locally manufactured and imported products and services with Federal Government policies on Standards Metrology and Quality Assurance. The institution is also mandated to establish and maintains laboratories for testing appliances to ensure they conform to stipulated standards.			
Consumer Protection Council (CPC)	The responsibilities of CPC include organizing and undertaking campaigns and other forms of activities to increase consumers' awareness. The responsibilities also include encouraging trade, industry and professional associations to develop and enforce quality standards designed to safeguard the interest of consumers.	CPC is a member of the EESC. The CPC, in collaboration with state-level consumer organizations, was planned to be responsible for education and enforcement activities among retail distribution channels.			
National Orientation Agency (NOA)	Objective of the NOA is Re-orientate and encourage Nigerians to take part actively and freely in discussions and decisions affecting their general and collective welfare. This organisation was not part of the original list of stakeholder and was added later on.				
National Centre for Energy Efficiency and	National Centre for Energy Efficiency and Conservation (NCEEC) was established by ECN in 2008. NCEEC organizes	NCEEC was one of the two centres (the other one being SON) in which test centre for light bulbs was established			

Institution / Stakeholder Group	Description	Role in the Project
Conservation (NCEEC)	and conducts research and development in energy efficiency and conservation and is located at the University of Lagos. Part of the mandate of the Centre is to train personnel and students in areas relating to energy conservation and climate change. NCEEC is developed as a centre of excellence for the testing of appliances, monitoring and creating innovative capacity building programmes to influence consumer behaviour change towards a low carbon lifestyle.	as part of this project.
Electrical Dealers' Association of Nigeria (EDAN)	EDAN is the Association of the distributors and retailers of electrical appliances.	EDAN was expected to act as potential link between the project team and consumers.
Nigerian Electricity Regulatory Commission (NERC)	 NERC is mandated by the government to regulate activities connected to the electricity sector. According to its website it has four different goals: Uninterrupted Electricity Private Sector Participation Consumer Protection Fair Regulation 	Since NERC are responsible for regulation in the Electricity sector, there was a need to liaise with NERC to ensure that appropriate legislations recommended and developed by the project are incorporated in the Nigerian law so that renewable energy and energy efficiency is mainstreamed in their procurement processes.
Manufacturers Association of Nigeria (MAN)	MAN has a strong network of members in Nigeria spread over 10 different manufacturing sectors. The sector directly connected to the current project is the Electrical and Electronic sector. MAN is disposed to collaborate with any institution that will support members of the network and is receptive to any initiative that will improve and make the Nigerian business environment friendly. The MAN is an active participant in initiatives to improve the competitiveness and performance of Nigerian manufacturers.	MAN was a key partner in developing and proposing capacity building, technical assistance and workshop activities to appliance manufacturers.
Economic	ECOWAS is committed to promoting energy efficiency policies	ECOWAS is already working in Nigeria and was expected

Institution / Stakeholder Group	Description	Role in the Project
Community of West African States (ECOWAS)	and practices in the region. Under the ECOWAS Energy Protocol enacted 21 January, 2003 in Dakar, Senegal, in Article 43, ECOWAS Member States agreed to co-operate and, as appropriate, assist each other in developing and implementing energy efficiency policies, laws and regulations. The member states agreed to establish energy efficiency policies and	to further extend their assistance into the current project by extending the stay of the Cuban consultant ² whose stay in Nigeria is the responsibility of ECOWAS. Also, ECOWAS was expected to help promote more corporation within the region to promote EE especially in develop EE policy and legislation and also promoting mechanism for
	appropriate legal and regulatory frameworks to promote, among others, reducing barriers to energy efficiency.	enforcement.
Presidential Task Force on Power (PTFP)	The PTFP is the implementing arm of the Presidential Action Committee on Power (PACP). The PACP is chaired by the President of the Federal Republic of Nigeria, and has the Vice President as a member of the Committee	PTFP was included in the EESC as per suggestion of other stakeholders during the Inception Workshop. It was perceived that with the presence of PTFP in the EESC, some aspects of the project component (policy and legislation) may get speedy attention from the government.

² Working on a project on promoting CFLs in the country supported by the Cuban Government

3.6 Expected Results

Table 5 shows the expected results at the end of the project, according to the Logical Framework (or Results Framework) provided in the Project Document (also reproduced in the TOR).

Objective, Outcomes and Outputs	Target (end of project)			
Project Objective: To improve the energy efficiency of appliances in Nigeria, especially in the residential and public sector, through the introduction of an EE legislation and standards & labels	 551 MW (512 and 39 MW) of electricity saved CO₂ emissions reduced by 352,000 tCO2e (92,000 from lighting and 260,000 from refrigerators) from direct impacts Govt. has adopted EE S & L in 50% of its procurement programs Govt. have introduced EE standards 50% in public buildings IMDR have adopted EE standards 1 million CFLs installed 			
Outcome 1: Capacities of all relevant stakeholders at national level regarding the concept, nature and potential of energy efficiency in the residential and public sector are enhanced (or strengthened)	 EE Appliance Unit set up by Year one The SON and the Custom agencies enforcing EE S&L 1,000 households surveyed for baseline data 			
Output 1.1: Energy & GHG savings potential for each main end-users in the residential and public sector validated	Inventory of baseline data for lighting, refrigeration, air- conditioners, motor, heating equipment and pumps established			
Output 1.2: Monitoring and data collection system for end-use sales, energy demand and energy consumption is formalized and implemented.	Appliances (lighting, refrigerators and air-conditioner) 1,000 households and 100 public buildings (lighting) surveyed and monitored			
Output 1.3: Awareness of the political and policy decision-makers on end-use energy efficiency options and potentials for GHG reductions enhanced	Climate Change Committees at the House of Rep and Senate to be briefed and trained on EE practices			
Output 1.4: EE Appliances Codes drafted and approved	EE Appliances code drafted and submitted to Parliament by Year 3			
Outcome 2: Development of new energy efficiency legal requirements for a series of end-use equipment in Nigeria.	Application decrees drafted and submitted by Year 3			
Output 2.1: National testing centre established and certification procedures to promote energy efficiency defined	2 Testing centers with comprehensive and clear testing and certification procedures developed			

Table 5 Expected Results at the End of Project

Objective, Outcomes and Outputs	Target (end of project)		
Output 2.2: Pilot program to test launched and appropriate energy efficiency schemes such as energy labels finalized	All proposed standards and labels are field tested to validate efficiency gains		
Output 2.3: National labelling content and format is designed, tested, validated and adopted	All proposed S&L are field tested to validate efficiency gains and become mainstream and common practice		
Output 2.4: A relevant multiyear timetable to assure a coherent implementation established	Mainstreaming of the S&L at the local levelTimely submission of all M&E reports		
OUTCOME 3: Training of professional stakeholders and public outreach activities & enforcement of the new energy efficiency legislation	 At least 10 EE demonstration projects 4,500 "man-days" of EE training provided to professionals 		
Output 3.1: The energy efficiency requirement (through Codes, Standards, Labels or a combination of them) are duly enforced, deeply transforming the end-use market	 Capacity building of at least all relevant agencies by Year 3 Application of legislations mandating relevant agencies to enforce EE Code and policy 		
Output 3.2: The new regulations are understood and adopted by local importers, manufacturers, distributors and the retail chain.	 Workshops hosted to rain relevant stakeholder National EE event hosted annually Quarterly electronic newsletter by Year 1 EE appliances certification program by Year 2 4500 "man-days" of technical training 		
Output 3.3: Energy efficiency becomes priority in the purchase of any equipment.	Government, retailers and consumers trained on EE benefits		
Output 3.4: Impact of the new energy efficiency measures/legislation are monitored	 Project workshops held on timely basis Timely submission of all M&E reports Yearly market surveillance of non-compliant products 		
Outcome 4: Transform the lighting market: promotion of energy savings lamps	 1 million CFLs to be installed in Lagos and Delta state Nigeria ready to develop Programmatic CDM to install 32 million CFL Carbon finance to fund CFL exchange for households 		
Output 4.1: A large scale pilot campaign for energy efficient lamps completed. A minimum of million CFLs disseminated in households, commercial and public services in partnership with Government of Cuba.	 Number of CFLs installed Close collaboration between partners 		
Output 4.2: Financial incentives provided to pro-active local importers and traders to sell EE lighting products	 Viable incentives scheme (turn in program) identified for the scaling up of CFL EE appliances become mainstream in residential and public sector 		
Output 4.3: compact fluorescent lamps are recycled for the elimination of mercury according to international best practices	Collaborate with Osram initiative to establish a CFL infrastructure and recycling center		

Objective, Outcomes and Outputs	Target (end of project)		
<u>Outcome 5:</u> Project management	Timely submission of all project reportsProject objectives substantially met		
Output 5.1: Project management and implementation support	Timely submission of all project reports		

4 FINDINGS

4.1 Project Design / Formulation

4.1.1 Analysis of Logical Framework Analysis (LFA) /Results Framework

There is a single objective defined in the LFA:

"To improve the energy efficiency of appliances in Nigeria, especially in the residential and public sector, through the introduction of an EE legislation and standards & labels".

The objective is to be achieved through five outcomes and several outputs for each outcome. The objective itself is clear and practicable. The outcomes and outputs are generally coherent and logical. Each of the outcomes and outputs have been defined in terms of indicators, targets and the baselines. In addition, sources of verifications of the indicators and the risks (to achieving the objectives, outcomes and outputs) and assumptions (that need to come true to achieve the outcomes/outputs) are also provided. Several risks in the categories of political, financial, legislative, technical, marketing and information have been identified along with the level of risks and the mitigation strategies. These are adequate in the evaluator's opinion. Details of Assumptions and Risks are discussed in Section 4.1.2. In general, the logical framework is well laid out with clear indicators, including baseline information. However, some of the indicators are provided in terms of target (e.g. increased sales of CFLs) rather than what will be measured (e.g. sales figures of CFLs).

The Results Framework / Logical Framework has been used as a reference in reporting the progress on the project objectives in the Project Implementation Reviews (PIR) by the project coordinator.

Project Outcomes and Outputs in the Logical Framework Analysis appear generally SMART (Specific, Measurable, Achievable, Relevant and Time-bound).

ECN was identified as the implementing partner for the project. In the evaluator's view, this was the right decision as ECN is in charge of the strategic planning and coordination of national policies in the field of energy. ECN is also responsible for establishing strategies regarding energy efficiency and conservation and renewable energy. It also has significant experience in the sector of energy efficiency. At the time of the project design, ECN was implementing a project on distributing 1 million CFLs with funding from government of Cuba.

4.1.2 Assumptions and Risks

"Guidance for Conducting Terminal Evaluations of UNDP-supported GEF-financed Projects" indicates that the evaluation should provide an assessment of the project assumptions and risks as set out in the project document and Log Frame/Results Framework.

The critical assumptions and risks are clearly identified, are logical and laid out in the LFA. The following external players are highlighted as sources of the main risks and assumptions:

- Government agencies
- Other Stakeholders including public and private sector

Lack of data or poor access to data are cited as risk factors for several outcomes and outputs but some of the data are likely to be generated by the project itself and hence not necessarily an external risk.

In addition, the Project Document undertakes an analysis of risks highlighting the risk levels and mitigation arrangements proposed to be in place. Financial Risks are regarded as high while political and legal risks are regarded as moderate.

