Terminal Evaluation of the UNEP/GEF Project "Promotion of Energy Efficiency in Public Lighting in Côte d'Ivoire" (GEF ID 3876)

(2013-2020)

Evaluation Office of the United Nations Environment Programme

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(Promotion of Energy Efficiency in Public Lighting in Côte d'Ivoire)
(GEF Project ID 3876)
(03/2023)

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ABOUT THE EVALUATION

Joint Evaluation:	No
Report Language(s):	English
Evaluation Type:	Terminal Evaluation
Brief Description:	This report is a terminal evaluation of a UNEP-GEF project implemented between January 2016 and June 2020. The project aim was to speed up market transformation for energy-efficient lighting technologies in the emerging economy of Côte d'Ivoire, thereby reducing electrical demand and consumption and the related greenhouse gas (GHG) emissions.
Key words:	Energy Efficiency; Climate Change; lighting; LED.
Primary data collection period:	April – June 2021 and Mid-April – June 2022
Field mission dates:	N/A

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List of acronyms and abbreviations

AFECAMCI	Association des Ferrailleurs et Des Casses Modernes de Côte d'Ivoire
AIENR	Association Ivoirienne des Energies Renouvelables et de l'Efficacité
ANARE	Energétique National Electricity Sector Regulation Authority
ANARE-CI	Autorite Nationale de Regulation du Secteur de L'electricite de Côte d'Ivoire
APR	Annual project report
BEE	Bureau of Energy Efficiency
BSP	Bali Strategic Plan
CASE	Centre Africain pour la Santé Environnementale
CFL	Compact Fluorescent Lamp
CHR	Regional Medical' Centre
CIE	Cote d'Ivoire Energies
CI-ENERGIES	Compagnie Ivoirienne d'Electricité
CODINORM	Côte d'Ivoire Normalisation
COP	Conference of the Parties
DGE	Directorate General of Energy
DH	Directorate of Hydrocarbons
ECOWAS	Economic Community of West African States
ECREEE	ECOWAS Centre for Renewable Energy and Energy Efficiency
EE	Energy Efficiency
ESM	Environmentally Sound Management
FACACI	Fédération des Associations de Consommateurs Actifs de Cote d'Ivoire
FONAME	Fond National pour la Maitrise de l'Energie
GEF	Global Environment Facility
GHG	Green House Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
IL	Incandescent Lamp
INHP	Institut National d'Hygiène Publique (INHP)
ISTC	Institut des Sciences et Techniques de la Communication
IW	Inception Workshop
kV	Kilovolt
kWh	Kilowatt Hours
LANEMA	Laboratoire National d'Essais, de Qualité, de Métrologie et d'Analyses
LDPES	Letter of Development Policy for the Electricity Sector
LED	Light Emitting Diode
M&E	Monitoring and Evaluation
MCACSP	Ministry of Commerce, Arts and Crafts, and SMEs Promotion
MEF	Ministry of Economy and Finance
MEPS	Minimum Energy Performance Standards
MESD	Ministry of Environment and Sustainable Development
MEWF	Ministry of Environment, Water and Forestry

mg	Milligram
MOF	Ministry of Finance
MPEER	Ministry of Petroleum, Energy and Renewable Energy
Mt	million ton
MTS	Medium-Term-Strategy
MVE	Monitoring, Verification and Enforcement
NDCs	Nationally Determined Contributions
NDP	National Development Plan
NGO	Non-Governmental Organization
NPD	National Project Director
PEEPL	Promotion of Energy Efficiency in Public Lighting
PIR	Project Implementation Review
PMU	Project Management Unit
PRF	Project Results Framework
PSC	Project Steering Committee
RESP	Regional Energy Saving Program
SAR	African Recycling Company
SDGs	Sustainable Development Goals
SGS	Société Générale de Surveillance
ToC	Theory of Change
TWG	Technical Working Group
U4E	United for Efficiency
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WB	The World Bank

Table 1: Project Identification Table

GEF Project ID:	3876		
Implementing Agency:	UNEP	**Executing Agency:**	Direction Générale de l'Energie, Ministry of Petroleum, Energy and Renewable Energy (MPEER)
Relevant SDG(s) and indicator(s):	SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all. Target 7.3: By 2030, double the global rate of improvement in energy efficiency.		
Sub-programme:	Climate Change	**Expected Accomplishments:**	EA (b) Countries increasingly adopt and/or implement low greenhouse gas emission development strategies and invest in clean technologies
UNEP approval date:	June 2012	**Programme of Work Output(s):**	PoW 2020-2021, Sub-programme 1 Climate Change
GEF approval date:	April 2012	**Project type:**	MSP
GEF Operational Programme #:	GEF-4	**Focal Area(s):**	Climate Change
		GEF Strategic Priority:	CC-SP1 Building EE
***Expected* start date:**	September 2013	**Actual start date:**	January 2016[1]
***Planned* completion date:**	August 2016	**Actual operational completion date:**	June 2020
***Planned* project budget at approval:**	USD 3,785,000	**Actual total expenditures reported as of 30 June 2020:**	Cash spent: USD 638,260
GEF grant allocation:	USD 884,091	**GEF grant expenditures reported as of 30 June 2020:**	USD 638,260
Project Preparation Grant - GEF financing:	USD 25,000	**Project Preparation Grant - co-financing:**	N/A
***Expected* Medium-Size Project co-financing:**	USD 2,900,909	**Secured Medium-Size Project co-financing:**	USD 2,072,406
First disbursement:	November 2013 USD 100,000	**Planned date of financial closure:**	September 2021
No. of formal project revisions:	4	**Date of last approved project revision:**	4 December 2019
No. of Steering Committee meetings:	2	**Date of last Steering Committee meeting:**	15 January 2019
Mid-term Review/ Evaluation *(planned date):*	N/A	**Mid-term Review/ Evaluation (actual date):**	N/A
Terminal Evaluation *(planned date):*		**Terminal Evaluation (actual date):**	December 2020 – October 2021 January 2022 – January 2023
Coverage - Country(ies):	Côte d'Ivoire	**Coverage - Region(s):**	West Africa
Dates of previous project phases:	N/A	**Status of future project phases:**	N/A

[1] Although the PCA with the DGE was signed in September 2013, the implementation of project activities effectively started in January 2016, following the recruitment of the Project Manager.

Executive Summary

Introduction

1. Cote d'Ivoire has had energy efficiency and conservation on its energy agenda since the 1980s and its rational use have always been among the major strategies of the Government in attaining its energy security goal while reducing environmental impacts related to energy generation by thermal plants. The various government attempts on energy efficiency and conservation have however suffered from various challenges/barriers that have prevented the uptake of energy efficiency projects and investments. These barriers are policy, legal, institutional, regulatory, technical, cost, awareness and implementation. The promotion of energy-efficient lighting was considered to have good prospects to make a great contribution towards the nation's energy savings objectives as set out in the Letter of Development Policy for the Electricity Sector adopted in January 2009. This letter presented a frank assessment of the energy sector challenges at the time and efforts by government to address them to ensure sustainable development of the electricity sector and to foster population access to electricity. The GEF ID 3876 "Promotion of Energy Efficiency in Public Lighting in Côte d'Ivoire" (PEEPL) project was a timely project that sought through various strategies, to address some of the above challenges/barriers. The project was implemented between January 2016 and June 2020. The original budget was USD 3,785,000, with a GEF grant allocation of USD 884,091, and a total co-financing commitments of USD 2,900,909. The actual project expenditure at the end of the project was USD 2,835,214, including co-financing.

Objectives

2. The goal of the project was to speed up market transformation for energy-efficient lighting technologies in the emerging economy of Côte d'Ivoire. The project aimed to accelerate the phase-out of incandescent bulbs by removing the main barriers to energy-efficient lighting, promoting the development of mercury-free technologies and reducing global greenhouse gas emissions as well as mercury releases. The project objective was to create, at local level, an enabling institutional, legal, technical and financial environment to phase out inefficient incandescent lamps while supporting the widespread diffusion of high-efficient and environmentally sound new technologies such as mercury-free Compact Fluorescent Lamps and electronic ballasts. To achieve this objective, the PEEPL project sought to support Cote d'Ivoire to:
    - update energy efficiency policies, standards and guidelines on energy efficient lighting applications;
    - build institutional and technical capacities on energy-efficient lighting products;
    - disseminate consumer education information on energy-efficient lighting;
    - develop and implement pilot projects (i. e. to promote LED technology); and
    - mitigate environmental impacts of the widespread utilization of energy-efficient lighting.

3. The PEEPL Project consisted of six components. These were Energy Efficiency Policy Enhancement; Technical and Managerial Capacity Building for Energy Efficient Lighting Market; Lighting Product Quality Improvement; Energy-Efficient Lighting Product Dissemination for Public Lighting; Consumer Education and Awareness; and Project Management and Monitoring and Evaluation Support.

Evaluation Criteria and Methods

4. In accordance with the UNEP Evaluation Policy[2], the PEEPL Terminal Evaluation was undertaken at completion of the PEEPL project to assess the project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The evaluation has two primary purposes: i) to provide evidence of results to meet accountability requirements; and ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP, Directorate General of Energy, Côte d'Ivoire and other implementing partners. The terminal evaluation identified lessons of operational relevance for future project formulation and implementation, especially for the U4E initiative for their future work in the region. An evaluation process was well defined and the Consultants used that to guide the assessment. The evaluation relied on both secondary and primary data. The Consultants interviewed key stakeholders who participated in the project virtually by Zoom due to the Covid 19 pandemic.

Evaluation Findings and Conclusions

Strategic Relevance

5. The PEEPL Project was very relevant to global development and specifically to Cote d'Ivoire. The project was in alignment with a number of UNEP's strategies, policies and mandate and the objectives of the project specifically falls within these mandates and policies, particularly its Medium-Term Strategy 2014-2017[3] and Chemicals and Waste, Expected Accomplishment 3 (or EA3 -Waste). The PEEPL Project also aligns with UNEP's Medium-Term Strategy (2018-2021)[4], specifically in the areas of Climate Change. The project was relevant to GEF's strategic programming objectives of GEF-4 (2006 - 2010), (CC-SP1 Building EE), GEF-6 (2015-2018) and GEF-7 (2018-2022), among others. The project was complementary with other existing global, regional and national interventions. Strategic relevance was therefore rated as *Highly Satisfactory*.

Quality of Project Design

6. The quality of project design was assessed looking at the strengths and weaknesses of the project design. As a strength, the design of the project was such that it managed to bring on board several key stakeholders from the public, private and parastatal sectors that worked closely together to achieve a common objective, with each one of them having a role to play to bring the project to a successful end. The design did not consider emerging technologies for the energy efficient lighting and so did not consider LED lamp, which is a better technology than the Compact Fluorescent Lamp (CFL). The LED lamp is mercury free and more illuminous than the CFL, thus has a better social and economic benefits to offer than the CFL lamps. The design also did not consider gender and so did not have any budget line to take care of gender considerations. Quality of project design is rated as *Satisfactory*.

Nature of External Context

7. Apart from the political turmoil that Cote d'Ivoire went through from 2012 to 2015 prior to the commencement of project implementation, there was no other political instability that affected project implementation. However, there was insecurity in the subregion which indirectly could impact the gains of the PEEPL project. A few countries (Nigeria and Burkina Faso, for example) have been experiencing terrorist attacks in the last few years. Nature of External Context was rated as *Favourable*.

Effectiveness

[2] http://www.unep.org/eou/StandardsPolicyandPractices/UNEPEvaluationPolicy/tabid/3050/language/en-US/Default.aspx
[3] https://wedocs.unep.org/bitstream/handle/20.500.11822/7670/-UNEP_Medium_Term_Strategy_2014-2017-2015MTS_2014-2017.pdf.pdf?sequence=3&isAllowed=y
[4] http://wedocs.unep.org/bitstream/handle/20.500.11822/7621/-UNEP_medium-term_strategy_2018-2021-2016MTS_2018-2021.pdf.pdf?sequence=3&isAllowed=y

8. Generally, most of the outputs of the project were successfully attained. A few were dropped when implementation began because the government of Cote d'Ivoire or other projects were implementing similar projects. Most of the project outputs of the 5 project components focused on capacity building of and awareness creation for key project stakeholders which included the public, private sectors and beneficiary households and institutions. For example, Component 2 on Technical and Management Capacity Building was 100% attained as all planned capacity building activities had been accomplished and beneficiaries had started making use of the skills they had acquired in implementing the project. The initial training provided for the PMU staff yielded positive results, the benefit of which was demonstrated in the way the entire project was managed even amidst the delays and other challenges the project suffered from. It also helped the PMU to work in partnership with the private sector. In another example, household members during the evaluation were able to demonstrate the benefits of using the energy efficient lamps compared to what they were using prior to being introduced to the LED lamps such as the incandescent lamps. Also according to market research carried out in October 2018, about 85% of imported lamps were energy efficient (Outcome 4.2), corroborating the evaluation findings. Thus, the project achieved all the 5 outcomes successfully. Effectiveness was therefore rated as *Satisfactory*.

Financial Management

9. The executing agency was guided by the financial guide of UNEP in funds disbursement and reporting diligently. Based on the financial reporting guidelines of UNEP, the executing agency produced several expected financial documents/reports which were submitted to UNEP for approval, and these were all available for the terminal evaluation. The GEF funding for the project was USD 884,091 and the co-funding, USD 2,900,909. About 24% of total GEF budget was transferred directly to United for Efficiency for their services. The budgeted amount actually transferred to Cote d'Ivoire by UNEP was USD 617,091. Out of this amount, USD 551,551 was spent and USD 65,539 was returned to UNEP at the end of the project. The project went through a few budget revisions because some of the outputs were cancelled and their budget lines were used to increase other budget lines for other activities. Changes to work plans and budgets were approved by the Project Steering Committee (PMC), which was the highest decision-making body of the project. The communication between the executing agency and their financial staff was cordial and where there was a need for budget revision, this was communicated to UNEP for final approval before the revisions were done. Financial management was therefore rated as *Satisfactory*.

Efficiency

10. There were major delays at the beginning (2012 – 2014) due to political instability in Cote d'Ivoire and at the commencement of the project (2015 – 2016) due to recruitment and administrative setbacks. The project management unit and the project steering committee were established after these delays and the experts both local and the 4 international experts from United for Efficiency were hired as consultants to provide various professional services related to the project. These setbacks necessitated changes in workplans and budget, but these were done at no cost. There was another delay towards the end of the project life (2018 – 2019) which was due to procurement delays and Covid 19 pandemic which also unduly delayed delivery of activities under Component 5. The executing agency adopted a number of measures to make the project cost effective by ensuring that it maximised the use of available resources and opportunities effectively during project implementation to achieve results. For example, where possible, the executing agency hired local consultants. Also, a number of public and private sector agencies cooperated with the executing agency and took up the implementation of some of the project activities because they were already undertaking similar projects. Examples are the nationwide distribution/installation of 2.34 million Compact Fluorescent Lamps between 2016 and 2017 and the provision of street lights, which led to the cancellation of 2 activities under Component 4. In the process, the budget for

implementing such activities was saved and used to support other PEEPL other activities. Efficiency was rated as ***Moderately Satisfactory*** due to the long delays of the project.

Monitoring and Reporting

11. The baseline data that was used in designing the project had to be updated after the 3-year delay in project commencement. This was important to ensure accurate data were available to be used as benchmark for monitoring and evaluation. The executing agency made use of the GEF Tracking Tool for Terminal Evaluation, basically to track GEF concerns. The tool was used to calculate greenhouse gas (GHG) emission avoided and evidence showed after the evaluation that the project met its targets and was successful in reducing emission. There was an efficient monitoring and reporting systems in place which helped in tracking performance and attainment of results. Project budget was regularly monitored and reviewed 4 times due to changes that occurred as a result of change in project design and work plans. There is evidence of Project Implementation Reviews (PIRs) covering 2015 to 2020. The PIRs provided details of progress towards objectives, implementation progress, and risk management for the PEEPL Project against the component indicators. The PIRs are of good quality and they adequately presented detailed progress of activities of the PEEPL Project. They indicated areas that needed prompt action to ensure smooth flow of implementation of project activities. The project did not go through mid-term evaluation as the project duration was short and shrouded with many delays but the executing agency produced the half-yearly reports. Based on the above, Monitoring of Project Implementation and reporting was rated as ***Satisfactory*****.**

Sustainability

12. Sustainability was evaluated under 3 areas: socio-political, financial and institutional.

13. The Ministry of Petroleum, Energy and Renewable Energy made the effort to secure funding for financial sustainability of the project. There is an allocated budget of FCFA 3,295 million in the 2021-2025 National Development Plan which is to cater for the National Strategy for the Transformation of the Lighting Market, where the project belongs. This has led to the establishment of a revolving fund (Decree[5] No. 2016-1131 of December 21 2016) that is committed to funding of projects related to renewable energies and energy efficiency. The United for Efficiency and Cote d'Ivoire's Directorate General for Energy have recently agreed to search for funding for a follow up energy efficient cooling appliances 3-year programme under GCF readiness. Components 2, 3 and 4 are not very much dependent on additional financing after implementation as they are mainly about capacity building.

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15. In terms of institutional sustainability, the project has built capacity for the relevant public sector actors, including the Directorate General for Energy and several other stakeholders (the private

[5] *http://www.energie.gouv.ci/uploads/documents/energie_decrets/Decret_n_2016_-1131_du_21_decembre_2016_FONAME%20pdf.pdf*
[6] *http://www.energie.gouv.ci/uploads/documents/energie_decrets/Decret_n_2016_-1131_du_21_decembre_2016_FONAME%20pdf.pdf*

sector, parastatal institutions and civil society organisations). The United for Efficiency provided technical expertise and has indicated their availability to provide any needed support in the future. Thus, knowledge and skills are retained in the local institutions of the country to sustain the gains of the project. The project has helped to build a new institutional capacity both on legal and commercial basis of key stakeholders in the private sector as well as in government institutions, particularly the importers/traders who work closely with the ministry. Cote d'Ivoire contributed 77% of the project finance both in kind and in cash, demonstrating the political will and commitment of the country to sustain the results of the project. Very high offices in government were also involved in the project implementation, demonstrating government commitment. Overall sustainability of the project was therefore rated as *likely*.

Factors affecting Project Performance and Cross-cutting issues

Preparation and readiness

16. The commencement of the project suffered undue delays which affected project preparedness and readiness. The PEEPL Project could not start after the approval date of the project, 16 April, 2012 due to political unrest in Cote d'Ivoire. After the political turmoil was over and as part of the preparation towards commencement of the project, a Consultant had to be hired to update the project document to enable the preparation for the inception workshop. The contract, which the Consultant signed on 17 July 2014 had to be terminated due to failure to deliver expected results and so all the efforts that went into that process became wasted and further delaying the commencement of the project. Preparation to commence project execution started in January 2016, with setting up of the Project Management Unit (PMU), preparations towards the Inception Workshop, updating of project work plan and the budget and preparations for recruitment of experts (both local and international). The undue delays therefore called for a number of revisions to be made both in workplan and project document to facilitate the preparation for the project inception that took place on 26 April 2016. The delays also affected recruitment of personnel to work on the project and as such the en.lighten-U4E of Centre of Excellence had to submit an updated Technical Assistance Proposal to the National Project Director on April 8, 2016 before the inception workshop was held.

17. There were also delays in getting initial documents approved and signed by the key stakeholders of the PMU as they all turned out to be top government officials with very busy schedules. It was mainly during the first 12-18 months of implementation that communication was difficult, but it greatly improved during the rest of the project implementation. Further, and just when the preparation for the project was beginning to fall in place, poor communication between the Implementing Agency (IA) and the Executing Agency (EA) created further delays in the first 12 to 18 months of implementation. Although the project execution beyond these challenges went on smoothly, this initial phase of the project suffered unduly from the delays which called for several other changes to be made to get the project going. As such the preparation and readiness was rated as *moderately satisfactory*.

Stakeholder Participation and Cooperation

18. With regards to stakeholder participation and cooperation, there was a broad range of stakeholders that participated in the project at both bi- and multi-lateral levels. These stakeholders were from the public and private sectors (including importers and distributors of lighting products), parastatal institutions, civil society organisations and project beneficiaries at community and household levels. Each of them played significant but different roles during project implementation, with the ultimate aim of attaining the project outputs and outcomes required to speed up market transformation for energy-efficient lighting technologies in Côte d'Ivoire. The Ministry of Petroleum, Energy and Renewable Energy played the executing agency role, and was responsible for recruitments and administrative matters, and worked closely with 4 international experts from United for Efficiency that provided targeted training and technical expertise for the stakeholders. Parastatal institutions like the National Energy Agency, for example, provided data on energy sector

and shared its expertise as and when needed towards implementation of the first 4 components. The National Electricity Company distributed awareness raising flyers to their subscribers to promote the LED lamps as part of Component 5. Further, many of the stakeholders in the private sector such as the importers and distributors, benefited from the training workshops and used the knowledge gained to support the project. The rating for Stakeholder Participation and Cooperation is *Highly Satisfactory*.

Responsiveness to Human Rights and Gender Equality

19. Gender was not a budget item in this project, however there is evidence that gender was considered in project implementation. The bulk of the project activities were capacity building and awareness creation. The reports from the training workshops showed that both men and women participated in the training workshops and the awareness raising activities, though women were few – about a quarter of the participants in most cases. The household pilot projects also covered men and women, as well as vulnerable groups at household levels and during the show rooms events organised nationwide. The project however would have benefited a lot more from a conscious assessment of the gender needs of men and women with regards to the project to inform decisions and policy on market transformation for energy efficient lighting technologies and their impact on men and women. The rating for Responsiveness to Human Rights and Gender Equality is *Moderately Satisfactory*.

Country Ownership and driven-ness

20. The participation of 6 state ministries in the project demonstrates the extensive involvement of public/state institutions, and the extent of national interest and ownership of the project. The Project Steering Committee was chaired by the Director of Cabinet of the Ministry of Petroleum, Energy and Renewable Energy, which is a very high office in the Ministry, thus demonstrating the national importance attached to the project. Additionally, the project engaged in extensive capacity building for a number of the public and private sector actors, which demonstrates available capacity in the country to sustain the gains of the project beyond the project life. The terminal evaluation interviews also revealed that staff at the DGE who participated in project implementation were all at post as at the end of the project, demonstrating retention of knowledge and skills within these institutions. It is estimated that 100% of the relevant public sector actors, 100% of the Project Management Unit staff and 90% of the relevant private sector institutions have had their capacities increased on project management related to energy efficient lighting market development[7] and this has been demonstrated through their performance on the project (Outcome 2) despite the delays. The total GEF project financing amount was USD 884,091 and co-finance (in cash and kind) from Cote d'Ivoire was USD 2,900,909. A total of these two figures gives USD 3,785,000, and so the co finance from Cote d'Ivoire constitutes about 77% of total project financing, which also demonstrates financially, the country's commitment to the project. The project has therefore demonstrated a high sense of driven ness and ownership in Cote d'Ivoire, the rating is thus *Satisfactory*.

Communication and Public Awareness

21. The project used several means to communicate its results to the key stakeholders and the general public as a way of creating public awareness which Component 5 was mainly devoted to. The project reached out to targeted audiences through national television, national radio, private radio, local radio and internet to spread the messages of the use and benefits of energy-efficient lighting, with a focus to increase the usage of energy-efficient lighting. The project produced promotional music (CD) in French and 4 local languages that was broadcasted on 2 community radio stations and 4 national radio stations. The capacity building training workshops were provided for all the key stakeholders in various public and private institutions who have become ambassadors in

[7] 3876 – EE Lighting – Cote d'Ivoire – Final Report (signed on 5 November 2020)

creating awareness about the project. It also made use of the show room exhibitions to share the benefits of the project nationwide and the websites of enlighten-U4E. The rating for Communication and Public Awareness is *Highly Satisfactory*.

22. The overall rating for factors affecting project performance and cross-cutting issues was rated as ***Satisfactory***.

23. Overall, the project receives a **Satisfactory** rating in the terminal evaluation. The respective project ratings are summarized in Table 13. Summary of the Evaluation Criteria Ratings in the Conclusion section.

Conclusion

24. The "Promotion of Energy Efficiency in Public Lighting in Côte d'Ivoire" project, to a large extent, has helped to overcome a number of the identified barriers, gaps and challenges to the transformation of the lighting market, in the efforts of the Government of Côte d'Ivoire to promote the uptake of energy efficient lighting. Legally, the project has produced legal instruments, policies and standards that guide importation of energy efficient lamps in Cote d'Ivoire including a comprehensive energy efficiency sectoral policy document comprising Volume 1; Efficient lighting policy document and Volume 2; Awareness raising campaign and capacity building material. The document on efficient lighting policy comes with related regulations, identifying training needs for energy efficiency sector players and proposing appropriate training materials.

Lessons Learned

25. Lessons learnt from this project are as follows;

- A clear national policy and strategic direction is a key driver to achieve outcomes of a project with a core objective of market transformation on appliances. This policy and strategic direction should be developed in the early stages of the project by well-qualified and experienced persons/experts to allow timely stakeholder awareness, cooperation and buy-in as demonstrated in this project.
- Capacity development of carefully selected project stakeholders, with the appropriate focus, scope and depth provides an indispensable support to accelerate the market transformation of energy-efficient appliances. The benefit of having experienced experts to develop the TOR is great and leads to a successful outcome.
- It is imperative that minimum energy performance standards (MEPS) are developed before any energy labelling are proposed for electrical appliances. This ensures that the labelling design does not consider those technologies and models that do not comply with MEPS. It would be counterproductive to design and promote an energy label whilst expecting a product that cannot be later put on due to its non-compliance with the MEPS. Harmonization of local MEPS and labelling with regional MEPS and labelling schemes contributes significantly to the sustainability of regulatory mechanisms for electrical appliances.
- The leverage of demonstration activities under a market transformation project can be maximized through careful and thoughtful designs that locate the demonstration in strategic locations to maximize exposure of the technology being demonstrated. These could be in educational institutions where students can be participants in disseminating information to their family members. Demonstrations could also be strategically located within public buildings such as hospital, churches and mosques amongst others to expose or promote conversions to energy efficient lighting systems. These public locations will also have the potential for getting more press coverage and increased dissemination of LED information.
- At the household level, the adoption of a good community entry strategy to include community sensitisation prior to the introduction of new energy-efficient technologies and market transformation can help in their acceptance and demystify local perceptions that can kill the initiative.

- The active participation of the private sector in a market transformation project is crucial and it can be assured through continuous engagement and dialogue by the project management team with the private sector to keep abreast with their needs and demands, and disseminating the project outputs and relevant information through appropriate channels.
- A market transformation project needs to be informed and guided by a comprehensive disaggregated consumer impact studies to identify priority consumer segments as well as structurally and socially disadvantaged groups (also taking into account gender and vulnerable groups)
- Capacity development of carefully selected project stakeholders, with the appropriate focus, scope and depth provides an indispensable support to accelerate the market transformation of energy-efficient appliances. The benefit of having experienced experts to develop the TOR is great and leads to a successful outcome.

Recommendations

26. Having covered market transformation for energy efficient lighting, it is recommended that future appliance-related market transformation projects should now focus on refrigerators and air-conditioners as well as consider interventions on energy-efficiency lighting in the commercial and industrial sectors. Based on lessons learnt from PEEPL and the local expertise developed and the ability to support financially, MPEER should finance similar market transformation projects in these sectors. En.lighten has agreed to provide support anytime they are called upon. MPEER should undertake gender assessment of any future energy efficient market transformation to ensure the needs and concerns of men, women and socially excluded are taken into account. Lastly, consultants that design energy efficient projects should involve all stakeholders including the importers, traders and distributors and see them all as partners right from the project conception stage to implementation.

1 Introduction

27. The UNEP-GEF Project entitled "Promotion of Energy Efficiency in Public Lighting" (herein referred to as the "PEEPL", or "Project") was implemented by United Nations Environment Programme (UNEP) under its Economy Division, Energy and Climate Branch, and executed by the Directorate General of Energy (DGE) in Abidjan, Côte d'Ivoire. The project, implemented only in Côte d'Ivoire, was launched by the Ivorian Ministry of Mines and Energy (MME) – now called the Ministry of Petroleum, Energy and Renewable Energy (MPEER) – to speed up market transformation for energy-efficient lighting technologies in Côte d'Ivoire, and to coordinate activities with the "Global Market Transformation for Efficient Lighting"[8] GEF-financed project. The project intended to address barriers to the widespread utilization of energy-efficient lighting technologies in Côte d'Ivoire. It aimed to reinforce the country's legal and regulatory framework and develop the capacity of key stakeholders to work together for the supply of high-quality energy-efficient lighting technologies. Additionally, the project involved implementation of pilot projects in two public buildings and a total of 500 households (300 in a suburb of Abidjan and 200 in rural areas of Yamoussoukro), which were all aimed at disseminating and inculcating best practices among consumers.

28. The project budget at approval was USD 3,785,000, made up of GEF grant allocation of USD 884,091 and co-financing of USD 2,900,909. In the process of project execution, a total of USD 2,072,406 was secured in co-financing (in-kind). The project was approved by the GEF in April 2012 and UNEP in June 2012. It commenced operations in January 2016[9] and reached operational completion in June, 2020. No Mid-Term Review was undertaken.

29. This Terminal Evaluation commenced in December, 2020 with the aim of assessing the project's intention to:

    - update energy efficiency policies, standards and guidelines on lighting applications;
    - build institutional and technical capacities;
    - disseminate consumer education information;
    - develop and implement pilot projects; and
    - mitigate environmental impacts of the widespread utilization of energy-efficient lighting.

30. The PEEPL project contributed to the GEF Focal Area 4 on Climate Change and to the GEF Specific Priority 1, Building Energy Efficiency. Within UNEP the project contributes to the Climate Change Sub-Programme, specifically to the Expected Accomplishment (b) EA (b) Countries increasingly adopt and/or implement low greenhouse gas emission development strategies and invest in clean technologies.

31. In accordance with the UNEP Evaluation Policy, this Terminal Evaluation is undertaken at completion of the PEEPL Project to assess the project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The evaluation has two primary purposes: i) to provide evidence of results to meet accountability requirements; and ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP, Directorate General of Energy (DGE), Côte d'Ivoire and other implementing partners. The terminal

[8] The Global Market Transformation for Efficient Lighting is a GEF funded initiative launched in 2015 to support countries in their transition to the use of energy-efficient lighting, appliances and equipment. It focuses on developing countries and emerging economies, which are seeing the largest growth in energy-consuming products.

[9] Although the PCA with the DGE was signed in September 2013, the implementation of project activities effectively started in January 2016, following the recruitment of the Project Manager.

evaluation, therefore identifies lessons of operational relevance for future project formulation and implementation, especially for the U4E initiative for their future work in the region.

2 Evaluation Methods

2.1 UNEP's Evaluation model/approach

2.1.1 Definitions of evaluation criteria

32. In line with the UNEP Evaluation Policy, the UNEP Programme Manual and the Guidelines for GEF Agencies in Conducting Terminal Evaluations, this TE has been carried out using a set of 9 commonly applied evaluation criteria which include: (1) Strategic Relevance[10], (2) Quality of Project Design, (3) Nature of External Context, (4) Effectiveness (incl. availability of outputs; achievement of outcomes and likelihood of impact), (5) Financial Management, (6) Efficiency, (7) Monitoring and Reporting, (8) Sustainability and (9) Factors Affecting Project Performance and Cross-Cutting Issues.

33. Most evaluation criteria are rated on a six-point scale as follows: Highly Satisfactory (HS); Satisfactory (S); Moderately Satisfactory (MS); Moderately Unsatisfactory (MU); Unsatisfactory (U); Highly Unsatisfactory (HU). Sustainability and Likelihood of Impact are rated from Highly Likely (HL) down to Highly Unlikely (HU) and Nature of External Context is rated from Highly Favourable (HF) to Highly Unfavourable (HU). The ratings against each criterion are 'weighted' to derive the Overall Project Performance Rating. The greatest weight is placed on the achievement of outcomes, followed by dimensions of sustainability.

2.1.2 Matrix of ratings levels for each criterion

34. The UNEP Evaluation Office has developed detailed descriptions of the main elements required to be demonstrated at each level (i.e. Highly Satisfactory to Highly Unsatisfactory) for each evaluation criterion. The evaluation team has considered all the evidence gathered during the evaluation in relation to this matrix in order to generate evaluation criteria performance ratings.

2.1.3 Strategic evaluation questions

35. In addition to the 9 evaluation criteria outlined above, the TR addresses a number of strategic questions that were formulated in the Terms of Reference. These questions presented below were posed by the UNEP Evaluation Office in conjunction with members of the Project Team:

(a) In its efforts to promote the uptake of energy efficient lighting technologies in Cote d'Ivoire, to what degree of success has this intervention overcome the identified barriers, gaps and challenges to the transformation of the lighting market?

(b) What assumptions identified in the Theory of Change at evaluation are deemed most critical and which are likely to hold in supporting progress of outcomes towards the achievement of Impact?

[10] This criterion includes a sub-category on Complementarity, which closely reflects the OECD-DAC criterion of 'Coherence', introduced in 2019. Complementarity with other initiatives is assessed with respect to the project's design. In addition, complementarity with other initiatives during the project's implementation is assessed under the criterion of Efficiency.

(c) Pertaining to the results that can be attributed to this intervention, which opportunities exist or have already been set in motion, that are likely to have a catalytic effect of outcomes within the country?

(d) Has the evaluation identified any unintended results (positive or negative) deriving from the project's implementation, and if so, how might this affect the expected Impact?

2.2 Evaluation Process

36. A participatory approach was applied in the Evaluation of the PEEPL, where interactive consultations were held with key stakeholders in a virtual manner. Using desk study, evidence-based qualitative and quantitative information on the project was compiled from available key project documentation and literature review. Relevant project documentation was provided by the DGE, Côte d'Ivoire and UNEP. Online information about UNEP evaluation procedures were also made use of for the evaluation. In addition, there were several consultations/meetings/interactions with the Task Manager and all relevant key stakeholders throughout the process of the evaluation.

37. The following provides a summary of the evaluation process:

- Review of all relevant Project documents from UNEP Evaluation Office;
- Re-examination of the Project Results Framework (PRF), as the basis to evaluate the project performance, followed by the reconstruction of a Theory of Change;
- Virtual briefings with Evaluation Office of the UNEP and the Project Manager, DGE, Côte d'Ivoire, prior to virtual meetings with the PEEPL stakeholders and partners in Côte d'Ivoire;
- Virtual meetings with the Project Management Unit (PMU) and PEEPL stakeholders and partners in Côte d'Ivoire;
- Follow-up phone conversations, emails and report writing from the Consultants' home base, Accra, Ghana;
- Additional gathering of information through further interviews; and finally,
- Validation meeting of findings and preparation of the draft report

38. A Theory of Change (TOC) for the PEEPL project was not presented in the project document. The PEEPL Project however, had a Project Results Framework (PRF), linking intended project outputs and outcomes with indicators and targets. As such, as part of the Terminal Evaluation, a Theory of Change was reconstructed for the project, to describe the roadmap of developmental pathways driven by regulatory or market drivers in combination with project activities to reach intended project outcomes as well as long-term impacts to reflect the sustainability of the project activities. A thorough study was carried out on the Project Results Framework and the Programmed Activities and corresponding planned Outputs, as indicated in the project document. The evaluation of the PEEPL PRF included an assessment of the clarity of the indicators to be monitored to achieve the intended outcomes and impact.

39. Figure 1 below presents the different steps of the UNEP Evaluation Process.

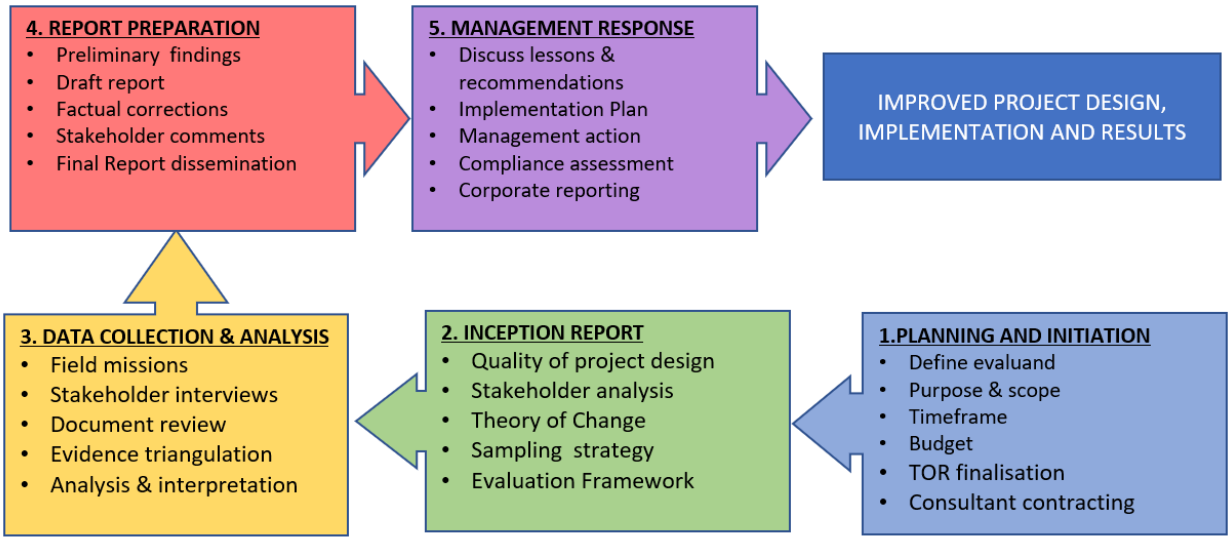


Figure 1. UNEP Evaluation Process

2.3 Data Collection

40. It was originally planned that the Consultant would travel to Côte d'Ivoire on a country mission to conduct physical consultations with the key project stakeholders. However, with the situation of the COVID-19 pandemic in the ECOWAS region at the time, in the context of the risk of infection at crowded airports and during face-to-face interviews, the physical country mission was called off, following consultation with the Evaluation Office of UNEP. Thus, the consultations with the key stakeholders were conducted virtually by Zoom. A total of 54 representatives were identified in 19 institutions, (plus 500 households who participated in the pilot project) as presented in Table 2. Of this number, 44 were interviewed (including 5 members of the households who participated in the pilot projects), with 8 of them being women. Four of the women were representatives of Organisation of Working Women in Cote d'Ivoire (OFACI), 2 from the PMU, one from U4E and one from Société Générale de Surveillance (SGS)/African Recycling Company (SAR) (see Annex II for the gender breakdown). To kick start the interviews, the Consultants introduced themselves to the PMU and other stakeholders, with the help of the Evaluation Manager of the Evaluation Office, UNEP. The introduction was also to authenticate the role of the evaluators on the terminal evaluation assignment.