4.1.3 Lessons from other Relevant Projects

The Project Document mentions the Ghana Electrical Appliance Labelling and Standards Program launched by the Ghana Energy Foundation, in collaboration with the Ghana Standards Board. The Project Document mentions that the standards and labels under this programme in Ghana were limited to room air conditioners, compact fluorescent lamps and refrigerators and the SON already cooperates with the Ghana Standards Board, its counterpart in Ghana, on a number of standards-related issues. Even though the project document does not appear to directly link the decision to adopt the labelling and standards for the same three appliances as those in Ghana, the decision to adopt the lighting, air-conditioning and refrigeration as the appliances of choice must be influenced by the programme in Ghana.

According to the project team, the risks and assumptions defined in the Project Document were informed by other similar projects in the region and in the sectoral area. Even though it appears that lessons from other relevant projects were taken into account, there are not many details of such relevant projects and lessons in the Project document or any other relevant documents reviewed.

4.1.4 Planned Stakeholder Participation

Stakeholders were key to this project and this was reflected in the design and planning of the project.

According to the Project Document, a large number of organisations were consulted during the preparatory phase of the project. The organisations included public and private sectors, multilateral and bilateral organisations and professional trade bodies. Many outputs have references to stakeholder participation and stakeholder consultation through workshops and meetings have been given plenty of attention in the Project Document.

A number of stakeholders were invited to be part of the Steering Committee, the governing body for the project. There were numerous meetings and workshops held throughout the life of the project and stakeholders were invited to take part in those meetings and share their thoughts.

Some of the key outputs were in fact implemented by some of the stakeholders. These included SON and NCEEC – SON undertaking the tests of CFLs and being the main statutory body for the implementation of MEPS and S&L.

The Government of Nigeria (through its various agencies and ministries) was a key stakeholder and confirmed its commitment by promising a large co-financing for the project. However, as mentioned elsewhere in the report, the co-financing did not materialize which adversely affected the projects outputs significantly.

4.1.5 Replication Approach

The Project Document specifies four key activities in order to ensure the replicability of the project.

- Establishment of an EE Unit within the Energy Commission of Nigeria for policy and technical work
- Updating the legal and institutional framework governing energy efficiency
- Providing training to manufacturers, importers, distributors, retailers, consumers, engineers, Federal and State enforcement agencies
- Creating a National EE Steering Committee with members from organisations such as ECN, SON and NERC that will ensure harmonization of EE policies and activities among key stakeholders and will promote an ongoing policy dialog between public and private stakeholders.

The Project Document states that the removal of technical, regulatory and informational barriers as key to achieving replicability of the project and aims to achieve this by working closely together with relevant professional associations (such as the Manufacturers Association of Nigeria, Nigerian Association of Refrigeration and Air-conditioning Practitioners, the Nigerian Chamber of Commerce,) national and local government agencies (SON, NERC and ECN), consumer associations (Consumer Protection Council) and other CSOs. Training workshops will be conducted to private sector operators under the auspices of the Manufacturers Association of Nigeria (for domestic manufacturers) and the Nigerian Chamber of Commerce (for importers and distributors).

In addition, the project aims to promote energy efficient appliances through regular distribution channels to educate and influence buyers at the retail locations. The use of existing channels (instead of establishing new ones) is a good approach to take as this is likely to ensure replicability of the project outputs. Additionally, the project aims to undertake a public education campaign through consumer organizations and selected media to change consumer mind sets by explaining the importance of total cost of ownership over the life of the appliance (cost of purchase and cost of electricity consumed) rather than just considering the initial cost of purchase.

In light of above, the replication approach during the design and formulation of the project is well considered and planned.

4.1.6 UNDP Comparative Advantage

UNDP has a clear comparative advantage as the GEF Agency of this project as UNDP has many years of experience in the region and in the country. As also highlighted in the Project Document, this project is relevant to the UNDP Country Program Action Plan II (2009-2012) mandate through its strong emphasis on environmental governance, capacity development and technical training for the private sector in order to provide professionals with the necessary know-how and technical skills to advise builders and other decision makers about EE standards and to integrate them into national policies and legislations. It also fits the UNDP's mandate by helping improve the capabilities of municipal enforcement agencies leading to better governance through sustained technical and institutional support.

Additionally, according to the Inception Report for the project, this project is an element of UNDP's Strategic approach – strengthening capacity for the integration of energy and environmental concerns into development, planning, policies and programmes.

4.1.7 Linkages between Project and other Interventions within the Sector

One of the outcomes of this project is the promotion of energy saving lamps in Nigeria which, according to the Project Document, is expected to transform the lighting market in the country. This component of the project was designed to work in tandem with an

ongoing UNDP/UNEP project under the Global Market Transformation for Efficient Lighting Initiative. This activity was to be done in partnership with the government of Cuba which was expected to provide technical assistance in this area to the government of Nigeria. Also, under an arrangement with the Cuban Government, a minimum of one million CFLs were expected to be disseminated in households, commercial and public services in partnership with the Government of Cuba.

Due to issues with non-availability of the project co-financing, this GEF-financed project had to limit the project scope. Activities including testing for Air Conditioning equipment could not be carried out. However, due to linkages of this project with other agencies and programmes including the German Agency for International Corporation (GIZ), MEPS for air conditioners is now being developed with the support of GIZ, which is an excellent outcome.

4.1.8 Management Arrangements

The Project is executed under the National Implementation modality, as opposed to Direct Implementation modality. UNDP is the GEF Agency for this project while the Energy Commission of Nigeria (ECN) is the implementing partner. An Energy Efficiency Steering Committee (EESC) was established as a governing body to oversee the project. The EESC was chaired by the GEF Operational Focal Point. However, as a result of request of stakeholders during the Inception Workshop, UNDP was appointed the Co-chair of the EESC.

ECN set up an Energy Efficiency unit to undertake this project. A project management Unit was set up by the UNDP where the National Project Coordinator was seconded to ECN in order to undertake this project.

4.2 **Project Implementation**

This section of the document reviews the M&E, Adaptive Management (changes in project management according to the feedback), partnership arrangement with stakeholders and project finance.

4.2.1 Adaptive Management and Feedback from M&E activities used for Adaptive Management

The project's management has shown flexibility in making changes if and when necessary to do so in order to keep the project up to date and keep it capable of producing the desired outputs as envisaged originally. One such example is shown in Section 3.5 where the project team changed the management structure after the inception meeting where the stakeholders provided the feedback with suggested changes. During the inception meeting, stakeholders identified the need to include the Presidential Task Force on Power (PTFP) as member of the EESC. It was felt that with

the presence of PTFP in the EESC, some aspects of the project components (e.g. policy and legislation) might get speedy attention.

Additionally, due to unavailability of co-financing, the project team had to make a number of changes to the project during its implementation. One example of this is that the development of MEPS for Air Conditioning equipment was not undertaken due to lack of co-financing. Moreover, the number of trainees were lower than expected.

Additionally, the regular steering committee meetings discussed the project details and deliverables and changes to project implementation were suggested and agreed during those meetings.

There have been some staffing issues with the project. The mid-term review highlighted a need to speed up the recruitment processes. As a result, the project management altered and linkages with experts in the sector were established to overcome this staffing issue. This meant that some of the activities in the project were sub-contracted as and when required.

4.2.2 Partnership Arrangements (with relevant stakeholders involved in the country/region)

According to the Project Document, a National EE Steering Committee is to be formed to bring together key government ministries and private sector representatives (e.g., manufacturers, importers, consumers) in order to provide strategic guidance to the ECN and define the priorities of the EE policy and legislation initiative. This Steering Committee has been at the heart of the project and has been working effectively as the governing body of the project providing supervisory and managerial oversight to the project. There were regular meetings of the Steering Committee where project progress was discussed and changes suggested, agreed and approved as necessary.

The project involves by design a number of awareness and capacity development workshops around the country. These workshops were carried out in partnership with Nigerian Universities, Nigeria Society of Engineers, Nigeria Institute of Architects, religious leaders, NGOs and state executive members. Similarly, some of the main project outputs such as testing centres for CFLs and refrigerators have been designed and implemented with SON and NCEEC. SON hosts the CFL and Refrigeration test centres while NCEEC at the University of Lagos hosts the CFL testing laboratory. The roles and responsibilities of SON and NCEEC (two of the most important stakeholders) have been defined reasonably well in the Project Document. However, in the evaluator's opinion, the roles and responsibilities of SON and NCEEC as regards testing of CFLs in their laboratories is not clear in practice. It is not clear how SON will use NCEEC expertise in testing of equipment for standards and labelling.

One of the main outcomes of the project is setting up and enforcement of S&L in terms of energy performance and energy efficiency for lighting and refrigeration products. SON has been identified and brought in as a key agency in order to roll out S&L and MEPS – because SON is the main agency in the country related to designing and enforcing standards for consumer products. This shows that the project has a good

partnership arrangement with key stakeholders in order to achieve the outputs of the project in an efficient and sustainable way.

Some of the stakeholders such as National Ozone Office (NOO) and Ozone Project Implementing and Management Unit (OPIAMU) originally identified in the Project Document did not appear to have taken any significant part in the project. Their roles were not considered critical by the Evaluator and there were no significant adverse effects on the project due to their limited participation.

4.2.3 Project Finance

According to the information provided by the project team (including in the TOR for this assignment), the total project cost at the project endorsement was USD 9,769,532, out of which 7,102,259 was pledged as co-finance and the rest was to come from the GEF. The breakdown of the project finance at the project inception (at endorsement) is shown in Table 6.

Funding Source	Total Amount (USD)			
GEF	2,667,273			
Co-Finance (TOTAL)	7,102,259			
Government of Nigeria	5,000,000			
Energy Commission of Nigeria	1,082,796			
UNDP	200,000			
Cuban Government	819,463			
GRAND TOTAL	9,769,532			

Table 6 Breakdown of Project Finance at Project Inception

The total budget for the project was distributed under 5 different outcomes as follows (Table 7).

Table 7 Budget by Outcome

	GEF	CO-FINANCE				
Outcomes	GEF	NGA	UNDP	CUBA (in kind)	ECN (in kind)	TOTAL
OUTCOME 1: Capacities enhancement of all relevant stakeholders at national level regarding the concept, nature and potential of energy efficiency in the residential and public sector	800,000	1,000,000				1,800,000
Outcome 2: Development of new energy efficiency legal requirements for a series of end-use equipment in Nigeria.	750,000	1,800,000				2,550,000
Outcome 3: Training of professional stakeholders and public outreach activities & enforcement of the new energy efficiency legislation	500,000	850,000				1,350,000
OUTCOME 4: Transform the lighting market: promotion of energy savings lamps	400,000	1,050,000		819,463	1,082,796	3,352,259
Outcome 5: Project Management	227,273	300,000	200,000			727,273
TOTAL	2,677,273	5,000,000	200,000	819,463	1,082,796	9,779,532

As can be seen from Table 8 below, cumulative project delivery stands at \$2,654,299 or 99% of the total GEF grant.

Budget	Source of Funds	2011	2012	2013	2014	2015	Grand Total
Component 1 - Capacity Enhancement	GEF	322,224.40	994,451.34	343,665.56	77,449.39	(7,631.09)	1,730,159.60
Component 2 - Development of Legal Requirements	GEF			197,640.31	26,009.84		223,650.15
Component 3 - Training and Public Outreach	GEF	16,161.52		179,656.25	66,442.52		262,260.29
Component 4 - Promotion of EE Lamps	GEF			22,004.90	36,897.70		58,902.60
Project Management Costs	GEF	13,494.79	63,451.18	119,461.50	182,918.58		379,326.05
Total GEF		351,880.71	1,057,902.52	862,428.52	389,718.03	(7,631.09)	2,654,298.69

Table 8 Actual Project Expenditure
The government pledged \$5,000,000 for the project. This was however not released to the Project, due to the complex political dynamics that characterised the period of implementation with resultant frequent changes in the leadership of the Ministry of Environment. Allocations were made in the national budget for this commitment but appropriation proved difficult due to challenges mentioned above. High level meetings were held with both the Federal Ministries of Finance and Environment to unlock the funds which served as opportunity for government to reaffirm its commitment to the project and willingness to do all within its powers to ensure the release of the funds, but the funds were eventually not released.

4.2.4 Monitoring and evaluation: design at entry (*), implementation (*), and overall assessment (*)

A very detailed logical framework was defined in the Project Document, which is annexed with this evaluation report. The logical framework analysis is reviewed for its completeness and other aspects in other sections of this review report. However, this section of the review concerns mostly with the aspects of the M&E during the implementation of the project and the Logical Framework forms the basis for the M&E.

The most direct global benefits of this project as it relates to GEF objectives is the reduction in GHG emissions, chiefly CO_2 emissions and hence will be one of the key parameters for monitoring in order to assess the success or otherwise of the project. The reduction in GHG emissions is clearly identified in the Logframe as an end of the project target to be achieved with its own indicator. Additionally, according to the Project Document, impact monitoring was to be done on an annual basis by the project implementation team, and the results will be used by the project team to improve and/or revise aspects of the project. This shows that there is some degree of forethought given regarding the monitoring of key indicators at the design stage of the project. However, there does not appear to be a distinct source of verification for this particular target. Given that this is a key target for the project, this will be regarded as a shortcoming in terms of Logframe design and also for monitoring of CO_2 emissions reduction.

There were some shortcomings regarding M&E during the implementation of the project. The PIRs did not always directly refer to the indicators and targets while reporting progress. In addition, the PIRs reported positive progress but did not always report issues or failures or outcomes not achieved.

The mid-term review (MTR) provided a number of recommendations, many of which were not relevant within the lifetime of the project. Some of the recommendations that were relevant to the project such that the changes could be made within the project lifetime are listed below (Table 9) along with any action taken in response to the recommendations.

MTE Recommendations	Actions Taken
Provide the Ministry of Finance and the Ministry of Energy with a detailed costs benefits analysis of EE	The study was not undertaken due to the resource being not available to the project team / implementing partner.
Continue to support testing for new appliances	Testing appliance for refrigerators were installed at SON site in Lagos.
Increase the staff within the PMU	It was not undertaken due to budget constraints.
Supporting simple measures such as the phase-out of GLS and limitation of heating in AC (Air Conditioning)	Energy Efficiency policy produced as a result of this project addresses the issue of GLS and there is a plan to phase out incandescent lamps.
	Heating/AC: This was not undertaken because this aspect of the work (Air Conditioning) was not undertaken due to funding not being available.
No GEF project extension but an extension of the PMU after April 2015 in case the Government is transferring its planned contribution to the project	The PMU time was extended to December 2015.
Invite new stakeholders (such as Discos) to sit in the Project Steering Committee	It was not possible to involve other stakeholders such as Discos due to their not being interested in a project like this.
Support the development of products eco labelling in the short-term	This was done.

Table 9 Mid Term Review Recommendations and Actions

Ratings:

M&E: Design at Entry:	HIGHLY SATISFACTORY (HS), SATISFACTORY (S), MODERATELY SATISFACTORY (MS), MODERATELY UNSATISFACTORY (MU), UNSATISFACTORY (U), HIGHLY UNSATISFACTORY (HU)
M&E: Implementation	HIGHLY SATISFACTORY (HS), SATISFACTORY (S), MODERATELY

	SATISFACTORY (MS), MODERATELY UNSATISFACTORY (MU), UNSATISFACTORY (U), HIGHLY UNSATISFACTORY (HU)
M&E: Overall Assessment	HIGHLY SATISFACTORY (HS), SATISFACTORY (S), MODERATELY SATISFACTORY (MS), MODERATELY UNSATISFACTORY (MU), UNSATISFACTORY (U), HIGHLY UNSATISFACTORY (HU)

4.2.5 Implementing Agency (UNDP) execution (*) and Executing Agency execution (*), overall project implementation/ execution (*)

GEF Agency (UNDP) Execution

UNDP was instrumental in the project design and writing of the project documents. The project was executed jointly with UNDP as the GEF agency and ECN as the implementing partner. The project team was set up as a joint team of UNDP and ECN and all the implementation was carried out by that project team. The project team also reported that the UNDP responded timely to any request for support. UNDP personnel assisted the project team in day to day execution of the project. One such example was that UNDP was instrumental in assisting the project team in identifying a competent organisation in carrying out the "End-use Metering Campaign for Residential Houses in Nigeria". This metering study was a pioneering activity in the region. Also, UNDP provided guidance on selecting the testing equipment for CFL and refrigerators.

UNDP also participated actively as a key Steering Committee member (as a co-chair jointly with the GEF focal point in Nigeria).

Implementing Partner (ECN) Execution

The Energy Commission of Nigeria has been very active in this project, right from the inception phase of the project. The project management unit led by the National Project Coordinator is based in the ECN premises in Abuja and a new Energy Efficiency Unit has been set up within the ECN.

Overall Project Execution

Based on the analysis above, in the author's opinion, the Overall Project Implementation and Execution is Satisfactory (HS).

Summary of Ratings:

Implementing Agency Execution:	SATISFACTORY (S)
EXECUTING AGENCY Execution:	SATISFACTORY (S)
Overall Project Implementation/Execution:	SATISFACTORY (S)

4.3 Project Results

The current chapter includes overall project achievement in terms of attainment of the global objectives and some of the key indicators of success or otherwise of the project such as relevance, effectiveness, efficiency, sustainability and impact.

4.3.1 Overall Project Outcome Rating (*)

The project "Promoting Energy Efficiency in Residential and Public Sector in Nigeria" had the global objective of improving the energy efficiency of appliances in Nigeria, especially in the residential and public sector, through the introduction of an EE legislation and Standards & Labels (S&L) and Minimum Energy Performance Standards (MEPS). A number of targets had been set as a measure of the achievement of the project objective, as shown below:

- 551 MW of electricity saved
- CO₂ emissions reduced by 352,000 tCO_{2e} (92,000 from lighting and 260,000 from refrigerators) from direct impacts
- Government adopts EE S & L in 50% of its procurement programs
- Government introduces EE standards in 50% of public buildings
- Importers, Manufacturers, Distributors and Retailers (IMDR) have adopted EE standards
- 1 million CFLs installed

The documents reviewed by the evaluator list several key activities carried out in order to meet the objective of the Project.

Minimum energy performance standard for lighting has been developed and approved by Nigerian authorities and it is now enforceable in Nigeria. In fact, MEPS for lighting is already being enforced by the Standard Organisation of Nigeria and the Nigeria Custom Services.

Additionally, according to the PIR of 2015, the minimum energy performance standard (MEPS) for refrigerators was endorsed by the Nigeria National Committee of International Electrotechnical Commission (IEC). Design of an appropriate energy

labelling was finalised and validated by stakeholders giving rise to Nigeria's very own label design. The energy label design was endorsed by the Nigeria National Committee of IEC.

Similarly, according to the documents, the National Renewable Energy and Energy Efficiency Policy was approved by the Federal Executive Council for the electricity sector. The policy was sponsored by the Federal Ministry of Power with the executing agency, the Energy Commission of Nigeria serving in the Inter-Ministerial Committee on Renewable Energy and Energy Efficiency. According to the project reports, over 80% of relevant government agencies have integrated EE into their policy, strategies and activities.

Numerous stakeholder workshops were held across the country as part of the awareness and training campaign that contributes to several outcomes of the project. However, there is no concrete information as to how these awareness campaigns have improved the knowledge of the target group, though anecdotal evidence suggests there is an improved awareness. The awareness campaign needs to be maintained and built on after the end of the project. Enforcement of performance standards will only achieve desired results if the consumer is well aware of the benefits of using energy efficient appliances.

Over 30 reports have been written on the Project and disseminated to stakeholders since the inception of the Project, with some reports having been published in international conferences and scientific journals. For example, in order to establish a baseline on the energy consumption of households and of appliances, a pioneering study in Nigeria entitled "End-use Metering Campaign for Residential Houses in Nigeria" was undertaken in 2013 by a French consulting firm Enertech. This activity feeds into Output 1.2 under Outcome 1 (as per the LFA). This study was undertaken to monitor the current level of total household electricity usage and to assess the energy efficiency of the main household electrical appliances (refrigerators, air conditioners and lighting appliances). A paper highlighting the activities of the Project was accepted for presentation at the 2015 conference on Energy Efficiency in Domestic Appliances and Lighting, Switzerland.

Approximately 3,000 stakeholders were trained on energy efficiency best practices during the life of the project even though the original plan was to train about 4,500 people.

There were two major pilots undertaken to promote Energy Efficiency in rural communities in Nasarawa State in Nigeria. In these two projects, energy efficient lighting products were retrofitted in order to demonstrate the concept and provide evidence of energy savings.

In addition, a demonstration project to replace CFLs and Fluorescent lightbulbs with LED lightbulbs was undertaken in the Energy Commission of Nigeria building. The retrofit was one of the demonstration projects under the GEF EE Programme and it was undertaken to promote energy efficiency best practices in public buildings in Nigeria and to showcase the Energy Commission of Nigeria Building as a benchmark for other public buildings in Nigeria. It was also designed to help create awareness on the role of

energy efficiency in achieving the objectives of the UN Sustainable Energy for All Initiative.

Based on the above, the rating under this category of project results is Satisfactory (S).

Rating:

Satisfactory (S)

4.3.2 Relevance (*)

As also described earlier, Nigeria has an acute problem of electricity demand outstripping supply. Use of inefficient appliances exacerbate the problem and require an increase in supply of electricity to run these appliances. Energy Efficiency represents one of the most effective methods of reducing consumption of electricity by employing energy efficient practices in the consumer appliance sector in the country.

Moreover, a National Energy Efficiency Policy has been drafted by ECN and aims to attain 60% consumption of energy-efficient lighting, refrigerators, freezers and air conditioners by 2016 and 100% by 2020. Additionally, it also aims to enact all relevant legislation required for policy implementation by 2015 but the current status is unknown.

This project is relevant to the UNDP Country Program Action Plan II (2009-2012) mandate through its strong emphasis on environmental governance, capacity development and technical training for the private sector in order to provide professionals with the necessary know-how and technical skills to advise builders and other decision makers about EE standards and to integrate them into national policies and legislations. It also fits in with the UNDP's mandate by helping improve the capabilities of municipal enforcement agencies leading to better governance through sustained technical and institutional support.

Additionally, according to the Inception Report for the project, this project is an element of UNDP's Strategic approach – strengthening capacity for the integration of energy and environmental concerns into development, planning, policies and programmes.

The project is relevant to the objectives of the GEF Strategic Priority (CC-1) "Transformation of markets for high-volume, commercial, low GHG products or processes", as the project was designed to remove the barriers to energy efficiency and energy conservation by introducing the necessary legal, institutional and regulatory frameworks for EE appliances and the project was designed to transform the market for appliances by introducing the total life cycle cost (purchase price and operating cost) in the purchasing decisions of consumers and businesses.

As shown above, this project is coherent with the relevant GEF and UNDP strategies and plans and national policy targets, and assists Nigeria in achieving those targets set for energy efficiency and hence is highly relevant.