Table 2: Number of key Stakeholders Consulted during the Evaluation of the PEEPL Project

Institution	Number of identified potential respondents
UNEP Climate Change Mitigation Unit (Implementing Agency)	5
Global Environment Facility	1
DGE (Executing Agency)	10
Project Consultants/Experts/ subcontractors (Executing Agency)	8
United for Efficiency team (targeted technical support)	5
Ministry of Commerce, Industry and SME	5
Ministry of Economy and Finance	3
Ministry of Environment and Sustainable Development	3
Ministry of Petroleum, Energy and Renewable Energy	4

Institution	Number of identified potential respondents
Others[11]	10
Total	54
+ Household beneficiaries	500

41. The list of the 44 stakeholders interviewed is presented in Annex II. Semi structured questionnaires were designed and used to collect information from each category of stakeholders. The questionnaires were designed to make the interviews participatory to enhance data collection. These were sent to all the key stakeholders in advance to allow them to have a fair idea of the questions they would be addressing, and this was followed by interviews held with them virtually via Zoom. A total of 15 stakeholders availed themselves for the zoom interviews during the first round of interviews from April to June 2021 and the rest who availed themselves were interviewed via zoom during the second round between the months of Mid-April and June 2022 at their convenience and on dates they preferred but this approach prolonged the data collection phase, although the outcome yielded the needed information.

42. The second set of interviews was organised to collect additional data to complement what was done during the first round and also to ensure the views of all key stakeholders were captured in the terminal evaluation, particularly to cover key stakeholders like beneficiary households from the pilot projects who were not interviewed in the first round of interviews (see Annex II). Further, the second set of interviews were carried out to complete/clarify some of the questions that were not fully/adequately addressed in the first instance, and so some stakeholders (such as the Project Manager) who were interviewed earlier, had to be reinterviewed. The second set of interviews was followed with a validation meeting on 7 July 2022, where the Consultant briefed UNEP and the project team members about the outcome of the additional data collected. The above, notwithstanding, a few of the stakeholders were unavailable for the interviews.

43. Using desk study, evidence-based qualitative and quantitative information on the project was compiled from available key project documentation and literature review. Relevant project documentation was provided by the DGE, Côte d'Ivoire and UNEP. Online information about UNEP evaluation procedures were also made use of for the evaluation (see Annex III). In addition, there were several consultations/meetings/interactions with the Task Manager and all relevant key stakeholders throughout the process of the evaluation.

44. During the evaluation, measures were taken to facilitate stakeholder engagement and ensure the quality of consultation, including: i) informing interviewees about the aims and expectations of the Terminal Evaluation; ii) using open-ended questions to enhance balanced reflection and perspectives, new insights, and high-quality information from stakeholders; and iii) not attributing comments made by individuals to them by name in the report. On ethical grounds, the Consultant was aware of the importance of obtaining informed consent, respecting voluntary participation of respondents, gender considerations, awareness about vulnerable groups, and the privacy of the respondents as well as the confidentiality of data collected, and acted accordingly during the evaluation process. Throughout this evaluation process and in the compilation of the Final Evaluation Report, efforts have been made to represent the views of both mainstream and more marginalised groups such as household members in the selected communities. Data were collected with respect for ethics and human rights issues. All discussions remained anonymous, and all information was collected according to the UN Standards of Conduct.

[11] Others here refer to representatives from the following institutions: African Center for Environmental Health (CASE), Federation of associations. of active consumers in Côte d'Ivoire (FACACI), Importers/distributors of lighting products (SOCOMELEC), Ivorian Association for Renewable Energies and Energy Efficiency (AIENR), SGS / SAR, Association of Scrap Metal Merchants of Côte d'Ivoire (AFECAMCI) and Organization of Working Women of Côte d'Ivoire (OFACI),

2.4 Limitations and mitigation strategy

45. The primary limitation to this Evaluation was the lack of physical meetings with the project stakeholders and partners, due to restrictions under the COVID 19 pandemic. The virtual meetings missed the facial expressions and body language of interviewees which convey a great deal of information, as well as the unconscious communication signs that help to facilitate discussion in physical meetings. The absence of the physical meetings also made it impossible to observe some of the pilot projects, particularly in the rural areas. It was not possible to have control over those stakeholders who could not be interviewed, and the evaluation had to go on without their inputs.

46. With regards to the additional information that was collected through the second set of interviews, extra care had to be taken to ensure that interview fatigue did not set in to discourage the respondents. This ended up prolonging the interview process as interviews could only be conducted at the convenience and pace of the stakeholders, and via Zoom. Again, based on the large number of non-responses experienced during the first set of interviews, measures were taken to reduce that in the second set of interviews. For example, to facilitate easy understanding of the instruments used for data collection, they were first translated from English to French and shared with the stakeholders prior to booking appointments for the interviews so that stakeholders were already aware of the key questions in the interview guides before they were granted interviews. The responses were again translated from French to English for the report writing and this was time consuming, but necessary.

3 Project Background

3.1 Context

47. Energy conservation and its rational use have always been among the major strategies of the Government of Côte d'Ivoire in attaining its energy security goal while reducing environmental impacts related to energy generation by thermal plants. According to the Project Document, despite all the efforts Cote d'Ivoire had been making towards energy efficient transformation in the past, a countrywide power crisis which occurred in 1983 propelled it to pay more attention to energy efficiency and conservation and saved the government an average of USD 6 million per year on its electricity bill since 1986.

48. The achievement was however slowed down by several institutional bottlenecks/barriers (policy, legal, regulatory, technical, cost, awareness and implementation, and particularly, the lack of financial mechanisms) to support EE investments, and public sector reluctance to invest in EE. Consequently, the country introduced the Energy Service Company (ESCO) in 2000, which is a market-based approach with the objective of helping to address this problem. According to the Project Document, and at the time of project design, the national market for EE in the public and residential sectors was estimated at more than USD 100 million of which about 50% could be attributed to lighting.

49. The Project Document also noted that residential sector alone accounted for 80% of lighting consumption while this market segment represented 90% of low-voltage consumers. Consequently, it was envisaged that widespread dissemination of energy-efficient lighting products would reduce demand in public building, the household and municipal sectors, as promoting energy-efficient lighting would, to a large extent, contribute towards the nation's energy savings objectives set out in the Letter of Development Policy for the Electricity Sector (LDPES) adopted in January 2009.

50. The purpose of the LDPES, which contained a frank assessment of sector problems and weaknesses at the time, was to present the measures that the government intended to take during the 2009-2012 period to ensure sustainable development of the electricity sector and to foster population access to electricity. Additionally, the LDPES stated the government's commitment to restore the sector to financial viability and improve its institutional and legal framework. Specifically, the Letter also reiterated government's pledge to ensure expansion of the electricity supply, development of energy efficiency and significant increased access to electricity supply among the population. As part of the second component of the LDPES, four main projects related to demand control and energy efficiency promotion were mentioned. These were:

    - Draft and design a suitable demand-side management program.
    - Revitalize the national energy efficiency program.
    - Replace existing lamps with energy saving lamps.
    - Conduct energy audits of industries, services and governments.

51. Improving the market for energy efficient lighting products was therefore going to require the participation of a broad spectrum of actors, including importers, distributors, utilities, Government ministries and consumers associations. However, a number of barriers that could hamper this initiative to reach its targets have been identified, which the PEEPL project was intended to address. The PEEPL project was also designed with the aim of reinforcing the country's legal and regulatory framework as well as developing the capacity of key stakeholders to work together for the supply of high-quality energy-efficient lighting technologies. Additionally, the project was to use pilot projects as key to disseminating best practices among consumers. The PEEPL therefore

came up at the right time to assist the Ivorian Government in pursuing its energy efficiency objectives.

Baseline Scenario of PEEPL Project

52. The baseline for the PEEPL Project as of 2016 is summarized below[12]:

- According to the Project Document, three types of lamps - CFLs, LEDs and fluorescent tube lamps - were the most commonly used in Cote d'Ivoire. Of these three, the CFLs performed well in different market segments with an average penetration rate of over 35%;
- In 2016, the incandescent lamps accounted for 20% of the total volume of lighting product imports, compared to 30% in 2015.The average price on the market at the time was FCFA 300;
- The high-pressure sodium (SHP) lamp commonly used for street lighting accounted for 9.5% of import volume in 2016, compared to 7.5% in 2015;
- CFLs accounted for 54% of the total volume of imports of lamps in 2016, compared to 39.7% in 2015; the average price of the CFL was FCFA 1,000;
- Imports of LED lighting products in 2016 accounted for 13.3% of the total volume of lamps, compared to 17.1% in 2015; the average price of the lamps was FCFA 2,000;
- The Decree N° 2016-862 of November 3, 2016 stipulated that as of January 1, 2019 incandescent lamps would be prohibited for sale on the Ivorian market to promote better penetration of energy-efficient lamps;
- Total electricity generation in 2016 in Côte d'Ivoire was 9,939 GWh (up from 8,180 GWh in 2014), with thermal generation contributing 85% (8,551GWh), with the remainder mainly from hydropower;
- The Intended Nationally Determined Contributions (INDCs) of Cote d'Ivoire published in 2015 ahead of the Paris Agreement provided for a 28% reduction in GHG emissions by 2030 compared to a "Business as usual" (BAU) situation in 2012;
- Electricity production accounted for 22% of GHG emissions in 2012 (reference year), second after agriculture;
- Lighting represented approximately 50% of the power demand in the domestic sector and 30% in public buildings. It was projected that by replacing the energy-intensive lighting products at the time with energy-efficient ones, it would be possible to achieve savings of about 60% in five (5) years;
- A new Electricity Code was promulgated in March 2014, giving the electricity sector the instruments necessary for its recovery and the revitalization of its development, particularly in the field of energy efficiency and energy management;
- In 2012, the Government of Cote d'Ivoire launched an operation to distribute 5 million energy-efficient lamps (CFLs) to households, with the aim of reducing the line overload during energy peaks and save energy;
- In 2013, ECOWAS member states adopted a regional policy for the harmonization of effective lighting development strategies consisting of:
    - Develop minimum energy performance standards (MEPS) and labels for lamps for household use in all ECOWAS countries;

[12] Lighting Products Market Study - Promotion Project Energy Efficiency in Public Lighting in Cote d'Ivoire (2018)

- Develop complementary policies and mechanisms to ensure the good implementation of MEPS (for example, distribution programs for lamps, tax incentives, bill financing, etc.) and promote high efficiency on-grid and off-grid lighting products.

53. The above baseline scenario confirms and reiterates the need, appropriateness and timeliness of the PEEPL project and how it was to contribute towards the nation's energy conservation objectives set out in the Letter of Development Policy for the Electricity Sector (LDPES) of 2009, and more specifically towards the transformation of the lighting market in the emerging economy of Cote d'Ivoire to include energy-efficient lighting technologies.

3.2 Project Objectives and Components

3.2.1 Objectives

54. The goal of the project was to speed up market transformation for energy-efficient lighting technologies in the emerging economy of Côte d'Ivoire. The project aimed to accelerate the phase-out of incandescent bulbs by removing the main barriers to energy-efficient lighting, promoting the development of mercury-free technologies and reducing global GHG emissions as well as mercury releases.

55. The project objective was to create, at local level, an enabling institutional, legal, technical and financial environment to phase out inefficient incandescent lamps while supporting the widespread diffusion of high-efficient and environmentally sound new technologies such as mercury-free CFLs and electronic ballasts. To achieve this objective, the PEEPL sought to support Cote d'Ivoire to:

- update energy efficiency policies, standards and guidelines on energy efficient lighting applications;
- build institutional and technical capacities on energy-efficient lighting products;
- disseminate consumer education information on energy-efficient lighting;
- develop and implement pilot projects (i. e. to promote LED technology); and
- mitigate environmental impacts of the widespread utilization of energy-efficient lighting.

3.2.2 Components

56. The PEEPL Project consisted of six components. Component 6 refers to project management and does not relate directly to a set of project results. The results framework of the other five components are presented below.

57. Component 1. Energy Efficiency Policy Enhancement

This component focused on providing technical assistance to set up a policy dialogue platform under the supervision of the Ministry of Petroleum, Energy and Renewable Energy (MPEER). It also sought to establish the necessary legal and institutional framework to phase out incandescent lamps, including the preparation of an enabling energy efficiency law with associated regulations. The outcomes and outputs of Component 1 are summarized in Table 3.

Table 3: Outcomes and outputs of Component 1

Outcomes	Outputs

Outcome 1.1: Strengthened national energy efficiency policy framework	Output 1.1.1: A steering committee set up for energy efficiency promotion
	Output 1.1.2: Workshops carried out to raise awareness of government agencies and standardization institute
Outcome 1.2: State Government legislation adopted for the phase out of incandescent lamps	Output 1.2.1: Economic and financial benefits of EE lighting for each sector identified and financing/purchase models developed
	Output 1.2.2: Barriers to the development of a full-fledged EE policy removed and legislation prepared to phase out inefficient lighting

58. Component 2. Technical and Managerial Capacity Building for Energy Efficient Lighting Market Development

This component involved technical assistance to private sector suppliers to increase their capacity to deliver an adequate supply of good-quality energy-efficient products. Similar technical assistance was also offered to public institutions, particularly ministerial entities involved in project implementation. It focused on providing technical support to the Project Management Unit (PMU) and strengthening the institutional and operational capabilities of government standard enforcement agencies. The outcomes and outputs of Component 2 are summarized in Table 4 below.

Table 4: Outcomes and outputs of Component 2

Outcomes	Outputs
Outcome 2.1: Increased capacity of public institutions for energy-efficient lighting market development	Output 2.1.1: Technical capacity of key public agencies enhanced
Outcome 2.2: Project Management Unit (PMU) created and operationalized within the Ministry of Mines and Energy	Output 2.2.1: PMU trained to increase its technical and managerial capacity
Outcome 2.3: Increased capacity of private sector institutions for energy efficiency market development	Output 2.3.1: Train traders and financing institutions on EE lighting project financing

59. Component 3. Lighting Product Quality Improvement

This component focused mainly on the following:

- Assisting government standard organization in preparing energy efficiency standards and labelling programme for lighting products;
- Preparing procedures for enforcing energy efficiency regulations for lighting products;
- Defining and establishing procedures for testing energy-efficient lighting products; and
- Ensuring through appropriate monitoring that all traded lighting products meet quality, environmental and energy performance standards.

The outcomes and outputs of Component 3 are summarized in Table 5 below.

Table 5: Outcomes and outputs of Component 3

Outcomes	Outputs
Outcome 3.1: Enhanced regulatory framework for EE lighting standard and labelling	Output 3.1.1: EE Lighting Technical Working Group established within the national bureau of standards
Outcome 3.2: MEPS for energy-efficient lighting products established	Output 3.2.1.: CFLs and LEDs minimum energy performance standard adopted

Outcome 3.3: All traded lighting products meet quality, environmental and energy performance standards	Output 3.3.1: Procedures for EE lighting testing developed and adopted
	Output 3.3.2: Energy efficiency, environmental and technical standards for lighting products are tightened in line with international best practices

60. Component 4. Energy-Efficient Lighting Product Dissemination for Public Lighting

This component focused mainly on:

- Delivering mobilization, outreach and training activities for public utilities, private distributors and installers to fully involve them in the dissemination of energy-efficient lighting products;
- Supporting significant improvements in the sale of energy-efficient lighting products and reducing the sales of incandescent lamps through demonstration projects in the residential, municipal and institutional sectors; and
- Implementing a recycling scheme for energy-efficient lighting products with regard to mercury content.

The outcomes and outputs of Component 4 are summarized in Table 6 below.

Table 6: Outcomes and outputs of Component 4

Outcomes	Outputs
Outcome 4.1: Public utilities and private distributors and installers fully involved in the dissemination of EE lighting products	Output 4.1.1: Pilot projects for the diffusion of EE lighting products increased annually
	Output 4.1.2: Pilot EE LED street lighting project implemented
	Output 4.1.3: Implement pilot EE LED lighting project in public buildings (as in Final Report)
	Output 4.1.4: Implement pilot EE LED lighting project in households
Outcome 4.2: Significant improvement in sales of energy-efficient lighting products and reduction in the sales of incandescent lamps	Output 4.2.1: Based on adoption of suitable financing/purchase models, up to five (5) million CFLs disseminated in household, commercial, and public services
	Output 4.2.2: Financial incentives provided to pro-active local importers and traders to sale energy-efficient lighting products
Outcome 4.3: Recycling schemes for EE lighting are operational	Output 4.3.1: CFLs are recycled for the elimination of mercury according to international best practices

61. Component 5. Consumer Education and Awareness

This component focused on increasing information to consumers about the benefits of energy-efficient lighting products. The outcome and outputs of Component 5 are summarized in Table 7 below.

Table 7: Outcomes and outputs of Component 5

Outcomes	Outputs
Outcome 5.1: Increased information to consumers about the benefits of energy efficient lighting products	Output 5.1.1: National campaign for energy-efficient lamps completed
	Output 5.1.2: Information on energy-efficient lighting provided through utility channels
	Output 5.1.3: A show room opened in each town for EE lighting products presentation

62. Component 6. Project Management and M&E Support

    This Component was about operational support which was to be provided to the MPEER and the DGE to assist in key project management functions. This technical assistance focused on strengthening DGE's ability to set up a Project Management Unit and to manage demonstration projects and development services. The component also sought to help to coordinate sectoral policies among government agencies to facilitate the adoption of the energy-efficient lighting standards and to allow conducting project monitoring and evaluation. This component is assessed under the performance criteria of Monitoring and Reporting and Quality of Project Management and Supervision.

3.3 Target Areas/Groups

63. The evaluation noted the project design ensured the establishment of a very effective project management body, made up of several key stakeholders with interest in the project, not merely because of the project but above all, because they were concerned about how they could assist the government to address the identified barriers mentioned in the Project Document. This came out clearly from the key informant interviews of a number of the stakeholders. Being able to establish such a management body that played various roles in ensuring project success with little tension among them was identified as an important strength of the project that helped it to achieve, to a large extent, its objectives and to have a successful story to share as the stakeholders were passionate about the roles they had to play and did it very well. The stakeholders of the PEEPL Project are key players who made vital contributions to the transformation of the lighting market in Côte d'Ivoire. The various stakeholders identified in the project document were involved and took active parts in the numerous but different project activities uni-, bi- or multi-laterally during the project implementation, including in meetings and workshops. These stakeholders therefore helped in addressing the objectives of Component 6.

64. Key staff from MPEER, the Ministry of Environment and Sustainable Development (MESD), the Ministry of Economy and Finance (MEF), the Ministry of Mines and Industry (MMI), the Ministry of Commerce, Arts and Crafts, and SMEs Promotion (MCACSP), the Ivorian Customs, Cote d'Ivoire Energies (CI-ENERGIES), National Electricity Sector Regulation Authority (ANARE-CI), Ivorian National Bureau of Standards (CODINORM), Ivorian Electricity Company (CIE) and the Chamber of Commerce took part in the project implementation through bilateral meetings with the national and international consultants, active participation in the workshops and trainings, but also through the provision of strategic insights during the PSC meetings.

65. The **public sector** institutions that participated in the project are as follows:

- **Ministry of Petroleum and Energy and Renewable Energy (MPEER)** – MPEER was responsible for defining government policy on energy efficiency, and for proposing a legislative framework for implementing energy efficiency regulations. The MPEER played its role as the project's Executing Agency, by hosting the PMU within its own premises. The MPEER also provided a car for the missions and other logistics as well as the necessary equipment during the different workshops (for all 5 components). Within the MPEER, the Directorate General of Energy (DGE) has been working closely with other public institutions to develop an overall policy statement on energy efficiency, defining the government's strategic orientations in this sector. As such, DGE coordinated the necessary government support. Further, it presided over the Project Steering Committee (PSC). Additionally, the DGE liaised with the Global Market Transformation for Efficient Lighting project, GEF as well as the GEF Program for West Africa - Energy component, which is to bring about significant global environmental benefits in West African countries in the area of climate change, along with a number of local environmental benefits, and other important developmental benefits.

- **Ministry of Finance (MoF)** - MoF is responsible for providing financial support to energy sector institutions and programmes in Cote d'Ivoire. As such, it was involved in the financing of demonstration projects during the project timeframe. It also participated in the Project Steering Committee (PSC) meetings. The MoF collaborated with MPEER to develop the financial incentive policies for importers and dealers in energy efficiency lighting products to help in changing their import habits. Implementing partners under MoF included the Customs Administration, and the Department of Tax Policy, which is responsible for the development of incentive fiscal tools. The Customs Administration provided data on imports to the Market Research expert (Components 1 and 2).
- **Ministry of Environment, Water and Forestry (MEWF)** - MEWF is the key governmental body responsible for the formulation and implementation of national environmental and climate change policies. The project worked closely with the relevant environmental agencies and institutions to promote the national energy-efficient lighting project.
- **Ministry of Industry (MoI)** - MoI took the lead for the development of energy efficiency standards and labelling enhancing regulations and roadmap for phasing out incandescent lamps in the country. This was done through the Ivorian National Bureau of Standards (CODINORM) mandate. CODINORM welcomed the technical note updating the 3011 standard and appointed its technical working group to work on the aforesaid subject until the endorsement of the updated standard in June 2019 (Components 1, 2 and 3). It also participated in awareness raising, and study/research on CFLs and incandescent lamps in the Ivorian market. Further, it participated in the Project Steering Committee (PSC) meetings, thus, an important partner for project execution.
- **Ministry of Commerce, Arts and Crafts, and SMEs Promotion (MCACSP)** - MCACSP participated in capacity building with regard to quality assurance/quality control of lighting products, and helped to strengthen relevant standards in line with regional and international standards. MCACSP participated in efforts aimed at the development of a quality control system and the upgrade of a national laboratory testing capacity. Under MCACSP, National Laboratory for Metrology and Quality Analysis (LANEMA) and the Directorate of Commerce (DC) were partners and beneficiaries of the Project. The DC directly participated in the standards development process while LANEMA was the laboratory for testing lighting products. MCACSP also participated in PSC meetings.
- **National Energy Agency (CI-ENERGIES)** is a state company responsible for monitoring the management of electricity transmission and distribution as well as the project management of development works on the electricity networks, including rural electrification and network extensions. It communicated data on the energy sector and shared its expertise when needed (Components 1, 2, 3 and 4).
- **National Electricity Company (CIE**) is linked to the State of Côte d'Ivoire by a concession agreement for the electricity production, transport and distribution, marketing, import and export. CIE participated in the project to distribute awareness raising flyers alongside electricity bills (Components 1,2 and 5).
- **U4E, UNEP** - The United for Efficiency (U4E) is a global effort that supports third-world nations and other emerging economies to prioritize energy-efficient appliances and equipment in the market. They support economies where electricity demand is predicted to expand (or more than double). U4E is a public-private partnership led by UNEP, the Global Environment Facility (GEF), the United Nations Development Programme (UNDP), the International Copper Association (ICA), CLASP, and the Natural Resources Defence Council (NRDC) with the support of other international partners. The U4E was involved in the design and development of the project, which followed the Integrated Policy Approach structure. The U4E was also involved in the implementation of the project and played the role of a coordinator through its team of international experts. These are the International Lighting Expert, the international MVE Expert, the international Environmentally Sound Management (ESM) Expert, and the Energy Efficiency expert. U4E supported the development and implementation of minimum energy performance standard for LEDs, recommendations for testing

procedures, product registration systems and overall monitoring, verification and enforcement (MVE) system features for market surveillance of energy-efficient lighting products, the development of an environmental regulatory and operational framework proposal and delivery of different training workshops to reinforce capacities of public officials, among others.

66. **Private sector entities** – Private sector entities were partners in the implementation of the PEELP Project. According to the final evaluation report of the PMU, several lighting products distributors and importers took active parts in the different workshops. 10 of them, including SOCOMELEC Ivoire (importers and distributors of electrical products), out of a total of 1,156 importing and distribution companies accepted to share their market data as inputs to the *Lighting Products Market Study - Promotion Project Energy Efficiency in Public Lighting in Cote divorce (2018)*, but all the other distributors and importers did not cooperate, which delayed the lighting market study and resulted in a change of the market assessment methodology.

67. **Project beneficiaries**. Generally, the entire country of Côte d'Ivoire and all consumers in households and public institutions, as well as the private sector engaged in the import and distribution of lighting products were project beneficiaries. The direct beneficiaries of the pilot energy-efficient LED lighting project in public buildings were Institut National d'Hygiène Publique (INHP) of Abidjan and the Institut des Sciences et Techniques de la Communication (ISTC), in Abidjan, which replaced the Regional Hospital Centre (Centre Hospitalier Régional (CHR)) in Yamoussoukro that was initially selected for the pilot. A total of 200 households in the rural areas of Yamoussoukro and 300 households in Abidjan suburbs were the beneficiaries of the pilot energy-efficient LED lighting project in the households. Thus, there were a total of 500 direct project beneficiaries.

3.4 Implementation Arrangements and Project Partners

68. The implementation arrangements (institutional arrangements) of the PEEPL Project comprised a Project Steering Committee and a Project Management Unit. Figure 2 presents a diagram of the implementation arrangements of the project.

69. **The Project Steering Committee (PSC)** – The PSC comprised a 10-member high-level representative from the following institutions/organisations:

    i. Ministry of Petroleum, Energy and Renewable Energy (MPEER) - Director of Cabinet; Director General of Energy; Energy Regulation Director; and PEEPL Project Manager);

    ii. Ministry of Commerce, Arts and Crafts and SMEs Promotion (MCACSP);

    iii. Ministry of Economy and Finance (MEF);

    iv. Ministry of Environment and Sustainable Development (MESD);

    v. Ministry of Mines and Industry (MMI);

    vi. National Commission of the Global Environment Facility (GEF);

    vii. UNEP (Climate Change Mitigation Unit);

    viii. U4E;

    ix. ANARE-CI; and

    x. CI-ENERGIES

70. The PSC was chaired by the Director of Cabinet (MPEER), a very high office in the Ministry, thus demonstrating the national importance attached to the PEEPL Project. The primary roles of the PSC were: i) to provide overall guidance to the implementation of the project; and ii) to ensure good coordination among participating agencies, sectors and international organizations. The PSC was to meet at least once a year, to discuss the progress of the project and provide future guidance.

71. The **GEF Executing Agency** for the project was the Ministry of Petroleum, Energy and Renewable Energy (MPEER). A **National Project Director** (NPD) - the Director General of Energy at the Directorate General of Energy (DGE) acted as the National Project Director (NPD), with the Energy Regulation Director of MPEER as the Deputy NPD. The NPD's overall role was to ensure the successful execution and implementation of the project activities toward achieving project results. The NPD represented the MPEER and was accountable to the Government and UNEP for the substantive quality of the Project and for the efficient use of project resources. The NPD was responsible for mobilizing all national and international project inputs in a timely manner, supporting project management and implementation, organizing project activities in accordance with the project work plan, and reporting to the Government of Côte d'Ivoire and UNEP the progress and the financial status of the Project.

72. The Task Manager's role was played by a representative of UNEP, as the Implementing Agency.

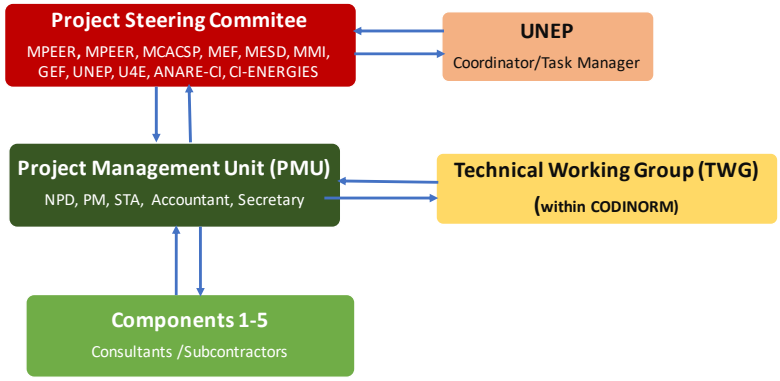


Figure 2: Project Implementation Arrangement

73. **Project Management Unit (PMU)** – The DGE set up a PMU that was responsible for the overall operational and financial management and reporting of the GEF funds in accordance with the rules and regulations for nationally executed projects. A Project Manager was in charge of day-to-day operations of the Project, and was working with his team at DGE premises (see Figure 3).

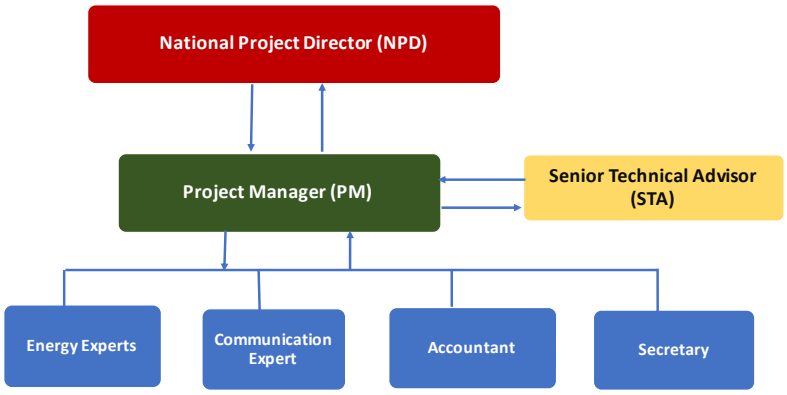


Figure 3: The Project Management Unit (PMU)

74. The PMU comprised seven members. These members were:

- the NPD who worked part-time for the project as in-kind contribution of the Government;

- the Project Manager (PM);
- a Technical Advisor;
- two energy experts;
- a communication expert;
- an accountant; and
- support staff (a secretary).

75. A Consultant acting as the **Technical Advisor** (TA) was recruited from time to time to assure the quality of the outputs over the project lifetime. In addition, a number of subcontractors and international experts supported the PMU as and when needed to carry out the project activities. The PM was appointed to carry out day to day project activities, centralize information related to project implementation and carry out regular progress reporting. The PM also acted as secretary of the Project Steering Committee. He also prepared quarterly progress reports to review achievement in the previous quarter, prepare financial report and develop work plan and budget for next quarter. All such documents were endorsed by the UNEP Task Manager. The PMU also held meetings with the UNEP Task Manager during visits to the host country to discuss the quarterly progress report, work plan, budget and any other relevant issues. It also produced annual progress reports, which were submitted to the PSC before the tripartite meetings. At the end of the project, the PMU produced the terminal report, which was submitted to the PSC before the final tripartite meeting.

76. **Technical Working Group (TWG)** - A TWG was to be established under the MPEER to provide overall comments of key project activities including fund commitments and co-financing arrangements. The TWG was to consist of the Director of DGE, senior representatives from the relevant departments of MPEER, MEF, MMI, MCACSP, MEF as well as CI-ENERGIES, CODINORM, CIE, lighting products importers/distributors, academia (R&D institutions), and professional associations. A dedicated TWG of the PEEPL Project was not formed. The Project rather used the services of a Technical Working Group in CODINORM, mainly on issues related to standards.

77. UNEP through its Climate Change Mitigation Unit served as the **GEF Implementing Agency** for PEEPL, responsible for the supervision of project execution to ensure consistency with GEF and UNEP policies and procedures and overall project reporting. UNEP's role also encompassed participation in steering committee meetings, clearance of half yearly and annual reports, technical review of project outputs, and additional technical assistance for the execution of the project as requested.

78. Directorate General of Energy (DGE, MPEER) was designated by MPEER as the executing agency, and was accountable to the Government and UNEP/GEF for ensuring:

- proper achievement of the objectives of the Project;
- monitoring and evaluation of the project outputs and outcomes;
- more efficient use of allocated international and national resources due to its autonomous status and ability to more quickly execute service and procurement contracts outside the public sector;
- provision of administrative support to the project through DGE's own protocols, accountability and audits;
- timely availability of financing to support project implementation;
- proper coordination among all project stakeholders, in particular inter-ministerial dialogue; and
- timely submission of all project reports, including work plans and financial reports.

3.5 Project Financing

79. Total PEEPL Project budget was USD 3,785,000 comprising a GEF grant of USD 884,091 and USD 2,900,909 from MPEER (representing cash and in-kind support). The Project Cooperation Agreement (PCA) with the DGE was signed in September 2013 after the project was endorsed by the GEF in April 2012. As such, the first cash advance could only be disbursed in November 2013.

80. The project budget was revised four times (see Section 3.6.2 for more details). During Revision 2 of the budget, it has been decided that about 24% of the GEF grant of USD 884,091 would be transferred directly to United for Efficiency (U4E) (USD 216,000) to support Components 1, 2, 3 and 4. U4E provided technical support to Cote D'Ivoire for the project by the provision of a technical adviser, a lighting expert, a waste management expert and a testing and standards expert (as follows (as per the latest revision) USD 13,000 for Component 1, USD 22,500 for Component 2, USD 128,600 for Component 3 and USD 51,900 for Component 4). After Revision 2, the DGE had a remaining GEF grant of USD 668,091 to the DGE. Table 8 below summarizes the evolution of the GEF budget per component. The total budget to the DGE under Components 1, 2 and 3 were gradually reduced to increase that of Component 4 (particularly the pilot projects) in order to increase their impact in terms of energy savings and reduction of greenhouse gas emissions.

Table 8. Summary of budget revisions (GEF grant allocated to the DGE and U4E)

Components All figures as US$	Original Budget	Revision 1	Revision 2		Revision 3		Revision 4	
			DGE	U4E	DGE	U4E	DGE	U4E
C1: Energy Efficiency Policy Enhancement	75,000	73,177	58,177	13,000	43,677	13,000	41,884	13,000
C2: Capacity Building for EE Lighting Market Development	75,000	74,000	74,000	34,690	71,500	22,500	69,925	22,500
C3: Lighting Products Quality Improvement	150,000	149,000	64,190	116,410	43,690	128,600	45,415	128,600
C4: EE Lighting Products Dissemination for Public Lighting	400,000	398,771	282,581	51,900	319,081	51,900	336,600	51,900
C5: Consumer Education and Awareness	109,09	108,091	108,091	0	111,591	0	95,715	0
C6: Project Management	75,000	81,052	81,052	0	78,552	0	78,552	0
Total	**884,091**	**884,091**	**668,091**	**216,000**	**668,09**	**216,000**	**668,091**	**216,000**

Source: Compiled from Project Financial Reports

81. Table 9 below presents the summary of the DGE and U4E GEF Grant expenditures per component against the latest budget revision. The table does not include Government of Cote D'Ivoire co-funding.