Rating:

Relevant

4.3.3 Effectiveness (*)

Another criterion to be assessed as part of the Terminal Evaluation process as specified in the TOR is the Effectiveness of the project. According to the "Guidance for Conducting Terminal Evaluations of UNDP-Supported GEF-financed Projects", the Effectiveness is defined as "the extent to which an objective has been achieved or how likely it is to be achieved."

The effectiveness and other criteria for that matter is affected by, among other things, internal and external factors, sometimes beyond the control of the project implementation team and the implementing partner. Clearly, these aspects that are beyond the control of the project team need to be identified as much as possible and the risks associated with these need to be assessed at the beginning of the project and indicated in the Logical Framework analysis.

The project sought to ultimately achieve reduced CO_2 emissions in the country by mitigating the demand for energy in the country's residential and public sectors through the introduction of Minimum Energy Performance Standards. It aimed to achieve this ultimate goal through changes that primarily focussed on:

- Capacity building of relevant stakeholders on energy efficiency at the national level
- Development of a legal framework and enforcement on energy efficiency of end use equipment
- Capacity building of professional stakeholders and public outreach activities
- Promotion of Energy Saving lamps

The project has achieved significant results towards achieving the overall objective. One million CFLs have been distributed and installed in the country. Moreover, a Minimum Energy Performance Standard (MEPS) for lighting has been developed and approved by Nigerian authorities and it is now enforceable in Nigeria.

The activities of this project have received wide media coverage including some high profile ones. The effects of such coverage is sometimes difficult to quantify but it is clear that the topic of energy efficiency has been brought to the fore with the help of this project.

One of the key factors that has affected this project is the co-financing. The co-financing pledged by the Government of Nigeria (GoN) has not been forthcoming (see Section 4.2.3) and hence the outputs of the project have been greatly affected. However, when considering the activities and outputs of the project in proportion to the financing available, the project has achieved, to a great extent, what it aimed to achieve and hence can be regarded as satisfactory.

Rating:

Satisfactory

4.3.4 Efficiency (*)

This was a four-year project on energy efficiency in a country where there was (and to some extent still is, though vastly improved) very little awareness on energy efficiency given the fact that reliable electricity is something of a luxury to many people. The project aimed to achieve a lot within this time frame and with a GEF budget of under US\$ 3 million. The project funded three testing facilities (2 for CFLs and one for refrigeration equipment) and trained over 3,000 people.

Additionally, building on the strategic partnership developed during the implementation of the project with other development partners in the country, GIZ is currently supporting the process of developing MEPS for Air Conditioning equipment (which was not possible under this project due to lack of co-financing from the GoN). This funding leveraged during the project implementation is an outcome of this project, which was not planned.

It is difficult to quantify all the outcomes (direct and indirect, planned and unplanned) of the project but there has been a significant transformation of the overall energy efficiency sector in the country as a result of this project. For example, it is not possible to quantify the effect that the project has on the industry where the standards and labelling is part of the everyday conversation though it is a very significant change. In light of above, in the author's view, the efficiency of the project has been highly satisfactory.

Rating:

Highly Satisfactory

4.3.5 Country ownership

In evaluating the Country Ownership of the project, the GEF Guide for Terminal Evaluations suggests that the evaluators try to find evidence that the project fits within stated sector development priorities, and also that outputs, such as new environmental laws, or new strategies for sustainable livelihoods around protected areas, have been developed with involvement from government officials and have been adopted into

national strategies, policies and legal codes. This evaluation criterion does not require any rating.

According to the Project Document, the project was designed after extensive consultation with public and private key stakeholders, including extensive inputs from the key relevant agencies of government such as the Ministry of Finance, ECN, SON, NERC, PHCN, Special Climate Change Unit, CPC, Federal Ministry of Science and Technology and Bureau for Public Procurement. Additionally, the project fits into the government's overall plan to reduce energy demand by promoting EE standards and practices.

Moreover, ECN – a GoN agency - being the implementing partner, the Government of Nigeria was directly involved in the implementation of the project. Similarly, Standards Organisation of Nigeria (SON) was a key stakeholder in the project responsible for some of the key outputs of the project. Both ECN and SON, and other key government agencies were active members of the EESC.

As mentioned elsewhere, energy efficiency has not been one of the main priorities in the country and hence there were no comprehensive energy efficiency policies in the country at the start of the project. However, due to the direct influence of the project, a comprehensive energy efficiency policy has been prepared by the Energy Commission of Nigeria (ECN) and has been approved by the Federal Executive Council.

Ownership of the project is also shown through the active involvement of SON through the MEPS and introduction and enforcement of S&L. SON has been an active partner in this project – not least by taking the lead in setting up the S&L for CFLs (including setting up the testing centre at its Lagos location).

FGN has also committed to the ultimate output of this project by asking all the government agencies and municipalities to adopt the MEPS for lighting systems in any procurement for lighting systems in the future.

Clearly, the ownership and the responsibility in seeing the MEPS and S&L in the electrical appliances sector starts with this project but will not end here. FGN needs to continue the good work and make sure that these are widely adopted and maintained.

4.3.6 Mainstreaming

The Federal Government of Nigeria signed the UNFCCC convention in June 1992 and ratified it in August 1994. Nigeria ratified the Kyoto Protocol on the 10th of December 2004.

Right from the outset, the Federal Government of Nigeria has been a part of this project – even during the preparatory phase. Involvement of the Energy Commission of Nigeria (ECN) in this project as the implementing partner puts the FGN at the heart of this project. ECN is hosting this project within its newly formed Energy Efficiency Unit as

the implementing partner and is a key partner in the Steering Committee formed to oversee the project. As the implementing partner of the project, the ECN (and by default the FGN) is responsible to deliver all of the outputs and outcomes of this project. ECN has also shown the way by replacing all of the existing energy inefficient lights in its premises with new efficient LED lights.

The project design did not consider specifically any gender mainstreaming aspects. There were no activities targeted specifically at increasing women's participation or building capacity of the women. A study on Gender Mainstreaming in this project found that though efforts were made to mainstream gender, the project team did not have great success due to various cultural and capacity aspects. Some efforts were made to achieve some gender balance in training participants but those efforts were only successful to a small extent.

Similarly, the UNDP Priorities of Poverty Alleviation and Improved Governance were not given a priority in this project, particularly the project targeted so called "upstream" activities such as influencing the policy and regulation of the government and at the national level.

4.3.7 Sustainability*

The GEF Guidelines stipulate that all terminal evaluations should at a minimum assess "the likelihood of sustainability of outcomes at project termination, and provide a rating for this".

In this context, Sustainability is defined as the likelihood of continued benefits after the project ends. Consequently, the assessment of sustainability is expected to consider the risks that are likely to affect the continuation of project outcomes. The GEF Guidelines establish four areas for considering risks to sustainability, and requires the evaluators to evaluate and rate them individually. The following sections present the evaluator's assessment of sustainability for each category.

Financial sustainability

One key aspect to be considered in relation to financial sustainability is the willingness of the government to assign sufficient financial resources to continue and build on the achievements of this project, particularly regarding standards and labelling. There are some aspects of this project that give rise to some doubts about the government's commitments. The co-financing pledged by the Government of Nigeria did not materialise adversely affecting the outcomes of this project. The author's rating of the financial sustainability is Moderately Unlikely (MU).

Rating:

Socio-economic Sustainability

Public awareness is not at the level yet where energy efficiency can be driven by consumer demand. Efforts have been made to improve awareness regarding energy efficiency but unless the electricity supply is reliable and tariff collection is enforced properly, there may not be sufficient incentive for consumers to reduce their demand for electricity.

As mentioned earlier, due to the political situation in the country, standards and labels and energy efficiency may not be one of the top priorities of the government and hence there may not be sufficient motivation to enact and enforce regulations in this sector.

In the Evaluator's opinion, the Socio-economic Sustainability is Moderately Unlikely (MU).

Rating:

Moderately Unlikely (MU)

Institutional Framework and Governance

Standards Organisation of Nigeria (SON) has been instrumental in adopting the MEPS and labelling – a key outcome of this project. SON is the main organisation that is responsible to take forward the standards and labelling and MEPS set up by this project. SON has the infrastructure and willingness to carry out this task. SON has already adopted and implemented MEPS demonstrating that it is willing to take initiatives in order to consolidate the standards and labelling for equipment in Nigeria. Testing infrastructure has been established by the project and technical training and know-how has been provided. However, the commitment form the GoN will be necessary in order to keep the technical infrastructure and the skills of the technical personnel up to date to cope with the changing technology.

Capacity building will need to continue in order to ensure sustainability.

There is no explicit exit strategy described in the Project Document. However, the project document states a number of measures to ensure sustainability, including:

- Establishment of an EE Unit within the ECN that will be responsible for conducting technical feasibility studies to evaluate new S and L, techniques and appliances,
- Developing and updating the EE policy and legislation

One of the project outputs has been the establishment of the EE unit within the ECN. As mentioned elsewhere, the National Renewable Energy and Energy Efficiency Policy was

prepared by ECN and approved by the Federal Executive Council for the electricity sector.

The above two aspects contribute towards achieving a long term sustainability of the project outputs after the project finishes.

As mentioned elsewhere in the document, a new donor (GIZ) has already taken up on supporting the implementation of standards related to Air Conditioning, which could not be carried out under this project due to unavailability of co-financing. Given an increased awareness regarding energy efficiency and performance of products, there is a strong likelihood of replication and consolidation of outcomes and objectives of this project.

In summary, the rating assigned for Institutional Framework and Governance sustainability is Likely (L).

Rating:

Likely (L)

Environmental Sustainability

There are no major issues regarding Environmental Sustainability of the project and hence Environmental Sustainability is Likely (L).

Rating:

Likely (L)

Overall Likelihood

Based on the above analysis, the overall rating for sustainability is rated as Moderately Likely (ML).

Rating:

Moderately Likely (ML)

4.3.8 Impact

In evaluating the Impact of the project, the GEF Guide for Terminal Evaluation suggests that the key findings that should be brought out in evaluations should include whether

the project has demonstrated verifiable improvements in ecological status, verifiable reductions in stress on ecological systems, and that progress is being made towards achievement of stress reduction and/or ecological improvement.

There is not enough data available at this stage to categorically demonstrate the improvement in ecological status as a direct result of the project. However, as mentioned in earlier sections, there are concrete outputs from this project that will lead to these ecological changes – changes that are already taking place and will take place in the future. A relevant impact study should be carried out in order to measure and verify these ecological changes.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Based on the evaluation as carried out and presented above, the following conclusions are drawn.

5.1.1 General Conclusions

- The project "PROMOTING ENERGY EFFICIENCY IN RESIDENTIAL AND PUBLIC SECTOR IN NIGERIA" has achieved significant results even though there were some aspects of the project that could be improved.
- One of the most notable outcomes of the project is the setting up and adoption of MEPS in lighting and refrigeration products by the Standards Organisation of Nigeria (SON) and the Customs of the Government of Nigeria.

5.1.2 Project Design / Formulation

- The Logical Framework generally appears SMART and has been used in project monitoring and reporting by the project team.
- The project team indicated that the lessons from other relevant projects were taken into account in designing the current project. However, such projects or lessons are not well documented.
- Stakeholder participation was one of the strong points of this project with stakeholders having been consulted at every stage of the project. In fact, stakeholders have implemented several aspects of the project.
- Replication of the project outcomes is one of the key aspects of the project design. Establishment of an Energy Efficiency unit within ECN and capacity building have been some of the activities to ensure replication.

- UNDP in Nigeria has a clear comparative advantage as the GEF Agency for this project: this project is relevant to the UNDP Country Program Action Plan II (2009-2012) and the project is an element of UNDP's Strategic approach – strengthening capacity for the integration of energy and environmental concerns into development, planning, policies and programmes.
- Linkages with other interventions in the country were well exploited support from the Cuban government is an example.