Table 9. Project Expenditures (GEF grant) - All figures as USD

	DGE		U4E		Total		
	Planned Budget[13]	Actual Expenditures	Planned Budget[14]	Actual Expenditures	Planned Budget[15]	Actual Expenditures	Expenditure ratio (actual/planned)
C1	41,884	36,153	13,000	13,000	54,884	49,153	**0.89557977**
C2	69,925	63,380	22,500	22,500	92,425	85,880	**0.92918583**

[13] As per latest revision (Revision 4)
[14] As per latest revision
[15] As per latest revision

	DGE		U4E		Total		
	Planned Budget[13]	Actual Expenditures	Planned Budget[14]	Actual Expenditures	Planned Budget[15]	Actual Expenditures	Expenditure ratio (actual/planned)
C3	45,415	38,163	128,600	119,196	174,015	157,359	**0.90428411**
C4	336,600	246,019	51,900	56,559	388,500	302,578	**0.77883655**
C5	95,715	92,976	0	0	95,715	92,976	**0.9713838**
C6	78,552	74,860	0	0	78,552	74,860	**0.95299929**
Total	**668,091**	**551,552**	**216,000**	**211,256**	**884,091**	**762,808**	**0.86281616**

Source: Compiled from Project Expenditure Reports

82. Overall, 86,3% of the GEF grant were spent. 98% of the GEF grant allocated to U4E were spent. The actual expenditures of the DGE were USD 551,552, representing an expenditure ratio of 82.6% The unspent budget, according to key informant interviews with project management, was due to a number of reasons as follows;

    - The PEEPL project Technical Advisor initially had a consistent budget in terms of honorarium and he was paid as and when he produced deliverables. Some of his activities were executed by the project management so part of his budget was left unspent.
    - Some workshops were cancelled due to the COVID 19 pandemic
    - The deadline for project completion set by UNEP was 30th June 2020 after which no further expenses was allowed
    - One of the first selected institutions for the pilot project, the regional Hospital in Yamoussokro, was dropped and replaced by INHP (Institut National d'Hygiène Publique), a much smaller institution; thus, expenses incurred in the pilot project at INHP was lower than the initial budget

83. At the end of the project, out of the planned USD 2,900,909, USD 2,072,406 of co-financing were secured

3.6 Changes in project design and project work plan during implementation

3.6.1 Changes in Project Design

84. The PEEPL project experienced a number of changes. These are changes between design and implementation and changes in workplan during implementation. The project was approved in 2012 with expected start date being September 2013, and first disbursement was made in November 2013, but it could not take off due to political instability in Cote d'Ivoire which stalled the project until December 2015 with the recruitment of a Project Manager. Consequently, work plans had to be revised with new timelines. The PEEPL project design benefitting from the expertise available from the UNEP Global en.lighten project, also necessitated design changes. These are discussed below in detail as follows:

- **Change in Technology**: There was a change of technology option for the project to include LED lamps. At the 1st PSC meeting held in April, 2016, it was reported that since the initiation of the project in 2009, the conditions of the lighting market had changed, where LED technology allowed better energy savings (based on its higher energy efficiency and longer life) compared to CFLs, and had become the preferred technology. There was also a nationwide ban on incandescent lamps that came into force in January 2019, and was reported to have resulted in the Ivorian population widely using efficient lamps that last longer and consume less energy than incandescent lamps. It was realized that the longer life and lower energy consumption of the LED lamps would also lead

to major savings in household energy costs with positive social impact regarding improved living standards of the beneficiary populations. Further, the project developed recommendations for the management of used CFL lamps containing mercury (see Output 4.3.1: CFLs are recycled for the elimination of mercury according to international best practices), which would be part of the implementation of the Decree 217-217 on the Management of Electric and Electronic Equipment Waste (including lamps). Based on the above, it became obvious that the benefits of switching to LED lamps were more than what was initially in the project design. Subsequently, it became necessary and more beneficial for the PMU to revise the technology of the project to: i) carry out awareness campaigns with both CFLs and LED lamps; ii) promote LED lamps within the framework of pilot projects; iii) update the 2011 standard on lighting products taking into account LED technology; and iv) ensure integrating the LED technology in the regulation that was being developed at the DGE.

- **Changes in Output 4**.1.1 (Prior to its cancellation). In the Project document, Output 4.1.1 was formulated as "Energy-efficient street lighting in Abidjan, San Pedro and Yamoussoukro". However, with the introduction of the LED lamps which was proved to be better option technologically, it was decided that the street lights should also have LED lamps, and so the output had to change also and therefore Revision 3 formulated Output 4.1.1 as "Implement pilot energy-efficient LED lighting project in the street". Thus, the change in technology also influenced the type of energy efficient lamps the street lights should have, which under the circumstance was the best option for street lights.

- **Cancellation of Output 4.1.1**: This output says "Implement pilot energy-efficient LED street lighting project" as per Workplan revision No. 3 and validated by the PSC. Other street lighting pilot-projects with LED technology were underway in the framework of CI-ENERGIES. The PMU therefore made a recommendation to shift the budget of Output 4.1.1 to Outputs 4.1.2 and 4.1.3 to undertake pilot projects in public buildings and households. This recommendation was approved during the 2nd PSC meeting held on 15 January 2019.

- **Cancellation of "Output 4.2.1**: Based on the financing models, disseminate 5 million CFLs in commercial, households and public services", as per Workplan revision No. 3. From 2012 to 2017 the Ministry of Energy was already implementing a distribution programme of 4.5 million CFLs in households, so the PMU sent a letter to the Task Manager to consider this programme as co-financing to the PEEEPL Project, which was approved.

- **Change in pilot site under "Output 4.1.2**: Implementation of pilot energy-efficient LED lighting project in public buildings" as per Workplan revision No. 4.: The PSC had approved of the pilot projects in the Regional Medical Centre (CHR) in Yamoussoukro and the National Institute of Public Hygiene in Abidjan. However, the CHR of Yamoussoukro was under renovation at the time the PEEPL project activity was to be implemented, making it impossible to conduct the pilot project there. The PSC accepted, under the proposal of the PMU, to replace it with the Institute of Communication Sciences and Technology (ISTC) in Abidjan. According to the end of project final report, the implementation of this pilot project started on July 1st and was completed on 30 September 2020.

- **Technical Working Group (TWG)**: The project did not have to put together a dedicated TWG of the PEEPL Project, as had been envisaged in the original project document, because CODINORM had put together one that was mainly concerned about issues related to standards as ECOWAS guidelines implementation and had started working.

3.6.2 Changes in project work plan during implementation

85. The project work plan was revised four times, mainly involving extension of project completion dates. Originally, the PEEEPL project was planned to begin in September 2013 and end in August 2016. In the end, the project was completed in June 2020 (see Section 5.6.1 for more information).

86. **Project Budget Revision:** The project budget was revised four times during the duration of the project to take into account the various extension requests and adjustments. The revision took into account the cancellation of some activities because some of these activities were already being implemented by the government agencies and to enable the executing agency to increase the budget for other activities where it became relevant. The budget revisions however, did not involve any increase in the financing levels.

4 Reconstructed Theory of Change at Evaluation

87. A Theory of Change (TOC) was not prepared for the PEEPL project in the Project Document, although UNEP introduced the design of TOCs into the project design template prior to the designing and implementation of the PEEPL project. The PEEPL, however, had a Project Results Framework (PRF), linking intended project outputs and outcomes with indicators and targets. For this evaluation a Theory of Change needed to be constructed for the project, to describe the roadmap of developmental pathways driven by regulatory or market drivers in combination with project activities to reach intended project outcomes as well as long-term outcomes to reflect the sustainability of the project activities. A thorough study was done on the Project Results Framework and the Programmed Activities and corresponding planned Outputs, as indicated in the Project Document. The project goals, objectives, outcomes and outputs have been reformulated for the Reconstructed TOC to reflect more clearly the actual targets and indicators in the original PEEPL PRF (refer to Figure 4 for a diagrammatic representation of the TOC). Table 10 presents the comparison of the Logical Framework in the Project Document and the Reconstructed TOC at Evaluation.

88. The TOC diagram (Figure 4). follows a logic flowing in a horizontal direction. The diagram shows causal pathways from project outputs (yellow boxes) to project outcomes (light green boxes) to long term impacts (blue boxes) of global GHG emission reductions from the reduced electricity consumption. Between the project outcomes and long-term impacts, there are 2 intermediate states.

89. The original project document had 12 intended direct outcomes in its logical framework; this evaluation has reformulated them into five outcomes, for which a corresponding justification for the changes made has been included.

Table 10: Comparison of the Logical Framework in the Prodoc and the Reconstructed TOC

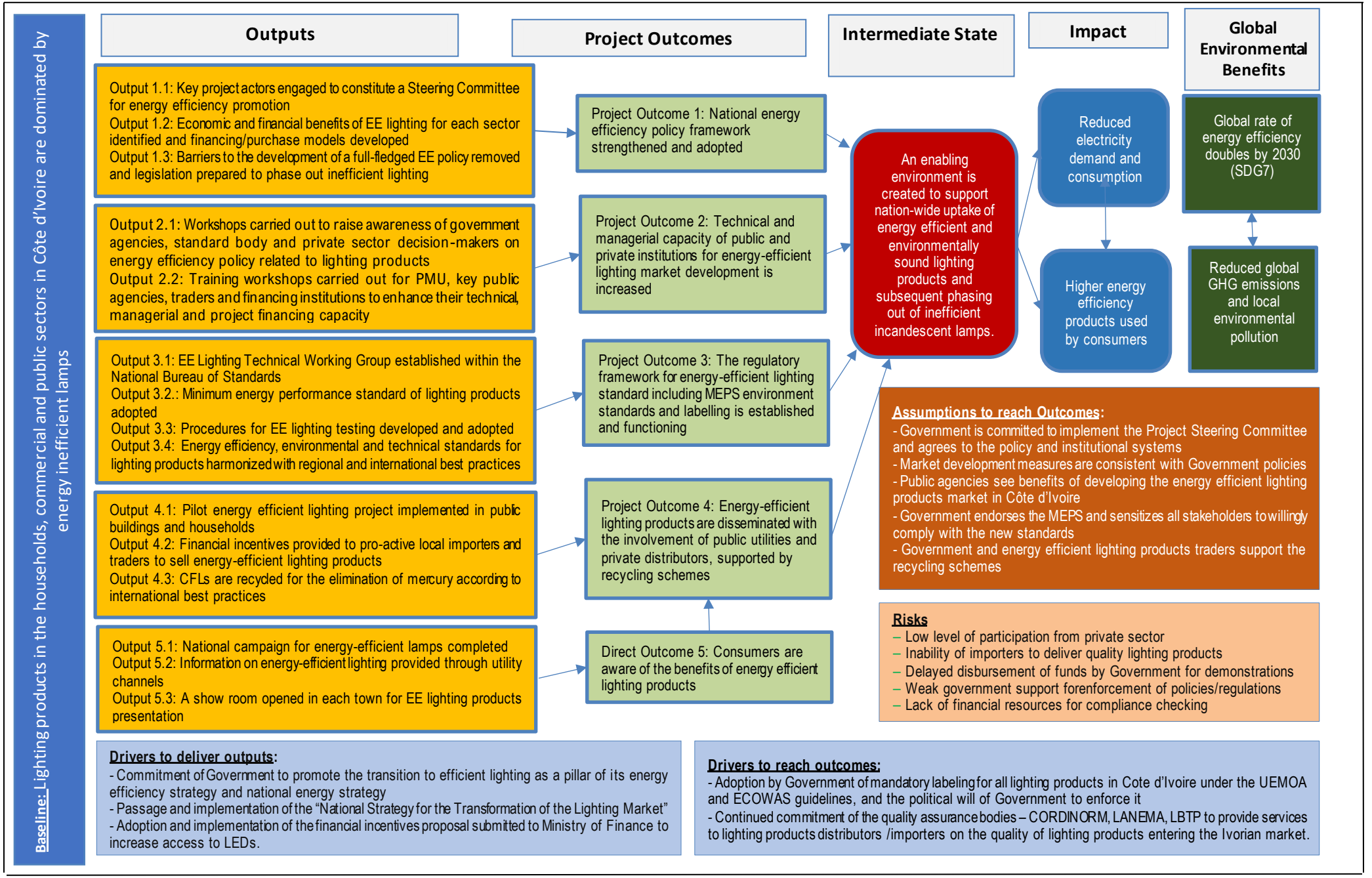
Formulation in original project document(s)	Formulation for Reconstructed ToC (RTOC)	Justification for Reformulation
PROJECT GOAL The project aimed to accelerate the phase-out of incandescent bulbs by removing the main barriers to energy-efficient lighting, promoting the development of mercury-free technologies and reducing global GHG emissions as well as mercury releases.	**GLOBAL ENVIRONMENTAL BENEFITS** 1. Global rate of energy efficiency doubles by 2030 (SDG7) 2. Reduced global GHG emissions and local environmental pollution	Inspired by the project goal, to reflect the contribution of the project to the achievement of global targets -SDGs and NDCs. In the project result framework, 4 targets of the project objectives are presented in terms of reduction of electricity demand and GHG emissions
PROJECT OBJECTIVES – TARGETS • Demand reduction: 135 MW by June 2015 • Direct CO_2 emission reduction: 426,000 tons • Indirect emission reduction: 44,000 tons • Lifetime direct CO_2 emission reduction: 1.3 million tons of CO_2 • Lifetime Indirect CO_2 emission reduction: 269,000 tons	**IMPACT** 1. Reduction of electricity demand and consumption 2. Higher energy efficiency products used by consumers	Inspired by the project goal and the first target of the project objectives.
PROJECT OBJECTIVE The project objective is to create, at local level, an enabling institutional, legal, technical and financial environment to phased out	**INTERMEDIATE STATE** An enabling environment is created to support nation-wide uptake of energy efficient and environmentally sound lighting	Intermediate states are changes (i.e. changes at the outcome level) beyond the Project Outcome(s) that are required to contribute towards the achievement of the intended impact

Formulation in original project document(s)	Formulation for Reconstructed ToC (RTOC)	Justification for Reformulation
inefficient incandescent lamps and nationwide diffusion of high-efficient and environmentally sound new technologies such as mercury-free CFLs and electronic ballasts supported.	products and subsequent phasing out of inefficient incandescent lamps.	of a project. The intermediate states resulting from the project were not directly defined in the project result framework of the ProDoc. However, the project objective reflects the intermediate state, and this has been integrated into the reconstructed TOC
PROJECT OUTCOMES AND OUTPUTS	**PROJECT OUTCOMES AND OUTPUTS**	
Outcome 1.1: Strengthened national energy efficiency policy framework	**Project Outcome 1: National energy efficiency policy framework strengthened and adopted**	To consolidate the outcomes under Component 1 to reflect the application of the outputs by intended beneficiary stakeholders
Outcome 1.2: State Government legislation adopted for the phase out of incandescent lamps		
Output 1.1.1: A steering committee set up for energy efficiency promotion	Output 1.1: Key project actors engaged to constitute a Steering Committee for energy efficiency promotion	Reformulated to reflect engagement of intended beneficiary stakeholders
Output 1.1.2: Workshops carried out to raise awareness of government agencies and standardization institute	Moved to Output 2.1.1	This is in awareness creation /capacity development category
Output 1.2.1: Economic and financial benefits of EE lighting for each sector identified and financing/purchase models developed	Output 1.2: Economic and financial benefits of EE lighting for each sector identified and financing/purchase models developed	No reformulation; reflects availability of improved services for intended beneficiary sector
Output 1.2.2: Barriers to the development of a full-fledged EE policy removed and legislation prepared to phase out inefficient lighting	Output 1.3: Barriers to the development of a full-fledged EE policy removed and legislation prepared to phase out inefficient lighting	No reformulation; reflects availability of improved services for intended beneficiary sector
Outcome 2.1: Increased capacity of public institutions for Energy-Efficient lighting market development	**Project Outcome 2: Technical and managerial capacity of public and private institutions for energy-efficient lighting market development is increased**	Reformulated to consolidate the outcomes under Component 2 to reflect the application of outputs by intended beneficiary institutions
Outcome 2.2: Project Management Unit (PMU) created and operationalized within the Ministry of Mines and Energy		
Outcome 2.3: Increased capacity of private sector institutions for Energy Efficiency market development		
Output 2.1.1: Technical capacity of key public agencies enhanced	Output 2.1: Workshops carried out to raise awareness of government agencies, standard body on energy efficiency policy related to lighting products	Moved from Output 1.1.2 since it is in awareness creation /capacity development category
Output 2.2.1: PMU trained to increase its technical and managerial capacity	Output 2.2: Training workshops carried out for PMU, key public agencies, traders and financing institutions to enhance their technical, managerial and project financing capacity	Consolidated Output 2.1.1, 2.2.1, 2.3.1 into Output 2.2 - to reflect availability of similar knowledge and skills for different intended beneficiary stakeholders
Output 2.3.1: Train traders and financing institutions on EE lighting project financing		

Formulation in original project document(s)	Formulation for Reconstructed ToC (RTOC)	Justification for Reformulation
Outcome 3.1: Enhanced regulatory framework for EE lighting standard and labelling	**Project Outcome 3: The regulatory framework for energy-efficient lighting standard including MEPS environment standards and labelling is established and functioning**	To consolidate the outcomes under Component 3 to reflect the application of the outputs by intended beneficiary stakeholders
Outcome 3.2: MEPS for energy-efficient lighting products established		
Outcome 3.3: All traded lighting products meet quality, environmental and energy performance standards		
Output 3.1.1: EE Lighting Technical Working Group established within the National Bureau of Standards	Output 3.1: EE Lighting Technical Working Group established within the National Bureau of Standards	No reformulation; reflects availability of knowledge and skills for intended beneficiary institution
Output 3.2.1: CFLs minimum energy performance standard adopted	Output 3.2.: Minimum energy performance standard of lighting products adopted	Reformulated to reflect availability of improved services for intended beneficiary institution
Output 3.3.1: Procedures for EE lighting testing developed and adopted	Output 3.3: Procedures for EE lighting testing developed	No reformulation; reflects availability of improved services for intended beneficiary institution
Output 3.3.2: Energy efficiency, environmental and technical standards for lighting products harmonized with international best practices	Output 3.4: Energy efficiency, environmental and technical standards for lighting products harmonized with regional and international best practices	Reformulated to reflect availability of availability of knowledge and skills for intended beneficiary institution
Outcome 4.1: Public utilities and private distributors and installers fully involved in the dissemination of EE lighting products	**Project Outcome 4: Energy-efficient lighting products are disseminated with the involvement of public utilities and private distributors, supported by recycling schemes**	To reflect the application of an output by intended beneficiary stakeholders
Outcome 4.2: Significant improvement in sales of energy-efficient lighting products and reduction in the sales of incandescent lamps		
Outcome 4.3: Recycling schemes for EE lighting are operational		
Output 4.1.1: Implement pilot energy-efficient LED street lighting project	Output 4.1: Pilot energy efficient lighting project implemented in public buildings and households	Consolidated Outputs 4.1.2 and 4.1.3 into Output 4.1– to reflect availability of similar services for different intended sectors. EE pilots in streets cancelled.
Output 4.1.2: Energy-efficient lighting in public buildings		
Output 4.1.3: Energy-efficient lighting promotion for households		
Output 4.2.1: Based on adoption of suitable financing/purchase models, up to five (5) million CFLs disseminated in household, commercial, and public services		This output was cancelled in Project Revision 3.
Output 4.2.2: Financial incentives provided to pro-active local importers and traders to sale energy-efficient lighting products	Output 4.2: Financial incentives provided to pro-active local importers and traders to sell energy-efficient lighting products	Corrected "sale" to "sell" No reformulation
Output 4.3.1: CFLs are recycled for the elimination of mercury according to international best practices	Output 4.3: CFLs are recycled for the elimination of mercury according to international best practices	No reformulation; reflects availability of improved services for intended beneficiary stakeholders

Formulation in original project document(s)	Formulation for Reconstructed ToC (RTOC)	Justification for Reformulation
Outcome 5.1: Increased information to consumers about the benefits of energy efficient lighting products	**Direct Outcome 5: Consumers are aware of the benefits of energy efficient lighting products**	To reflect the application of an output by intended beneficiaries
Output 5.1.1: National campaign for energy-efficient lamps completed	Output 5.1: National campaign for energy-efficient lamps completed	No reformulation; reflects availability of awareness for intended beneficiary stakeholders
Output 5.1.2: Information on energy-efficient lighting provided through utility channels	Output 5.2: Information on energy-efficient lighting provided through utility channels	No reformulation; reflects availability of awareness for intended beneficiary stakeholders
Output 5.1.3: A show room opened in each town for EE lighting products presentation	Output 5.3: A show room opened in each town for EE lighting products presentation	No reformulation; reflects availability of awareness for intended beneficiary stakeholders

Figure 4: Re-Constructed Theory of Change Diagram for PEEPL Project



4.1 Causal pathways from Outputs to Project Outcomes

90. With respect to the TOC causal pathways from the outputs to the outcomes of the project:

- The delivery of Outputs 1.1 to 1.3 *(Key project actors engaged to constitute a Steering Committee for energy efficiency promotion; Economic and financial benefits of EE lighting for each sector identified and financing/purchase models developed; and Barriers to the development of a full-fledged EE policy removed and legislation prepared to phase out inefficient lighting)* would be driven by the Ministry of Petroleum, Energy and Renewable Energy (MPEER) to achieve strengthened national energy efficiency policy framework (Outcome 1). MPEER would drive this achievement in close collaboration with the Ministry of Finance and Ministry of Trade, Industry and Promotion of SMEs. The key drivers for these achievements are: i) The passage of and implementation of the "National Strategy for the Transformation of the Lighting Market"; and ii) the adoption and implementation of the financial incentives proposal submitted to Ministry of Finance to increase access to LEDs. The achievement is based on the assumption that the Government is committed to implement the Project Steering Committee, agrees to the policy and institutional systems and will continue to support (in kind and cash) them in the future.
- The delivery of Outputs 2.1 and 2.2 (*Workshops carried out to raise awareness of government agencies, standard body and private sector decision-makers on energy efficiency policy related to lighting products; and Training workshops carried out for PMU, key public agencies, traders and financing institutions to enhance their technical, managerial and project financing capacity*) would be driven by MPEER, working in collaboration with the private sector and financial institutions to achieve Outcome 2 *(Technical and managerial capacity of public and private institutions for energy-efficient lighting market development is increased)* to facilitate energy-efficient lighting market development in Côte d'Ivoire. The driver for these achievements is the commitment of the Government of Côte d'Ivoire to promote the transition to efficient lighting as a pillar of its energy efficiency strategy and national energy strategy. This achievement is based on the assumption that: i) The market development measures are consistent with Government policies; ii) Public agencies see benefits of developing the energy efficient lighting products market in Côte d'Ivoire; iii) Government officials to ensure timely appointment and recruitment of the PMU staff; iv) PMU staff are committed to the training sessions; and v) Private sector institutions are willing to take part in the capacity building training activities
- The delivery of Outputs 3.1 to 3.4 *(EE Lighting Technical Working Group established within the National Bureau of Standards; Minimum energy performance standard of lighting products adopted; Procedures for EE lighting testing developed and adopted; and Energy efficiency, environmental and technical standards for lighting products harmonized with regional and international best practices)* would be driven by CODINORM in collaboration with MCACSP to enhance the establishment of regulatory framework for energy-efficient lighting standard including MEPS environment standards and labeling (Outcomes 3). The driver of these achievements is the adoption of mandatory labeling for all lighting products in Cote d'Ivoire under the UEMOA and ECOWAS guidelines, and the political will of Government to enforce it. These would be achieved with the assumption that the Government and the private sector support the Technical Working Group and endorses the procedure; Government endorses the MEPS and sensitizes all stake holders to willingly comply with the new standards; Government endorses the testing procedures, and continues to support the development of such standards.
- The delivery of Outputs 4.1 to 4.3 *(Pilot energy efficient lighting project implemented in streets, public buildings and households; Financial incentives provided to pro-active local importers and traders to sell energy-efficient lighting products; CFLs are recycled for the elimination of mercury according to international best practices)* will be driven by the Ministry of Energy and Ministry

of Finance, in collaboration with the private sector, to facilitate full involvement of public utilities and private distributors and installers in the dissemination of EE lighting products, supported by recycling schemes (Outcome 4). The driver of these achievements is the adoption and implementation by Government of the financial incentives proposal submitted to Ministry of Finance to increase access to efficient lighting products. These would be achieved with the assumption that local importers and traders of efficient lighting products accept and use the financial incentives. The recycling of CFLs for the elimination of mercury according to international best practices (Output 4.3) will be driven by the Ministry of Environment and the private sector, such that recycling schemes for EE lighting are operational. This achievement is based on the assumption that Government and energy efficient lighting products importers, distributors and traders support the recycling schemes.

- The delivery of Outputs 5.1 to 5.3 (*National campaign for energy-efficient lamps completed; Information on energy-efficient lighting provided through utility channels; and a show room opened in each town for EE lighting products presentation*) will be driven by the DGE and the private sector to achieve increased awareness of consumers about the benefits of energy-efficient lighting products (Outcome 5). The driver for these achievements is the continued commitment of the Government of Côte d'Ivoire to promote the transition to efficient lighting as a pillar of its energy efficiency strategy and national energy strategy. This achievement is based on the assumption that campaigns would be carried out over sufficiently long periods with the support of consumers, the Government and the private sector (importers, distributors and traders), using appropriate media; and utilities to continue to support the show room concept.

4.2 Causal pathways from Outcomes to Intermediates State

91. With respect to the TOC causal pathways from outcomes to intermediate state:

- The achievement of the Intermediate State (An enabling environment is created to support nation-wide uptake of energy efficient and environmentally sound lighting products and subsequent phasing out of inefficient incandescent lamps.) from the Outcomes will be driven by the DGE, in collaboration with CODINORM and the Customs agency. Ivory Coast´s Market transformation project to more energy efficient Lighting products has a strong sustainability strategy, where a number of local stakeholders have shown a great interest. The project would help to build a new institutional capacity as well as legal and commercial frameworks. Once the policy and regulatory standards are implemented by the DGE and its partners, the advantages of energy-efficient lighting will become clearer and the government will also have established the legal knowledge and self-sustaining process as basis to support any ongoing and new programmes on energy-efficient lighting. These shall include the periodic revision and update of the regulations established during the project to ensure sustainability over time. MEPS and labelling criteria for such revision has been clearly defined to prevent losing effectiveness.

- The project allows for the DGE and its partners to continue engagement with end-users, other governmental institutions, service providers and developers in energy efficient-related topics as they have already acquired experience and incorporated new instruments and knowledge. Additionally, familiarity with energy-efficient lighting has increased for all involved actors, thereby eliminating some of the fundamental barriers to the deployment of energy efficient low-carbon solutions. This was enhanced as in January 2019 a ban was placed on the use of incandescent lamps in Cote d'Ivoire. This has also upscaled the familiarity and use of energy efficient lamps in the country.

- This achievement is based on the assumption that the Government of Côte d'Ivoire and the private sector promote the transition to efficient lighting as a pillar of its energy efficiency

strategy and national energy strategy; and CODINORM promotes energy efficiency labels to consumers.

4.3 Causal pathways from Intermediate State to Impact

92. With respect to the TOC causal pathways intermediate state to impact:

- The Impact of the project (reduced electricity demand and consumption; and higher energy efficiency products used by consumers) will be driven by the DGE, supported by CODINORM, consumers, and the private sector (importers and distributors of lighting products). The driver for the impact is the continued commitment of the quality assurance bodies – CORDINORM, LANEMA, LBTP to provide services to lighting products distributors /importers on the quality of lighting products entering the Ivorian market and consumers giving testimonies about the quality and benefits of the improved lighting products. This Impact will be achieved provided the Government adopts and implements the financial incentives proposal submitted to Ministry of Finance to increase access to LEDs.

5 Evaluation Findings

5.1 Strategic Relevance

5.1.1 Alignment with UNEP's strategy, policies and mandate

93. The PEEPL Project is in alignment with the UNEP Medium-Term Strategy (MTS) 2014-2017[16], specifically Climate Change Expected Accomplishment 2 (or EA2 - Low emission growth) where "energy efficiency is improved …… in partner countries to reduce GHG emissions and other pollutants as part of their low emission development pathways", and Chemicals and Waste, Expected Accomplishment 3 (or EA3 -Waste), where "countries…make increasing use of the scientific and technical knowledge and tools needed to implement sound waste management".

94. The PEEPL Project also aligns with the Medium-Term Strategy (MTS) 2018-2021[17], specifically to proposed outcomes in:

    - Climate Change – where "countries increasingly adopt and/or implement low greenhouse gas emission development strategies and invest in clean technologies" to achieve "reduced emissions consistent with a 1.5/2oC stabilization pathway" (SDG 7.2 and 7.3)
    - "Countries …transition to low-emission economic development" through "emission reductions of greenhouse gases and other pollutants from renewable energy and energy efficiency; and share of gross domestic product invested in energy efficiency and renewable energy" to achieve "reduced emissions consistent with a 1.5/2°C stabilization pathway" (UNEP Medium Term Strategy, 2018-2021)
    - Chemicals, Waste and Air Quality – where countries develop or implement "policies and legal, institutional and fiscal strategies and mechanisms for waste prevention and sound management within the frameworks of relevant MEAs and SAICM" to achieve "reduced negative impacts from waste on environmental and human health' (SDG6, 11 and 12)

95. The alignment of the PEEPL Project to the *Bali Strategic Plan* (BSP)[18] was reflected in the emphasis and efforts made to achieve the BSP objectives through capacity building activities aimed at increased technical, managerial and project financing capacity of public and private sector institutions for energy-efficient lighting market development (Outcome 2). The BSP has objectives to "strengthen the capacity of governments of developing countries through targeted capacity building within the mandate of UN Environment, using and sustaining the capacity of technology obtained through training or other capacity building efforts, and developing national research, monitoring and assessment capacity that supports national institutions in data collection, analysis and monitoring of environmental trends and in establishing infrastructure for scientific development and environmental management (that will ensure sustainability of capacity building efforts)".

96. The other specific objectives of the BSP are "promoting, facilitating and financing as appropriate, access to and support of environmentally sound technologies and corresponding know-how, especially for developing countries as well as countries with economies in transition", and "strengthening cooperation amongst UN Environment, multilateral agreement secretariats (that take into account their autonomous decision-making processes), and other bodies engaged in

[16] https://wedocs.unep.org/bitstream/handle/20.500.11822/7670/-UNEP_Medium_Term_Strategy_2014-2017-2015MTS_2014-2017.pdf.pdf?sequence=3&isAllowed=y

[17] http://wedocs.unep.org/bitstream/handle/20.500.11822/7621/-UNEP_medium-term_strategy_2018-2021-2016MTS_2018-2021.pdf.pdf?sequence=3&isAllowed=y

[18] https://wedocs.unep.org/bitstream/handle/20.500.11822/26642/Annex%202%20to%20the%20briefing%20on%20South-South%20Cooperation.pdf?isAllowed=y&sequence=1

environmental capacity building including GEF". The PEEPL Project was aligned to these objectives of the BSP through its emphasis and efforts to adopt minimum energy performance standard of lighting products, and harmonizing energy efficiency, environmental and technical standards for lighting products with regional and international best practices (Outcomes 3.2 and 3.3).

97. The PEEPL Project was in alignment with South-South Cooperation (SSC), through its activities to harmonize energy efficiency, environmental and technical standards for lighting products with regional and international best practices (Outcome 3). The project recognized that "harmonization of standards with neighbouring countries (for example within the ECOWAS countries) would require inviting participation and input from these countries, particularly from those like Ghana that have already developed standards for lighting appliance".

The rating for alignment to UNEP's strategic priorities is Highly Satisfactory.

5.1.2 Alignment with GEF focal areas and strategic priorities

98. GEF grants are provided for projects in focal areas of biodiversity, climate change, international waters, land degradation, the ozone layer, persistent organic pollutants, and chemicals and waste. The GEF funds for the PEEPL Project were approved in April, 2012 under the GEF Operational Programme 4 (GEF-4) (2006-2010), in the focal area of Climate Change. At the time of its approval, the PEEPL had aligned with GEF Strategic Program 1 (Climate Change): Promoting Energy Efficiency in Residential and Commercial Buildings as lighting accounts for 26% - 28% of total electricity consumption.

99. With the commencement of the PEEPL Project in January 2016, the planned outcomes of the PEEPL remained consistent with the strategic programming objectives of GEF-6 (2014-2018) and GEF-7 (2018-2022). Regarding GEF-6, the PEEPL was highly relevant under CC 1: Promote Innovation, Technology Transfer, and Supportive Policies and Strategies to "develop and demonstrate innovative policy packages and market initiatives to foster new range of mitigation actions" (Program 2) [19]. Regarding GEF-7, the PEEPL Project was relevant to the Climate Change Focal Strategy Objective 1: "Promote innovation, technology transfer for sustainable energy breakthroughs"[20].

The rating for alignment to UNEP and GEF strategic priorities is Highly Satisfactory.

5.1.3 Relevance to global, regional and national environmental priorities

Sustainable Development Goals

100. The Project Document (ProDoc) does not explicitly refer to the SDGs, which are global development goals, possibly because it was not a requirement to do so at the time of ProDoc formulation. However, the evaluator confirms that the project addresses several SDGs both directly and indirectly (see Table 11).

Regional environmental priorities

101. At the regional level, the project is of relevance to *Institut de l'Energie et de l'Environnement de la Francophonie* through the activities of its international Energy Efficiency Program (PRISME). It is also of relevance to the Regional Energy Saving Program (RESP, 2011) of UEMOA under its Regional Initiative for Sustainable Energy and ECOWAS Energy Efficiency Policy (2012). The aim of the Regional Initiative for Sustainable Energy of UEMOA is to support energy efficiency (EE) and

[19] https://www.thegef.org/sites/default/files/documents/GEF-6%20Programming%20Directions.pdf, see pg 57
[20] https://www.thegef.org/sites/default/files/publications/GEF-7%20Programming%20Directions%20-%20GEF_R.7_19.pdf, see pg 37The

renewable energy (RE) in all the member states while the ECOWAS Energy Efficiency Policy of 2012 was adopted by the 43rd Ordinary Session of the Conference of Heads of State and Government of ECOWAS, which was held in Abuja, Nigeria, on 17th and 18th July 2013.

National environmental priorities

102. At the national level, the project contributes to the achievement of the country's sustainable development objectives through the reduction of greenhouse gas emissions associated with the energy sector. The project is also relevant in accelerating the integration of energy-efficient lighting projects to the EE and conservation programmes that were being developed by the Ministry of Petroleum and Energy to enhance private sector involvement and ensure environmental impacts associated with the widespread use of energy-efficient lighting products. Further, the PEEPL project is in alignment with the Ministry of Environment, Water and Forestry (MEWF) objectives. The MEWF is the key government institution responsible for the formulation and implementation of national environmental and climate change policies.

Table 11: The SDGs and linkage to energy efficiency

Sustainable Energy	Linkage with energy efficiency
7.3 Double the global rate of improvement in energy efficiency	7a. Enhance international cooperation to facilitate access to clean energy research and technologies, including renewable energy, energy efficiency, and advanced and cleaner fossil fuel technologies, and promote investment in energy infrastructure and clean energy technologies 7b. Expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries
Other SDGs	
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Energy efficiency and conservation influence the country's energy intensity and carbon content of economic growth
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Resilient infrastructure and appropriate public-private partnerships are required to ensure access to energy for all and to maximise energy efficiency
11. Make cities and human settlements inclusive, safe, resilient and sustainable	Municipalities require careful electricity planning and efficient power distribution
12. Ensure sustainable consumption and production patterns	The residential and buildings sector is a key part of a future in which there is sustainable consumption of energy and products
13. Take urgent action to combat climate change and its impacts	The carbon-intensive energy sector (based on fossil fuels) is a key driver of climate change.

Source: Compiled from Transforming our World: the 2030 Agenda for Sustainable Development (UN, 2015), Indicators and a Monitoring Framework for the Sustainable Development Goals, Sustainable Development Solutions Network (SDSN)

The rating for relevance to global, regional and national environmental priorities is Highly Satisfactory.

5.1.4 Complementarity with Existing Interventions

103. The PEEPL Project is highly relevant to and complements a number of ongoing as well as recently completed national issues, policies and strategies. The project was welcomed by the authorities of Côte d'Ivoire because it is consistent with the National Energy Saving Program. The PEEPL project complements the following global, regional and national programs, based on similarity in objectives: i) National Development Plan "PND 2012-2015" and "PND 2016-2020"; ii) National

Program for the Distribution of Low Consumption Lamps (PNDLBC, 2012); iii) Nationally Determined Contributions (NDC) of Côte d'Ivoire (2015); iv) Regional Energy Saving Program (RESP, 2011) of UEMOA under its Regional Initiative for Sustainable Energy; and v) ECOWAS Energy Efficiency Policy (2012).

104. The PEEPL project is complementary with the ECOWAS Energy Efficiency Policy (2012)[21] which has the objectives to:

- Promote the rapid adoption of connected and off-grid lighting products, high-performance and high-quality while permanently eliminating all lamps inefficient market in the ECOWAS region;
- Increase national and regional demand for efficient on-grid and off-grid lighting of high quality;
- Increase access to high-performance, high-quality, on-grid and off-grid lighting products
- Reduce the costs of using lighting (with a considerable positive impact especially on low-income households); and
- Reduce mercury and greenhouse gas emissions from electricity consumption linked to lighting (by reducing consumption);

105. The PEEPL project also complements the Regional Energy Saving Program (RESP, 2011)[22] of UEMOA under its Regional Initiative for Sustainable Energy. The RESP comprises four components, which are:

- Institutional support for the creation of energy efficiency organizations in the member States;
- Distribution of energy efficient lamps in the Member States;
- Addition of energy performance labels on household appliances in the UEMOA space; and
- Adding energy efficiency requirements to building codes in member states.