5.1.3 Project Implementation

- The project management unit has shown flexibility in making changes if and when necessary to do so in order to keep the project up to date and capable of producing the desired outputs as envisaged originally.
- Partnership arrangements have been defined reasonably well in the documents (including Project Document) and these arrangements were executed well within the project. However, roles and responsibilities of SON and NCEEC in testing of CFLs for enforcing standards do not seem to be clearly defined.
- Project Finance was one of the aspects of the project that did not go according to the original plan. The main issue was the co-finance from the government which was not available as originally promised, affecting the outputs.
- Monitoring and Evaluation aspect of this project is generally satisfactory but there are certain aspects that could be improved. There are some targets and indicators without a clear source/means of verification.
- One of the strongest aspects of the project is its implementation. Both the GEF Agency and implementing partner execution have been highly satisfactory. The overall execution of the project has been satisfactory.

5.1.4 Project results

- The project has been successful in achieving its objectives considering that almost half of the total budget (US\$5 mil GoN co-finance) was not available.
- Awareness about energy efficiency is important as enforcement of performance standards will only achieve desired results if the consumer is well aware of the benefits of using energy efficient appliances.
- Capacity Building needs to continue to ensure sustainability.
- This project is coherent with the national policy targets and assists Nigeria in achieving those targets set for energy efficiency and hence is regarded as highly relevant.
- The project has achieved significant results towards achieving the overall objective even though the outputs of the project have been affected by financing issues.

- Country Ownership is demonstrated in both project design and implementation.
- The project outputs can be regarded as moderately sustainable with continued GoN and other party support being key to long term sustainability.
- It is not possible to quantify the project impact at this stage though concrete outputs are evident that will lead to attainment of project objectives.

5.2 Recommendations

The following recommendations are provided in order of priority, though all recommendations are regarded as important.

- 1. The Government of Nigeria needs to support SON and needs to provide necessary funding in order to maintain and enhance S&L implementation.
- 2. Organisations such as CPC should continue and consolidate awareness campaigns to target the relevant stakeholders after the end of the project to achieve the desired results of adoption of energy efficient appliances.
- 3. Capacity building across the sector and stakeholder groups in areas such as consumer behaviour in relation to use of appliances, manufacturers and suppliers of appliances on MEPS and S&L, and institutional capacity in implementing MEPS and other standards need to continue in order to ensure sustainability.
- 4. Roles and responsibilities of NCEEC and SON need to be clearly defined in terms of who does what so that efforts are not duplicated and SON benefits from NCEEC expertise.
- 5. Monitoring / project reporting for future projects run by UNDP needs to identify challenges and shortcomings in the project as well as reporting positive progress.
- 6. For future UNDP projects, Logical Framework needs to be designed so that all indicators and targets are clearly defined and suitable and realistic means of verification is chosen and detailed.
- 7. Stakeholder's Meeting should be organised by ECN after the terminal evaluation to discuss way forward for future activities.
- 8. UNDP should carry out a study in order to quantify and detail the impacts of the project.

6 ANNEXES

6.1.1 Itinerary

The itinerary of the visit to Nigeria is shown below.

Date	Activities	
22 November 2015	Consultant arrives in Abuja	
23 November 2015	Meeting with the Project Team	
24 November 2015	Meeting with NERCMeeting with CPC	
25 November 2015	 Meeting with GEF Desk Office Visit to Field Site Roguwa (Nassarawa) Visit to Field Site Uke (Nassarawa) Interviews at field sites 	
26 November 2015	Visit to Field site of NCEECInterviews with NCEEC officials	
27 November 2015	Visit to Field Site of SONInterviews with SON Officials	
28 November 2015	Leave Nigeria	

6.1.2 List of Persons Consulted

Name	Details
Mr Etiosa Uyigue	National Project Coordinator, UNDP/ECN
Ms Grace Ohiowele	Project Office, UNDP/ECN
Dr Jason Yapp	International Technical Advisor
Mr Okon Ekpengyong	Deputy Director- Energy Manpower Training and Management Development, ECN
Prof Abiola Kehinde	NCEEC
Mr Abdulmutalib Yusuff	NCEEC
Mr Charles Eguma	NCEEC

Mr Banabas Azubike	NERC
Mr Yusuf Abdussalam	NERC
Mr Shamm Kolo	Deputy Director, Consumer Protection Council (CPC)
Mr Richard Adewumi	SON
Mr George Okere	SON
Mr Festus Eguaoje	Ministry of Environment (GEF Focal Point Office)
Ms Esther Okon	Environmental Scientific Officer, Ministry of Environment
Mr Kayode Bello	Desk Admin Officer, Ministry of Environment
Dr Mabka H Habu	Doctor, Uke Hospital
Mr Luka Augustine	Pharmacist, UKE Hospital
Alhaji Ahmad Abdullahi Hassan	Sarki of Uke Community

6.1.3 Summary of Field Visits

Field visits were made to 4 sites: NCEEC and SON in Lagos, Roguwa community and Uke Hospital in Nasarawa state in Nigeria.

Standards Organisation of Nigeria

The Evaluation Consultant visited the refrigeration testing lab that was built as part of the GEF project in Lagos. The installation of the testing equipment was complete but the laboratory equipment was waiting to be commissioned. The installation was done completely by the local engineers contracted by SON.

NCEEC in Lagos

National Centre for Energy Efficiency and Conservation (NCEEC) was established by ECN in 2008. NCEEC organizes and conducts research and development in energy efficiency and conservation and is located at the University of Lagos.

The Evaluation Consultant visited the centre during the trip to Nigeria and interviewed various personnel at the centre as mentioned in Section 6.1.2. NCEEC was found to be undertaking the testing of the light bulbs as mandated as part of the project. The UNDP project on Energy Efficiency was regarded by NCEEC as an important step in the right direction, which provided capacity to the Centre in undertaking tests to complement the MEPS initiative.

Roguwa Community

As part of the GEF project, a 4.0 kWp Solar Photovoltaic Micro off-grid system was installed which generates a minimum of 14.0 kWh daily. The energy generated from the solar system supplies power to pump water into a 13000 litre water tank in the community and is also used for lights and other appliance. Fifty households, a health centre, a drugstore, and about 10 small scales privately owned businesses benefit from the solar power system. The evaluation consultant was able to observe some of these benefits directly and verify.

<u>Uke Hospital</u>

A stand-alone photovoltaic (PV) system was installed in the Uke hospital under the GEF project. The hospital was provided with high quality LED lamps for lighting. The capacity of the PV system installed is 1.5 kVA with a back-up battery bank of about 7 kWh, to power the lighting system including in the hospital theatre, a refrigerator and several fans in the doctor's office. Discussions with the hospital staff (see Section 6.1.2) revealed that the PV system has been very beneficial to the hospital in that they are now able to undertake surgery at the hospital. In the past, they couldn't undertake surgeries and had to send patients to other hospitals. In addition, the LED lights provide illumination in various areas of the hospital.

6.1.4 List of documents reviewed

Annual Project Implementation Reports

Draft Proceedings of 4th Energy Summit - 2015

ENERCAP Report - Data Collection and Analysis

Energy Efficiency Steering Committee Meeting Report

ENERTECH REPORT ON END-USE METERING

Evaluation of Gender Mainstreaming in the GEF-Supported Energy Efficiency Programme in Nigeria

GEF Tracking Tool

Inventory of Lighting, AC and Refrigeration Appliances in Nigeria

Lighting Standard Nigeria

Mid Term Evaluation Final report

NEES 2012 Final Report

New energy audit report

Nigeria EE Programme Report Stakeholders Appraisal Meeting

Project Inception Report

Report of Installation of Light Testing Equipment

Report of SON Technical Committee Meeting

Report of the Retrofit of ECN Building Report on EE Training Tour Report on Roguwa Pilot Report on SC Meeting April 2015 Report on SC Meeting March 2014 Study for Appliance Label Design (Draft Report) Success Story Uke Community Nasarawa State Summary of Project Reports as at 2012 Third National Energy Efficiency Summit 2013 Full Report Training for Media Personnel - Summary Report Training for Nigerian Universities - Summary Report Training for the 36 State Directors of National Orientation Agency - Summary Report Training Manual - EE Project UNDP GEF Nigeria EE Appliance Project Document

6.1.5 Evaluation Questionnaire

Questionnaire for Stakeholders

Terminal Evaluation of the UNDP/GEF Project Promoting Energy Efficiency in Residential and Public Sector in Nigeria

An Independent Evaluation of the above project is being undertaken in order to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

This Terminal Evaluation of the project **'Promoting Energy Efficiency in Residential and Public Sector in Nigeria** ' has been contracted by UNDP and ECN Nigeria. Interviews and evaluation are being conducted by the independent consultant from the United Kingdom, Dr. Drona Upadhyay.

Interview Date: Name:

Organisation:

Role in the project:

GENERAL

What is your and responsibility area with respect to the EE Nigeria project?

What activities have you and your organization been directly involved with?

How long have you been working for or cooperating with the project?

Who are your primary counterparts and/or colleagues in the project?

Project Management:

Outcome:

PROJECT DESIGN (Relevance):

How does the project relate to the main objectives of the GEF focal area, and to the environment and development priorities at the local, regional and national levels?

How would you describe the project objectives?

Did the project objectives change during the course of the project?

How do the project objectives and purpose match your organisation's objectives?

Has the project contributed to wider adoption of energy efficiency in public, private and residential buildings in Namibia?

PROJECT IMPLEMENTATION (Effectiveness):

To what extent have the expected outcomes and objectives of the project been achieved?

(Effectiveness describes how well the results achieved have furthered the achievement of the project purpose).

Were the project objectives achieved?

Did the project make a positive impact on the community - what?

Has the institutional capacity and awareness, and information on EE for appliances increased?

Have there been improvements made by the Government in the National EE policy, regulatory framework, and building codes?

PROJECT IMPLEMENTATION (Efficiency):

Was the project implemented efficiently, in-line with international and national norms and standards?

Efficiency concerns the relation between the result and means i.e. whether the process of transforming the means into results has been cost-effective.

Do you think the money that went into the effort was worth it? Do the ends justify the means?

Were the project funds well managed?

Was there good coordination and cooperation among the participants involved in the community project?

Did the project implementation team remain the same or was there a lot of staff turnover?

Were the activities carried out timely and according to work plans?

Are you aware of any financial, legal or other project implementation concerns with respect to the activities?

If you could start over again, would you implement the project differently? How?

PROJECT IMPACT (Impact):

Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status?

Impact concerns whether there has been a change towards the achievement of the overall objective as a consequence of the achievement of the results and specific objectives. Both intended and unintended impacts are reviewed.

What has happened as a consequence of the project?

What practical improvements have there been as a result?

Can the project impacts be quantified? (e.g., number of septic systems rehabilitated / replaced: increased amount of garbage picked up/separated/recycled: evidence of improvements in coastal fish populations and fresh water quality, etc.).

How many people have directly benefited from the project activities?

Did the pilot project help to influence environmental and development policies programmes and plans in the country?

PROJECT IMPACT (Sustainability):

To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results?

(Sustainability can be described as the degree to which the benefits produced by the project continue after the external assistance has come to an end.)

Is the project effort continuing after the end of GEF funding / end of the project?

Who will take a lead in continuing this work? Is there an enough commitment from them?

Have any of the project efforts been replicated (or starting to replicate) in other communities?

Are there efforts under way to find new sources of funding to continue and expand the activities that were started under this project and not yet finished?

Were there public awareness and outreach efforts? And how effective was the project in attracting public attention?

6.1.6 Evaluation Question Matrix

This Evaluation Question/Criteria Matrix as referred to in Section 2.2.1 was used during the evaluation. must be fully completed/amended by the consultant and included in the TE inception report and as an Annex to the TE report.

Evaluative Criteria Questions	Indicators	Sources	Methodology	
Relevance: How does the project relate to the main objectives of the national levels?	GEF focal area, and to the environment and d	levelopment priorities at the	e local, regional and	
How would you describe the project objectives?How do the project objectives and purpose match	 Project Design (e.g. ProDoc) incorporates the wider priorities and objectives in the sector 	 ProDoc 	 Review of documents 	
 Are the project objectives? Are the project objectives and purpose in line with UNDP, National and regional priorities and objectives in the sector? 	 Existence of clear link between UNDP and Government of Nigeria priorities and the project objectives 			
Effectiveness: To what extent have the expected outcomes and object	tives of the project been achieved?			
 Were the project objectives achieved? Did the project make a positive impact? Have there been improvements made by the Government in the National EE policy and regulatory 	 Record of Achievement of project outcomes and outputs Improvement in Government Policy 	 PIRs MTE report Government Policy documents 	 Review of documents Interviews 	
 Has the institutional capacity and awareness, and information on EE for appliances increased? 		Training RecordsWorkshop Proceedings		

 to work plans? Are you aware of any financial, legal or other project implementation concerns with respect to the activities? If you could start over again, would you implement the project differently? How? Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results? Is the project effort continuing after the end of GEF funding / end of the project? Who will take a lead in continuing this work? Is there an enough commitment from them? Have any of the project efforts been replicated (or ctarting to replicate) in other communities? New funding availability 	 Do you think the money that went into the effort was worth it? Do the ends justify the means? Were the project funds well managed? Was there good coordination and cooperation among the participants involved in the community project? Did the project implementation team remain the same or was there a lot of staff turnover? Were the activities carried out timely and according 	9 minutes vs Actual s
 Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results? Is the project effort continuing after the end of GEF funding / end of the project? Who will take a lead in continuing this work? Is there an enough commitment from them? Have any of the project efforts been replicated (or starting to replicate) in other communities? New funding availability New funding availability New funding availability Other websites 	 Are you aware of any financial, legal or other project implementation concerns with respect to the activities? If you could start over again, would you implement the project differently? How? 	
 Is the project effort continuing after the end of GEF funding / end of the project? Who will take a lead in continuing this work? Is there an enough commitment from them? Have any of the project efforts been replicated (or starting to replicate) in other communities? New projects New project websites New project websites New project websites New project websites 		erm project results?
 Are there efforts under way to find new sources of funding to continue and expand the activities that were started under this project and not yet finished? 	Sustainability: To what extent are there financial, institutional, social	

•	Were there public awareness and outreach efforts? And how effective was the project in attracting public attention?			
Im	pact: Are there indications that the project has contributed to, or er	abled progress toward, reduced environmer	ntal stress and/or improved	ecological status?
•	What has happened as a consequence of the project?	Reduction in GHG	Project Tracking	Review of documents
•	What practical improvements have there been as a result?			
•	Can the project impacts be quantified?			
•	How many people have directly benefited from the project activities?			
•	Did the pilot project help to influence environmental and development policies programmes and plans in the country?			

6.1.7 Evaluation Consultant Agreement Form

Evaluators:

- 1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
- 2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
- 3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
- Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
- 5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
- 6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
- 7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Evaluation Consultant Agreement Form³

³www.unevaluation.org/unegcodeofconduct

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Name of Consultant: Drona Upadhyay

Name of Consultancy Organization (where relevant):

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at Bristol on 18 October 2015

Signature

6.1.8 Evaluation Report Clearance Form

(to be completed by CO and UNDP GEF Technical Adviser based in the region and included in the final document)

Evaluation Report Reviewed and Cleared	by
UNDP Country Office	
Name:	
Signature:	Date:
UNDP GEF RTA	
Name:	
Signature:	Date:

6.1.9 Terms of Reference

Terminal Evaluation Terms of Reference

INTRODUCTION

In accordance with UNDP and GEF M&E policies and procedures, all full and medium-sized UNDP support GEF financed projects are required to undergo a terminal evaluation upon completion of implementation. These terms of reference (TOR) sets out the expectations for a Terminal Evaluation (TE) of the *Project titled* Promoting Energy Efficiency in Residential and Public Sector Nigeria (PIMS 4122).

The essentials of the project to be evaluated are as follows:

PROJECT SUMMARY TABLE

Project Title: Promoting Energy Efficiency in Residential and Public Sector in Nigeria						
GEF P	Project ID:	3794 (PMIS#)		<u>.</u>	<u>at endorsement</u> <u>(Million US\$)</u>	<u>at completion</u> <u>(Million US\$)</u>
UNDP F	Project ID:	4122 (PIMS#) 00075698(Atl as ID)	GEF financing:	2,667,273		
Со	untry:	Nigeria	Implementing/ Executing Agency own:			
R	egion:	Africa	Government:	5,0 1,0	000,000 (NGA) 082,796 (ECN)	
Focal	Area:	Climate Change	Other:	200,000 (UNDP) 819,463 (Cuban Embassy)		
FA Objec (O	ctives, P/SP):	Conservation and Efficiency/ Transforming GHG Markets	Total co-financing:	7,102,259		
Exe Ag	cuting gency:	Energy Commission of Nigeria	Total Project Cost:	9,769,532		
Other Partners involved:		Federal	ProDoc Signature		te project began):	April 2011
		Ministry of Environment, National centre for	(Operational) Closing Da	te:	Proposed: September 2015	Actual: April 2015

Energy efficiency		
Conservation		
and Standard		
Organization of Nigeria		

PURPOSE, OBJECTIVES, AND SCOPE

The project was designed to reduce Nigeria's energy-related CO2 emissions by mitigating the demand for energy in the country's residential and public sectors through the introduction of a Minimum Energy Performance Standards (MEPS) for new equipment and appliances.

The TE will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects.

The objectives of the evaluation are to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

EVALUATION APPROACH AND METHOD

An overall approach and method⁴ for conducting project terminal evaluations of UNDP supported GEF financed projects has developed over time. The evaluator is expected to frame the evaluation effort using the criteria of **relevance**, effectiveness, efficiency, sustainability, and impact, as defined and explained in the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects. A set of questions covering each of these criteria has been drafted and is included with this TOR (*seeAnnex C*). The evaluator is expected to amend, complete and submit this matrix as part of an evaluation inception report, and shall include it as an annex to the final report.

The evaluation must provide evidence- based information that is credible, reliable and useful. The evaluator is expected to follow a participatory and consultative approach ensuring close engagement with government counterparts, in particular the GEF operational focal point, UNDP Country Office, project team, UNDP GEF Technical Adviser based in the region and key stakeholders. The evaluator is expected to conduct a field mission to *Nigeria*, including the following project sites: *Standard Organization of Nigeria (SON) and the National Centre for Energy Efficiency and Conservation (NCEEC), Lagos.* Interviews will be held with the following organizations and individuals at a minimum: *Energy Commission of Nigeria, Federal Ministry of Environment, Standard Organization of Nigeria, Consumer Protection Council, National Centre for Energy Efficiency and Conservation Agency.*

The evaluator will review all relevant sources of information, such as the project document, project reports – including Annual APR/PIR, project budget revisions, midterm review, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, and any other materials that the evaluator considers useful for this evidence-based assessment. A list of documents that the project team will provide to the evaluator for review is included in <u>Annex B</u> of this Terms of Reference. The full scope methods used in the evaluation are at the discretion of the evaluator, but a mixed method of document review and interviews should be employed, at a minimum. The TE report should explain all the evaluation methods used in detail.

⁴ For additional information on methods, see the <u>Handbook on Planning, Monitoring and Evaluating for Development Results</u>, Chapter 7, pg. 163

EVALUATION CRITERIA & RATINGS

An assessment of project performance will be carried out, based against expectations set out in the Project Logical Framework/Results Framework (see <u>Annex A</u>), which provides performance and impact indicators for project implementation along with their corresponding means of verification. The evaluation will at a minimum cover the criteria of: **relevance, effectiveness, efficiency, sustainability and impact.** Ratings must be provided on the following performance criteria. The completed table must be included in the evaluation executive summary. The obligatory rating scales are included in <u>Annex D</u>.

Evaluation Ratings:						
1. Monitoring and Evaluation	rating	2. IA& EA Execution	rating			
M&E design at entry		Quality of UNDP Implementation – Implementing Agency (IA)				
M&E Plan Implementation		Quality of Execution - Executing Agency (EA)				
Overall quality of M&E		Overall quality of Implementation / Execution				
3. Assessment of Outcomes	rating	4. Sustainability	rating			
Relevance		Financial resources				
Effectiveness		Socio-political				
Efficiency		Institutional framework and governance				
Overall Project Outcome Rating		Environmental				
		Overall likelihood of sustainability				

PROJECT FINANCE / COFINANCE

The Evaluation will assess the key financial aspects of the project, including the extent of co-financing planned and realized. Project cost and funding data will be required, including annual expenditures. Variances between planned and actual expenditures will need to be assessed and explained. Results from recent financial audits, as available, should be taken into consideration. The evaluator(s) will receive assistance from the Country Office (CO) and Project Team to obtain financial data in order to complete the co-financing table below, which will be included in the terminal evaluation report.

Co-financing (type/source)	UNDP own financing (mill. US\$)		Government (mill. US\$)		Partner Agency (mill. US\$)		Total (mill. US\$)	
	Planne d	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants								
Loans/Concessions								
 In-kind support 								
• Other								
Totals								

MAINSTREAMING

UNDP supported GEF financed projects are key components in UNDP country programming, as well as regional and global programmes. The evaluation will assess the extent to which the project was successfully mainstreamed with other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender.

IMPACT

The evaluators will assess the extent to which the project is achieving impacts or progressing towards the achievement of impacts. Key findings that should be brought out in the evaluations include whether the project has demonstrated: a) verifiable improvements in ecological status, b) verifiable reductions in stress on ecological systems, and/or c) demonstrated progress towards these impact achievements.⁵

CONCLUSIONS, RECOMMENDATIONS & LESSONS

The evaluation report must include a chapter providing a set of **conclusions**, **recommendations** and **lessons**.

IMPLEMENTATION ARRANGEMENTS

The principal responsibility for managing this evaluation resides with the UNDP CO in *Nigeria*. The UNDP CO will contract the evaluators and ensure the timely provision of per diems and travel arrangements within the country for the evaluation team. The Project Team will be responsible for liaising with the Evaluators team to set up stakeholder interviews, arrange field visits, coordinate with the Government etc.

EVALUATION TIMEFRAME

The total duration of the evaluation will be 22 days over a time period of 12 weeks according to the following plan:

Activity	Working Days	Timeframe
Preparation	<i>3</i> days	14 th - 18 th September, 2015
Evaluation Mission	∕days	5 th – 13 th October, 2015
Draft Evaluation Report	<i>10</i> days	19 th October- 4 th November, 2015
Final Report	2 days	23 rd – 27 th November, 2015

EVALUATION DELIVERABLES

The evaluation team is expected to deliver the following:

Deliverable	Content	Timing	Responsibilities
Inception Report	Evaluator provides clarifications on timing and method	No later than 2 weeks before the evaluation mission: <i>18 September</i>	Evaluator submits to UNDP CO

⁵A useful tool for gauging progress to impact is the Review of Outcomes to Impacts (ROtI) method developed by the GEF Evaluation Office: <u>ROTI Handbook 2009</u>

		2015	
Presentation	Initial Findings	End of evaluation mission: <i>13 October 2015</i>	To project management, UNDP CO
Draft Final Report	Full report, (per annexed template) with annexes	Within 3 weeks of the evaluation mission: 04 November 2015	Sent to CO, reviewed by RTA, PCU, GEF OFPs
Final Report*	Revised report	Within 1 week of receiving UNDP comments on draft: <i>27 November 2015</i>	Sent to CO for uploading to UNDP ERC.