106. Further, the project objectives complement that of the National Development Plans "PND 2012-2015" and "PND 2016-2020": The development of the policy of the government included in the national plan of development, the "PND 2012-2015", which covered all sectors of activities. This plan foresaw in particular improving energy efficiency in the country. The new PND 2016-2020 Plan 34 opens the door to renewable energies, energy management, energy efficiency and the use of new technologies.

107. The National Program for the Distribution of Low Consumption Lamps (PNDLBC, 2012) in the sector which comprised residential and administrative replacement of incandescent lamps was launched in Cote d'Ivoire, with the following outcomes:

  - Distribution of more than 2.34 million LEDs to households and administrative buildings by the end of 2016;
  - Sensitization of households on the necessity and benefits of using low energy lamps

The rating for Complementarity with Existing Interventions is Highly Satisfactory.

The overall rating for Strategic Relevance is Highly Satisfactory.

[21] ECREEE. ECOWAS Energy Efficiency Policy (EEEP), 2012. http://www.ecreee.org/fr/node/7550
[22] Regional Program for the Development of Renewable Energies and Energy Efficiency (PRODERE) of UEMOA

5.2 Quality of Project Design

108. A review of the PEEPL Project design is crucial towards a comprehensive understanding of intended direct PEEPL outcomes and the actual outcomes achieved. A summary of this review is contained in the following paragraphs.

Project Design Strengths:

The strengths of the project are based on the following attributes:

109. The situational analysis in the project document adequately covers: i) Threats, root causes and barrier analysis; ii) Institutional, sectoral, and policy context; iii) Stakeholder mapping and analysis; iv) Baseline analysis and gaps; v) Linkages with other GEF and non-GEF interventions.

110. The project built on from the experience of existing worldwide projects from UNEP´s U4E through a highly experienced team of independent international experts. The project also allowed an exchange platform for high-level representatives from the relevant government bodies, parastatal institutions and U4E´s team of international experts. The project also allowed for interaction between relevant government bodies and the private sector (importers and distributors). These interactions were in the form of capacity building, information/data and experience sharing, among these stakeholders. The Customs, for example provided data on imports of various lamps to Cote d'Ivoire. The project therefore served as an amalgam that gelled these stakeholders together for a common interest.

111. The design of the PEEPL Project was clearly scoped to provide incremental support to the Government of Côte d'Ivoire to: i) Strengthen national energy efficiency policy framework, including adopting Government legislation for the phase out of incandescent lamps; ii) Increase capacity of public and private sector institutions for energy-efficient lighting market development; iii) Enhance regulatory framework for energy efficient lighting standard and labelling; iv) Establish recycling schemes for energy-efficient lighting products; and v) Increase information to consumers about the benefits of energy efficient lighting products. Phasing out incandescent lamps has direct implication for reducing CO2 emission and meeting a number of the international and local objectives of reducing the effects of climate change and protecting the environment. It is in the same vein that the project had the objective of having recycling schemes for energy efficient products. Increasing information to consumers helps them in making the right choices regarding energy efficient lighting products. The energy efficient lamps are cost effective and helps consumers to make savings on lamps. Indirectly therefore, the standard of living of beneficiaries are improved with the use of energy efficient lighting products. It is this interconnectedness of the outcomes all aimed at achieving a common goal which is a strength of the PEEPL Project and the fact that it provided a holistic approach to achieving the intended PEEPL objective.

112. The project was satisfactorily designed to apply a holistic approach to implement specific barrier removal activities which involved addressing the project questions as follows: (i) updating energy efficiency policies, standards and guidelines on lighting applications; (ii) building institutional and technical capacities; (iii) disseminating consumer education information; (iv) developing and implementing pilot projects; and (v) mitigating environmental impacts of the widespread utilization of energy-efficient lighting. Additionally, the project was designed to accelerate the integration of energy-efficient lighting projects to the energy efficiency and conservation programmes being developed by the Ministry of Petroleum, Energy and Renewable Energy to enhance private sector involvement and ensure that environmental impacts associated with the widespread use of energy-efficient lighting are mitigated. The project therefore brought together varied local and international expertise (government, parastatal institutions and the private sector) required in the removal of the barriers. The ability to collaborate with different and a broad range of stakeholders - including consumers (households in urban and rural areas) - and work amicably with all of them is considered as a strength of this project.

113. The PEEPL project was also satisfactorily designed to represent an integrated and comprehensive approach for the transformation of the market for lighting products in Côte d'Ivoire to an energy-efficient one resulting in less GHG emissions and more efficient use of energy. The project design focused on the strategic provision of incremental support to improve the baseline situation of Cote d'Ivoire in 2013, where there was the practice of using energy inefficient incandescent lamps and poor-quality energy efficient lighting products for lighting will continue with corresponding GHG emissions and inefficient use of energy as an alternative to the BAU situation in Côte d'Ivoire.

114. The project is in line with, and supports, the renewed GEF vision: strategy, innovation, equity, accessibility and focus. The proposed project also relies on a strong public-private partnership. It is consistent with the GEF Climate Change Strategy and the Strategic Program of Promoting Energy Efficiency in Buildings as lighting accounts for 26% - 28% of total electricity consumption. It is also consistent with other interventions such as the Regional Energy Saving Program (RESP, 2011) of UEMOA under its Regional Initiative for Sustainable Energy and ECOWAS Energy Efficiency Policy (2012).

115. The project was to benefit from an already existing similar project with almost the same objectives and which the country implemented earlier, which are the GEF-financed and UNEP-executed "Global Market Transformation for Efficient Lighting" project as well as the GEF West Africa Program - Energy Component. In particular, the "Global Market Transformation for Efficient Lighting" project was to facilitate the establishment of methodologies, which the PEEPL was also interested in. Such tools were intended to be used for the development of labelling procedures and quality certification as well as for the identification of appropriate policy options for phasing out ILs. Finally, the "Global Market Transformation for Efficient Lighting" project was to introduce the latest energy-efficient technologies and detail environmental safeguards under the project. The availability of rich experience, experts and expertise that are available in the country serve as a strong foundation for the PEEPL to benefit, through learning, from past experiences and actions taken in the country and in others such as Ghana that were at a similar stage of market transformation for ESL products, thus enhancing South-South cooperation between Cote d'Ivoire and other countries in the subregion, which is important for sharing best practices.

116. The project took a programmatic approach and involved major stakeholders including policy makers, the industry, international experts and consumers. Availability of such a pool of stakeholders, having varied expertise to tap into at any given time is an asset for the project. Over the last two decades, GEF has been gaining solid experience as a network and partnership instrument to cope with global climate change issues. Such experience will pave the way for the market transformation of energy-efficient lighting in Africa as a whole and help phase out ILs. The GEF initiative will contribute to the G8+5 Initiative on energy efficiency. As a matter of fact, it could become one of its most visible and pragmatic components.

PEEPL Project Design Weaknesses

117. The project document also did not identify concerns with respect to human rights in relation to sustainable development, including the consideration of integrated approach to human and natural systems; gender perspectives, and rights of indigenous people. The stakeholder analysis did not cover gender/ minority groupings or indigenous peoples, and how the project would impact on these different groups of people in terms of policy, standards and other implications. Women's household chores are highly dependent on energy forms and so ignoring their views during project design could create a gap in the end results. Also, acceptability of the energy efficient lamp was assumed to be indisputable and communities would accept it once it is free. However, evidence from the household pilot projects showed that the related outputs would not have been achieved without an intensive community sensitization to disabuse the minds of community members about LED lamps being used to 'buy' votes from electorates. The project design therefore did not consider perceptions of consumers/beneficiaries of the energy lighting products and its implication for acceptability of the improved lighting technology. Free goods households received in the past were linked to politicians and was considered as infringement on their rights.

118. Some activities might have been too ambitious for what is realistic for the country to deliver in such a short period of time the project had. For example, a wide suite of recommendations for the environmentally-sound management (ESM) framework have been provided, but their implementation required more time and resources, as these usually involves new infrastructure, assistance to informal workers, implementation of taxes, and many more. that exceed the time of the project or U4E's possibility to influence. Implementation of taxes, for example, is a policy issue that has to be deliberated upon at the highest level before it is approved. Administratively, public sector systems are very bureaucratic and this slows down progress especially for projects that have defined timeframe within which to deliver results. The rating for project design is Satisfactory.

The rating for project design is Satisfactory.

5.3 Nature of External Context

119. Generally, the context and challenges as outlined in the Project Document of PEEEPL during its design remained the same throughout the project implementation. The project document did not identify any unusually challenging operational factors – such as likelihood of conflict, natural disaster or change in national government - that were likely to negatively affect project performance. However, the project suffered a 3-year delay in its commencement (2013 until 2016) due to unforeseen national political turmoil between 2012 and 2015, and this significantly hindered the implementation of project activities. It is important to mention that the political instability in Cote d'Ivoire was an external factor outside the control of the project and therefore not much could be done during this period with regards to project implementation. This delay called for review of the baseline study that the project used eventually and also the workplan. Being aware of this possible risk informs future decisions and preparedness towards any eventuality. There was therefore a conducive environment in Cote d'Ivoire during project execution. The nature and external context of the project is therefore rated as *favourable*.

The rating for nature of external context is Favourable

5.4 Effectiveness

Effectiveness assesses the level of success of the project in producing the programmed outputs and achieving milestones as per the Project design Document. Section 5.4 therefore assesses the extent to which the outputs were achieved.

5.4.1 Availability of Outputs for Component 1: Energy Efficiency Policy Enhancement

120. Output 1.1: Key project actors engaged to constitute a Steering Committee for energy efficiency promotion required the MPEER to engage with the key project stakeholders and partners to form the PSC. The PSC served as the overall decision-making body for the project, and acted as a cross-sectoral coordination platform for a stronger policy dialogue. Establishing the PSC however took a long while due to bureaucratic processes as letters had to be sent to the 10-member agencies to appoint representatives. Without the appointment of the representatives, the PSC would not be dully constituted. The members from the agencies are also holding high offices in their respective agencies, thus suggesting that they must be busy individuals. As at the time of submitting the first PIR report, it was reported that the PSC had not been established and without which the project would "lack orientation and will remain stalled". The NDP who served as the chairman of the PSC and his deputy had also not been appointed at the time the first PIR was completed and submitted. From the key informant interviews, it was noted that the NDP and his deputy occupied very

important and high offices that kept them very busy and therefore adding this responsibility to it was going to make them busier.

121. To avoid further delays, a provisional PSC was constituted and had its first meeting in April, 2016 to allow the inception of the project to take place[23]. This provisional meeting of the PSC was attended by 11 participants including, the Task Manager and the UNEP Regional Coordinator for Africa. The PSC discussed and made decisions on project issues including: i) Work plan for the 12 first months and budget; ii) Decision-making procedures of the PSC; iii) Technical Assistance from UNEP; and iv) Technological scope of the project. Eventually, the Ministerial department order establishing the PSC was signed in October 2016.

122. Due to sudden outbreak of Covid 19 Pandemic, the PSC could only meet for the second and final time in January, 2019. This meeting was attended by 17 participants including the Task Manager. The PSC discussed and made decisions on project issues including: i) Project progress report; ii) Situational analysis of the lighting products market of Cote d'Ivoire; iii) Updated Action Plan and Budget; and iv) Communication Plan for the project's continuation. The third and last meeting could not come on due to the Covid 19 Pandemic.

123. In spite of the delays in establishing the PSC and its inability to meet regularly, employing adaptive management skills, the services of the PSC were largely made available to all key stakeholders and the tasks of the PSC were completed as planned, or adapted to address the challenges that were encountered. For example, the PMU periodically sent letters to members of the PSC requesting for their advice and agreement when there were important decisions (e. g. in the selection of pilot sites) to be made. This is attributable to the efficiency with which the PMU worked to ensure workflow.

124. Output 1.2: Economic and financial benefits of EE lighting for each sector identified and financing/purchase models developed This output was intended to help end-users and businesses to claim economic and financial incentives to accelerate the penetration of EE lighting products in the Ivorian market. The technical assistance provided by the PEEPL Project facilitated the availability of this output, through actions including:

- A Market Research Expert started this activity in April 2017. The expert was recruited with his terms of reference being the activities to be implemented under this Output 1.2. The activities were; i) conduct survey on the demand and offer related to lighting products in the local market; ii) assess economic and financial benefits of energy-efficient) lighting for consumers, governments, importers, distributors and potential manufacturers; iii) develop a proposal for financing/purchase models to be set up by the government; iv) organize workshops, seminars and conferences to train energy efficiency key market players and decision makers about the economic and financial models.
- The data provided by the Consultant was deemed to be insufficient to assess the current lighting market situation in Cote d'Ivoire. The Consultant indicated that the lighting products distributors were reluctant to provide the data explaining that these are kept confidential because of the competition. In addition, key informant Interviews granted to some of these distributors for the terminal evaluation also revealed that their reluctance to provide the required information was due to the fear that government could make them pay more tax if they should disclose information about their work. Another set of letters signed by the Director-General, DGE were sent to the lighting products distributors on 30 November, 2017 to explain again the very reasons why this information was requested, i. e. to collect data related to the lighting market in Cote d 'Ivoire in the framework of the implementation of the PEEPL project. Failure of the Market Research Expert to gather data for his work amounted to waste of time and so further delay of project activity implementation, which in turn, has

[23] The first PSC for the PEEPL project was called 'provisional; because the process of appointment of membership of the committee had not been completed prior the first PSC meeting due to administrative delays but this was eventually done and the members participated in the next PSC meeting.

implication for the implementation of other activities as the result of this output was to feed into another activity. Thus, this delay was another setback for the PEEPL project, as noted from the interviews.

- With the support of the International Lighting Expert (U4E), it was decided that the market research needed to be started all over again, following a new methodology and using a new survey questionnaire. This new survey started in July 2018 and the updated draft market study report was submitted in October 2018 and validated in December 2018. The final version of the market research report was made available to lighting products distributors and financial institutions at a workshop in January 2019, and these stakeholders validated the report. The report, among others, identified the economic and financial advantages for consumers, government, importers, distributors and potential manufacturers.
- Several proposals on financing models were prepared and made available to lighting products importers, distributors at a Workshop on Energy Efficiency held on 26-27 September, 2018 and further developed in the "Strategy for the Transformation of the Lighting Market". A team of national experts also conducted a lighting market research to assess the economic and financial benefits of EE lighting for consumers, government (local and national) as well as for importers, distributors and potential manufacturers. The "Strategy for the Transformation of the Lighting Market" has been adopted in the National Development Program (NDP) 2021-2025, which has a budget of FCFA 3,295 million allocated for it. The DGE intends to request the Ministry in charge of finance for a tax reduction on LED lamps. The implementation of this activity therefore has addressed the barrier related to the absence of a national lighting strategy for actors in the energy efficiency market. With the approved budget also, the enforcement of this strategy will go on beyond the lifespan of the project, thus ensuring project sustainability.
- In spite of the delay in the accomplishment of this output, the PMU again, applied adaptive management skills to address the setbacks caused by the delay and finally made the output available to the intended beneficiaries.

125. Output 1.3: Barriers to the development of a full-fledged energy efficiency policy removed and legislation prepared to phase out inefficient lighting. This was required to provide recommendations on policy measures that could be implemented by the Ivorian government in the phase-out of incandescent lamps, following a barrier analyses. These include institutional, policy, legal, regulatory, technical, cost, awareness and implementation barriers. The output was made available by PEEPL actions including:

- To attain the result of this output, a Public Policy Expert was recruited to: i) develop a document on efficient lighting policy, including preparation of legislative and regulatory instruments to phase-out incandescent lamps; ii) identify training needs for energy efficiency sector players and propose appropriate training materials; and prepare legislative and regulatory instruments related to economic and financial incentives to promote energy efficiency. The expert completed his work and his first report was submitted on September, 2017. This was followed by submission of an updated version after the first draft was submitted for review and validation by the committee set up by the DGE.
- Further, there was a team of experts that i) prepared an energy efficiency and conservation bill that was intended to help mainstream EE concerns into development strategies and programs; ii) prepared to implement government's decision (by Decrees) to phase out incandescent lamps; iii) provision of technical support by DGE for the implementation of the legislation at national and local levels; and iv) lastly, proposals were made for tax and customs incentives for the 2019 budget but were not taken into consideration.
- A decree - Decree No. 2016-862 – was passed and issued on 3 November 2016, stating in section 12 that incandescent lamps were to be prohibited for sale nationwide by January 01, 2019. Draft order was submitted to the DGE in July 2018. The decree is already in force.

However, since the order was not signed before the deadline on 1st January 2019, a new order was proposed defining exemptions and sanctions.

The rating for availability of outputs for "Component 1: Energy Efficiency Policy Enhancement" is Satisfactory.

5.4.2 Availability of Outputs for Component 2: Technical and Managerial Capacity Building for Energy-Efficient Lighting Market Development

126. Output 2.1: Workshops carried out to raise awareness of government agencies, standard body and private sector decision-makers on energy efficiency policy related to lighting products aimed to raise awareness and inform government agencies, standard body, traders and financing institution staff about the social and economic benefits of energy-efficient lighting products. PEEPL resources were utilized to achieve this output, which comprised of a 2-day Workshop on Energy Efficiency held on 26-27 September, 2018. The feedback from the interviews indicated that the 2 days were too short a duration for such a workshop. The participants were made up of 87% men and 13% women. The participants from the public sector were made up of representatives from all relevant Ministries and parastatal agencies[24] and key representatives from the main private sector institutions[25]. Of the 12 relevant private sector institutions invited, 11 sent key representatives to attend the capacity building workshop: The training was provided by experts from the International Lighting Expert (U4E). They provided training materials and a workshop report covering the agenda, programme and conclusions The training workshop covered, among other things, the following:

- Training to enhance the administrative and technical capacities of key public agents involved in the project and to develop the capacity of the PMU in policy and legislation preparation;
- Training to enhance the capacity of energy-efficient lighting products importers, traders and potential manufacturers to prepare proposals for submission to local financial institutions to develop or improve their business; and
- Training to enhance the capacity of financing institution staff to assess business plans for energy-efficient lighting technologies.

127. Output 2.2: Training workshops carried out for PMU, key public agencies, traders and financing institutions to enhance their technical, managerial and project financing capacity was envisaged to expose key PEEPL stakeholders, which are the public institutions, particularly ministerial entities involved in project implementation, and domestic suppliers (importers and supply chain partners such as distributors, wholesalers, dealers and retailers) to the best international practices to increase their capacity to deliver and manage an adequate supply of good-quality energy-efficient products. The public and parastatal institutions were among institutions invited to participate in the first and second workshops on the "National Strategy for the Transformation of the Lighting Market" that were held on 25 September, 2018 and 22 January, 2019. Key representatives from all relevant Ministries and parastatal agencies that attended the workshops were MPEER, MEF, Ministry of Budget, Ministry of Construction; Ivorian Customs, MCACSP, MESD, CI-ENERGIES, ANARE-CI, CODINORM, LANEMA and LBTP. The second workshop was attended by over 40 participants.

[24] Ministry of Petroleum, Energy & Renewable Energy, Ministry of Economy & Finance, Ministry of Budget, Ministry of Construction, Ivorian Customs, Ministry of Commerce, Ministry of Environment and Sustainable Development, CI-ENERGIES, ANARE-CI, CODINORM, LANEMA , LBTP, SOGEPIE.

[25] CIE, Chamber of Commerce & Industry, CGECI (Industry association), ENVIPUR (waste management company), FACACI (Consumer Association), AIENR (RE & EE association), CASE (environmental protection advocacy organization) and the 5 main lighting products distributors / importers in Cote d'Ivoire.

128. Out of the 12 relevant private sector institutions invited, 11 sent key representatives to attend the capacity building workshop. These were the national electricity company (CIE), Chamber of Commerce and Industry, Envipur (a waste management company), Federation of Associations of Active Consumers in Cote d'Ivoire (FACACI), Ivorian Association for Renewable Energies and Energy Efficiency (AIENR), African Center for Environmental Health (CASE) and the 5 main lighting products distributors /importers.

129. The training of traders and financing institutions on energy-efficient lighting project financing was provided by the local Business Plan expert during a workshop held on 16 January, 2019. The expert developed a strategic business plan document on the public lighting technology specific to the Ivorian lighting market. This document was made available to the stakeholders

130. The 3rd Workshop on the "National Strategy for the Transformation of the Lighting Market" was held on 25-26 July 2019 for 38 participants. The outputs at the end of the different training workshops and confirmation from the key informant interviews indicated that national capacity on energy efficient lighting has now been built, with approximately 100% of PMU staff, 100% of the relevant public sector actors and 90% of the relevant private sector institutions have had their capacities increased on energy efficient lighting market development.

The rating for the availability of outputs for "Component 2: Technical and Managerial Capacity Building for Energy-Efficient Lighting Market Development" is satisfactory.

5.4.3 Availability of Outputs for Component 3: Lighting Products Quality Improvement

131. Output 3.1: EE Lighting Technical Working Group established within the National Bureau of Standards. This, output, according to the Project Document, was envisaged to support the formation of a Technical Group under the supervision of CODINORM, as a multi-sectoral group to review, integrate, recommend, and update energy law, regulations, standards, guidelines and programmes including the adoption of the energy-efficient lighting labelling. The results of the implementation for this output show that the Technical Working Group on energy-efficient lighting was established within CODINORM as part of ECOWAS guidelines implementation but outside the PEEPL project. The Technical Group was supported by research and recommendations on best practices on MEPS for the ECOWAS region delivered by the International Lighting expert (U4E) through the National Strategy proposal and the workshops.

132. Output 3.2: Minimum energy performance standard (MEPS) of lighting products adopted. This is aimed to facilitate the review of existing MEPS based on current or previous international standards and provide assistance to CODINORM in the final selection and adoption of appropriate MEPS for Côte d'Ivoire with regard to energy-efficient lighting products. The results of implementing this activity includes the availability of a Technical Note justifying the need to update the Standard NI 3011 "Technical specifications of on-grid lamps" (which was developed in 2014 and approved in April 2018 as part of a project executed by ECOWAS) was submitted to CODINORM. The Technical Note recommended new technical specifications MEPS on CFL and LED lamps related to the luminous flux instead of the power. The recommendations of the Technical Note were examined and validated by the Technical Working Group (GT11) under the supervision of CODINORM, and later, CODINORM approved and adopted the updated Standard NI 3011 on 11 June 2019.

133. CODINORM had started the process of updating Decree 2016-1152 of December 2016 mandating certain enforcement standards at CODINORM, but as of 30 September 2020, the updating procedure of the decree was still underway. A national register and test methods of lighting products were also developed by the international Testing and Standards Expert from U4E. The deliverables are available to CODINORM and its partners.

134. Output 3.3: Procedures for EE lighting testing developed and adopted. This output was envisaged to establish a national quality inspection system for energy-efficient lighting products, and

strengthen the capacity of a national testing laboratory. The results show that testing procedures had been developed by the International Testing and standards expert (U4E) and training was provided to the different laboratories during the workshop held on 17-18 January 2019; LANEMA had also acquired certain lamp-testing equipment in April 2020; and the draft market surveillance decree on monitoring, verification and enforcement (MVE) developed within the framework of this project was combined with another MVE decree on refrigerators and air conditioners drafted within the framework of another project. This draft order was submitted and made available to the MPEER Cabinet in April 2020.

135. Output 3.4: Energy efficiency, environmental and technical standards for lighting products harmonized with regional and international best practices. This output aimed to facilitate relationship with regional bodies such as ECOWAS and UEMOA for harmonization of standards and labelling of energy-efficient lighting products. The results achieved by implementing this output is firstly, a national capacity building workshop on "Standards and Testing Control Standards of Lighting" which took place on 17-18 January 2019. The training focused on standards development for lighting products and establishment of testing laboratory facility to support energy efficiency regulation of lighting products. The procedures were developed by the U4E Testing and Standards Expert. The workshop was attended by more than 20 participants.

136. Following the passing of the Decree No. 2017-567 (6 September 2017), Intertek International Limited, SGS SA, Bureau Varitas BIVAC and COTECNA Inspection have been performing compliance checks since July 2018 before energy efficient lighting products are shipped to Cote d'Ivoire. Thus, imported energy-efficient lighting products sold in Cóte d'Ivoire coming from the formal importation market are monitored to meet international quality standards.

The rating for the availability of outputs for "Component 3: "Lighting Products Quality Improvement" is Satisfactory.

5.4.4 Availability of Outputs for Component 4: Energy Efficient Lighting Products Dissemination for Public Lighting

137. Output 4.1: Pilot energy efficient lighting project implemented in public buildings and households. This output was aimed to demonstrate and promote the benefits of energy-efficient lighting in three municipalities selected by the DGE – Abidjan (commercial capital), Yamoussoukro (national capital) and San Pedro (city in south-west Cote d'Ivoire). The results of the activities under this output show that the pilot projects in households and public buildings were duly implemented and results attained. According to the key informant interview, the initial plan for the pilots was selection of 1 village (Bregbo) and 1 public institution (INHP) for the south (around Abidjan) and 1 village (Bonzi) and 1 public institution (regional hospital of Yamoussoukro) for the centre (around Yamoussokro). However, prior to implementation, the selected public building in the centre which was the regional hospital of Yamoussoukro was under renovation. The pilot project therefore could not have taken place at the regional hospital while the contractor was still on site doing the renovation. One option was to wait for the completion of the renovation but that would have delayed the implementation of the pilot project beyond the end of this project, especially, when the project had already suffered from severe delays. Moreover, the renovation of the regional hospital included fixing energy efficient lamps, which would have solved the same problem the pilot intended to do. Eventually, the regional hospital of Yamoussoukro was dropped out upon suggestions from the PMU and with approval of PSC, and replaced with Institut des Sciences et Techniques de la Communication (ISTC), which was part of the initial 10 audited buildings.

138. Based on the above, the PSC gave the approval for the pilot project to be carried out in the National Institute of Public Hygiene (Institut National d'Hygiène Publique (INHP)) in Abidjan and the Institute of Sciences and Communication Technologies (Institut des Sciences et Techniques de la Communication, ISTC) in Abidjan. Consequently, the implementation of this pilot project started on 1st July, 2020 after some delays with the procurement processes including bidding. The pilot was

completed on 30th September 2020. These public institutions (10 buildings at ISTC and 11 buildings at INHP) were selected for the pilot to demonstrate the cost-effectiveness and the environmental benefits in large buildings (in terms of reducing GHG emission) of the use of the energy efficient lamps in public buildings. The building therefore had to be retrofitted purposely for the LED lamps.

139. The selection of the public buildings was based on an initial audit. The Consultant, according to his ToRs, first conducted an energy audit of electrical installations in the two public institutions in order to verify the compliance with NF C15-100, a French norm but used in Cote D'Ivoire. The results of the audit were that the electrical installations at INHP were obsolete and those at ISTC did not respect the basic electric wiring and safety standards. The protection of property and people was not assured. The Consultant on the pilot projects strongly recommended retrofitting to standards of the entire electrical installation. However, the necessary retrofitting work necessitated a bigger budget and a longer time beyond the means of this project. Hence, the Consultant was limited to upgrading the protection and safety systems of only the lighting circuits of the buildings.

140. The PSC also approved the implementation of the pilot project in 200 households in the rural areas of Yamoussoukro and 300 households in Abidjan suburbs. The only criterion for the selection of household was to have a legal connection in the sense that some households' electricity connections were illegal. The Consultant who won the bid to undertake the household pilots started with identification of households which had legal connection since the list of households which had legal connection to the electricity grid was not available to him (OCM - BUROTEC). The implementation of the household pilot started with employing a community entry strategy, which included paying a courtesy call on the community leaders, the local administration and traditional authorities in the villages during which the project was explained to them to seek their support and cooperation. This strategy helped in reducing potential resistance from the communities. The Consultant also engaged some young local persons to undertake intensive sensitization of community members to disabuse their minds of any suspicion that could derail the project as community members are often suspicious of such free goods that politicians often came up with to deceive the public. It was reported that some households did not understand why their old lamps had to be taken back if they were being given free LED lamps and all this had to be explained carefully at the community level to make the project implementation successful.

141. Initially and according to the output 4.1, 500 households were to benefit from this the LED lamp distribution: 300 in Bregbo (near Bingerville) and 200 at Bonzi (Yamousokro) but 596 households eventually benefited (328 in Bregbo and 268 in Bonzi). The initial plan was to give 5 lamps per households to 500 households in both villages making 2500 energy efficient lamps to have been distributed. However, during the distribution campaign, it was noticed that households did not have equal number of lighting points as houses differ in size and usage of electricity. Some had only two lighting points while others had more. Those who had only two lighting points had the two less efficient lamps replaced by the energy efficient lamps and were even given two more as spares. Thus, on the average, 3.7 (4) energy efficient lamps were distributed per household, bringing the total number of those who benefited to 596 households.

142. Output 4.2: Financial incentives provided to pro-active local importers and traders to sell energy-efficient lighting products This output was intended to offer financial incentives to local importers and traders who commit to comply with the new regulations on lighting products to help them import high-quality lighting products into the national market. Thus, a proposal on financial incentives was submitted to the Ministry of Economy and Finance for the 2020 Finance Act. This was to reduce customs duties and VAT on CFL lamps by half and remove them completely on LED lamps, but the proposal was not endorsed by Government for the 2020 Finance Act. At the completion of the project, the Government had still not submitted a tax exemption request to the relevant ministries for the 2021 Finance Act, making this output not effective.

143. Output 4.3: CFLs are recycled for the elimination of mercury according to international best practices This output aimed to address the potential negative environment impacts of mercury-containing lamp waste through the development of guidelines and programmes for proper waste

management and disposal. This output was partially attained. The U4E Waste Management Expert developed recommendations for the management of lamp wastes. These recommendations are expected to be considered by Société Générale de Surveillance/African Recycling Company (SGS/SAR), company hired by the Government as part of the implementation of the Decree 217-217 on the Management of Electrical and Electronic Equipment Wastes (including lamps).

144. There was also a Technical Mission to Abidjan by the International Waste Management expert on 11-15 March 2019, to meet national stakeholders related to the waste management sector in order to assess the current country situation and provide further tailored recommendations for the Environmentally Sound Management (ESM) activities. The expert held consultations with 10 key actors in the waste management sector. Further, a workshop was conducted on "Environmental Management CRSO for Lighting products" with SGS/SAR on 24 July, 2019 for 30 participants in the waste management sector. SGS/SAR was to begin operations on 5 August, 2019 but as of September 2020, the Government and the private sector were yet to agree on the amount of Eco-Tax to be levied to support the waste management program. At the completion of the project, the implementation of the Management of Electrical Electronic Equipment Wastes had not yet started.

145. The data gathered through the key informant interviews also showed that the Consultant hired to undertake the pilot project organized sensitization meetings with community members to educate them about the need to dispose of the replaced CFL lamps as they wanted to keep their lamps and did not understand why the project was collecting them.

The rating for availability of outputs for "Component 4: "Energy Efficient Lighting Products Dissemination for Public Lighting" is Satisfactory.

5.4.5 Availability of Outputs for Component 5: Consumers Education and Awareness

146. Output 5.1: National campaign for energy-efficient lamps completed This output was envisaged to raise awareness of the target audiences on energy-efficient lighting benefits. As such a number of activities were implemented and the results were successful achievement of the outputs.

147. A promotional music for the project was produced and broadcasted on 2 community radio stations and 4 national radio stations with large audiences (Radio Abobo, Radio Yopougon, Radio C6te d'Ivoire, Radio Nostalgie and Radio JAM) between June and September 2018. This promotional music raised awareness of people in French and in 4 local languages on the advantages of using energy-efficient lamps. There was also a poster-sticking campaign on SOTRA (a public transport state-owned company) buses and a UTB (a private Intercity company) was carried out from December to January 2019.

148. All the project training and experience sharing workshops were awareness creation opportunities for the project and those who participated in them as well as the public as the workshops were all covered by the media and reports were broadcasted on TV.

149. The distribution of flyers to electricity subscribers and posting them on billboards did not occur in August and September 2019 as originally planned, because the Minister of Energy requested the GEF project to integrate it into the Ministry's own national awareness raising campaign on energy efficiency and energy saving. At the end there was an increase in the sale of energy efficient lighting products in Cote d'Ivoire. The most sold products were CFL and LED lamps. The sale of CFLs increased from 60% to 70%, LED lamps from 10% to 15% and IL from 10% to15%. This information was as a result of the market research carried out in 2018 as part of this project. With the ban on the use of incandescent lamps since January 2019, it is most likely that most Ivorians have since been using energy efficient lighting products. The awareness creation therefore yielded the expected outcome.

150. Output 5.2: Information on energy-efficient lighting provided through utility channels This output aimed to assist the key utility CI-ENERGIES to mainstream the issues related to the promotion of

energy-efficient lighting into their business plan, and subsequently to use the appropriate channels to give information of energy-efficient lighting products to the consumers. Attainment of this output included the creation of a Website for the project and the content was validated by the DGE. It was put on line as a sub- domain of the DGE site and made available to consumers and other stakeholders.

151. Output 5.3: A show room opened in each town for EE lighting products presentation This output was envisaged to allow the presentation of energy-efficient lighting products to consumers in show rooms with the aim to promote these products. The results show that show rooms were held in 2 Abidjan suburbs (Yopougon and Abobo) and 8 other towns (Abengourou, Bondoukou, Man, Odienné, Daloa, Séguela, San Pedro and Gagnoa). The selected suburbs and towns were low- and middle-income communities, and the aim was to promote energy-efficient lighting products in such communities.

The rating for the availability of outputs for "Component 5: "Consumers Education and Awareness" is Satisfactory.

The overall rating of the achievement of outputs for all five project components is Satisfactory.

5.4.6 Achievement of project outcomes as defined in the reconstructed TOC

152. The reconstructed Theory of Change in Section 4 illustrates the outputs and outcomes that the PEEPL Project sought to achieve to contribute to an overall objective of "promoting the rapid uptake of high energy efficient lighting technologies through the transformation of efficient lighting products markets, thereby reducing electrical demand and consumption and the related greenhouse gas (GHG) emissions". In the reconstructed ToC in Figure 4, this objective is spread along a development pathway with "*an enabling environment is created to support nation-wide uptake of energy efficient and environmentally sound lighting products and subsequent phasing out of inefficient incandescent lamps"* as an Intermediate State prior to achieving the impacts from the PEEPL Project which are "reduced electricity demand and consumption", and "reduced related greenhouse gas (GHG) emissions". The evaluation of the effectiveness of the PEEPL Project consisted of an assessment of causal pathways from the baseline to the outputs of the Project to generate the intended project outcomes that would have impacts and generate global environmental benefits (all based on the reconstructed ToC in Figure 4). As such, the intended outcomes of the PEEPL Project were:

- Project Outcome 1: "National energy efficiency policy framework is strengthened and adpoted"
- Project Outcome 2: "Technical and managerial capacity of public and private institutions for energy-efficient lighting market development is increased"
- Project Outcome 3: "The regulatory framework for energy-efficient lighting standard including MEPS environment standards and labelling is established and functioning"
- Project Outcome 4: "Energy-efficient lighting products are disseminated with the involvement of public utilities and private distributors, supported by recycling schemes"
- Direct Outcome 5: "Consumers are aware of the benefits of energy efficient lighting products".

153. Outcome 1 "National energy efficiency policy framework is strengthened and adopted" had end of project targets including approval and adoption of the energy efficiency policy, and adoption and implementation of legislation for the phasing out of incandescent lamps. The outcome is evaluated based on these targets and Outputs 1.1, 1.2 and 1.3. as follows:

154. From the key informant interviews conducted with officials of the PMU and triangulated with existing project documents, strengthening of the national energy efficiency policy framework was achieved because of the achievement of the following results;

- The "National Strategy for the Transformation of the Lighting Market" was developed and validated. The S2-2019 Progress Report of U4E reported that monitoring activities in that semester were by a committee put together by DGE, based on the 5 deliverables from the reports sent by the U4E experts, including the final draft of the report "Stratégie nationale pour un éclairage efficace", with the update of the proposal for a National Strategy and Action Plan with the additions of the Waste Management expert and Testing and Standards expert, following the U4E integrated policy framework to facilitate the adoption of energy efficient lighting products and leverage in the market for low energy consumption lighting alternatives.
- The "National Strategy for the Transformation of the Lighting Market" has now been integrated in the 2021-2025 National Development Plan with an allocated budget of FCFA 3,295 million;
- A draft order was submitted to the DGE in July 2018 for the implementation of the Decree No. 2016-862 of 03 November 2016, with its Article 12 which indicated that the prohibition of sale of incandescent lamps nationwide would come into force on January 01, 2019. However, the ban on incandescent lamps entered into force before the signing of the decree setting the prohibition date. Evidence from key informants interviewed for the evaluation also indicated that citizens were patronising more of the energy efficient lamps compared to the less efficient ones because the sale of more energy efficient lamps had increased even in the local communities.

The rating for achievement of Outcome 1 "National energy efficiency policy framework is strengthened" is Satisfactory.

155. Outcome 2 of "Technical and managerial capacity of public and private institutions for energy-efficient lighting market development is increased" had end of project targets including, capacity building for 100% of all the key public institutions involved in the project, 100% of the PMU staff, 75% of all the private sector institutions. The Outcome is evaluated based on these targets and Outputs 2.1 and 2.2. The following are indicative of results achieved;

156. The Final Report on PEEPL indicates that 100% of the relevant public sector actors as well as 90% of the relevant private sector institutions have received capacity building on energy-efficient lighting market development, as a result of the different workshops and trainings conducted as part of the project.

157. The U4E experts involved in the project, and whose services were paid for by the project attest that PEEPL project has helped to build a new institutional capacity on technical and managerial basis. Once the policy and regulatory standards come into force, the advantages will become clearer and the government will also have established the legal knowledge and self-sustaining process basis to support any ongoing/new programmes. It is intended that these shall include the periodic revision and update of the regulations established during the project to ensure sustainability over time. MEPS and labelling criteria for such revision has been clearly defined to prevent losing effectiveness.

158. The impact of the project allows for end-users, governmental institutions, service providers and developers to be more engaged in energy efficient-related topics as they have already acquired experience and incorporated new instruments and knowledge and overall, familiarity with energy-efficient lighting has increased for all involved actors, thereby eliminating some of the fundamental barriers to the deployment of energy efficient low-carbon solutions.

The overall rating for achievement of Outcome 2 "Technical and managerial capacity of public and private institutions for energy-efficient lighting market development is increased" is Satisfactory.

159. Outcome 3 "The regulatory framework for energy-efficient lighting standard including MEPS environment standards and labelling is established and functioning" had end of project targets including adoption and publication of the regulatory framework for MEPS, labelling scheme and testing procedures for energy-efficient lighting products as well as at least 50% of traded energy-efficient lighting products meet quality, environmental and energy performance standards in line with international best practices. The Outcome is evaluated based on these targets and Outputs 3.1, 3.2, 3.3 and 3.4 as follows:

- The Final Report on PEEPL states that a labelling system was developed for the UEMOA (West African Economic and Monetary Union) region as part of another project. The guidelines for implementation have been signed by heads of member states on June 26, 2020. Each state member then has 2 years to translate it into regulatory text and enforce it. Cote d'Ivoire has already developed a draft order in this regard that is planned to be signed before the end of year 2020.
- The minimum energy performance standard on lamps already exists. This is standard NI 3011 which was approved in April 2018 as part of a project executed by ECOWAS. Since the efficiency of the lamps has evolved, it was necessary to update the criteria. In the framework of the PEEPL project, a technical note in this regard was prepared and sent to CODINORM and was then adopted. The new NI 3011 standard, taking into account the recommendations of the technical note, was approved on 11 June 2019. The NI 3011b « Spécifications techniques pour des lampes de service d'éclairage en réseau. » updated in the framework of this project deals with MEPS for both CFL and LED lighting products. The Decree 2016-1152 of December 2016 mandating certain enforcement standards related to on-grid lamps has been revised and approved by CODINORM. Standard NI 3012 related to off-grid lamps is yet to be revised but is scheduled to be revised under the National Strategy for the Transformation of the Lighting Market.
- A national capacity-building workshop on standards development for lighting products and establishment of testing laboratory facility to support energy efficiency regulation of lighting products took place on 17-18 January 2019. Following this training, LANEMA has acquired certain lamp - testing equipment in April 2020.
- The draft market surveillance decree on Monitoring, Verification and Enforcement (MVE) developed within the framework of this project was combined with another decree on MVE for refrigerators and air conditioners drafted as part of another project. This draft decree was sent to the cabinet in April 2020 for review and comments.

The rating for achievement of Outcome 3 of "The regulatory framework for energy-efficient lighting standard including MEPS environment standards and labelling is established" is Satisfactory.

160. Outcome 4 of "Energy-efficient lighting products are disseminated with the involvement of public utilities and private distributors, supported by recycling schemes" had end of project targets including installation of more than 6 million energy-efficient lighting products, dissemination of 5 million energy-efficient lighting products, and a recycling scheme for energy-efficient lighting is developed and is operational. The Outcome is evaluated based on these targets and Outputs 4.1, 4.2. and 4.3 as follows:

- The pilot projects under the PEEPL distributed 500 LED lamps in households and retrofitted the Institut des Sciences et Techniques de la Communication (ISTC) in Abidjan and the INHP building in Abidjan with LED lamps. The bidding procedure for the pilot projects started in October 2019, but due to administrative setbacks, the contract with the service provider was only signed and registered in May 2020 and the advance payment to start the works was paid on June 25, 2020. The implementation of the pilot projects started on July 1st 2020 and were completed in the same year. Households as at the time of evaluation indicated they were benefiting from the use of LED lamps as it more cost saving, more illuminous and environmentally friendly. There is also evidence to show that GHG emission has been reduced as a result of the pilot projects in public buildings and households which the GEF tracking tool was used to track, among others.

- There was already in force the Decree 217-217 relating to the management of waste electrical and electronic equipment (D3E) (including lamps). Its implementation was ensured by the MESD and Ministry in charge of the Environment and the Ministry of Sanitation and Public Hygiene (MSPH). The PEEPL made recommendations towards the implementation of this Decree for the specific case of the management of used lamps. The National Waste Management Program, however, indicates that the implementation of the decree, including the management of used lamps has not been effective yet. SGS/SAR are working on that once the bureaucratic huddles are surmounted.

The overall rating for achievement of Outcome 4 "Energy-efficient lighting products are disseminated with the involvement of public utilities and private distributors, supported by recycling schemes" is Satisfactory.

161. Direct Outcome 5 "Consumers are aware of the benefits of energy efficient lighting products" had end of project targets including, at least 85% of electricity consumers are aware about the benefits of energy-efficient lighting products. The Outcome is evaluated based on this target and Outputs 5.1, 5.2. and 5.3 as follows can be described as follows:

162. With the free distribution of nearly 4.5 million CFLs between 2011 and 2017 throughout the country and the associated communication campaign (PNDLBC project, co-finance), the PEEPL project considers that some level of awareness creation among the Ivorian population about energy efficient lighting products had been achieved because there is evidence in the market that generally, the sale of energy efficient lamps had increased. Lessons learnt from the key informant interviews in relation to the household pilots on LED lamps distribution however show that offering citizens free goods may not necessarily be acceptable to them as their perceptions about free goods could be associated with doubts about the credibility of the product.

The rating for achievement of Outcome 5 "Consumers are aware of the benefits of energy efficient lighting products" is Satisfactory.

The overall rating for achievement of all Outcomes is Satisfactory.

5.4.7 Likelihood of impact

163. The "likelihood of impact assessment" (LIA) was made with the assistance of a LIA Decision Tree which is presented in Annex VI. The assessment was mainly based on the verification of assumptions and drivers being in place to deliver developmental results towards desired impacts. The comments made in the "responses" for the LIA in Annex VI are: Drivers, such as "adoption by Government of mandatory labelling for all lighting products in Cote d'Ivoire under the UEMOA and ECOWAS guidelines, and the political will of Government to enforce it" are only partially in place;

164. Drivers that support the transition from direct intended outcomes to the intermediate state of "An enabling environment is created to support nation-wide uptake of energy efficient and environmentally sound lighting products and subsequent phasing out of inefficient incandescent lamps" such as "continued commitment of the quality assurance bodies – CORDINORM, LANEMA, LBTP to provide services to lighting products distributors /importers on the quality of lighting products entering the Ivorian market" are mostly in place. Policies and standards have been developed and capacity building of these private sector service providers have been built to enhance their performance. The private sector was as at the period of evaluation benefiting from the capacity building as one of them was the consultant that worked on the pilot household project and disseminating information on the benefits of using energy efficient lighting products.

165. The LIA of the PEEPL Project is also evaluated against the ToC assumptions (from Figure 4) as follows:

166. With regards to "Government is committed to implement the Project Steering Committee and agrees to the policy and institutional systems" and "Market development measures are consistent with Government policies", this assumption holds true. The PSC was established and it was responsible for approval of major decisions affecting the project, particularly the workplan revisions and the 2 output cancellations.

167. With regards to *"Public agencies see benefits of developing the energy efficient lighting products market in Côte d'Ivoire"*, there were indications from the stakeholder consultations that this assumption holds true. An example was the demonstration of the energy savings that was made in the 2 public buildings used for the LED lamps distribution pilots and the CO2 emissions that was reduced.

168. With regards to *"Government endorses the MEPS and sensitizes all stakeholders to willingly comply with the new standards"*, there were indications from the stakeholder consultations that this assumption holds true;

169. With regards to the *"Government and energy efficient lighting products traders support the recycling schemes"*, there were indications from the stakeholder consultations that this assumption holds true. The PMU was in consultation with a private sector consortium (SGS/SAR) to undertake the project. SGS/SAR is a consortium of 2 private companies that have been entrusted with the following mandate: (1) identify and register all the electrical and electronical equipment; (2) collect eco tax with manufacturers, exporters and importers; and (3) set up a waste management system through the establishment of collection and recycling sites for electric and electronic waste. The traders are hoping that the taxes on their importation would be reduced to facilitate their business.

The rating for likelihood of impact of the PEEPL Project is Likely.

The overall rating for Effectiveness of the PEEPL Project is Satisfactory.

5.5 Financial Management

5.5.1 Adherence to UNEP's financial policies and procedures

170. The financial management and reporting of all project finances were guided by UNEP's financial policies and procedures as shown in the next paragraph. The executing agency adhered to these policies and procedures in financial reporting related to the project, and produced all the relevant and necessary financial reports but ensuring that financial standards are adhered to. The Project Manager prepared and submitted the financial reports to implementing agency for review and feedback. The Task Manager of UNEP endorsed the financial reports as final once they are completed.

The rating for completeness of financial information is Satisfactory.

5.5.2 Completeness of project financial information

171. Most of the financial information on the project, including expenditures and all financial information listed in UNEP's Evaluation Criteria from 2017 was complete. The following financial information was made available to the Consultant for the evaluation:

- The original GEF Budget (2012) for the project (covering Reconciliation between GEF Activity Based Budget and UNEP Budget line and Reconciliation between GEF Budget and Co finance Budget);

- The reports of Planned and Actual Co-Finance by Budget Line for the years 2016, 2017, 2018, 2019 and 2020;
- Reports on Budget Reallocations and Revisions, covering:
  - GEF Budget Reallocation (18 January 2017);
  - Co-Financing Budget Reallocation (18 January 2017);
  - PCA (between UNEP and DGE) amendment & budget Revision 1 (10 February 2017);
  - DGE and U4E Budget Revision 2 (date not available);
  - Budget Revision 3 (16 October 2018);
  - Budget Revision 4 (28 October 2019); and
  - U4E Technical Support - Budget Revision 1 (4 December 2018);
- Quarterly Expenditures Reports (for Q1, Q2, Q3 and Q4) for the years 2016, 2017, 2018, 2019 and 2020;
- U4E Half-Yearly Reports (for S1 and S2) for 2018 and 2019. For 2020, only the first half-year (S1) is available;
- Reports on DGE Cash Advance Requests were made available covering:
  - Request 2 – Cash requirement for the period April-June 2017;
  - Request 3 – Cash requirement for the period October-December 2017;
  - Request 4 – Cash requirement for the period July-September 2018;
  - Request 5 – Cash requirement for the period January-March 2019; and
  - Request 6 – July-December 2019.
- Financial Audit Reports on the project for the years 2016, 2017, 2018 and 2019.

The rating for completeness of financial information is Satisfactory.

5.5.3 Communication between finance and project management staff

172. In rating the communication between UNEP finance personnel and project management staff of DGE, the communication aspects between finance and project management staff were assessed. Evidence shows that there were no set periods for the review of the work plan and budget. It depended on the evolution of the project. The Project Manager proposed a review of the work plan and budget to the UNEP Task Manager. After several exchanges and corrections, the documents were sent to UNEP by an official letter signed by the National Project Director.

173. Available evidence shows that the frequency of cash advances was normally quarterly but with the delays of the project, it was decided to make the requests for advances of the fund according to the progress of the activities of the project. The Project Manager proposed a request for an advance to the UNEP focal point. After several exchanges and corrections, the request was sent to UNEP by an official letter signed by the National Project Director. Adjustments to the budget in relation to actual expenditure were made during the budget review. Despite the above, the revisions called for constant budget review which were done accordingly. Apart from the work plan review which did not affect budget review, the other three reviews did. An independent firm was hired to carry out the annual financial audit of the project.

The rating for communication between finance and project management staff is Satisfactory.

The overall rating for Financial Management is Satisfactory.

5.6 Efficiency

174. This aspect of the evaluation covers the extent to which the project delivered maximum results from the given resources, including the cost-effectiveness and timeliness of project execution. Efficiency explains timeliness of delivery of outputs to achieve outcomes towards overall goal achievement, and their cost effectiveness in terms of maximizing the benefits from the available project resources.

5.6.1 Timeliness

175. The design of the project, as indicated in the Project Document was timely, as it coincided with a number of actions the government of Cote d'Ivoire had embarked on in relation to energy conservation and energy efficient lighting products and transformation of its market. Thus, implementation of the project strengthened the capacity of the public and private sector institutions involved in pushing this agenda in Cote d'Ivoire. Also, the timeliness of the project cannot be overemphasized as this made it possible for the PEEPL project to cooperate with several stakeholders engaged in similar project to achieve a common goal aimed at speeding up market transformation for energy-efficient lighting technologies in Côte d'Ivoire.

176. The above notwithstanding, the project suffered from a 3-year delay (2012 until 2015) as a result of unforeseen national political turmoil between 2012 and 2015 that affected timeliness of project implementation and attainment of results, and which significantly hindered the implementation of project activities as originally planned. Discussions to re-initiate the project started in 2015 and, project activities could only start in January 2016.

177. Such delays apart from compelling the project executing agencies to reschedule implementation of activities also have implication for timeliness of delivery of outputs and outcomes. The key informant interviews suggest that the initial adjustment delays were largely due to *"lack of responsiveness from the Executing Agency"*. Further, it came up in the key informant interviews that the offices being held and the heavy work schedule of key individuals inside the EA, coupled with the additional responsibility they had to take on for the PEEPL project accounted for some of the delays, particularly with regards to recruitment of personnel, reviewing and signing documents/letters, which went on for months. The delays therefore created inconveniences for both the implementing and executing agencies. Further, a Consultant that was recruited to review the Project Document failed to do so and so his contract had to be terminated. This expediated the recruitment of a Project Manager in December 2015 before project activities could start in January 2016. Thus, although co-financing was released in June 2014, the executing of project activities could only start in January 2016.

178. In addition to these initial delays, the project work plan was revised four times, mainly involving extension of project completion dates. Originally, the PEEEPL project was planned to begin in September 2013 and end in August 2016. But due to these extensions caused by a number of unforeseeable delays as explained below, the project was completed in June 2020, as presented in Table 12.

Table 12. Revisions of project work plan

Workplan Revision & Budget Reallocation	Date of Revision Request	Project implementation Schedule	Justification for Revision
Original		Sept 2013 – Aug 2016	

Workplan Revision & Budget Reallocation	Date of Revision Request	Project implementation Schedule	Justification for Revision
Revision 1	19 Dec 2016	Jan 2016 - Dec 2018	Delay in setting up PMU Delay in updating Project Document
Revision 2	14 Nov 2018	Jan 2016 – Sep 2018	Delay in signing TA agreement with U4E Delay in updating baseline market data
Revision 3	17 Sep 2019	Jan 2016 – Dec 2019	Delay in validation and procurement of services for pilot projects
Revision 4	12 Nov 2019	Jan 2016 - Jun 2020	Delay in pilot projects implementation Delay in awareness raising campaign

Source: Project Budget and Workplan Revisions in Project Financial Documents

179. **Work plan revision 1:** The DGE encountered some administrative difficulties in starting the project's activities. This included setting up the project management unit and revising the Project Document to take care of changes like a change in technology as mentioned above. In another example, a consultant who was hired to revise the Project Document, had his contract terminated for failure results, leading to a significant delay. In order to address this challenge, the Project Manager was recruited late December 2015, enabling the implementation of the project to start in January 2016. The DGE therefore requested an extension of the project, with a revised completion date of 31 December 2018 (Revision 1) to enable the execution of all the activities planned under this project. A revised work plan and budget reallocation were proposed and approved.

180. **Work plan revision 2:** The negotiations to sign the technical assistance agreement with the en.lighten-U4E Center of Excellence took longer than expected. The agreement was finally signed on 18 December 2017, delaying the activities assigned to the International Experts by a few months. Additionally, the initial market study which had been undertaken to update the baseline data to enable the Steering Committee to redirect project activities had not yielded the expected results, due to difficulties in accessing certain market data. Outcome of the key informant interviews conducted revealed that the importers and distributors who were to provide the data were concerned about the possibility of being taxed if they were to share their data with the public institutions and the project and therefore refused to share their data for the market study. A new assessment was therefore requested with another methodology and the Steering Committee's meeting was rescheduled for December 2018. The implementation of updated and validated pilot projects by the Steering Committee was therefore have continue till September 2019. As a consequence, the DGE requested for an additional extension of the project, with a revised technical completion date as of September 30, 2019.

181. **Work plan revision 3:** The execution of the pilot projects was significantly delayed, due to the inability of the Steering Committee to meet until 15 January, 2019 to reorient the project's activities following the project baseline data update. The final version of the pilot projects could only be validated on 15 March, 2019. The bidding documentation was validated at the end of April 2019, but it could not be transmitted to the Public Procurement Directorate because the funds allocated to the pilot projects had not been included in a national budget line. Finally, a backup solution was found and the bidding documentation was sent to the Public Procurement Directorate on 20 August, 2019. Given the duration of the bidding process, the execution of the pilot projects was not possible over the remaining time of the project (up to 30 September 2019). As a result, the DGE requested a final extension of the project, with a revised technical completion date as of 31 December, 2019.

182. **Work plan revision 4:** Following the delay in the procurement process, the project faced further challenges due to the inability of DGE to complete the process since the project's financial resources was rather being hosted by CI-ENERGIES. Consequently, CI-ENERGIES was mandated to

complete the bidding process. The Public Procurement Directorate finally published the bidding documentation of the project on October 8, 2019, with the opening of bids planned one month later (8 November, 2019). The awarding and signature process was expected to be completed at the end of December 2019. Under the situation, it was likely the pilot projects would not be completed before April 2020 (beyond the planned completion of the project - 31 December, 2019). With respect to awareness raising campaign (Component 5), MPEER requested to include the activity in the comprehensive awareness raising campaign of the Ministry on energy saving, which was likely to start in early 2020. With these challenges, the DGE requested a final extension of the project, with a revised technical completion date as of 30 June, 2020.

183. Despite the willingness to implement recommendations developed throughout the project, the level of bureaucracy also slowed down the progress of the activities of the project, which came up during the evaluation interviews. Most stakeholders showed a high level of interest in advancing with the implementation of the activities, but a lack of individual power, added to a strong hierarchical structure, made the decision process very slow. For example, the PSC which approves all final decisions before approval is given for implementation to go on, meets at least once in a year to discuss the progress of the project and provide future guidance. Effectively, the PSC met only once throughout the lifespan of the project and for the rest of the time, other forms of communication were used, but not in-person meetings. Waiting for approval of decisions could therefore delay timely implementation/execution of project activities. The PSC has the responsibility to provide overall guidance to the implementation of the project and to ensure good coordination among participating agencies, sectors and international organizations.

184. Towards the end of the PEEPL project, (2018 – 2019) the project suffered again from procurement delays and this delayed project completion. The very end of the project was also the period the world was going through Covid 19 pandemic and working hours in many countries had been reduced to minimise face-to-face contact. The PMU and all other public sector workers in Cote d'Ivoire were working half day, thus prolonging project execution.

185. Based on the above therefore, the timeliness of PEEPL according to UNEP's evaluation criteria on efficiency is rated as ***moderately satisfactory***.

5.6.2 Cost Effectiveness

186. Cost-effectiveness of the PEEPL Project was assessed looking at a number of factors, one of which is the recruitment process. Based on the approach taken by the DGE, local and international experts were recruited depending on availability of the expertise needed. Local experts were hired if the expertise required could be sought locally within Cote d'Ivoire and where it was not, they were sought from without. Thus, the PMU engaged well-qualified and experienced local consultants on the project activities, as well as other well-qualified specialists recruited under the technical assistance agreement with the U4E Centre of Excellence. For example, a local Policy Expert was recruited who developed the efficient lighting policy with related regulations, identifying training needs for energy efficiency sector players and proposing appropriate training materials. Also, a local Business Plan Expert was recruited to work on providing technical assistance to lighting product distributors/traders in order to help them in the development and implementation of financial models for a market transformation towards efficient lighting. His last report was submitted on 29 October 2018 and validated on December 2018. Further, a local Market Research Expert was recruited who in early 2018 conducted a supply and demand study on the local market of lighting products, with provision of financial models for energy-efficient lighting market management. However, a second survey had to be conducted with the support of the International Lighting Expert (under the U4E Technical Assistance), since the first survey results were deemed insufficient to assess the country's lighting market situation. Other local consultants recruited by the project were i) Standards and Quality Inspection Expert and ii) Environmental Expert.

187. International specialists were also recruited under the technical assistance agreement with the en.lighten U4E Centre of Excellence who offered a number of technical support towards the delivery of the project outputs, such as technical recommendations on the National Lighting Strategy; development and adoption of testing procedures for energy-efficient lighting products; and monitoring, verification and enforcement (MVE) of the conformity of lighting products to MEPS. The en.lighten-U4E also provided technical/expertise advise towards the adoption of minimum energy performance standards for energy-efficient lighting products, including revision and comment on the CODINORM Lightning Normative "Technical Specifications on Grid Lamps" (Specifications techniques pour des lampes de service d'eclairage en reseau); and international and regional policy on Environmental Management for lighting product waste.

188. The foresight the executing agency had to recruit both local and international qualified and experienced experts to provide capacity building and share experiences where necessary yielded positive results as the bulk of the activities carried out under this project was capacity building and therefore it was cost effective hiring such experts to render services using best practices. It is cheaper in terms of cost to hire local consultants when they are locally available, but where it is not, then the alternative is to bring in international experts and the executing agency did exactly that making hiring of services cost-effective. The satisfactory performance of the local and international experts contributed significantly to the delivery of the project outputs and the achievement of the project outcomes.

189. The project also benefited from pre-existing institutions, agreements, partnerships, data sources, synergies and complementarities with other initiatives and projects/programmes, which to a large extent, was cost saving for the PEEPL project. It is also in a sub region where all the countries are undertaking similar projects and have lessons to share under the umbrella of its sub regional body, ECOWAS. This, notwithstanding, some of the responses from the key informants indicated that the project could have benefited more from a strong involvement of the many stakeholders and partners associated with the project right from the early stages of project implementation but this was not possible due to inadequate time and resources to fully engage them all and tap from their experiences.

190. The PEEPL project design helped integrating the activities towards achieving the targets of the Project. Some of the targets were not achieved before end of project (for example the inclusion of implementation of the national lighting strategy in the Finance Act), but this was not caused by poor sequencing of PEEPL activities but due to the long bureaucratic processes in the public sector that delays action.

191. Due to the implementation delays the project encountered, some activities outside the control of the project had to be started or had been completed in other national projects before the PEEPL project inception, and so the activities included in Components 1, 2, 3 needed to be adjusted to the emerging context. For example, Output 3.1.1 says 'EE Lighting Technical Working Group established within the National Bureau of Standards". However, due to the delays in commencing project execution and due to the standards that the project needed to proceed with execution of project activities, work had to go on using the Technical Working Group that had already been set up at CODINORM in order to develop standards on technical specifications for grid lighting lamps. The Technical Working Group planned to be set up by the project therefore could not come on again. In the case of the change in technology for LED lamps, the delay in commencement of the project came with the introduction of an improved and more efficient technology, and so what was originally planned for in the Project Document had to give way to the improved and efficient technology. This delay could be viewed positively as it helped the project to adopt an improved technology, which was timely and cost effective, with better benefits. Thus, the delayed execution of activities in the work plan has helped to achieve;

    - Significant improvement in sales of energy-efficient lighting products and reduction in the sales of incandescent lamps; and

- Increased information to consumers about the benefits of improved energy-efficient lighting products

192. Considering the efficient sequencing of all PEEPL Project activities - which is attributable to the adaptive management skills the executing agency adopted throughout the project management - and high co-financing levels, the cost effectiveness for PEEPL is rated as *satisfactory*.

The overall rating for efficiency is Moderately Satisfactory due to the long delays of the project (actual completion date 4 years after planned completion date).

5.7 Monitoring and Reporting

5.7.1 Monitoring design and budgeting

193. Section 6 of the Project Document presents guidelines on Monitoring and Evaluation Plan for the PEEPL Project, in conformity with UNEP standard reporting and evaluation processes and procedures. The guidelines cover progress and financial reports, project monitoring (project inception, implementation progress and termination) and project evaluation. The Monitoring and Evaluation (M&E) Plan is summarized in a table that presents the M&E activity, the description of the activity, the responsible parties, and the timeframe for the activity. The activities covered by the M&E Plan are: i) Progress and Financial Reports; ii) Inception Report; iii) Progress Reports; iv) Annual Project Reports (APR); v) Project Implementation Review (PIR); vi) Tripartite Project Review (TPR); vii) Terminal Tripartite Review (TTR); viii) Project Terminal Report; and ix) Midterm and Final Project Evaluation. Appendix 1 presents the M&E budget on year-to-year basis, in accordance with the UNEP budget line format. The PMU, together with other project partners prepared detailed schedules for project review meetings and this is incorporated in the inception report

194. The M&E was sound and well designed to monitor results. Stakeholders' responsibilities were clearly defined with a timeframe specified for various activities. It showed the outcome indicators, mid-point targets and end of project targets. The plan showed where information was going to be gathered for monitoring purpose (Means of Verification). The plan covered all the 5 Components of the project. The M&E plan also provided information on baseline condition for each of the components. The desired Almost all the indicators were well formulated, appropriate and SMART. However, bearing in mind the bureaucracy involved in Cote d'Ivoire in getting things done in the public sector, the indicator for Outcome 4.3 which says "Recycling schemes for EE for lighting operational" could have been reconsidered as contracts passing through the bureaucratic system to get projects on going takes unusually longer time than the project envisaged. The project tasked SGS/SAR Consortium to set up a waste management system through the establishment of collection and recycling sites for electric and electronic waste the process had not been completed at the termination of this project. At the end of the project therefore, the plant had not been set up to be operational. On the whole however, the monitoring plan was relevant and appropriate as this terminal evaluation has shown with the project results that were attained for each outcome.

195. The original budget was well defined in the project documents provided, showing budget lines for each component and activities that was going to be funded by GEF and that of co-financing. The GEF provided USD21,000 for monitoring and evaluation. This was supported with in-kind co-financing from Cote d'Ivoire of USD 82,000, making a total of USD 103,000 for all M&E activities. Of the GEF cash of USD 21,000, USD 10,000 was allocated to mid-term evaluation which did not come on. So effectively, only USD 11,000 was meant to be used for terminal evaluation, which is inadequate, looking at the number of the various monitoring activities that has to be undertaken (see Table 14 in Project Document). The funds allocated for the M&E as at the time of approving the project (2012) was adequate for the purpose it was planned for. However, with a number of revisions that had to be made due to the several delays that spanned over 4 years but having to

operate with the same funds was bound to create difficulties. The funds allocated for the monitoring of each of the outcomes was therefore inadequate. GEF made allocation of USD 1,000 and the co-financing was USD 1,500 as at the time project was approved by GEF and as at the time of project inception in 2016.

The rating for monitoring design and budget is Satisfactory.

5.7.2 Monitoring of project implementation

196. There was an efficient monitoring system in place which helped in tracking performance and attainment of results. The monitoring system was submitted on April 6 2012 and had CEO approval on April 16 2012 and so became operational since then. Data were available for monitoring and collected based on the monitoring plan and shared with project managers and at the two PSC meetings. The data were collected regularly based on the monitoring plan and budget was made available for the monitoring activities. The data however did not show evidence of having been collected as disaggregated along gender/vulnerability groupings.

197. The GEF Tracking Tool is one of the several GEF tracking tools used for tracking performance at terminal evaluation of GEF projects. It aims to report on managing effectiveness but not intended to replace a much more thorough method. The tool makes use of both qualitative and quantitative indicators for evaluation and for this GEF PEEPL Project. The tool was used to access energy efficiency in this case. One of the three functions of the Independent Evaluation Office is ensuring 'oversight and supports evaluation networks to be abreast with current and emerging methodologies through the adoption of evaluation guidelines and processes that are consistent with international good practices', thus the use of the tool in tracking energy efficiency is in the right direction in ensuring best practice is adhered to for this project.

198. Objective 2 on Energy Efficiency in the tracking tool for terminal evaluation was directly applicable to the PEEPL project. The PEEPL Project among other things, sought to address barriers to the utilization of energy-efficient lighting technologies in Côte d'Ivoire so the tool to be used to report two main indicators as per GEF reporting requirements; i) the qualitative indicator related to required quality and performance standards of lights to be used in Cote d'Ivoire and ii) a quantitative indicator related to the MWh saved during the course of project implementation. Using the manual provided for calculating energy savings, the savings made on the implementation of Outputs 4.1.1 were calculated for the lifespan of the PEEPL Project and the results showed that the targets were achieved as lifeline emissions. In both two public buildings and 500 households, the project had saved Cote d' Ivoire energy and reduced the GHG emissions as a result of the introduction of the LED lamps. This is evidence that one of the objectives of the project was achieved. The tracking tool was good in collecting useful data on utilities over the lifespan of the project which made is possible to know how much energy was saved and therefore demonstrated that the project result was achieved. Outcome 4.1 in the TOC says "Energy efficient lighting products are disseminated with the involvement of public utilities and private distributors, supported by recycling schemes" and installers fully involved in the dissemination of EE lighting products. The tool was used to track three items and the results are as follows;

- Lifetime energy saved - 12,178,154,719 mj
- Lifetime direct energy GHG emissions avoided - 147,829 tonnes of CO2
- Lifetime indirect GHG emissions avoided (bottom-up) - 443,488 tonnes of CO2

199. It is important to have this evidence to demonstrate to distributors that using energy efficient lighting products saves energy and it is cheaper, which helps them in the promotion of energy efficient lighting products to their customer.

The rating for monitoring project implementation is Satisfactory.

5.7.3 Project reporting

200. The evaluation on project reporting is based on 2015, 2016, 2017, 2018, 2019 and 2020 *Project Implementation Reviews (PIRs)*. The PIRs provided details of progress towards objectives, implementation progress, and risk management for the PEEPL Project against the component indicators. The progress reviews provided details of all the five components of PEEPL Project to: i) enhance energy efficiency policy; ii) develop technical and managerial capacity building for energy efficient lighting market; iii) improve lighting product quality; iv) disseminate energy-efficient lighting product for public lighting; and v) promote consumer education and awareness. The PIRs reports presented evidence of good coordination, collaboration and communication by the DGE in the management of the implementation of PEEPL Project. The PIRs are of good quality and they adequately presented detailed progress of activities of the PEEPL Project. The GEF Tracking Tool was used in tracking results.

201. The PIRs also present result-based monitoring and reporting that facilitated prompt improvements and adaptive management of the implementation of the PEEPL Project [26]. For example, the UNEP Task Manager on the project recommended a weekly review meeting for the executing agency to address the issue of *"lack of responsiveness from the executing agency to review and approve reports"*. This was in the 2016 PIR report that noted that "*the project had incurred severe delay in all its activities planned*". The 2016 PIR report noted that there were no responses to UNEP emails sent to the executing agency. The recommendation for the weekly meeting was also proposed to speed up the communication process between implementing agency and the executing agency. Thus, all the PIRs reports indicated areas that needed prompt action to ensure smooth flow of implementation of project activities. Similarly, it took note of areas that had achieved great success. For example, the 2020 PIR remarked that there had been a significant made between the years of 2018 and 2019 in terms of implementation of project activities. The duration of the PEEPL was essentially less than four years, so a mid-term review of the PEEPL was not done; however, the PIRs indicated appreciable progress of the PEEPL Project towards achieving its outcomes.

The rating for project reporting is Satisfactory

The overall rating for Monitoring and Reporting is Satisfactory

5.8 Sustainability

5.8.1 Financial sustainability

202. Interviews with staff of the PMU showed that financial sustainability of PEEPL is assured as there was a conscious effort by the Ministry of Energy to establish a fund to ensure sustainability of the gains of the project. As such, the financial sustainability of PEEPL is founded in the National Strategy for the Transformation of the Lighting Market, which has been integrated in the 2021-2025 National Development Plan with an allocated budget of FCFA 3,295 million. This led to the establishment of a revolving fund that is financed by the National Fund for Energy Management - "Fond National pour la Maitrise de l'Energie" (FONAME). FONAME was established by Decree[27] No.

[26] PIR section of "3. Rating Project Performance and Risk" has a sub-section after each component entitled "Action plan to address MS, MU, U and HU rating" which requests the Project Manager to propose adaptive management measures to rectify less than satisfactory ratings. There is evidence in the 2015, 2016, 2017, 2018, 2019 and 2020 PIRs that this was duly done.

[27] http://www.energie.gouv.ci/uploads/documents/energie_decrets/Decret_n_2016_-1131_du_21_decembre_2016_FONAME%20pdf.pdf

2016-1131 of December 21, and dedicated to the financing of projects related to renewable energies and energy efficiency. The fund is expected to contribute, among other things, to the preservation and increase of national energy resources, the promotion of research and the development of technical innovation and the dissemination of efficient technologies in the field of energy management, the development of renewable energy, improving the living environment and protecting the environment, the introduction of energy efficiency norms and standards, certification and labelling, demonstration through the creation of pilot sites, and consumer education and awareness. There are also plans to create energy service companies (ESCOs) to gradually disengage FONAME and encourage the support of private financial institutions.

203. The contributors to/sources of the fund are licensing fees, national budget allocation, donations, legacy and subsidies in particular from donors, fines related to non-compliance with energy efficiency requirements, loans contracted by the State and which are allocated to the Fund, proceeds from investing the funds, contributions from technical and financial partners and any other resources, public or private, that could be allocated to FONAME through the PEEPL project. This demonstrates a conscious effort being made by government to establish a fund to ensure sustainability of the gains of the project. With the establishment of the fund and an allocated budget of FCFA 3295 million for the 2021-2025 National Development Plan that also covers the National Strategy for the Transformation of the Lighting Market as explained above, it is highly likely that future funding and financial flow have all been taken care of adequately to ensure financial sustainability of the outcomes of the PEEPL project.

204. From the interviews, the DGE has also indicated that with availability of the fund, it will continue the activities of the project; in particular, the implementation of market surveillance (in collaboration with other stakeholders) and quality control of lamps on the Ivorian market, raising awareness and management of waste from lighting products. There are other follow-up activities that are also to be implemented to sustain the direct outcomes of the project components, which include the following;

- For Component 1 – The direct outcomes of the 'Energy Efficiency Policy Enhancement' are not likely going to depend on future financing to sustain it. The project has helped to build a new institutional capacity both on legal and commercial basis particularly within MPEER and CODINORM. Though some policy actions and regulatory mechanism could not be enforced before project completion, all recommendations and lessons learned have been adequately and properly documented through the U4E initiative and U4E is still in contact with the DGE to help ensure that recommended policies, reports and resources are used and implemented albeit after project completion. Once the policy and regulatory mechanisms come into force, the advantages are expected to become clearer and the government will also have established the legal knowledge and self-sustaining process /basis to support any ongoing/new programmes. These may include the periodic revision and update of the regulations established during the project to ensure sustainability over time. The newly created fund could support this initiative since it has to do with legal instruments related to energy efficiency. Therefore, the financial sustainability of the outcomes of Component 1 is ranked as *likely*.
- For Component 2 – This second component has to do with the 'Technical and Managerial Capacity Building for Energy Efficient Lighting Market Development,'. The direct outcomes of this component will rarely be dependable on future financing to sustain it as the skills acquired through capacity building is intended to improve the performance of those who benefited from it. It is knowledge they have acquired. The project has helped to build a new institutional capacity both on legal and commercial basis of key stakeholders in the private sector as well as in government institutions, particularly the importers/traders who work closely with the ministry and therefore can benefit from the newly set up fund. The impact of the project allows for end-users, government

institutions, service providers and developers to be more engaged in energy efficient-related topics as they have already acquired experience and incorporated new instruments and knowledge, and overall, familiarity with energy-efficient lighting has increased for all involved actors, thereby eliminating some of the fundamental barriers to the deployment of energy efficient low-carbon solutions. The importers/traders are also in a position now to import and sell energy-efficient lighting products for the local market. The financial sustainability of the outcomes of Component 2 is therefore ranked as *highly likely*.