*When submitting the final evaluation report, the evaluator is required also to provide an 'audit trail', detailing how all received comments have (and have not) been addressed in the final evaluation report. See <u>Annex H</u> for an audit trail template.

TEAM COMPOSITION

The evaluation team will be composed of *1 independent evaluator*. The consultant shall have prior experience in evaluating similar projects. Experience with GEF financed projects is an advantage. The evaluator selected should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities.

The evaluator must present the following qualifications:

- Previous Minimum 6years of relevant professional experience;
- Knowledge of and/or experience with UNDP supported projects and/or GEF funded projects;
- Technical knowledge in the targeted focal area(s): knowledge in energy efficiency, in particular of household appliances;
- experience with results-based monitoring and evaluation methodologies; Must have undertaken at least 3 Mid-Term and/or Final Evaluations, including one in the field of Energy Efficiency, preferably for a similar UNDP/GEF project;
- Demonstrate ability to assess complex situations, succinctly distils critical issues, and draw forward-looking conclusions and recommendations;
- Be excellent in human relations, coordination, planning and team work;
- Have exemplary written and oral communication skills in English;
- Being highly knowledgeable in GEF and UNDP-GEF monitoring and evaluation policies procedures will be an added advantage;
- Having familiarity with Nigeria or any Developing Countries is an advantage.

EVALUATOR ETHICS

Evaluation consultants will be held to the highest ethical standards and are required to sign a Code of Conduct (Annex E) upon acceptance of the assignment. UNDP evaluations are conducted in accordance with the principles outlined in the <u>UNEG 'Ethical Guidelines for Evaluations'</u>.

PAYMENT MODALITIES AND SPECIFICATIONS

Milestone

10%	At submission and approval of inception report
40%	Following submission and approval of the 1ST draft terminal evaluation report
50%	Following submission and approval (UNDP-CO and UNDP RTA) of the final terminal evaluation report

APPLICATION PROCESS

UNDP applies a fair and transparent selection process that will take into account the competencies/skills of the applicants as well as their financial proposals. Interested candidate should send their CV with indication of the e-mail and phone contact to <u>etiosa.uyigue@undp.org</u> and <u>muyiwa.odele@undp.org</u> no <u>later than 30th August 2015</u>

Shortlisted candidates will be requested to submit a price offer indicating the total cost of the assignment (including daily fee, per diem and travel costs).

ANNEX A: PROJECT LOGICAL FRAMEWORK

This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD: Environmental planning and climate change prevention

Country Programme O	utcome Indicators:	Strengthening the	Policy,	institutional	and	financing	framework	at national	level t	to combat
climate change										

Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one): 1. Mobilize finance for improved environmental management and 2. Address increasing threats from climate change and build local capacity to better manage the environment and deliver energy services.

Applicable GEF Strategic Objective and Program: To reduce Nigeria's energy-related CO₂ and ozone depleting substance (ODS) emissions

Applicable GEF Expected Outcomes: A strategic Market Transformation 352,000 tCO₂ abated over four years' program duration

Applicable GEF Outcome Indicators: Cumulative amount of GHG reduced in kilotons of CO₂

Strategy	Indicators	Baseline	Target (end of project)	Sources of Verification	Risk and Assumptions
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Strategy	Indicators	Baseline	Target (end of project)	Sources of Verification	Risk and Assumptions
Project Objective: To improve the energy efficiency of appliances in Nigeria, especially in the residential and public sector, through the introduction of an EE legislation and standards & labels	 Reduction in electricity used Reduction in CO₂ emissions Increased number of appliances with EE standards & labels MEPS adhered to in government procurements Importers, manufacturers, distributors, retailers (IMDR) and consumers adopt EE practices 	 Very few appliances have incorporated EE standards and labels Govt. procurement programs in public sector do not specify minimum EE performance standards IMDR professionals and engineers and consumers do not understand basic EE principles 	 551 MW (512 and 39 MW) of electricity saved CO₂ emissions reduced by 352,000 tCO2e (92,000 from lighting and 260,000 from refrigerators) from direct impacts Govt. has adopted EE S & L in 50% of its procurement programs Govt. have introduced EE standards 50% in public buildings IMDR have adopted EE standards 1 million CFLs installed 	 Survey of import, manufacturing and retail sale data and government agencies Survey of SON and custom enforcement agencies Survey of consumer and household electricity bill 	 Govt. adopts necessary regulatory framework Govt. is willing to "lead by example" in adopting EE standards in its own programs Strong support from IMDR professionals and operators for EE standards S & L non- compliance is a significant risk Lack of enforcement
Strategy	Indicators	Baseline	Target (end of project)	Sources of Verification	Risk and Assumptions
---	---	---	---	---	---
Outcome1:Capacitiesofallrelevantstakeholdersatnationallevelregardingthe concept,natureandpotentialofenergyefficiencyintheresidentialandpublicsectorareenhanced(orstrengthened)strengthened)	 EE Appliance Unit at NCEEC fully functional All key stakeholders (Politicians, lawmakers, Govt. agencies, CSO, IMDR professionals) trained in EE principles EE being considered in public and household procurements Increased number of EE appliances in domestic market Increase awareness on EE concept among policy makers, legislators and civil society 	 No EE regulatory or institutional framework Limited S&L for appliances Influx of inefficient secondhand appliances into Nigerian market Influx of substandard appliances into the domestic market Dominant use of incandescent light bulbs and other inefficient appliances 	 EE Appliance Unit set up by Year one The SON and the Custom agencies enforcing EE S&L 1,000 households surveyed for baseline data 	 Project files Surveys of Federal and State S&L enforcement process Inventory of baseline data 	 Political support to establish legal, regulatory and institutional framework Lack and poor access to baseline data

Strategy	Indicators	Baseline	Target (end of project)	Sources of Verification	Risk and Assumptions
Output 1.1: Energy & GHG savings potential for each main end- users in the residential and public sector validated	• Inventory of baseline data from sale and import sources	• Limited inventory on baseline data (sale volume, GHG emission, energy rating and consumption)	• Inventory of baseline data for lighting, refrigeration, air- conditioners, motor, heating equipment and pumps established	 Publication of baseline data Publication of Nationally Appropriate Mitigation Actions (NAMA) report 	 Lack of clear data set for the sale and import of appliances Poor access to data Non cooperation from stakeholders to release data
Output1.2:Monitoring and datacollection system forend-use sales, energydemand and energyconsumptionisformalizedandimplemented.	• Baseline data (brand, energy rating, electricity consumption, GHG emissions) from individual households and public building surveyed and monitored	• Lack of clear validated baseline at the household and public building level	 Appliances (lighting, refrigerators and air-conditioner) 1,000 households and 100 public buildings (lighting) surveyed and monitored 	Publication of report on the social (access to electricity), economic (reduce bill) and environmental (lower emissions) benefits of EE appliances	 Lack of representative data and trained technicians to conduct study Impact of income status on result
Output 1.3: Awareness of the political and policy decision-makers on end-use energy efficiency options and potentials for GHG reductions enhanced	 Politicians and lawmakers trained in EE policy and legislations and benefits Intensified campaign for EE appliances by govt. officials 	• Lack of understanding of the social, economic and environmental benefits of EE demand side practices	Climate Change Committees at the House of Rep and Senate to be briefed and trained on EE practices	 Syllabus and publication developed on EE policy and legislation Training programmes well documented and publicized in print and electronic media 	 Lack of stakeholders buy in and political will Pressure and lobbying from the importers and distributors

Strategy	Indicators	Baseline	Target (end of project)	Sources of Verification	Risk and Assumptions
Output 1.4: EE Appliances Codes drafted and approved	• Drafting and submission of EE Appliances Code	• No EE regulations currently exist in for appliances design, manufacturing and import	• EE Appliances code drafted and submitted to Parliament by Year 3	• Official govt. publications	 Delay in the approval processes EE Code response to Nigerian economic, social and cultural specificities may be slow
Outcome 2: Development of new energy efficiency legal requirements for a series of end-use equipment in Nigeria.	• Draft application decrees necessary to make the EE Appliances Code mandatory	• No regulatory framework exists to mandate EE Appliances Code	• Application decrees drafted and submitted by Year 3	• Official government publications	• Enabling EE law not adopted by parliament
Output 2.1: National testing center established and certification procedures to promote energy efficiency defined	• Testing center established	• Lack of international accredited testing center	• 2 Testing centers with comprehensive and clear testing and certification procedures developed	• Publication of testing and certification standards	 Lack of competent technicians Nigerian government may provide subsequent funding of the testing centers after the GEF funding Non-adherence to policy on standard by importers

Strategy	Indicators	Baseline	Target (end of project)	Sources of Verification	Risk and Assumptions
Output 2.2: Pilot program to test launched and appropriate energy efficiency schemes such as energy labels finalized	 Testing and measurement of energy consumption in sample appliances Minimum energy performance standards set for appliances 	• Very limited data on the applicability of international EE standards and labels	• All proposed standards and labels are field tested to validate efficiency gains	• Field testing and measurement reports	• Delay in the acceptance of the S and L by various stakeholders
Output 2.3: National labeling content and format is designed, tested, validated and adopted	• Design of S&L accepted and adopted	• Lack of clear S&L in Nigeria	• All proposed S&L are field tested to validate efficiency gains and become mainstream and common practice	• S&L for CFL, refrigerators and air-conditioners widely adopted	• Lack of support from stakeholders due to higher appliances cost
Output 2.4: A relevant multiyear timetable to assure a coherent implementation established	 Acceptance of the S&L by the market Timely reporting and monitoring of the project 	• No review on the effectiveness of the S&L in the market	 Mainstreaming of the S&L at the local level Timely submission of all M&E reports 	• Reports and workshop minutes from M&E team	 EE Appliances Code responds to Nigerian economic, social and cultural specificities Lack of financial support to develop upgraded versions of S&L

Strategy	Indicators	Baseline	Target (end of project)	Sources of Verification	Risk and Assumptions
OUTCOME3:Trainingofprofessionalstakeholdersstakeholdersandpublicoutreachactivities&enforcementofnewenergylegislation	 Number of demonstration projects Number of professionals trained 	• Limited availability of EE technical information and training	 At least 10 EE demonstration projects 4,500 "man-days" of EE training provided to professionals 	 Demonstration project audit report Training class EE sheet Documentation of training programmes 	• Willingness and interest from substantial number of professionals, developers and operators in EE
Output 3.1: The energy efficiency requirement (through Codes, Standards, Labels or a combination of them) are duly enforced, deeply transforming the end-use market	 Number of municipal agencies trained and able to enforce EE Code Application legislations in place to empower municipal agencies 	• Municipal code enforcement agencies do not enforce any EE appliance standards	 Capacity building of at least all relevant agencies by Yr 3 Application legislations mandating relevant agencies to enforce EE Code and policy 	 Project files Official govt. publications 	• Technical and managerial capability of relevant agencies