- For Component 3 – For the 'Lighting Products Quality Improvement', the sustainability of outcome is not likely to depend so much on future financing, mainly because MEPS and labelling criteria for lighting products quality improvement has been clearly defined. Other measures were also put in place or are to be put in place to ensure that outcomes are not dependable on future financing. These include, among others, implementation of lamp labelling and support for the establishment of a national testing laboratory. Besides, the establishment of a revolving fund that is financed by the National Fund for Energy Management will be available to fall on for quality improvement programmes of lighting products. Based on the above therefore, financial sustainability of the outcomes of Component 3 is ranked as *likely*.
- For Component 4 – This is on 'Energy Efficient Lighting Products Dissemination for Public Lighting'. The outcome will not be dependable on future financing to be sustained, as both the households and the managers of the public buildings are seeing/experiencing the benefits of using the energy efficient lighting products which will entice them to switch over to use the energy efficient lighting products. Others will also learn from them. Thus, they will become advocates of the energy efficient products based on their experiences. From the interviews conducted with some households at Bregbo, for example, they were able to mention the savings they have made by using the LED lamps. One person mentioned that he had saved about half of the expenditure he used to make on lighting products. The only obstacle the households complained about is the unavailability of the LED bulbs in their communities and for which they have to travel to the larger towns to purchase it. This however would change over time when other outcomes related to marketing in terms of importation and local production are resolved. As such, the financial sustainability of the outcomes of Component 4 is ranked *as likely*.
- For Component 5 – This has to do with 'Consumers Education and Awareness'. The sustainability of the outcome emanating from this component will rarely be dependable on future financing. There will be continued awareness creation based on the methods being used and the participation of other stakeholders outside the project. The national electricity company (CIE) was willing to distribute awareness raising flyers alongside electricity bills. Distribution of electricity bills is a continuous exercise (until a different means for distributing bills is introduced) and so the newly created fund can be assessed in support of this component for sustainability so that the ministry can have more of such materials printed for the CIE to continue with the awareness campaigns. The project also produced a promotional music (CD) in French and 4 local languages. Most importantly, there were a number of awareness creation training workshops that impacted knowledge to guide their decisions of consumers on energy efficient lighting products. Based on the above therefore, the financial sustainability of the outcomes of Component 5 is ranked *as likely.*

205. In summary, the financial sustainability of the PEEPL Project is rated as *likely* based on a low dependency on future funding for the direct outcomes of the five Project Components.

The financial sustainability rating of the PEEPL Project is Likely

5.8.2 Socio-Political sustainability

206. The socio-political sustainability of the PEEPL project is essentially assessed based on the Outcomes of the five Project Components. For the outcomes of Component 1, there is a fair level of ownership by the Government of Cote d'Ivoire, the Directorate-General of Energy (DGE) and other

stakeholders on the enhancement of energy efficiency policy. The Decree on the prohibition of incandescent lamps and the adoption of "Strategy for the Transformation of the Lighting Market" in the National Development Program (NDP) 2021-2025 with a budget present good prospects for policy actions to drive the market transformation towards energy-efficient lighting products in Cote d'Ivoire. However, in spite of the political will to implement recommendations developed throughout the project, the level of bureaucracy may slow down the progress of the activities and make the implementation by the government institutions less efficient. All stakeholders (public and private sector) show a high level of interest on advancing with the implementation of project activities but a lack of individual power, in addition to a strong hierarchical structure, could make the decision process very slow and relatively inefficient as experienced in the commencement of the project. In this regard, the socio-political sustainability of the Outcomes of Component 1 is ranked as *likely*.

207. With respect to the outcomes of Component 2, stakeholder government institutions and private sector show a fair level of ownership towards the building of technical and managerial capacity for energy efficient lighting market development. Stakeholders such as DGE, LANEMA, LBTP and CODINORM, have been very proactive and responsive to the capacity development activities as well as the suggestions and recommendations of the international experts of the U4E Centre of Excellence. Out of the 12 relevant private sector institutions invited to the capacity building workshop, 11 sent key representatives to participate in the training workshops, a sense of high-level commitment. In consideration of this therefore, the socio-political sustainability of the Outcomes of Component 2 is ranked as *highly likely*.

208. With respect to the outcomes of Component 3, there is a strong ownership group – the quality assurance organizations, CORDINORM, LANEMA and LBTP - with demonstrated interest in the improvement of the quality of lighting products in Cote d'Ivoire. CODINORM, in particular has been responsive to the U4E International Expert´s input and recommendations, and thus it successfully adopted new MEPS to ban incandescent lamps. The recommendations provided by the U4E Lighting Experts have also been elevated by CODINORM and recommended to the regional standardization body. In this context, the socio-political sustainability of the Outcomes of Component 3 is ranked as *highly likely*.

209. For the outcomes of Component 4, there is a fair level of ownership by the Government, DGE and some private sector stakeholders towards the dissemination of energy-efficient lighting product for public lighting in Cote d'Ivoire. The planned activities on purchase and distribution of LED lamps to 100,000 households, demonstration operations on audited public buildings, and the establishment of a network of collection points for used lamps give a good reflection of this ownership. Thus, the socio-political sustainability of the Outcomes of Component 4 is ranked as *likely*.

210. Regarding the outcomes of Component 5, the DGE has indicated a good level of ownership towards the promotion of consumers education and awareness, through its planned activities on continued awareness campaigns and communication with the general public. The socio-political sustainability of the Outcomes of Component 5 is ranked as *likely*

211. In conclusion, and based on the above narratives, the socio-political sustainability of the PEEPL Project is rated as *likely*, which is based on the generally good ownership demonstrated by the relevant stakeholders to ensure the achievement of the direct outcomes of the five components.

The overall socio-political sustainability rating of the PEEPL Project is likely

5.8.3 Institutional framework sustainability

212. The design of the PEEPL project made it possible to have it entirely mainstreamed in the energy sector responsible for energy efficient of Cote d'Ivoire. The institutional framework sustainability

of PEEPL is primarily assessed against the Outcomes of the 5 Project Components. These are discussed as follows;

- With respect to Outcomes of Component 1, there is a high dependency on institutional support to implement the "National Strategy for the Transformation of the Lighting Market" and enforce Article 12 of Decree No. 2016-862 on the prohibition of incandescent lamps. The Strategy presents comprehensive guidelines for its implementation and presents detailed action plans, implementation schedule and budget for the four key integrated actions towards market transformation of energy-efficient lighting products in Côte d'Ivoire. These guidelines include; i) Minimum Energy Performance Standards (MEPS); ii) Support Policies and Mechanisms; iii) Monitoring, Verification and Enforcement; and iv) Ecologically Sound Management. The DGE, with the support of the oversight ministry, MPEER, and working in close collaboration with the key project stakeholders (notably Ministry of Trade, Ministry of Finance, Ministry of Environment, CI-ENERGIES, CODINORM, LANEMA and LBTP) will lead and coordinate the institutional support towards the Direct Outcomes of Component 1. The PEEPL Project has upgraded the technical and management capacities of these relevant stakeholders to enhance energy efficiency policy in Côte d'Ivoire. Thus, the institutional framework sustainability of the Outcomes of Component 1 is ranked as *highly likely*;
- For the Outcomes of Component 2, a high dependency on institutional support to sustain and continually upgrade the technical and managerial capacity of key stakeholders for energy efficient lighting market development in Côte d'Ivoire, under the guidelines presented by the "National Strategy for the Transformation of the Lighting Market". The key stakeholders, related to energy efficient lighting market development, under the coordination of the DGE, actively participated in all the relevant the capacity building workshops during the project. The participants took care of gender with about 23% of all the participants being women. As is the practice, it is expected that the U4E will follow up with DGE and its collaborating stakeholders to track the progress in the implementation of the project recommendations and the "National Strategy for the Transformation of the Lighting Market" to keep them updated of the release of new material/tools and events, and thereby sustain continual capacity building. The U$E also produced training manuals for the participants as well as the workshop reports which are to be used as references. Based on the above therefore, the institutional framework sustainability of the Outcome of Component 2 is assessed as *likely.*
- For the Outcomes of Component 3, there is a high dependency on institutional support to monitor, verify and enforce the Standard 3012: 2018 "Technical specifications for off- grid lighting service lamps" and lamp labelling, in the national effort towards lighting products quality improvement. The quality assurance institutions, CORDINORM, LANEMA and LBTP will play the leading roles to sustain lighting products quality improvement. These institutions worked actively and closely with U4E´s international experts on different aspects to increase their level of knowledge to provide better quality services to other local stakeholders. Thus, the institutional framework sustainability of the Outcome of Component 3 is assessed as *highly likely*.
- Regarding Outcomes of Component 4, there was the need to strongly depend on institutional support to widely disseminate energy efficient products for public lighting in Côte d'Ivoire and for household usage. With the support of the oversight Ministry MPEER, the DGE and its collaborating stakeholders (particularly OCM/BUROTEC that were responsible for the household pilot projects), have built substantial capacity and experience in the dissemination of energy efficient lighting products through the pilot activities that distributed energy-efficient lamps to public buildings and households in Yamoussoukro and Abidjan. With the enhanced capacity these institutions are poised to sustain the dissemination of energy efficient products for public lighting in Côte d'Ivoire. Thus, the institutional framework sustainability of Outcomes of Component 4 is assessed as *satisfactory*.
- For Outcomes of Component 5, there is a strong dependency on institutional support to promote consumers education and awareness, under the guidelines of the "National Strategy for the

Transformation of the Lighting Market". The DGE and its collaborating stakeholders have built considerable capacity and experience in consumers education and awareness campaigns on energy-efficient lighting during the project, and there are good prospects that these campaigns will be sustained to keep consumers' understanding and appreciation of the benefits of energy-efficient lighting products. As such, the institutional framework sustainability of Outcomes of Component 5 is assessed as *likely*.

213. In conclusion, the institutional framework sustainability of the PEEPL Project is rated as *likely,* considering the clear national policy direction reflected in the "National Strategy for the Transformation of the Lighting Market" and Article 12 of Decree No. 2016-862 on the prohibition of incandescent lamps, and the enhanced capacities of key stakeholders in technical, managerial, quality assurance and awareness creation for energy efficient lighting market development in Côte d'Ivoire.

The institutional framework sustainability rating is Likely.

The overall rating for Sustainability is Likely.

5.9 Factors affecting project performance and crosscutting issues

5.9.1 Preparation and readiness

214. This section which addresses aspects of Component 6, presents an assessment of the readiness and preparation of the PEEPL Project between the approval date of the project 16 April, 2012 and the Inception Workshop of 26 April, 2016, with due consideration that the project actually commenced in January, 2016 due to political instability Cote d'Ivoire experienced and the delays in putting administrative and procedural structures/systems in place to get the project started. During this period under consideration, Project activities included setting up the PMU, preparations for the Inception Workshop, updating of project work plan and the budget and preparations for recruitment of experts (both local and international) (see section 3.6.1).

215. The Inception Workshop report of 26 April 2016 presents the evidence of the readiness of the PEEPL Project. According to this report, the Project Cooperation Agreement (PCA) between DGE and UNEP was signed on 26 September, 2013, but as mentioned above, the political instability in Cote d'Ivoire which went on from 2012 to 2015 brought the project to a halt and therefore delayed the commencement of project implementation, thus disrupting the preparations and readiness for the commencement of project execution. Due to the delays, en.lighten-U4E of Centre of Excellence had to submit an updated Technical Assistance Proposal to National Project Director on April 8, 2016.

216. As part of the preparation towards commencement of the project, a Consultant had to be hired to update the project document to enable preparations to be made towards the inception workshop. However, the contract, which was signed on 17 July 2014 later had to be terminated because of failure to deliver results and so all the efforts that went into that process became wasted and further delaying the commencement of the project. It then became necessary to recruit a project manager to supervise the updating of the project workplan and budget. His recruitment took place in 2015 and he had to immediately see to the preparation of the bylaw for the establishment of PSC and submission to Minister of Energy for signature, so that they could prepare for the first PSC meeting that was scheduled for 25 April 2016.

217. During this period also, the PMU had to prepare for interviews for the recruitment of the Technical and Communication Experts. The Project inception workshop finally came on, with 32 participants

from national institutions involved in project implementation, key stakeholders, co-financing partners and UNEP representatives, as listed in the CEO Endorsement Document for PEEPL.

218. Further, evidence from the interviews and the second report (2016) of the Project Implementation Review (PIR), it was noted that key individuals of the EA were generally very busy people, in addition to having to manage the challenges associated with the commencement of the project. From the narrative above, it can be concluded that the period between project approval and inception/first disbursement, managing and supervising the project was challenging for the EA due to the delays it encountered.

The rating for preparation and readiness is moderately satisfactory.

5.9.2 Quality of project management and supervision

5.8.2.1 Implementing Agency

219. Quality of project management and supervision addressed aspects of Component 6. UNEP was the Implementing Agency providing oversight management and international technical assistance to the PEEPL Project. UNEP served as the GEF Implementing Agency (IA) for PEEPL Project and was responsible for the supervision of project execution to ensure consistency with GEF and UNEP policies and procedures and overall project reporting. UNEP was represented on the project by a Task Manager who worked closely with the EA and participated in the two PSC meetings that were held. The Task Manager visited to the host country to discuss the quarterly progress report, work plan, budget and any other relevant issues. The Task Manager reviewed all the half yearly and annual reports and provided the needed technical review of project outputs. It also provided clearance of these reports, evidence of having played its supervisory role. The IA supervised all the PEEPL project implementation reviews (PIRs) from 2015 to 2000, and made useful comments regarding how best the EA could address some of its challenges to achieve project outcomes. The IA had the responsibility of ensuring that the potential risks that could derail the project were addressed. An example is the initial challenges with poor communication on the part of the EA that affected its management and supervisory role as this affected workflow during the commencement phase of the project but these were quickly resolved as the IA came out with proposals for weekly meetings among the PMU members. The IA used some of these interventions, for example to try to avert some of the risks that project could suffer from. The IA also participated actively in decisions related to all the revisions in workplans that had to take place and approved of all of them which were at no cost.

The rating for quality of project management and supervision for the IA is Satisfactory.

5.8.2.2 Executing Agency

220. The Executing Agency was the DGE of MPEER. The Executing Agency was responsible for leadership and supervision roles in the delivery of assistance to local stakeholders to develop the enabling regulatory and investment environment towards a transition to energy efficient lighting in Côte d'Ivoire. The PSC was the highest decision-making body of the project and every decision at the executing agency level had to be approved by the PSC.

221. Regarding PEEPL management and supervision of Project and giving the political instability that delayed project commencement, evidence provided shows that beyond the initial challenges, and to a large extent, the DGE provided satisfactory management and coordination functions in terms of leadership for attaining planned outcomes as evidenced in the achievements of the project execution. This includes frequent communications with all project stakeholders, particularly with the MPEER, CODINORM and CI-ENERGIES, which the stakeholders mentioned in the course of the evaluation as the most committed and productive partners. The PMU personnel remained the same throughout the duration of the project which is evidence of the personnel's level of commitment and appreciation of the project, and assurance of continuity of the implementation

process. This was confirmed by some of the respondents who indicated that some of the activities such as the continuous advertisement of energy efficient lighting products, were still on-going despite the project having come to an end. Thus, one of the qualities of the project worth mentioning is the ability of the PMU to maintain productive partners throughout project execution, many of which (particularly the private sector partners) will continue to work with the DGE of MPEER beyond the project lifespan. The level of appreciation of the project and its importance to transforming the energy market in Cote d'Ivoire is also attributable to the capacity building the PMU was taken through as part of Component 2.

222. Interviews with the stakeholders also revealed that the DGE demonstrated good adaptive management capabilities which were demonstrated, for example, through the number of revisions that had to be done due to unanticipated changes in original project design and work plans that came with different requirements and challenges, including budget reviews, but were handled without any serious negative effect on project implementation process and attainment of outcomes. Some of these adaptive management skills were demonstrated during;

- The technology change from CFLs to LEDs due to changes in the conditions of the lighting market when LEDs became the preferred lighting technology;
- Revision of the project budget four times during project life to take into account the various extension requests and adjustments.

223. The two examples cited above also constitute some of the possible risks the leadership of the project used their management skills to avert. Through the good adaptive management skills adopted for project execution, they were able save the project from the risks. Thus, the flexibility of management and supervision skills adopted as well as openness to new ideas that made the project implementing agency, including the PSC to easily accept revisions, are attributes that helped in attaining project outcomes. This level of flexibility therefore made it possible for the project to accommodate the changes with less difficulties as indicated by the stakeholders. Another example demonstrating management flexibility and adaptive capabilities of the project managers is that the project was initially intended to promote CFLs but after the market study, the project also promoted LED lamps. This informed government who also adopted LEDS during its subsequent awareness programmes.

224. Despite the initial management and supervision challenges the project encountered, such as the initial delays in project commencement, non-responsiveness on the part of the executing agency, late start of a number of activities (i. e. the PSC met at the launch of the project in April 2016, whilst project activities were fully launched in 2018 after the signing of the technical assistance contract with en.lighten-U4E; the 2nd and the last meeting of the PSC was delayed till January 2019 due to challenges related to the market study, which started in 2017 but ended in December 2018; the results of the market study were required to update the reference data to allow informed decisions of the PSC to guide the project, and as such, the PSC could only have two meetings instead of three), the execution agency was successful in managing these risks, and therefore the above challenges did not affect outcomes.

225. Another major risk that the executing agency had to work around to ensure it did not affect project management and supervision was the outbreak of Covid 19. The 3rd and the last meeting of the PSC was planned before the official end of the project on June 30, 2020, but due to the Covid 19 pandemic and restrictions in administration and travel, this meeting could not take place. However, letters were sent to members of the PSC requesting for their advice and agreement when there were important decisions to be made such as decisions related to selection of sites for pilot projects.

226. Staff taking on additional PEEPL Project related responsibilities was another adaptive management strategy the PMU and DGE employed at the executing agency level to cope with both the project and other national responsibilities. Some of the respondents noted that the national project director who was the Director General of Energy (Directeur générale de l'énergie) had to

appoint a deputy national project director because of his heavy work schedule and responsibilities that left him with limited time for the project management and supervision. In a response to this question during the evaluation interviews, a stakeholder said; "*Both the national project director and his deputy had limited time and this contributed to administrative delays though without impeding on the smooth running of the project*".

227. Project management and supervisory role provided by other partners were also supportive of the work of the executing agency in providing quality management and supervision of the project, which also helped with delivery of outcomes. For example, the Technical Working Group (TWG) dedicated to the PEEPL Project was not set up because a Technical Group of the same composition already existed within the CODINORM, so the PMU relied on this Technical Working Group of CODINORM. en.lighten-U4E also supervised its activities that provided timely and excellent international technical assistance to PEEPL through its team of experts. Most local stakeholders attested to the high quality of international expertise provided by the en.lighten-U4E team of experts to the PEEPL project, which made a significant contribution to the knowledge of best practices to the MPEER, MESD, CODINORM, LANEMA, CI-ENERGIES, and lighting suppliers and retailers in Côte d'Ivoire.

228. The flexibility of the project made it possible for the project executing agency to employ adaptive management skills that also made it possible for the changes that took place before, during and until the end of project execution. The PEEPL project was initially intended to promote CFLs but after the market study, the project rather promoted LED lamps through the change in project technology in project design and evidence from the market study conducted in 2018 showed increase in the sale of energy efficient lighting products. This shift might have probably informed government who also adopted LEDS during its subsequent awareness programmes. As part of the flexibility adopted, the project served 596 households with LED lamps instead of 500. The PSC also agreed to change one of the initial public buildings selected (hospital) which was then under renovation for another one. These are but a few examples of the flexibility the executing agency and with the approval of the PSC and the implementing agency made use of the drive the project to a successful conclusion despite the initial undue delays

229. To sum up the above, apart from the initial delays that nearly marred the performance, the executing agency provided satisfactory management and coordination functions of the PEEPL project. However, irregular meetings of the PSC denied the PEEPL Project the benefit of efficient and effective project oversight and guidance by this high-level group of national experts. The absence of a TWG dedicated to the PEEPL Project also denied the Project the full services of this multi-sectoral group to review, integrate, recommend, and update energy law and regulations beyond the technical services on standards, guidelines and programmes including the adoption of the energy-efficient lighting labelling scheme. The PMU indicated that the role of TWG in CORDINORM in the PEEPL project was primarily on the update of the lighting standard NI 3011.

The rating for quality of project management and supervision for the EA is Moderately Satisfactory.

Overall rating for quality of project management and supervision is Satisfactory.

5.9.3 Stakeholder participation and cooperation

230. It is important to mention that working with multiple stakeholders as indicated in Annex II can be very challenging if not managed well as each one of them comes with its own complexity in terms of interests, motives, influence and expectations (Friedman & Miles, 2006). Coordinating a project like the PEEPL that involved multiple stakeholders therefore could pose management challenges where the level and extent of participation on the project could be compromised. Available documents and discussions with the DGE and PMU give evidence that the Executing Agency, DGE

and the en.lighten-U4E teams, had a key role in the engagement of stakeholders in the activities of the PEEPL Project, which was also confirmed in the interviews and this was managed successfully though the initial delays are acknowledged as a setback (these were however quickly overcome). These engagements included recruitments, calling for meetings, assisting in organising project training workshops, sharing experiences, among others. The Task Manager at UNEP and the PSC were always available to provide support to the PMU. The Task Manager's support often came as feedbacks to the PIR reports or through emails and meetings. When it was not possible for the PSC to meet, communication still went on through other means such as letters and emails.

231. The other stakeholders were also quite cooperative except that some of the distributors during the market study did not want to disclose their figures. Only 10 distributors cooperated, out of a total of 1,156 importing and distribution companies, and this slowed down the market study. It was explained during the key informant interviews that this was due to the fear of being taxed by the state if they provided more information about their work, and so many of the importers and distributors avoided participating in the market study where they were being requested to disclose certain sensitive data about their work. (See paragraph 66 in section 3.3)

232. DGE was able to easily identify the roles and responsibilities of all key stakeholders due to their previous involvement in the regional UNEP-en.lighten project of ECOWAS; these stakeholders included MPEER, MESD, CODINORM, LANEMA, LBTP, CI-ENERGIES, CI, the private sector including, Local importers / distributors of lighting products, Chamber of Commerce and Industry, General Confederation of Businesses of Côte d'Ivoire (CGECI), NGOs and other local organizations (AIENR, CASE, FACACI, AFECAMCI).

233. The DGE was engaged in outreach activities and engagement on PEEPL Project with other relevant stakeholders in suburbs of Abidjan and Yamoussoukro, supply and retail outlets and the electric utility in Côte d'Ivoire (CI-ENERGIES) for pilot activities on energy-efficient lighting products. Further, the DGE, with the participation and approval of the PSC, demonstrated due consideration of vulnerable groups and linkages to poverty alleviation in the choice of sites for the pilot projects on energy-efficient lighting through the inclusion of two surburbs of Bonzi/Bregbo and Yopougon where the majority of households are in the low to middle income groups. In the same context, the pilot sites included two educational institutions - National Institute of Public Hygiene (Institut National d'Hygiène Publique, INHP) and the Institute of Sciences and Communication Technologies (Institut des Sciences et Techniques de la Communication, ISTC) in Abidjan.

234. In summary, the stakeholder consultations revealed that, generally, most stakeholders actively participated and showed good cooperation during the project to reflect their interest and buy-in of the objective of the PEEEPL Project. Attaining of a good stakeholder participation and cooperation as in this case is also attributable to the management and coordination skills of the executing, and the initial capacity building for the key stakeholders helped in achieving this.

The rating for "Stakeholder participation and cooperation" is Highly Satisfactory.

5.9.4 Responsiveness to human rights and gender equality

235. The evaluation took into account the UN Common Understanding on the human rights-based approach (HRBA) and the UN Declaration on the Rights of the Indigenous People, as well as UNEP's Policy and Strategy for Gender Equality and the Environment, assessing the extent to which these policies and strategies influenced the implementation of the PEEPL project. The PEEPL Project Document did not cover gender perspectives and rights of minority groupings. The Project Document also did not identify concerns with respect to human rights in relation to sustainable development, including the consideration of integrated approach to human and natural systems. This is because this project was designed and approved under GEF-4 cycle, which did not mainstream gender as part of programming. However, the Project Document indicates that the project presents a good opportunity for sustainable development in Côte d'Ivoire, including

environmental, economic, and technology transfer opportunities and therefore is applicable to all manner of people including men and women, and vulnerable groups, which was evidenced, to some extent, in the results attained.

236. There was an absence of detailed budget to implement gender-related activities, which include the awareness raising activities and market survey on lighting product where disaggregation of survey data into age and gender could have identified different needs with respect to lighting technologies. Such disaggregation could also have facilitated greater participation in the promotion of energy efficient lighting in consumer information messaging, as well as addressing gender as a topic during stakeholder consultations and project meetings.

237. The above notwithstanding, key informant interviews with three households that participated in the pilot project at Bregbo and consultations with PMU and DGE revealed that all project activities were intended for both men and women and other beneficiaries in the pilot rural communities. In all the training workshops the project organized, there was some moderate representation of women (average of about 20%), giving that the training activities did not deliberately mainstream/consider gender. The workshops however monitored workshop participation of men and women. The ratios of men compared to women participation during some of the different workshops undertaken are as follows:

- Workshop on the Waste Management of Lighting Products (July 24, 2019): 77% men / 23% women;
- 3rd Workshop on the Transformation Lighting National Strategy (25-26 July 2019): 84% men / 16% women;
- Nationwide show rooms to raise awareness about the use of LED lamps: 85% men: 15% women.

238. It is also important to mention that gender concerns at household level cannot be overlooked in the African context as the volume of household chores women undertake suggests that women stand the chance of benefitting more from energy efficient lighting products and energy conservation than men. Rural and urban women in most African countries, apart from farming, are engaged in livelihood activities that sometimes go on even at night, such as food processing, and efficient energy saving lighting reduces their drudgery tremendously and improves household income (Srivastav, 2022,). It also reduces the cost of providing lighting. It is not clear the extent to which the data gathered to update the original baseline study took into account the concerns of women and vulnerable groups. Thus, energy-inefficient lighting technologies, and lack of participation constitute major barriers to women's economic empowerment and sustainable market transformation. However, evidence over the years has indicated that with regards to policy in the energy sector, it is important to recognize that men and women typically have distinct energy needs which must be investigated, as both benefits differently from national policies and increased energy access, including lighting and related benefits. The PMU was sensitive to the plight of the less privileged, minority and other vulnerable groups and therefore was very influential in selecting communities for the household pilots (Output 4.1.4) that could take care of such key beneficiaries of the project

239. Consultations with Organization of Active Women (OFACI), a prominent women's group in Cote d'Ivoire affirmed that as the primary managers of water, sanitation and energy in homes, women's education on energy efficiency and their involvement in the policy aspects - the use of these technologies to reduce time spent on domestic and household chores and to unlock women's economic opportunities for sustainable livelihoods- is paramount. The group also noted that the PEEPL Project would have great impact on poor households in isolated villages. For example, the introduction of MEPS and other standards and regulations on lighting products will result in a lower electricity consumption, which many of them are already experiencing, and thus the release of power generation capacity, enabling more energy access to poor households, or for households not yet connected to the grid.

240. Notwithstanding the lack of consideration of gender mainstreaming and the rights of minority groupings in the design of the PEEPL Project, the implementation of the project activities did not appear to have a bias to either gender or income groups.

The rating for "Responsiveness to Human rights and gender equality" is Moderately Satisfactory.

5.9.5 Country ownership and driven-ness

241. The country ownership and driven-ness towards the PEEPL Project is assessed through a review of evidence to confirm that all government ministries and public sector agencies working with PEEPL undertook leadership roles on various activities that can ensure the necessary long-term impact to be realized through moving forward from outputs to outcomes, from outcomes to intermediate states and ultimately making the needed impact.

242. A major strength of this project is the ability of the project designers and executing agency to recognise, identify and mobilise diverse stakeholders nationwide and beyond, with different interests/stake in the project to work closely together for project implementation. There were 6 key public sector ministries involved in this project as well as other stakeholders in the energy sector. Key staff from the Ministry of Petroleum and Energy, the Ministry of Environment, the Ministry of Economy & Finance, the Ministry of Industry, the Ministry of Trade, the Ivorian Customs, CI-ENERGIES, ANARE-CI, CODINORM, CIE (national electricity company) and the Chamber of Commerce took part in the project implementation through bilateral and multilateral meetings with the national and international consultants that actively participated in the capacity building workshops and trainings, and also through the provision of strategic insight during the PSC meetings. It is estimated that 100% of the relevant public sector actors, 100% of the PMU staff and 90% of the relevant private sector institutions have had their capacities increased on energy efficient lighting market development. It was therefore expected that participants would share lessons learnt from the various training workshops or meetings they participated in regarding the project at their various institutional levels.

243. The interviews with the stakeholders showed that the appointment of the Director General of Energy, for example, as the project director demonstrates the country's commitment to the project and a demonstration of country ownership, also showing the support he had from his ministry and minister in particular. He therefore, according to the interviews, had the responsibility to be briefing the minister of energy about the progress of project implementation, and who in turn briefed members of his hierarchy. Ensuring that many stakeholders with diverse backgrounds (related to the project) - including the private sector and NGOs - and with different roles to play on project implementation was in a way demonstrating the project driven-ness as the ultimate goal of all of them is to ensure the success of the project. In other words, several stakeholders in the country participated in the project with the objective of all them participating in ensuring that ultimately, the impact of the project is realized in the long term.

244. The PSC was chaired by the Director of Cabinet (MPEER), a very high office in the Ministry, thus demonstrating the national importance attached to the PEEPL project. More specifically, the Ministry of Petroleum, Energy and Renewable Energy (MPEER) played its role as the project's Executing Agency, by hosting the Project Management Unit within its own premises. The MPEER also provided a car for the missions and other logistics as well as the necessary equipment during the different workshops (for all 5 Components). The Ivorian Customs provided data on imports to the Market Research expert (Components 1 and 2). CI-ENERGIES (national energy agency) also communicated data on the energy sector and shared its expertise when needed (Components 1, 2,3 and 4).

245. CODINORM (national standard organization) welcomed the Technical Note updating the 3011 Standard and appointed its Technical Working Group (GT11) to work on the Standard until the endorsement of the updated Standard on 11th June 2019 (Components 1, 2 and 3). By appointing

its Technical Working Group made it unnecessary for the project to appoint another one. Thus, in-house capacity was assured. CIE (national electricity company) was willing to distribute awareness raising flyers alongside electricity bills (Components 5). The private sector stakeholders, made up of several lighting products distributors and importers, also took an active part in the different training workshops. 10 of them accepted to share their market data with the Market Research Expert. Although other importers and distributors would have shared their data, they were afraid that was going to implicate them for more taxation. The United for Efficiency (U4E) Centre of Excellence provided targeted technical support to the project through its international expertise (Components 1, 2, 3 and 4). They have offered to provide further support/assistance beyond the project life.

246. In summary therefore, the active participation of key stakeholders (public and private sector, NGOs, international development partners, media houses, etc.) in the project, coupled with extensive training and experience sharing and learning, and the initiative of government and the private sector to drive the transformation process give the assurance of country ownership and driven-ness as satisfactory.

The rating for country ownership and driven-ness is Satisfactory.

5.9.6 Communication and public awareness

247. Communication and public awareness activities of PEEPL were mainly implemented under Component 5 which focused on increasing information to consumers about the benefits of energy-efficient lighting products. The evidence available showed that the PEEPL Project had outreach campaigns with targeted audiences through national television, national radio, private radio, local radio and internet to spread the messages of the use and benefits of energy-efficient lighting to the general public with a focus to increase the usage of energy-efficient lighting. Consequently, the project produced i) a promotional music (CD) in French and 4 local languages that was broadcasted on two community radio stations and four national radio stations; ii) an awareness raising poster; and iii) an awareness raising flyer. The above communication channels met the needs of the broad spectrum of beneficiaries, including urban and rural communities, women and marginalised groups. Some of these communication channels such as the promotional music, are sustainable as songs do not easily fade away.

248. The PEEPL Project has made extensive use of U4E´s communication channels, such as U4E´webpage, Twitter and Facebook, sharing the project progress through, for example, articles (*https://united4efficiency.org/enhancing-the-national-strategy-for-energy-efficient-lighting-and-market-surveillance-in-cote-divoire/*) and factsheets (*https://united4efficiency.org/resources/u4e-ivory-coast-factsheet/*)

249. Being able to work closely with different partners and particularly, with the engagement of U4E experts, a lot of experience sharing and learning went on among the project team members/partners through various means such as training workshops, demonstrations at show rooms, community levels and in public buildings, among others. Example is the number of training workshops that were carried out throughout the lifespan of the project to disseminate knowledge among key country stakeholders, including the executing agency. These include, among others, the following:

- Awareness raising campaign on energy efficiency: (26 September 2018).
- Training on "Energy Efficient Lighting" (26-27 September 2018)
- 1st workshop on the Strategy for the Transformation of the Lighting Market
- Workshop on the development of a strategy and action plan for the transformation of the lighting market in Côte d'Ivoire (25th September 2018)

- Training for financial institutions and lamp distributors on business plans and financial models for the transformation of the lighting market (January 16, 2019).
- "Standards and Testing Control Standards of Lighting" workshop (17-18 January 2019)
- "2nd Workshop on the Transformation Lighting National Strategy" (22nd January 2019)
- "Environmental Management CRSO for Lighting products" workshop (24th July 2019)
- "3rd Workshop on the Transformation Lighting National Strategy" (25-26 July 2019)

250. Other public awareness activities that were undertaken during the implementation of the project to influence attitudes or shape behaviour among wider communities and civil society at large included the household pilots and the pilots in two public buildings where evidence from the interviews show that they achieved their objectives. At the household level, household members have come to realise the benefits of the use of energy efficient bulbs which has reduced their expenditure on electricity drastically (by almost half the cost). This was confirmed by the three household members interviewed for this aspect of the evaluation. As part of the awareness raising campaign for consumers and the stakeholders, show rooms were held in 2 Abidjan suburbs and 8 other towns. This is also considered as a major public awareness event to reach out to those at the grassroots. Additionally, he PEEPL Project has created alliances with the public and private sectors, including CODINORM, LANEMA, LBTP, Chamber of Commerce and Industry, CGECI (General Confederation of Businesses of Côte d'Ivoire), local importers and distributors of lighting products, NGOs and other local organizations (including AIENR, CASE, FACACI, AFECAMCI). These alliances strengthened and broadened PEEPL Project's communications and public awareness efforts.

The rating for communication and public awareness is Highly Satisfactory.

5.9.7 Environmental, Social and Economic Safeguards

251. Although the GEF-4 cycle was designed before environmental and social safeguard action plans were introduced and documented in the CEO Endorsement Document, the PEEPL Project had elements that show that it was concerned about environmental, social and economic safeguards. Promoting energy efficient lighting technologies suggests the environment is of paramount concern to the PEEPL Project and it rightly sought to achieve that, including promotion of the development of mercury-free technologies and having policies to that effect. As such prior to project implementation, there was a change in project design, where LED lamps were introduced as a better technology that is energy efficient, reduces CO2 emissions, and more luminous. LED lamps are also mercury-free and therefore not harmful to the environment and human beings. The reorientation of the project towards LED lamps partly solves the problem of mercury management when using CFL lamps. As much as possible and through awareness creation and sensitisation of all kinds, the project brought to the attention of consumers and the general public the benefits of using mercury free lamps.

252. The project through Component 4 introduced LED lamps through pilot project in 2 public buildings and over 500 households in rural and suburban communities. The introduction of the LED lamps was to promote increased use of the LED lamps which at the time, formed only 10 – 15% of lamp sales in Cote d'Ivoire, compared to 60 to 70% of CFLs. A nationwide ban on the use of incandescent lamps since January 2019 compelled citizens to shift to the use of energy efficient lamps. In addition, the National Program for the Distribution of Energy efficient Lamps (PNDLBC) led by the government from 2012 to 2018 helped in the distribution of 2.34 million CFLs lamps nationwide. The results of the PNDLBC project over the 2016-2017 period showed that with the installation of 2.340761 CFLs, the demand for energy reduced by 56.2 MW leading to CO_2 emission reductions by 31,264 ton/year. The over 500 LED lamps households benefited from as a replacement of their CFLs lamps at household level led to retrieving equivalent number, of over 500 CFL bulbs. The CFL

bulbs were taken back for safe disposal due to the mercury content of these lamps which is harmful to the environment and human beings. Further, the project's Waste Management Expert developed recommendations for the management of used CFL lamps containing mercury. The recommendations will be incorporated by SGS/SAR, hired by the government as part of the implementation of the decree 217-217 on the management of Electric and Electronic Equipment waste (including lamps). The project updated the standard 3011 on lamps and trained test laboratories such as LANEMA in order to be equipped for lamp quality testing on the market.

253. Interviews with beneficiaries demonstrated that the LED lamps has social-economic benefits for households. They experienced that luminosity of the LED lamps was better than the CFL while they could also save about half the amount of money they were spending on electricity with the use of the CFLs. The PEEPL Project therefore was environmentally and socially beneficial to the population. Healthwise, the use of the LED lamps exposed them less to environmental hazards from mercury and protected them from straining their eyes due to better illuminous lamps. Indirectly, it improved their standard of living.

The environmental, social and economic safeguard is not rated.[28]

[28] The PEEPL was approved 16 April 2012

6 Conclusions, Recommendations and Lessons Learned

6.1. Conclusions

254. The PEEPL project was designed to remove certain barriers, which include institutional, policy, legal, regulatory, technical, cost, awareness and implementation that were impeding the market transformation of energy efficient lighting products in Cote d'Ivoire. To do so, the project aimed at providing incremental support to the Government of Côte d'Ivoire to: i) Strengthen national energy efficiency policy framework, including adopting Government legislation for the phase out of incandescent lamps; ii) Increase capacity of public and private sector institutions for energy-efficient lighting market development; iii) Enhance regulatory framework for energy efficient lighting standard and labelling; iv) Establish recycling schemes for energy-efficient lighting products; and v) Increase information to consumers about the benefits of energy efficient lighting products.

255. To address the legal and policy barriers, a number of experts were recruited to undertake these assignments. The project has helped to build a new institutional capacity both on legal and commercial basis of key stakeholders in the private sector as well as in government institutions, particularly the importers/traders who work closely with the ministry. A Public Policy Expert developed a document on efficient lighting policy. These included preparation of legislative and regulatory instruments to phase-out incandescent lamps. A decree - Decree No. 2016-862 – was passed and issued on 3 November 2016 prohibiting the sale of incandescent lamps nationwide with effect from 1st January 2019. The decree is already in force. To address the technical barriers, a technical and managerial capacity building for energy-efficient lighting market development was organised. The project helped in the development of a comprehensive energy efficiency sectoral policy document comprising Volume 1; Efficient lighting policy document and Volume 2; Awareness raising campaign and capacity building material. The local Policy Expert developed this document on efficient lighting policy with related regulations, identifying training needs for energy efficiency sector players and proposing appropriate training materials.

256. In terms of the regulatory barriers, the project has helped in removing a number of them. The project helped in developing a "Registration system" report. This was prepared by the International Test and Standards expert from en.ligthen-U4E. The document contains an excel based system for Lighting Product Registration in Cote d'Ivoire, which includes the Web interface structure, Database details required, example of custom codes, among other information, in order for Côte d'Ivoire to develop its own Registration System as part of its Market Monitoring, Verification and Enforcement (MVE). The project produced "UNEP GSL Lamps Product Registration System V1.0" report, produced by the International Test and Standards expert that presents a graphic prototype and step-by-step guidance notes based on global best practices. The document includes Application, Products and Test details and Performance Claims, among other topics. Another achievement of the project is "Standards Test Methods and Laboratories for Lighting Technologies" report prepared by the International Test and Standards expert from en.ligthen-U4E. The report includes the assessment of Laboratories with all the technical explanation to assist laboratory staff in understanding testing requirements and methods as well as providing a level of competency in assessing the specifications of laboratory equipment under consideration for procurement.

257. Awareness creation workshops were carried out for government agencies, standard body and private sector decision-makers on energy efficiency policy related to lighting products aimed to raise awareness and inform government agencies, standard body, traders and financing institution staff about the social and economic benefits of energy-efficient lighting products. There were a number of training workshops that enhanced the administrative and technical capacities of key public agents involved in the project and to develop the capacity of the PMU in policy and legislation preparation. To address the barrier of cost, the project helped in developing a Strategic Business

Plan on lighting technology specific to the Ivorian lighting typology. Beneficiaries were given more than 500 LED lamps while about 2 million household benefited from free CFLs, all of which were cost saving, while the LED lamps had an additional advantage of being mercury-free, thus reducing CO2 emissions. There were nationwide show rooms to create awareness about the energy efficient lighting products and their economic and social benefits. Key stakeholders were also provided training on the economic and social benefits of energy efficient lighting products.

258. Despite the delays encountered during project implementation, the project objectives and outcomes were fulfilled. It has created opportunities at the national level for similar projects in energy efficient market transformation to be undertaken as there is now available capacity at the national level to sustain similar other projects.

Table 13. Summary of the Evaluation Criteria Ratings

Criterion	Summary Assessment	Rating
A. Strategic Relevance		**HS**
1. Alignment to MTS and POW	Strong alignment with MTS, BSP and SSC.	**HS**
2. Alignment to UN Environment /Donor/GEF strategic priorities	Strong alignment with GEF 6 CC1 and CW1, and GEF 7's CC Focal Strategy Objective 1	**HS**
3. Relevance to regional, sub-regional and national environmental priorities	Relevance to Côte d'Ivoire's National Energy Saving Program, ECOWAS Energy Efficiency Policy (2012), Regional Energy Saving Program (RESP, National Development Plan "PND 2012-2015 and "PND 2016-20202011) and Nationally Determined Contributions (NDC) of Côte d'Ivoire (2015)	**HS**
4. Complementarity with existing interventions	Complements National Program for the Distribution of Low Consumption Lamps (PNDLBC, 2012).	**HS**
B. Quality of Project Design	The project document did not present the Theory of Change of the project, but the design of the PEEPL Project was clearly scoped to provide incremental support to the Government of Côte d'Ivoire in holistic approach to achieve the intended objective of the PEEPL Project.	**S**
C. Nature of External Context	Though the project document did not identify any unusually challenging operational factors, the document appropriately identified and described project risks and presented a management strategy to address them.	**F**
D. Effectiveness	All outcomes of the PEEPL Project were achieved with most of the outputs being delivered.	**S**
1. Delivery of outputs	Most outputs delivered.	**S**
2. Achievement of direct outcomes	Most of the targets of the direct outcomes of the five Components of the PEEPL Project were achieved.	**S**
3. Likelihood of impact	Impact is likely due to several strong market drivers such as the adoption by Government of mandatory labelling for all lighting products in Cote d'Ivoire under the UEMOA and ECOWAS guidelines.	**L**
E. Financial Management	Most of the financial information on the project, including expenditures and financial information was complete.	**S**
1.Adherance to UNEP's financial policies and procedures	All relevant documents reviewed including financial audits and cash advance requests.	**S**
2.Completeness of project financial information	All relevant documents reviewed including financial audits and cash advance requests.	**S**
3.Communication between finance and project management staff	Communications between Project Manager and UNEP finance personnel sufficiently frequent and effective	**S**

Criterion	Summary Assessment	Rating
F. Efficiency	In spite of the delayed project inception, the project engaged well-qualified and experienced local and international consultants on the project activities, and applied efficient sequencing of activities. The project also engaged a number of local consultants where it was possible to provide technical expertise	**MS**
G. Monitoring and Reporting	Monitoring design and budgeting, implementation monitoring and reporting were satisfactory	**S**
1. Monitoring design and budgeting	Project Document provided guidelines on Monitoring and Evaluation Plan for the Project, in conformity with UNEP standard reporting and evaluation processes and procedures	**S**
2. Monitoring of project implementation	The project was effectively monitored through half-yearly Progress Reports of the DGE and U4E.	**S**
3.Project reporting	PIRs presented result-based monitoring and reporting that facilitated prompt improvements and adaptive management of the implementation of the PEEPL Project	**S**
H. Sustainability	The Project has good stakeholder ownership, little dependency for future funding, and clear national policy direction and support from Government on energy-efficient lighting	**L**
1. Financial sustainability	The Project will be less dependent on future funding for the direct outcomes of the five Project Components as the bulk of project activities were capacity building and awareness creation, thus knowledge generation.	**L**
2. Socio-political sustainability	The Project has good ownership demonstrated by the relevant stakeholders to ensure the achievement and sustainability of the direct outcomes of the five components.	**L**
3. Institutional sustainability	The Project has clear national policy direction on energy-efficient lighting and it has enhanced the capacities of key stakeholders for energy efficient lighting market development	**L**
I. Factors Affecting Performance	The DGE demonstrated good project management and applied effective communication strategies to develop stakeholder cooperation and ownership of the PEEPL Project.	**S**
1. Preparation and readiness	There was a number of initial delays that affected project commencement and caused delays in recruitment of experts and for a number of revisions to be done to the workplans, although the level of readiness and preparation later improved when finally, the project execution began with an Inception Workshop with 32 participants from national institutions on April 2016	**MS**
2. Quality of project management and supervision		**S**
2.1. Implementing Agency		**S**
2.2. Executing Agency	Irregular meetings of the Project Steering Committee denied the PEEPL Project the benefit of efficient and effective project oversight and guidance by this high level group of national experts	**MS**
3. Stakeholders participation and cooperation	Most stakeholders actively participated and showed good cooperation during the project to reflect their interest and buy-in of the objective of the PEEEPL Project	**HS**

Criterion	Summary Assessment	Rating
4. Responsiveness to human rights and gender equity	Gender issues were only partially mainstreamed and there was lack of budget to implement gender related activities	**MS**
5. Country ownership and driven-ness	Most government ministries and public sector agencies involved in the Project played leadership roles on the various Project activities	**S**
6. Communication and public awareness	The Project had outreach campaigns with targeted audiences through national television, national. radio, private radio, local radio and internet	**HS**
7. Environmental, Social and Economic Safeguards		N/A
Overall Project Rating	The PEEPL Project has contributed significantly towards the efforts of the Government of Côte d'Ivoire to speed up market transformation for energy-efficient lighting technologies, accompanied by substantial national energy savings.	**S**

6.2. Lessons Learned

259. The implementation of the PEEPL Project has generated several national benefits including the significant contribution towards an effective market transformation of energy-efficient lighting products in Côte d'Ivoire. This achievement is a strong indicator of the excellent management of the implementation, despite some challenges experienced by the Project in the initial stages of project implementation. To this end, there are some lessons that may serve future projects in the energy efficiency sector globally:

Lesson Learned #1:	**A clear national policy and strategic direction is a key driver to achieve outcomes of a project with a core objective of market transformation on appliances. This policy and strategic direction should be developed in the early stages of the project by well-qualified and experienced persons or experts to allow timely stakeholder awareness, cooperation and buy-in as demonstrated in this project.**
Context/comment:	The final document on the "National Strategy for the transformation of the lighting market" developed within the framework of this project was not available until December 16, 2019, almost three years after project inception, which delayed its inclusion in the 2020 budget as part of 2015-2020 National Development Plan (NDP). The lighting market transformation strategy document has now been accepted under the National Development Program 2021-2025 and will be implemented after completion of the PEEPL Project. The delay in the delivery of the national strategy has subsequently pushed back the implementation of planned vital activities to accelerate the market transformation of energy-efficient lighting products, including the implementation of lamp labelling, massive purchase and distribution of LED lamps to 100,000 households and the creation of the revolving fund financed by the FONAME (National Fund for Energy Management)

Lesson Learned #2:	**Capacity development of carefully selected project stakeholders, with the appropriate focus, scope and depth provides an indispensable support to accelerate the market transformation of energy-efficient appliances. The benefit of having experienced experts to develop the TOR is great and leads to a successful outcome.**
Context/comment:	Côte d'Ivoire's national capacity on energy efficient lighting has now been strengthened. Following the different workshops and training sessions

	conducted as part of the project, most of the relevant public sector actors and the PMU staff of the relevant private sector institutions have had their technical and managerial capacities increased on energy efficient lighting market development. This success was assured through a close collaboration of local and international experts of the en.lighten U4E, with the local experts contributing to the local context of training focus and content, whilst the international experts complemented with global best practices. It is evident that capacity development was also based on the preparation of precise and specific ToRs for consultant inputs to provide effective and efficient consulting inputs for the project. Such specific ToRs identify the specific focus areas where the consultants are to provide useful inputs, with the persons preparing the ToRs having a good understanding of the subject matter where the consultant will be providing assistance.

Lesson Learned #3:	**It is imperative that minimum energy performance standards (MEPS) are developed before any energy labelling are proposed for electrical appliances. This ensures that the labelling design does not consider those technologies and models that do not comply with MEPS. It would be counterproductive to design and promote an energy label whilst expecting a product that cannot be later put on due to its non-compliance with the MEPS. Harmonization of local MEPS and labelling with regional MEPS and labelling schemes contributes significantly to the sustainability of regulatory mechanisms for electrical appliances.**
Context/comment:	A labelling system was developed for the UEMOA (West African Economic and Monetary Union) region as part of another project. The guidelines for implementation were signed by heads of member states on June 26, 2020. Each member state then had 2 years to translate it into regulatory text and enforce it. Cote d'Ivoire has already developed a draft order in this regard that was planned to be signed before the end of year 2020. The minimum energy performance standard on lamps already existed, i.e. Standard NI 3011 which was approved in April 2018 as part of a project executed by ECOWAS. Since the efficiency of the lamps had evolved over the years, it was necessary to update the criteria. In the framework of this project, a technical note in this regard was prepared and sent to CODINORM and was then adopted. The new NI 3011 standard taking into account the recommendations of the technical note were approved on 11 June 2019. The NI 3011b « Spécifications techniques pour des lampes de service d'éclairage en réseau. » updated in the framework of this project deals with MEPS for both CFL and LED lighting products. The decree 2016-1152 of December 2016 mandating certain enforcement standards is being updated at CODINORM. A national capacity-building workshop on standards development for lighting products and establishment of testing laboratory facility to support energy efficiency regulation of lighting products took place on 17-18 January 2019. Following this training, LANEMA has acquired certain lamp - testing equipment in April 2020. The draft market surveillance decree on Monitoring, Verification and Enforcement (MVE) developed within the framework of this project was combined with another decree on MVE for refrigerators and air conditioners drafted as part of another project. This draft decree was sent to the cabinet in April 2020 for review and comments.

Lesson Learned #4:	**The leverage of demonstration activities under a market transformation project can be maximized through careful and thoughtful designs that locate the**

	demonstration in strategic locations to maximize exposure of the technology being demonstrated. These could be in educational institutions where students can be participants in disseminating information to their family members. Demonstrations could also be strategically located within public buildings such as hospital, churches and mosques amongst others to expose or promote conversions to energy efficient lighting systems. These public locations will also have the potential for getting more press coverage and increased dissemination of LED information.
Lesson Learned # 5:	At the household level, the adoption of a good community entry strategy to include community sensitisation prior to the introduction of new energy-efficient technologies and market transformation can help in their acceptance and demystify local perceptions that can kill the initiative.
Context/comment:	The demonstration pilot projects and the dissemination of energy-efficient lighting products under the PEEPL Project has considerably increased the awareness of the benefits of energy-efficient lighting products among consumers and other stakeholders, including policy makers and the private sector. Pilot projects on energy-efficient LED lighting were conducted at the National Institute of Public Hygiene (INHP) of Abidjan and the Institut des Sciences et Techniques de la Communication (ISTC) in Abidjan, as well as in 200 households in the rural areas of Yamoussoukro and 300 households in Abidjan suburbs. As part of the awareness raising campaign for consumers and the stakeholders, show rooms were held in 2 Abidjan suburbs and 8 other towns. This was considered as a major public awareness event to reach out to consumers particularly at the grassroots. Additionally, 2.34 million CFLs were distributed in households in the framework of the PNDLBC project (co-finance) from January 2016, and 4.46 million since 2011. All mixed lamps and mercury vapor lamps were replaced with high-pressure sodium lamps as part of the ENERGOS project. According to the market research carried out in October 2018, around 15% of the imported lighting products in Cote d'Ivoire were incandescent lamps, meaning approximately 85% the products imported were energy efficient. Now that the ban on Ils has entered into force since January 2019, the percentage of energy-efficient lighting products imported is likely to have increased even more.

Lesson Learned #6:	**The active participation of the private sector in a market transformation project is crucial and it can be assured through continuous engagement and dialogue by the project management team with the private sector to keep abreast with their needs and demands, and disseminating the project outputs and relevant information through appropriate channels.**
Context/comment:	The management of stakeholders during the project was fairly well done and the organizations actively involved in the project were well integrated. However, there were certain gaps observed that need to be noted for future efforts: Several lighting products distributors and importers took an active part in the different workshops under the Project. Ten out of the 1,156 of them accepted to share their market data during the market study on lighting products. However, all the other distributors and importers refused because of the perception that additional tax could be imposed on them if the government should have data about their activities. This delayed the lighting market study and forced the consultant to change the market assessment methodology. This reflects some shortcoming in the private sector engagement that constraint full buy-in of the project objectives and direct outcomes. It is observed that the involvement of the private sector at the project design stage was minimal. It also appears the private sector was not involved in the management of the project although they are important actors. A project that has market transformation as one of its key objectives may face the risk of isolating the private sector, the largest directly impacted group of stakeholders, if it fails to continually engage a broad-based representation of the

	private sector at all stages of the project – project concept, design, implementation as well as follow-up activities. Such inclusive effort will avoid the counterproductive result of an uncooperative private sector with a negative impact on the market dynamics. In a project where such market transformation focuses on energy-efficient lighting products, these private sector stakeholders include local importers and distributors of lighting products as well as architects, builders, real estate developers and hotel owners.

Lesson Learned #7:	**A market transformation project needs to be informed and guided by a comprehensive disaggregated consumer impact studies to identify priority consumer segments as well as structurally and socially disadvantaged groups (also taking into account gender and vulnerable groups)**
Context/comment:	There is often some controversy with market transformation of energy efficient lighting owing to the contradiction between accelerating electricity demand for socio-economic development on one hand and the need to manage wasteful energy consumption by energy-inefficient (but affordable) electrical appliances on the other. Such projects should be supported with disaggregated consumer impact studies to identify priority consumer segments that can leap to higher energy-efficient technologies and appliances. This approach would avoid a counter-productive result that would further hinder alleviation of groups which are often structurally and socially disadvantaged.

Lesson Learned #8:	**A market transformation project is greatly enhanced with positive direct outcomes if it is supported with a Gender Impact Assessment study to evaluate the inclusion of women as end-users of energy efficient appliances or in economic activities connected to the value chain surrounding energy efficient lighting solutions.**
Context/comment:	The PEEEPL Project lacked a detailed budget to implement gender-related activities that would have included awareness raising activities and market survey on lighting product where disaggregation of survey data into age and gender could have identified different needs with respect to lighting technologies. Such disaggregation could also have facilitated greater participation in the promotion of energy efficient lighting in consumer information messaging, as well as addressing gender as a topic during stakeholder consultations and project meetings. Women are significant end-users of energy efficient appliances and they are also engaged in economic activities related to the value chain of energy efficient lighting solutions. Therefore, their inclusion in projects on market transformation of energy-efficient lighting could considerably facilitate the creation of technology acceptance and outreach to a generally inaccessible consumer base in most developing economies - women, young adults and children. A study to assess the gender impact of such projects helps to translate baseline results into measurable project indicators and activities.

6.3. Recommendations

260. Based on the above project outcomes and lessons, three recommendations are proposed for consideration.

Recommendation for Government of Côte d'Ivoire

Recommendation #1:	**Future appliance-related market transformation projects should focus on energy-efficient refrigerators, air conditioners and other energy efficient related areas where greater national energy savings and GHG emission reductions can be generated. The MPEER should engage with ECOWAS and ECREEE (ECOWAS**

	Centre for Renewable Energy and Energy Efficiency) as well en.lighten-U4E for support.
Challenge/problem to be addressed by the recommendation:	The PEEPL primarily focused on the market transformation of energy-efficient lighting in Cote d'Ivoire, but the DGE of MPEER has built adequate capacity to extend its effort towards the market transformation of other electrical appliances for increased national energy savings and GHG emission reduction. The project has served as the starting point to implement similar programmes to replicate U4E´s policy approach and to promote other energy efficient and climate friendly products (such as refrigerators, room air conditioners, distribution transformers and medium motors - products that together consume over half of the world´s electricity) and achieve greater GHG reductions. A considerable advantage of this programme is that it can be replicated to various other energy efficient technologies without needing to repeat the initial setup phase. In addition, the technical best practices implementation and tools developed during the project could be further replicated to other goods and services.
Cross references in the report (paragraph number):	Paragraphs 129 – 234, 230 - 234
Priority Level:	Important – This is important for the acceptability of the technology
Type of Recommendation	Partners
Responsibility:	UNEP project staff should pass on the recommendation to the relevant third party in an effective or substantive manner.
Proposed implementation time-frame:	Futuristic

Recommendations for UNEP

Recommendation #2:	**In project design of any energy efficient product that is expected to be of benefit to the people and who forms the largest proportion of the beneficiaries, efforts should be made to understand their socio-economic and political background as that informs the project designers of likely expectations from the beneficiaries.**
Challenge/problem to be addressed by the recommendation:	The key informant interviews revealed that during the implementation of the household pilots, it was assumed that communities would accept the free LED lamps. This was however met with doubts from the communities which nearly led to the rejection of the lamps as previous experience has shown them that free goods was a strategy used by politicians to deceive those at the grassroots and to 'buy' (to get the) votes of the electorates. The Consultant on the household pilot project had to first engage the community in extensive damage control before awareness creation about the social and economic benefits of the LED lamps
Cross references in the report (paragraph number):	Paragraphs 116, 145-146
Priority Level:	Important – This is important for the acceptability of the technology
Type of Recommendation	UNEP-wide
Responsibility:	UNEP/Project designer
Proposed implementation time-frame:	Futuristic

Recommendation #3:	**Catering for the specific needs of women and vulnerable groups who are major beneficiaries of development interventions should have a dedicated budget line in every project design and/or should be clearly embedded into the ToRs of the project personnel (Project Manager)**
Challenge/problem to be addressed by the recommendation:	Men and women typically have distinct energy requirements and both benefit differently from increased energy projects. Therefore, in designing energy related projects, the views, needs and concerns of both men and women should be considered and this should inform the design of the project. Though not the fault of the project designers in the case of the PEEPL, the absence of responsiveness to human rights and gender equality led to the absence of a budget line that could take care of the specific concerns of women and excluded groups with regards to energy efficient lighting products.
Cross references in the report (paragraph number):	Paragraphs 224 – 226
Priority Level:	UNEP – wide
Type of Recommendation	Critical – policy decisions and projects impact men and women differently
Responsibility:	UNEP/Project designer
Proposed implementation time-frame:	Futuristic

Annex I: Response to Stakeholders' Comments

Response to stakeholder comments received but not (fully) accepted by the reviewers, where appropriate

Page Ref	Stakeholder comment	Evaluator(s) Response	UNEP Evaluation Office Response
			There was no major comments, and all the comments received were accepted, the report being amended accordingly.

Annex II: People Consulted During the Evaluation

Organisation	Name	Position	Gender
Ministry of Petroleum, Energy and Renewable Energies (MPEER) – Cabinet	CHEVALIER Jacques	Technical advisor	M
Ministry of Petroleum, Energy and Renewable Energies (MPEER) – Cabinet	AKOUSSI Jacob	Technical Advisor	M
Directorate General of Energy (DGE) - MPEER	KONE Moussa	Assistant to the Director Project National	M
Project management unit - MPEER	ASSIE Adamo	Project Manager	M
Project management unit - MPEER	KONE Saki	Local Technical Expert	M
Project management unit - MPEER	BOHI Matthias	Local communication expert	M
Project management unit - MPEER	AGOH Bertine	Account monitoring	F
Project management unit - MPEER	LEDJA Sylvie	Administrator. Assistant to the project manager	F
CI-ENERGIES – MPEER	ADJEI Jean-Marc	Head, Department of Planning and Investment Programming	M
General Directorate of Internal Trade - Ministry of Commerce, Arts and Crafts, and SME Promotion (MCACSP)	ACHOU N. Loves Frederic	Senior Financial Services Administrator Director of Competition, Consumption and the Fight against Expenses	M
LANEMA - National Laboratory for Metrology and Quality Analysis (MCACSP)	ZABO Déza Emmanuel	Director of the Metrology and Technical Controls Division	M
CODINORM - MCACSP / private sector	KOUAME Elgar	Head, Product Certification Department	M
CODINORM - MCACSP / private sector	Alain Constant Assa		M
General Directorate of Customs - Ministry of Economy and Finance (MEF)	DEZAI Bonguin Ferdinand (Lt-Col.)	Deputy Director, Cooperation and Administrative Assistance	M
National Waste Management Program - Ministry of the Environment and Sustainable Development (MESD)	ZADI D. Raphael	Deputy Coordinator (Legal)	M
National Waste Management Program - Ministry of the Environment and Sustainable Development (MESD)	KOFFI Jacque	Waste Management Coordinator	M
ANAGED - National waste management agency	KOUADIO Kapet Guillaume	Technical Advisor to the DG in charge of Quality, Planning and Development	M

Organisation	Name	Position	Gender
ANAGED - National waste management agency	N'GOUANDI Firmin	Director of Operations and Programs	M
ANARE	ABLI KOUA Touré	Collaborator	M
INHP ((Institut National d'Hygiène Publique)	TCHOUMOU Francis Xilson	Head of Technical Dept	M
CASE - African Center for Environmental Health	KONAN Yannick	General Secretary	M
Bregbo Youth Group	Fofana	Chairman and pilot project beneficiary[29]	M
FACACI - Federation of associations. of active consumers in Côte d'Ivoire	TAHI Alain	President	M
SOCOMELEC - (Importers / distributors of lighting products)	YEDESS Gerard Philippe	Managing Director	M
AIENR - Ivorian Association for Renewable Energies and Energy Efficiency	BORAUD Edi	President	M
Chamber of Commerce and Industry	MAGUIRAGA Bakary		M
Service Energie à la Direction Régionale d'Abengourou	M. OUATTARA	Chef Service Energie	M
SGS / SAR	GNAPA Marie-Joelle Bitty Epse	Manager, Government Relations	F
AFECAMCI - Association of scrap metal merchants of Côte d'Ivoire	Mr. TOURE Soumaïla	Secretary General	M
OCM / BUROTEC Director (pilot projects)	DIARRA Cheick Mahomed	Private Sector/Project Implementation Partner	M
OFACI - Organization of working women of Côte d'Ivoire	SEMI Lou	President, Board of Directors	F
OFACI - Organization of working women of Côte d'Ivoire	AWA Mina	Vice-president	F
OFACI - Organization of working women of Côte d'Ivoire	ADENGRA Nadia	General Secretary	F
OFACI - Organization of working women of Côte d'Ivoire	TOURE Bintu	Assistant Secretary	F
United for Energy (U4E)	Paul Kellett	U4E Programme Manager	M
United for Energy (U4E)	Soledad Garcia	U4E Technical Adviser	F
United for Energy (U4E)	Bruno Lafitte	International Lighting Expert	M
United for Energy (U4E)	Steve Coyne	International Testing and Standards Expert	M
United for Energy (U4E)	Ignacio Duque	International Waste Management Expert	M

[29] 5 additional beneficiary household members were interviewed in Bonzi and Bregbo

Annex III: Key Documents Consulted

1. Directorate General of Energy, Côte d'Ivoire (2016). Semi-annual progress report. Promotion of energy efficiency in public lighting
2. Directorate General of Energy, Côte d'Ivoire (2016). Inception report. Promotion of energy efficiency in public lighting
3. Directorate General of Energy, Côte d'Ivoire (2016). Minutes of the first meeting of the Steering Committee. "Promotion of energy efficiency in public lighting in Côte d'Ivoire".
4. Directorate General of Energy, Côte d'Ivoire (2017). Effective Lighting Policy Document - Côte d'Ivoire.
5. Directorate General of Energy, Côte d'Ivoire (2017). Semi-annual progress report. Promotion of energy efficiency in public lighting
6. Directorate General of Energy, Côte d'Ivoire (2018). Semi-annual progress report. Promotion of energy efficiency in public lighting
7. Directorate General of Energy, Côte d'Ivoire (2018). Strategic business plan document on lighting technology in the Ivorian lighting market
8. Directorate General of Energy, Côte d'Ivoire (2019). Semi-annual progress report. Promotion of energy efficiency in public lighting
9. Directorate General of Energy, Côte d'Ivoire (2019). Minutes of the 2nd Steering Committee meeting. "Promotion of energy efficiency in public lighting in Côte d'Ivoire".
10. Directorate General of Energy, Côte d'Ivoire (2020). Final report. Promotion of energy efficiency in public lighting
11. Directorate General of Energy, Côte d'Ivoire. Awareness raising and capacity building in energy efficiency
12. Directorate General of Energy, Côte d'Ivoire. Lighting product market research
13. Directorate General of Energy, Côte d'Ivoire. Energy efficiency sector policy document. Volume 1; Efficient lighting policy document volume 2
14. Friedman, L. A., & Miles, S. (2006). *Stakeholders: Theory and Practice*. OUP Oxford, 2006.
15. Light naturally (2019). Training workshop: standards, test methods and laboratories
16. Srivastav, S. 2022, "How Clean Energy can Empower Women in Rural Communities". International Growth Centre. https://www.theigc.org/blog/how-clean-energy-can-empower-women-in-rural-communities/ (Accessed on 23 July 2022)
17. U4E (2018). Semi-annual progress report. S1
18. U4E (2018). Semi-annual progress report. S2
19. U4E (2019). Semi-annual progress report. S1
20. U4E (2019). Semi-annual progress report. S2
21. UNEP (2016). 3876. 2016.PIR. Ivory Coast. Promotion of energy efficiency in public lighting
22. UNEP (2017). 3876. 2017.PIR. Ivory Coast. Promotion of energy efficiency in public lighting
23. UNEP (2017). Proposal for a management system for second-hand lamps in Côte d'Ivoire. August 2019
24. UNEP (2018). 3876. 2018.PIR. Ivory Coast. Promotion of energy efficiency in public lighting
25. UNEP (2018). Strengthening of the national strategy for energy efficient lighting and market surveillance in Côte d'Ivoire
26. UNEP (2019). 3876. 2019. PIR. Ivory Coast. Promotion of energy efficiency in public lighting
27. UNEP (2020). 3876 FY20. PIR. Ivory Coast. Promotion of energy efficiency in public lighting

28. UNEP-GEF (2009) Document PIF revised - 3876. “Promotion of energy efficiency in public lighting in Côte d'Ivoire” .12-14-09
29. UNEP-GEF (2010) PDG PIF and PPG approval. “Promotion of energy efficiency in public lighting in Côte d'Ivoire”. 29.01.2010
30. Approval by the CEO of UNEP-GEF (2012). “Promotion of energy efficiency in public lighting in Côte d'Ivoire”. 04/16/2012
31. UNEP-GEF (2013). Project document - “Promotion of energy efficiency in public lighting in Côte d'Ivoire”. 09.10.2013

Annex IV: Brief CV of Evaluators

Position title and no. **ENERGY EFFICIENCY Expert**

Name of expert: **Essel Ben Hagan**

Date of birth **07/06/1951**

County of citizenship/residence **GHANA**

Education

1999-2003 PhD, Mechanical Engineering Kwame Nkrumah University of Science & Technology, Kumasi Ghana

1977-1979 Master of Science, Chemical Engineering, University of Aston, Birmingham, U.K.

1970-1974 Bachelor of Science, Chemical Technology, University of Science & Technology, Kumasi, Ghana

LANGUAGE SKILLS

Language	Reading	Speaking	Writing
English	Excellent	Excellent	Excellent
French	Fair	Fair	Fair

PRESENT POSITION

Facilitator - at level of Associate Professor - MSc Mechanical Engineering Programme, Institute of Distant Learning, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana. Since 2016

KEY EXPERTISE

- Energy Efficiency Technologies and Regulation
- Renewable Energy Technologies and Policy
- Off-grid/Grid Electricity Regulation
- Climate Change Impacts / Adaptation

Employment Record

Period	Employing organization and your title/position. Contact information for references	Country	Summary of activities performed relevant to the Assignment
A. AS CONSULTANT ON PROJECT/PROGRAM EVALUATION			
December 2015 – March 2016	GIZ Position: Team Leader Contact: George Johnson: *george.johnson@giz.de*	Ghana	Cost-Benefit Analysis Nationally Determined Contributions (NDC) of Ghana to climate change adaptation and mitigation. Key activities: 1) Gap Analysis/Evaluation of Ghana's NDCs; 2) Comprehensive cost-benefit analysis of the NDC; 3) Recommendations on modes and structuring of funding of the climate change adaptation and mitigation options

August-September 2015	GIZ Position: Sustainable Energy Expert Contact: Steffen Behrle *steffen.behrle@giz.de*	Ghana	Evaluation of Project on Regulatory and Procurement Framework for Electricity Generation from Renewable Energy (RE) in Ghana and Appraisal of a Follow-on Measure. Key activities: 1) Stakeholder consultations; 2) Support towards gap analysis/evaluation of project, including mechanisms and strategies for RE-based electricity generation; and 3) Appraisal of a follow-on measure
May-July 2015	UNDP Position: Team Leader Contact: Paolo Stella *paolo.d.stella@undp.org*	Ghana	Assessment of Ghana's Renewable Energy Policy. Key activities: 1) Gap analysis of Ghana's Renewable Energy Policy and Strategy; and 2) Evaluation of renewable energy initiatives, including analysis of impacts of energy access, and institutional framework and capacity
Feb–May 2014	Global Alliance for Clean Cookstoves Position - Team Leader Contact - Sumi Mehta *smehta@cleancookstoves.org*	Ghana	Development of Monitoring and Evaluation (M&E) framework, Strategies and Action Plan on Clean Cooking for Ghana. Key activities included: i) Identified local stakeholders, provided insights on them, and facilitated contact with them; ii) Provided inputs to the country level M&E Strategy, and Country Level Strategy and Action Plan on Clean Cooking for Ghana regarding overview of the local context and its implications for M&E, role of stakeholders, current practices and trends on cooking; and iii) Identified capacity needs of stakeholders at the national level
Sept-December 2014	UNDP Position: Sustainable Energy Expert Contact - Aboubacar Oualy *aboubacar.oualy@undp.org*	Gambia	Action Agenda and Investment Prospectus on Sustainable Energy for All (SE4ALL) for Gambia. Key activities: 1) Gap analysis of Gambia's Energy Policy and Strategy; and 2) Evaluation of energy initiatives, including analysis of impacts of energy access, and institutional framework and capacity; 3) Development of Action Agenda and Investment Prospectus on SE4ALL, including promotion of clean cooking, increase of RE in energy mix and improvement in energy efficiency
October-December 2013; November 2015	UNDP Position : Team Leader Contact: Sithembiso Gina *sithembiso.hlatshwako@ undp.org*	Swaziland (now Eswatini)	Sustainable Energy for All (SE4ALL) for Swaziland. Key actions: 1) Gap analysis of Swaziland's Energy Policy and Strategy; and 2) Evaluation of energy initiatives, including analysis of impacts of energy access, and institutional framework and capacity; 3) Development of Action Agenda and Investment Prospectus on SE4ALL, including promotion of clean cooking, increase of RE in energy mix and improvement in energy efficiency
March-June 2012	UNDP Position : Team Leader Contact: Paolo Stella *paolo.d.stella@undp.org*	Ghana	Development of Country Action Plan on Sustainable Energy for All (SE4ALL) for Ghana. Key activities: 1) Gap analysis of Ghana's Energy Policy and Strategy; and 2) Evaluation of energy initiatives, including analysis of impacts of energy access, and institutional framework and capacity; 3) Development of Country Action Plan on SE4ALL, including promotion of clean cooking, increase of RE in energy mix and improvement in energy efficiency
B. AS CONSULTANT ON ENERGY EFFICIENCY			
2020 -present	UNEP Position: Senior Advisor Contact: Brian Holuj *brian.holuj@ un.org*	Ghana	Promotion of large-scale adoption of energy-efficient and climate-friendly cooling products, Ghana under ECOFRIDGES initiative. Key activities: i) Stakeholder engagements with governments and private sector, industry, civil society, financiers, international organizations including: ii) Reviewing and tracking national and regional developments on cooling: iii) Gathering information and securing buy-in / support for ECOFRIDGES from officials; iv) Gathering information and securing buy-in / support for ECOFRIDGES from key stakeholders; v) Developing clear and in-depth recommendations for consideration by Ghanaian stakeholders.
June 2018-April 2019	EU – TAF Position: Energy label expert	Africa Region	Minimum Energy Performance Standards (MEPS) and Labelling of Appliances at the Continental Level in Africa. Key

	Contact: Stephan Fox *stephan.fox@eeas.europa.eu*		activities: Development of Guidelines / Roadmaps for implementing energy efficiency standards and label schemes in African countries, including stakeholder consultations in Uganda and Senegal
September 2015 February 2016	ECREEE Position: Energy efficiency expert Contact: Ibrahim Soumaila *isoumaila@ecreee.org*	ECOWAS region	Regulating the refrigerator and air conditioner market in the ECOWAS Region through Standards and Labelling. Key activities: Development of the Minimum Energy Performance Standards (MEPS) of refrigerators and air-conditioners in the ECOWAS Region, including; i) Development of MEPS on refrigerators and air-conditioners; ii) Appliance performance requirements related to the MEPS; and iii) Proposal on packaging and labelling
July 2015-April 2017	GIZ Position: Energy Efficiency Expert Contact: Charles Diarra *dcdiarra@yahoo.com*	Nigeria	Regulating the air conditioner market in Nigeria through Standards and Labelling. Key activities: i) Development of MEPS on air-conditioners; ii) Appliance performance requirements related to the MEPS; iii) Design of energy efficiency labels for air conditioners; iv) Development of bankable business plan on national testing laboratory for air conditioners; v) Capacity building of stakeholders
October 2009 – June 2010	UNDP Position: Team Leader Contact: Paolo Stella *paolo.d.stella@undp.org*	Ghana	Development of project document on "Promoting of Appliance Energy Efficiency and Transformation of the Refrigerating Appliances Market in Ghana". Key activities: Studies and preparation of a full size UNDP/GEF project document, including: i) detailed planning matrix; ii) institutional framework/ implementation mechanism and stakeholder involvement plan; and iv) Detailed project budget

Position title and no. **ENERGY EFFICIENCY PLANNING Expert**

Name of expert: **Sylvana Rudith King** (*rudithk@gmail.com*)

Degrees/Diploma

- **PhD in Gender and Development Studies**
  University of Sussex, Brighton, UK. 1999
- **M.Sc. in Development Planning and Management**
  University of Science and Technology, Kumasi, Ghana. 1988
- **Post Graduate Diploma in Regional Planning and Management**
  University of Dortmund, Germany. 1987
- **B.Sc. (Hons) in Development Planning**
  University of Science and Technology, Kumasi, Ghana. 1982.