Strategy	Indicators	Baseline	Target (end of project)	Sources of Verification	Risk and Assumptions
Output 3.2: The new regulations are understood and adopted by local importers, manufacturers, distributors and the retail chain.	 Mobilization and outreach plan Workshops and national EE events EE housing certification program Number of professionals receiving technical EE training 	• Poor development of EE concept among Nigerian stakeholders	 Workshops hosted to rain relevant stakeholder National EE event hosted annually Quarterly electronic newsletter by Year 1 EE appliances certification program by Year 2 4500 "man-days" of technical training 	 Project files Copies of publications Invitations to events 	 Mobilization and outreach plan fails to mobilize critical mass of professionals Professional trade associations slow to cooperate Key stakeholders unwilling to partake in training programme
Output 3.3: Energy efficiency becomes priority in the purchase of any equipment.	 Increase in the sale of EE appliances Proliferation of EE appliances Availability of EE brochure 	 EE benefits are not considered in the purchase of appliances Dearth of information on EE products EE concept poorly understood 	• Government, retailers and consumers trained on EE benefits	 Sale brochures advertising EE products Sale assistant trained on EE principles Consumer and Government. made informed decision for the purchase of EE products 	 Lack of understanding on the life cycle cost analysis Higher price may deter EE products Expectation not met

Strategy	Indicators	Baseline	Target (end of project)	Sources of Verification	Risk and Assumptions
Output 3.4: Impact of the new energy efficiency measures/legislation are monitored	 Timely reporting and monitoring of the project % non compliant products 	 None Lack of data on non-compliant products 	 Project workshops held on timely basis Timely submission of all M&E reports Yearly market surveillance of non-compliant products 	 Reports and workshop minutes from M&E team Market surveillance report 	 EE Appliances Code responds to Nigerian economic, social and cultural specificities Inaccurate market survey data
Outcome 4: Transform the lighting market: promotion of energy savings lamps	 Increase sale of CFLs Baseline data for developing Carbon project Different types of monetary incentive schemes High penetration of EE bulbs in the Nigeria system 	 No concrete plan to scale up the promotion of CFL project Lack of incentives to promote EE products Low penetration of EE lighting 	 1 million CFLs to be installed in Lagos and Delta state Nigeria ready to develop Programmatic CDM to install 32 million CFL Carbon finance to fund CFL exchange for households 	• Publication of the report on the lessons learnt in the scaling up of CFL	 Lack of public support Lack of coordination between partners

Strategy	Indicators	Baseline	Target (end of project)	Sources of Verification	Risk and Assumptions
Output 4.1: A large scale pilot campaign for energy efficient lamps completed. A minimum of million CFLs disseminated in households, commercial and public services in partnership with Government of Cuba.	 CFL promoted in the residential and public sector Clear implementation and monitoring plan 	 Slow rate of CFLs penetration and adopted by the residential and public sector Lack of clear implementation plan 	 Number of CFLs installed Close collaboration between partners 	 CFL M&E report Publication of the report on the Lesson leant in the scaling up of CFLs 	• Lack of clear roles and coordination between partners
Output 4.2: Financial incentives provided to pro-active local importers and traders to sell EE lighting products	 Carbon project for the mainstreaming of CFL High acceptance of importers to import EE appliances 	• No financial incentives for the mainstreaming of EE products	 Viable incentives scheme (turn in program) identified for the scaling up of CFL EE appliances become mainstream in residential and public sector 	• Report on incentives scheme for the scaling up of CFL	 Inability to identify of EE projects offering attractive rates of return on investment Lack of understanding and appreciation by hotel operators of the value of implementing EE measures
Output 4.3: compact fluorescent lamps are recycled for the elimination of mercury according to international best practices	• Feasibility study on the viability of a lamp recycling facility in Nigeria	 No lamp recycling facility site No supporting infrastructure for lamp recycling 	• Collaborate with Osram initiative to establish a CFL infrastructure and recycling center	 Feasibility report on the investment of lamp recycling facility Lamp recycling established 	 Sustainability of the recycling center Lack of cost effective infrastructure

Strategy	Indicators	Baseline	Target (end of project)	Sources of Verification	Risk and Assumptions
Outcome 5: Project management	• Overall project management and coordination	• Government agencies have experience in managing donor projects, but they lack with EE projects	 Timely submission of all project reports Project objectives substantially met 	 Surveys of key stakeholders and donors Project management report 	 Lack of project ownership Lack of coordination
Output 5.1: Project management and implementation support	 Project objectives and deliverables Alignment of sectoral policies with objectives of EE project 	• Lack of clear project implementation and monitoring plan	• Timely submission of all project reports	• Review of M and E report	 Poor monitoring skills Lack of project ownership Political interference Delay in the release of fund

ANNEX B: LIST OF DOCUMENTS TO BE REVIEWED BY THE EVALUATORS

GEF Project Information Form (PIF), Project Document, and Log Frame Analysis (LFA)

Project Implementation Plan

Implementing/Executing partner arrangements

List and contact details for project staff, key project stakeholders, including Project Boards, and other partners to be consulted

Project sites, highlighting suggested visits

Mid Term Review (MTR) Report

Annual Project Implementation (APR/PIR) Reports

Project budget and financial data

Project Tracking Tool, at baseline, at mid-term, and at terminal points

UNDP Development Assistance Framework (UNDAF)

UNDP Country Programme Document (CPD)

UNDP Country Programme Action Plan (CPAP)

GEF focal area strategic program objectives

ANNEX C: EVALUATION QUESTIONS

This Evaluation Criteria Matrix must be fully completed/amended by the consultant and included in the TE inception report and as an Annex to the TE report.

Evaluative Criteria Questions	Indicators	Sources	Methodology
Relevance: How does the project relate to the main objectives of the GI national levels?	EF focal area, and to the environment and c	evelopment priorities at the	local, regional and
•	•	•	•
•	•	•	•
•	•	•	•
Effectiveness: To what extent have the expected outcomes and objective	ves of the project been achieved?		
•	•	•	•
•	•	•	•
•		•	•
Efficiency: Was the project implemented efficiently, in-line with internat	ional and national norms and standards?		
•	•	•	•
•	•	•	•
•	•	•	•
Sustainability: To what extent are there financial, institutional, social-e	economic, and/or environmental risks to sus	taining long-term project re	sults?
•			

•	•	•	•		
•	•	•	•		
Impact: Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status?					
•	•	•	•		
•	•	•	•		

ANNEX D: RATING SCALES

Ratings for Effectiveness, Efficiency, Overall Project Outcome Rating, M&E, IA&EA Execution	Sustainability ratings:	Relevance ratings			
6. Highly Satisfactory (HS): no shortcomings	4. Likely (L): negligible risks to sustainability	2. Relevant (R)			
5. Satisfactory (S): minor shortcomings	3. Moderately Likely (ML): moderate risks	1. Not relevant (NR)			
4. Moderately Satisfactory (MS): moderate shortcomings	2. Moderately Unlikely (MU): significant risks				
Moderately Unsatisfactory (MU): significant shortcomings	1. Unlikely (U): severe risks				
2. Unsatisfactory (U): major shortcomings					
1. Highly Unsatisfactory (HU): severe shortcomings					
Additional ratings where relevant:					
Not Applicable (N/A)					
Unable to Assess (U/A)					

ANNEX E: EVALUATION CONSULTANT CODE OF CONDUCT AND AGREEMENT FORM

Evaluators:

- 1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
- 2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
- 3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
- Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
- 5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
- 6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
- 7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Evaluation Consultant Agreement Form⁶

⁶www.unevaluation.org/unegcodeofconduct

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Name of Consultant: _____

Name of Consultancy Organization (where relevant):

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at *place* on *date*

Signature:

ANNEX F: EVALUATION REPORT OUTLINE⁷

i. Opening page:

- Title of UNDP supported GEF financed project
- UNDP and GEF project ID#s
- Evaluation time frame and date of evaluation report
- Region and countries included in the project
- GEF Operational Program/Strategic Program
- Implementing Partner and other project partners
- Evaluation team members
- Acknowledgements
- ii. Executive Summary
 - Project Summary Table
 - Project Description (brief)
 - Evaluation Rating Table
 - Summary of conclusions, recommendations and lessons
- iii. Acronyms and Abbreviations

(See: UNDP Editorial Manual⁸)

- **1.** Introduction
 - Purpose of the evaluation
 - Scope & Methodology
 - Structure of the evaluation report
- **2.** Project description and development context
 - Project start and duration
 - Problems that the project sought to address
 - Immediate and development objectives of the project
 - Baseline Indicators established
 - Main stakeholders
 - Expected Results
- 3. Findings

(In addition to a descriptive assessment, all criteria marked with (*) must be rated⁹)

- **3.1** Project Design / Formulation
 - Analysis of LFA/Results Framework (Project logic /strategy; Indicators)
 - Assumptions and Risks
 - Lessons from other relevant projects (e.g., same focal area) incorporated into project design
 - Planned stakeholder participation
 - Replication approach
 - UNDP comparative advantage
 - Linkages between project and other interventions within the sector
 - Management arrangements
- **3.2** Project Implementation
 - Adaptive management (changes to the project design and project outputs during

⁷The Report length should not exceed <u>40</u> pages in total (not including annexes).

⁸ UNDP Style Manual, Office of Communications, Partnerships Bureau, updated November 2008 ⁹See Annex D for rating scales.

implementation)

- Partnership arrangements (with relevant stakeholders involved in the country/region)
- Feedback from M&E activities used for adaptive management
- Project Finance
- Monitoring and evaluation: design at entry (*), implementation (*), and overall assessment (*)
- Implementing Agency (UNDP) execution (*) and Executing Agency execution (*), overall project implementation/ execution (*), coordination, and operational issues

3.3 Project Results

- Overall results (attainment of objectives) (*)
- Relevance (*)
- Effectiveness (*)
- Efficiency (*)
- Country ownership
- Mainstreaming
- Sustainability: financial resources (*), socio-economic (*), institutional framework and governance (*), environmental (*), and overall likelihood (*)
- Impact

4. Conclusions, Recommendations & Lessons

- Corrective actions for the design, implementation, monitoring and evaluation of the project
- Actions to follow up or reinforce initial benefits from the project
- Proposals for future directions underlining main objectives
- Best and worst practices in addressing issues relating to relevance, performance and success

5. Annexes

- ToR
- Itinerary
- List of persons interviewed
- Summary of field visits
- List of documents reviewed
- Evaluation Question Matrix
- Questionnaire used and summary of results
- Evaluation Consultant Agreement Form
- Report Clearance Form
- Annexed in a separate file: TE audit trail
- Annexed in a separate file: Terminal GEF Tracking Tool

ANNEX G: EVALUATION REPORT CLEARANCE FORM

(to be completed by CO and UNDP GEF Tech document)	nical Adviser based in the region	and included in the final
Evaluation Report Reviewed and Cleared UNDP Country Office	by	
Name:		_
Signature:	Date:	
UNDP GEF RTA		
Name:		-
Signature:	Date:	

ANNEX H: TE REPORT AUDIT TRAIL

The following is a template for the evaluator to show how the received comments on the draft TE report have (or have not) been incorporated into the final TE report. This audit trail should be included as an annex in the final TE report.

To the comments received on (*date*) from the Terminal Evaluation of (*project name*) (UNDP *PIMS #*)

The following comments were provided in track changes to the draft Terminal Evaluation report; they are referenced by institution ("Author" column) and track change comment number ("#" column):

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE teamresponse and actions taken

6.1.10 GEF Tracking Tool

In a separate file

6.1.11 TE Report Audit Trail

In a separate file