Summary of CV

- **Profession**: Development Planner and Policy Analyst, **Gender Expert**. (with rich experience in **gender/energy planning, land governance research methods, monitoring and evaluation (M&E)**).
- **Area of Expertise: over 30 years** working experience in the area of socio-economic planning and policy (particularly related to gender), monitoring and evaluation, and in governance and energy related issues at the Kwame Nkrumah University of Science and Technology, Kumasi as a Research Fellow, and nationally/internationally as a **Consultant.**
- **Work Experience: over 28 years** working experience with international development agencies/institutions, development partners, organisations and consulting firms in participatory action-oriented research, projects development and assessments, monitoring and evaluation and training programmes. These include Institute of Development Studies, Sussex University, Brighton, UK, DFID (Ghana and the UK); UK Overseas Development Institute (ODI), UK; the Danish Development Agency (DANIDA), Ghana; USAID, Accra; ACT Consult, France; Edburgh Consultants, Utrecht, The Netherlands; the World Bank (Ghana and Washington); UNOP/UNDP, Senegal; UNDP, Ghana; UNIDO, Geneva and UNEP, Kenya.
- **Work Experience with CSOs: A strong civil society activist. Over 25 years** working experience with active civil society organizations in Ghana and abroad, and serves as a chairperson of the Board of Trustees for one such civil society organisation, namely Centre for the Development of People (CEDEP), based in Kumasi, Ghana.
- **Over 25 years working experience in the informal sector, working with e-waste dealers, women in various livelihoods and housing issues.**
- **Professional skills: M&E Expert, Trainer** in Participatory Research Methods/Tools including Participatory Monitoring and Evaluation, Social Accountability Tools, Participatory Gender Analysis and Planning and Participatory Impact Assessment. Also, trainer in **Gender Mainstreaming** in Projects and the development of Logical Framework/Project Planning Matrix. Several years of experience in designing and conducting research. Trainer in Board functions and effectiveness, particularly in the energy sector.

- **Membership of Boards:** Served on the Energy Commission Board of Ghana for 2 terms, and on the Public Utility and Regulatory Commission (PURC) Technical Committee. I also serve on 2 civil society boards (People's Dialogue, Ghana and Centre for the Development of People).

- **Lectures** in the following; **Principles of Sustainable Development in the Energy Sector, Research Methods**, **Project Planning and Management**, **Monitoring and Evaluation**, and **Organisation and Management** for both undergraduate and post graduate students in the various departments at KNUST, including the Planning Department and KNUST Business School.

- **Special areas of interest:** include monitoring and evaluation, gender/energy planning and policy, governance and rights related issues, and urban and rural livelihoods strategies for poverty reduction.

Annex V: Terms of Reference for the Evaluation of the UN Environment/Global Environment Facility project "Promotion of Energy Efficiency in Public Buildings in Côte d'Ivoire"

TERMS OF REFERENCE

Terminal Evaluation of the UNEP/GEF project "Promotion of Energy Efficiency in Public Lighting" and "GEF ID 3876"

Section 1: PROJECT BACKGROUND AND OVERVIEW

Project General Information

Table 1. Project summary

GEF Project ID:	3876		
Implementing Agency:	UNEP	**Executing Agency:**	Direction Générale de l'Energie, Ministry of Petroleum, Energy and Renewable Energy (MPEER)
Relevant SDG(s) and indicator(s):	SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all. Target 7.3: By 2030, double the global rate of improvement in energy efficiency.		
Sub-programme:	Climate Change	**Expected Accomplishments:**	EA (b) Countries increasingly adopt and/or implement low greenhouse gas emission development strategies and invest in clean technologies
UNEP approval date:	June 2012	**Programme of Work Output(s):**	PoW 2020-2021, Subprogramme 1 Climate Change
GEF approval date:	April 2012	**Project type:**	MSP
GEF Operational Programme #:	GEF-4	**Focal Area(s):**	Climate Change
		GEF Strategic Priority:	CC-SP1 Building EE
***Expected* start date:**	September 2013	**Actual start date:**	September 2013[30]
***Planned* completion date:**	August 2016	**Actual operational completion date:**	June 2020
***Planned* project budget at approval:**	USD 3,785,000	**Actual total expenditures reported as of 30 June 2020:**	Cash spent: USD 638,260

[30] Although the PCA with the DGE was signed in September 2013, the implementation of project activities effectively started in January 2016, following the recruitment of the Project Manager.

GEF grant allocation:	USD 884,091	**GEF grant expenditures reported as of 30 June 2020:**	USD 638,260
Project Preparation Grant - GEF financing:	USD 25,000	**Project Preparation Grant - co-financing:**	N/A
***Expected*Medium-Size Project co-financing:**	USD 2,900,909	**Secured Medium-Size Project co-financing:**	USD 2,072,406
First disbursement:	November 2013 USD 100,000	**Planned date of financial closure:**	September 2021
No. of formal project revisions:	4	**Date of last approved project revision:**	4 December 2019
No. of Steering Committee meetings:	2	**Date of last Steering Committee meeting:**	15 January 2019
Mid-term Review/ Evaluation *(planned date):*	N/A	**Mid-term Review/ Evaluation (actual date):**	N/A
Terminal Evaluation *(planned date):*		**Terminal Evaluation (actual date):**	October 2020
Coverage - Country(ies):	Côte d'Ivoire	**Coverage - Region(s):**	West Africa
Dates of previous project phases:	N/A	**Status of future project phases:**	N/A

Project rationale

As the second largest economy in West Africa (after Nigeria), Côte d'Ivoire is critical to the overall development of the sub-region and accounts for nearly 40% of gross domestic product (GDP) of the eight member countries of the West African Economic and Monetary Union (UEMOA).

Côte d'Ivoire is endowed with rich energy resources such as oil, natural gas, hydro, as well as renewable energies, particularly biomass and solar. Despite the important energy resource potential of the country, years of political and military crisis, punctuated by a brief armed conflict which divided the country in 2002, have taken a heavy toll on Côte d'Ivoire. Access to reliable and affordable energy resources is a major economic issue facing Côte d'Ivoire as electricity demand outweighs the supply capacity. Overall, there is an urgent need to upgrade and rehabilitate the entire power system to tackle the challenges related to maintenance deficit and high energy demand growth resulting from the political normalization process.

West African countries generally need to reinforce their electricity supply infrastructures and implement demand-side management programs to promote energy efficiency (EE) market development in the region. This could be done through the adoption of a genuine energy efficiency policy and program in the short term, since retrofitting existing installations and/or constructing new generation and transmission facilities is insufficient to overcome the barriers to energy sector development.

Energy conservation and its rational use have always been among the major strategies of the Government of Côte d'Ivoire in attaining its energy security goal while reducing environmental impacts related to energy generation by thermal plants. The country took a positive spin on energy efficiency and conservation in the 1980s, more particularly during the countrywide power crisis which occurred in 1983. Progress achieved in energy efficiency and conservation allowed the government to save an average of USD 6 million per year on its electricity bill since 1986. However, this achievement was slowed down by several factors; barriers that have prevented the uptake of EE projects and investments include institutional, policy, legal, regulatory, technical, cost, awareness and implementation barriers.

Promoting energy-efficient lighting was deemed likely to make a great contribution towards the nation's energy savings objectives as set out in the Letter of Development Policy for the Electricity Sector (LDPES). Historically, the main barrier hampering the deployment of energy-efficient lighting products has been their high initial cost. Changing lamps or replacing fixtures at home to save energy requires a higher investment in general, yet households are price-sensitive and continue to buy cheaper incandescent lamps or lower-priced imitations of CFLs. In Côte d'Ivoire, a CFL (with almost the same initial light output) costs 10 times the market value of a generic incandescent bulb (IL). This makes energy-efficient lighting products vulnerable to consumer criticism and dissatisfaction. On a life-cycle basis however, CFLs are far more economical than ILs but there is incomplete or inaccurate consumer awareness about new energy-efficient lighting technologies.

The project "Promotion of Energy Efficiency in Public Lighting" was launched by the Ivorian Ministry of Mines and Energy (MME) – now called the Ministry of Petroleum, Energy and Renewable Energy (MPEER) – to speed up market transformation for energy-efficient lighting technologies in Côte d'Ivoire, and to coordinate activities with the "Global Market Transformation for Efficient Lighting" GEF-financed project. The project intended to address barriers to the widespread utilization of energy-efficient lighting technologies in Côte d'Ivoire. It aimed to reinforce the country's legal and regulatory framework and develop the capacity of key stakeholders to work together for the supply of high-quality energy-efficient lighting technologies. Additionally, implementation of pilot projects would be geared at disseminating best practices among consumers.

The project specifically focused on the promotion of energy-efficient products such as linear fluorescent lamps, CFLs, High-Intensity Discharge (HID) lamps and ballasts for linear fluorescent lamps (low-loss electromagnetic and electronic). It also promoted the integration of energy-efficient lighting projects to the EE and conservation programs being developed by the Ministry of Petroleum and Energy, enhanced private sector involvement, and advocated for the mitigation of environmental impacts associated with the widespread use of energy-efficient lighting.

The Project is an example of national efforts to develop the EE market by phasing out the use of incandescent bulbs while promoting the introduction of EE lighting technologies, particularly CFLs. At the time of project design, CFLs were considered an important technology for saving energy, addressing climate change issues and mitigating GHG emissions. The project intervention area covered the whole country with a focus on the Greater Abidjan area, where more than 70% of residential customers are located.

Project objectives and components

The goal of the project was to speed up market transformation for energy-efficient lighting technologies in the emerging economy of Côte d'Ivoire. It was expected to bring about significant actions at national level to transform the market in terms of efficient lighting products with three inter-related objectives: the promotion of high-performance lighting technologies, the phasing-out of inefficient ILs and the demonstration of EE lighting benefits for consumers, including the promotion of EE mercury-free alternatives.

Overall, the main development objective of the initiative was to create, at local level, an enabling institutional, legal, technical and financial environment to phase out inefficient ILs while supporting the widespread diffusion of high-efficient and environmentally sound new technologies such as mercury-free CFLs and electronic ballasts. To achieve this objective and pave the way for the market transformation of energy-efficient products used by Côte d'Ivoire households, the project aimed to:

- Work in close partnership with national public and parastatal institutions including qualified experts specialized in energy efficiency and energy-efficient lighting.
- Provide a platform for policy dialogue and communication among all stakeholders.
- Provide technical assistance in implementing pilot projects for demonstration purposes.

In order to make progress towards the development objective, the project was organized under five components and twelve outcomes. Each outcome included a number of specific outputs and a series of planned activities. Table 2 below presents an abridged version of the results framework. (Component 6 'Project Management and M&E Support' is not included in the summary; it has to do with operational support provided to the Executing Agency to assist in key project management functions).

Table 2. Summary of project components, planned outputs and outcomes

Components	Outcome	Outputs
1. Energy Efficiency Policy Enhancement	1.1. Strengthened national energy efficiency policy framework	1.1.1: A Steering Committee set up for energy efficiency promotion 1.1.2 Workshops carried out to raise awareness of government agencies and standardization institute
	1.2. State Government legislation adopted for the phase out of incandescent lamps	1.2.1 Economic and financial benefits of EE lighting for each sector identified and financing/purchase models developed 1.2.2 Barriers to the development of a full-fledged EE policy removed and legislation prepared to phase out inefficient lighting
2. Technical and Managerial Capacity Building for Energy-Efficient Lighting Market Development	2.1. Increased capacity of public institutions for Energy-Efficient lighting market development	2.1.1. Technical capacity of key public agencies enhanced
	2.2. Project Management Unit (PMU) created and operationalized within the Ministry of Mines and Energy	2.2.1 PMU trained to increase its technical and managerial capacity
	2.3. Increased capacity of private sector institutions for EE market development	2.3.1 Traders and financing institutions trained on EE lighting project financing
3. Lighting Products Quality Improvement	3.1. Enhanced regulatory framework for EE lighting standard and labelling	3.1.1 EE Lighting Technical Working Group established within the national bureau of standards
	3.2. MEPS for energy-efficient lighting products established	3.2.1: CFLs minimum energy performance standard adopted
	3.3. All traded lighting products meet quality, environmental and energy performance standards	3.3.1: Procedures for EE lighting testing developed and adopted 3.3.2 Energy efficiency, environmental and technical standards for lighting products harmonized with international best practices

Components	Outcome	Outputs
4. Energy Efficient Lighting Products Dissemination for Public Lighting	4.1 Public utilities and private distributors and installers fully involved in the dissemination of EE lighting products	4.1.1: Energy-efficient street lighting in Abidjan, San Pedro and Yamoussoukro 4.1.2: Energy-efficient lighting in public buildings 4.1.3: Energy-efficient lighting promotion for households
	4.2 Significant improvement in sales of energy-efficient lighting products and reduction in the sales of incandescent lamps	4.2.1: Based on adoption of suitable financing/purchase models, up to five (5) million CFLs disseminated in household, commercial, and public services 4.2.2: Financial incentives provided to pro-active local importers and traders to sale energy-efficient lighting products
	4.3 Recycling schemes for EE lighting are operational	4.3.1: CFLs are recycled for the elimination of mercury according to international best practices
5. Consumers Education and Awareness	5.1 Increased information to consumers about the benefits of energy efficient lighting products	5.1.1: National campaign for energy-efficient lamps completed 5.1.2: Information on energy-efficient lighting provided through utility channels 5.1.3: A show room opened in each town for EE lighting products presentation

Executing Arrangements

The project's GEF **Implementing Agency** was UNEP, Economy Division. UNEP monitored the indicators for outputs and outcomes against the Project Logical Framework.

The General Directorate of Energy (DGE) in Côte d'Ivoire was the project's **Executing Agency**, designated to supervise the project implementation. However, since under other GEF-financed projects DGE expressed the need for further technical assistance to successfully execute the project; it was supported by the UNEP's United For Efficiency (U4E) Initiative. For this purpose UNEP's U4E Initiative in cooperation with DGE were accountable to the Government of Côte d'Ivoire and GEF for ensuring (i) the proper achievement of Project objectives; (ii) the monitoring and evaluation of the project outputs and outcomes; (iii) the effective use of both international and national resources allocated to it; (iv) the timely availability of financing to support project implementation; (v) the proper coordination among all project stakeholders; in particular national parties; and (vi) the timely submission of all project reports, including work plans and financial reports.

Figure 1 below shows the structure of the project's implementation arrangements as outlined in the original Project Document:

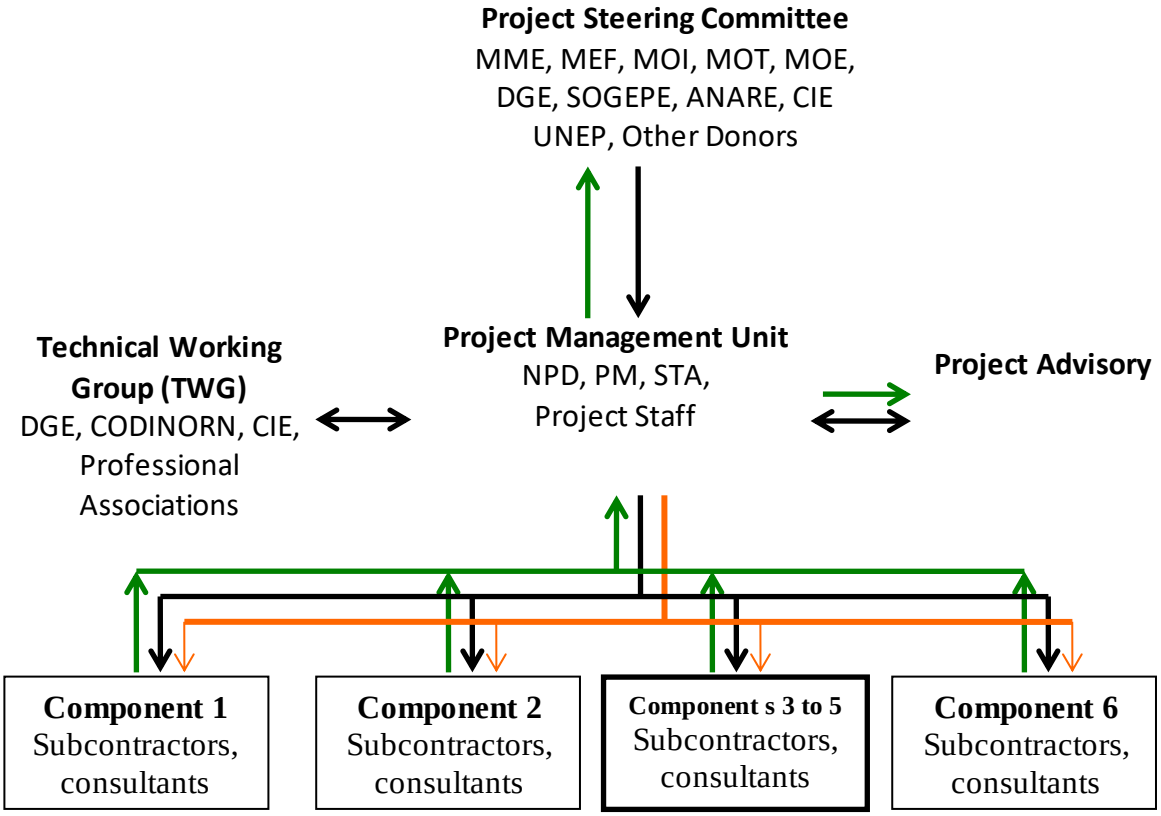


Figure 1. Executing Arrangements for the EE Lighting Project in Côte d'Ivoire

The project management arrangement is expected to consist of the following:

The Project Steering Committee (PSC)
The National Project Director (NPD)
The Project Management Unit (PMU)
The Technical Working Group (TWG)

As per decree 021/MPE/CAB/DGE dated 25 October 2016, the **Project Steering Committee** (PSC) consisted of high-level representatives from Government ministries, namely, Ministry of Petroleum and Energy (MPE, now known as MPEER), Ministry of Economy and Finance (MOF), Ministry of Trade (MOT), Ministry of Environment (MoE) and Ministry of Industry (MOI), other national agencies such as CI-ENERGIES and ANARE, as well as the GEF and UNEP. The primary roles of the PSC were: (i) to provide overall guidance to the implementation of the project, (ii) to ensure good coordination among participating agencies, sectors and international organizations.

The Director General of Energy acted as the **National Project Director** (NPD). The NPD's overall role was to ensure the successful execution of the project activities toward achieving project results. The NPD represented the MPEER and was accountable to the Government of Côte d'Ivoire and UNEP for the substantive quality of the Project and for the proper use of project resources. The NPD was also responsible for mobilizing all national and international project inputs in a timely manner, supporting project management and implementation, organizing project activities in accordance with the project work plan, and reporting to the Government of Côte d'Ivoire and UNEP the progress and the financial status of the Project. It is worthy to mention that the NPD also had a Deputy NPD, that could backstop him whenever needed.

The Executing Agency (DGE) set up a **Project Management Unit** (PMU) that was be responsible for the overall operational and financial management and reporting of the GEF funds in accordance with the rules and regulations for nationally executed projects. The Project Manager was in charge of day-to-day operations of the Project, and worked with his team at DGE premises.

The PMU comprised of: (i) the NPD working part-time for the project as in-kind contribution of the Government; (ii), a Deputy NPD; (iii) a Project Manager (PM); (iv) a Senior Technical Adviser recruited from time to time to assure the quality of the outputs over the project lifetime; (v) energy experts; (vi) a communication expert; (vii) an accountant and; (viii) support staff. In addition, a number of subcontractors and international experts supported the PMU in carrying out project activities.

A **Technical Working Group** (TWG) was established under the MPEER to provide overall comments of key project activities including fund commitments and co-financing arrangements. The TWG consisted of the Director of DGE, senior representatives from the relevant departments of MPEER, MOF, MOI, MOT, MOE as well as Electricity Sector Asset Management Company (SOGEPE), Côte d'Ivoire Normalisation (CODINORM), Compagnie Ivoirienne d'Electricité (CIE), CFL importers/distributors, academia, and professional associations.

Project Cost and Financing

This is a Medium Size Project (MSP); the total cost of the Project is US$ 3,785,000 with a GEF allocation of USD 884,091 and the remainder consisting of a co-financing amount of 2,900,909 being provided as in-kind and cash contribution by the government of Cote d'Ivoire. The overall project budget is shown in Table 3 and Table 4 below. The financial figures are presented by component and by funding source.

Table 3: Overall Project Budget by Component[31]

Project Components	GEF Financing (a)		Co-Financing (b)		Total (US$)
	(US$)	%	(US$)	%	(c=a+ b)
1. Energy Efficiency Policy Enhancement	75,000	42.8	100,000	57.2	175,000
2. Technical and Managerial Capacity Building for Energy Efficient Lighting Market Development	75,000	42.8	100,000	57.2	175,000
3. Lighting Products Quality Improvement	150,000	35	280,000	65	430,000
4. Energy Efficient Lighting Products Dissemination for Public Lighting	400,000	16.7	2,000,000	83.3	2,400,000
5. Consumers Education and Awareness	109,091	37	185,909	67	295,000
6. Project management	75,000	24	235,000	76	310,000
Total Project Costs	**884,091**	**23**	**2,900,909**	**67**	**3,785,000**

Table 4: Summary of Co-financing[32]

Name of Co-financier (source)	Classification	Type	Project (US$)	%
Government Contribution/MPEER	Executing Agency	In-kind	2,650.909	91.4
Government Contribution/MPEER	Executing Agency	Cash	250,000	8.6
Total Co-financing			**2,900,909**	**100.00**

[31] Figures as per Appendix 1 of the Project Document
[32] Only 2 co-finance letters for this project were received from the government: for the cash and for the in-kind contribution

Implementation Issues

The project was approved in April 2012 but it was not until January 2016 that the project activities were underway (over 3 years later than initially planned). The country had undergone political turmoil between 2012 and 2015, and this significantly hindered the implementation of project activities. Discussions to re-initiate the project took off in 2015 (with the recruitment of the Project Manager) and by January 2016 the project was on once again. Most of the workplan activities were completed between 2018 – 2019. Almost all the project outputs were delivered, although there was a significant delay in the implementation of pilot projects, which have been completed in 2020.

The implementation of the project's main activities started late (Year 2016 instead of 2013). The baseline data and end-of-project targets were therefore outdated. A new baseline study was carried out to assess the new baseline situation and suggest updated indicators and end-of-project targets. In particular, LED technology had significantly evolved since 2012 and could yield better results compared to CFL.

Since the project's logical framework had to be updated based on the results of the new baseline study, project activities and outputs also had to be adjusted, and their execution re-scheduled. The Executing Agency also adjusted the project's workplan and budget accordingly.

This is a GEF-4 project and as such it was designed before environmental and social safeguard action plans were documented in the CEO Endorsement Document. Since January 2019, however, incandescent lamps have been prohibited nationwide and the Ivorian population widely uses efficient lamps which last longer and consume less energy than incandescent lamps. The project steering committee also decided to reorient the project towards LED lamps which consume even less energy than CFLs. From this point of view, the project has also been environmentally and socially beneficial to the population.

Although this project was approved under the GEF-4 cycle and gender mainstreaming was not yet part of the programming directions, the projects has monitored workshop participation of men and women. The project organized show rooms nationwide in order to raise awareness about the use of LED lamps. The estimated gender-disaggregated participation in those show rooms is: women 15%; men: 85%.

COVID-19 pandemic impacted project implementation. The bidding process for the pilot projects was delayed mainly due to administrative setbacks, but the COVID-19 pandemic further slowed down the process, since offices were obliged to close at 2 p.m. instead of 4:30 p.m. and staff working in shifts was implemented to respect social distancing from the 15th of March 2020 onwards. In addition, the government's awareness raising program on energy savings (to which the GEF project's own awareness raising activities are supposed to be integrated) was postponed because of COVID 19. Finally, the project's final closing and dissemination workshop that we were planning to organize in May or June 2020 had to be cancelled because of the COVID 19 outbreak.

There was found to be low technical capacity within the government ministries engaged in the project and therefore about 25% of the project funds had to be directed towards providing technical support in project implementation. The Project Manager was recruited by the MPEER after the project ended, thereby helping to retain institutional memory of the project within government. Several other project officers were also retained as civil servants. Generally, however, the project may not be high in the Ministry's current priorities, which could hinder sustainability of its outcomes.

There is a follow-up/related initiative on energy efficiency that is likely to support some of the project's outcomes into the future; this is through the U4E (United for Energy) Center of Excellence. The U4E initiative will be able to follow through on the policy recommendations over the next few years under its upcoming engagements in Cote d'Ivoire and in the ECOWAS region.

Section 2. OBJECTIVE AND SCOPE OF THE EVALUATION

Objective of the Evaluation

In line with the UNEP Evaluation Policy[33] and the UNEP Programme Manual[34], the Terminal Evaluation is undertaken at completion of the project to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The evaluation has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP and main project partners, namely: Directorate General for Energy (DGE) within the Ministry of Petroleum, Energy and Renewable Energy (MPEER), Ministry of Industries and Mines, Ministry of Finance, Ministry of Trade, Ministry of Public Sanitation, Environment and Sustainable Development, Electricity Sector Asset Management Company (SOGEPE), Côte d'Ivoire Normalisation (CODINORM), Compagnie Ivoirienne d'Electricité (CIE), CI-ENERGIES, ANARE-CI, and United for Efficiency (U4E) Centre of Excellence. Therefore, the evaluation will identify lessons of operational relevance for future project formulation and implementation, especially for U4E initiative for their future work in the region.

Key Evaluation Principles

Evaluation findings and judgements will be based on **sound evidence and analysis**, clearly documented in the evaluation report. Information will be triangulated (i.e. verified from different sources) as far as possible, and when verification is not possible, the single source will be mentioned (whilst anonymity is still protected). Analysis leading to evaluative judgements should always be clearly spelled out.

The "Why?" Question. As this is a terminal evaluation and a follow-up project is likely [or similar interventions are envisaged for the future], particular attention will be given to learning from the experience. Therefore, the "*Why?*" question should be at the front of the consultants' minds all through the evaluation exercise and is supported by the use of a theory of change approach. This means that the consultant(s) needs to go beyond the assessment of "*what*" the project performance was and make a serious effort to provide a deeper understanding of "*why*" the performance was as it was. This should provide the basis for the lessons that can be drawn from the project.

Attribution, Contribution and Credible Association: In order to *attribute* any outcomes and impacts to a project intervention, one needs to consider the difference between what has happened with, and what would have happened without, the project (i.e. take account of changes over time and between contexts in order to isolate the effects of an intervention). This requires appropriate baseline data and the identification of a relevant counterfactual, both of which are frequently not available for evaluations. Establishing the *contribution* made by a project in a complex change process relies heavily on prior intentionality (e.g. approved project design documentation, logical framework) and the articulation of causality (e.g. narrative and/or illustration of the Theory of Change). Robust evidence that a project was delivered as designed and that the expected causal pathways developed supports claims of contribution and this is strengthened where an alternative theory of change can be excluded. A *credible association* between the implementation of a project and observed positive effects can be made where a strong causal narrative, although not explicitly articulated, can be inferred by the chronological sequence of events, active involvement of key actors and engagement in critical processes.

Communicating evaluation results. A key aim of the evaluation is to encourage reflection and learning by UNEP staff and key project stakeholders. The consultant(s) should consider how reflection and learning can be promoted, both through the evaluation process and in the communication of evaluation findings and key lessons. Clear and concise writing is required on all evaluation deliverables. Draft and final versions of the main evaluation report will be shared with key stakeholders by the Evaluation Manager. There may, however, be several intended audiences, each with different interests and needs regarding the report. The consultant(s) will plan with the Evaluation Manager which audiences to target and the easiest and clearest way to communicate the key evaluation findings and lessons to them. This may include some, or all, of the

33 https://www.unenvironment.org/about-un-environment/evaluation-office/policies-and-strategies
34 https://wecollaborate.unep.org

following: a webinar, conference calls with relevant stakeholders, the preparation of an evaluation brief or interactive presentation.

Key Strategic Questions

In addition to the evaluation criteria outlined in Section 10 below, the evaluation will address the **strategic questions** listed below. These are questions of interest to UNEP and to which the project is believed to be able to make a substantive contribution:

In its efforts to promote the uptake of energy efficient lighting technologies in Cote d'Ivoire, to what degree of success has this intervention overcome the identified barriers, gaps and challenges to the transformation of the lighting market?

What assumptions identified in the Theory of Change at evaluation are deemed most critical and which are likely to hold in supporting progress of outcomes towards the achievement of Impact?

Pertaining to the results that can be attributed to this intervention, which opportunities exist or have already been set in motion, that are likely to have a catalytic effect of outcomes within the country?

Has the evaluation identified any unintended results (positive or negative) deriving from the project's implementation, and if so, how might this affect the expected Impact?

Evaluation Criteria

All evaluation criteria will be rated on a six-point scale. Sections A-I below, outline the scope of the criteria and a link to a table for recording the ratings is provided in Annex 1). A weightings table will be provided in excel format (link provided in Annex 1) to support the determination of an overall project rating. The set of evaluation criteria are grouped in nine categories: (A) Strategic Relevance; (B) Quality of Project Design; (C) Nature of External Context; (D) Effectiveness, which comprises assessments of the availability of outputs, achievement of outcomes and likelihood of impact; (E) Financial Management; (F) Efficiency; (G) Monitoring and Reporting; (H) Sustainability; and (I) Factors Affecting Project Performance. The evaluation consultant(s) can propose other evaluation criteria as deemed appropriate.

Strategic Relevance

The evaluation will assess *'the extent to which the activity is suited to the priorities and policies of the target group, recipient and donor'*. The evaluation will include an assessment of the project's relevance in relation to UNEP's mandate and its alignment with UNEP's policies and strategies at the time of project approval. Under strategic relevance an assessment of the complementarity of the project with other interventions addressing the needs of the same target groups will be made. This criterion comprises four elements:

In line with the UNEP Evaluation Policy[35] and the UNEP Programme Manual[36], the Terminal Evaluation is undertaken at completion of the project to assess project performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The evaluation has two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote operational improvement, learning and knowledge sharing through results and lessons learned among UNEP and the main project partners (see para 30). Therefore, the evaluation will identify lessons of operational relevance for future project formulation and implementation, especially for the second phase of the project, where applicable

The evaluation should assess the project's alignment with the MTS and POW under which the project was approved and include, in its narrative, reflections on the scale and scope of any contributions made to the planned results reflected in the relevant MTS and POW. UNEP strategic priorities include the Bali Strategic Plan for Technology Support and Capacity Building[37] (BSP) and South-South Cooperation (S-SC). The BSP

[35] *https://www.unenvironment.org/about-un-environment/evaluation-office/policies-and-strategies*
[36] *https://wecollaborate.unep.org*
[37] *http://www.unep.fr/ozonaction/about/bsp.htm*

relates to the capacity of governments to: comply with international agreements and obligations at the national level; promote, facilitate and finance environmentally sound technologies and to strengthen frameworks for developing coherent international environmental policies. S-SC is regarded as the exchange of resources, technology and knowledge between developing countries.

Alignment to Donor/GEF/Partner Strategic Priorities

Donor, including GEF, strategic priorities will vary across interventions. GEF priorities are specified in published programming priorities and focal area strategies. The Evaluation will assess the extent to which the project is suited to, or responding to, donor priorities. In some cases, alignment with donor priorities may be a fundamental part of project design and grant approval processes while in others, for example, instances of 'softly-earmarked' funding, such alignment may be more of an assumption that should be assessed.

Relevance to Global, Regional, Sub-regional and National Environmental Priorities

The evaluation will assess the alignment of the project with global priorities such as the SDGs and Agenda 2030. The extent to which the intervention is suited, or responding to, the stated environmental concerns and needs of the countries, sub-regions or regions where it is being implemented will be considered. Examples may include: national or sub-national development plans, poverty reduction strategies or Nationally Appropriate Mitigation Action (NAMA) plans or regional agreements etc. Within this section consideration will be given to whether the needs of all beneficiary groups are being met and reflects the current policy priority to leave no one behind.

Complementarity with Existing Interventions/Coherence[38]

An assessment will be made of how well the project, either at design stage or during the project inception or mobilization[39], took account of ongoing and planned initiatives (under the same sub-programme, other UNEP sub-programmes, or being implemented by other agencies within the same country, sector or institution) that address similar needs of the same target groups. The evaluation will consider if the project team, in collaboration with Regional Offices and Sub-Programme Coordinators, made efforts to ensure their own intervention was complementary to other interventions, optimized any synergies and avoided duplication of effort. Examples may include UN Development Assistance Frameworks or One UN programming. Linkages with other interventions should be described and instances where UNEP's comparative advantage has been particularly well applied should be highlighted.

<u>Factors affecting this criterion may include:</u>
Stakeholders' participation and cooperation
Responsiveness to human rights and gender equity
Country ownership and driven-ness

Quality of Project Design

The quality of project design is assessed using an agreed template during the evaluation inception phase, ratings are attributed to identified criteria and an overall Project Design Quality rating is established (www.unenvironemnt.org/about-un-environment/our-evaluation-approach/templates-and-tools). This overall Project Design Quality rating is entered in the final evaluation ratings table as item B. In the Main Evaluation Report a summary of the project's strengths and weaknesses at design stage is included, while the complete Project Design Quality template is annexed in the Inception Report.

<u>Factors affecting this criterion may include (at the design stage):</u>
Stakeholders participation and cooperation
Responsiveness to human rights and gender equity

[38] *This sub-category is consistent with the new criterion of 'Coherence' introduced by the OECD-DAC in 2019.*
[39] *A project's inception or mobilization period is understood as the time between project approval and first disbursement. Complementarity during project implementation is considered under Efficiency, see below.*

Nature of External Context

At evaluation inception stage a rating is established for the project's external operating context (considering the prevalence of conflict, natural disasters and political upheaval[40]). This rating is entered in the final evaluation ratings table as item C. Where a project has been rated as facing either an Unfavourable or Highly Unfavourable external operating context, and/or a negative external event has occurred during project implementation, the ratings for Effectiveness, Efficiency and/or Sustainability may be increased at the discretion of the evaluation consultant and Evaluation Manager together. A justification for such an increase must be given.

Effectiveness

i. Availability of Outputs[41]

The evaluation will assess the project's success in producing the programmed outputs and achieving milestones as per the project design document (ProDoc). Any *formal* modifications/revisions made during project implementation will be considered part of the project design. Where the project outputs are inappropriately or inaccurately stated in the ProDoc, reformulations may be necessary in the reconstruction of the TOC. In such cases a table should be provided showing the original and the reformulation of the outputs for transparency. The availability of outputs will be assessed in terms of both quantity and quality, and the assessment will consider their ownership by, and usefulness to, intended beneficiaries and the timeliness of their provision. It is noted that emphasis is placed on the performance of those outputs that are most important to achieve outcomes. The evaluation will briefly explain the reasons behind the success or shortcomings of the project in delivering its programmed outputs and meeting expected quality standards.

Factors affecting this criterion may include:
Preparation and readiness
Quality of project management and supervision[42]

Achievement of Project Outcomes[43]

The achievement of project outcomes is assessed as performance against the project outcomes as defined in the reconstructed[44] Theory of Change. These are outcomes that are intended to be achieved by the end of the project timeframe and within the project's resource envelope. Emphasis is placed on the achievement of project outcomes that are most important for attaining intermediate states. As with outputs, a table can be used where substantive amendments to the formulation of project outcomes is necessary. The evaluation should report evidence of attribution between UNEP's intervention and the project outcomes. In cases of normative work or where several actors are collaborating to achieve common outcomes, evidence of the nature and magnitude of UNEP's 'substantive contribution' should be included and/or 'credible association' established between project efforts and the project outcomes realised.

Factors affecting this criterion may include:
Quality of project management and supervision

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[40] Note that 'political upheaval' does not include regular national election cycles, but unanticipated unrest or prolonged disruption. The potential delays or changes in political support that are often associated with the regular national election cycle should be part of the project's design and addressed through adaptive management by the project team.

[41] Outputs are the availability (for intended beneficiaries/users) of new products and services and/or gains in knowledge, abilities and awareness of individuals or within institutions (UNEP, 2019)

[42] In some cases 'project management and supervision' will refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping provided by UNEP.

[43] Outcomes are the use (i.e. uptake, adoption, application) of an output by intended beneficiaries, observed as changes in institutions or behavior, attitude or condition (UNEP, 2019)

[44] All submitted UNEP project documents are required to present a Theory of Change with all submitted project designs. The level of 'reconstruction' needed during an evaluation will depend on the quality of this initial TOC, the time that has lapsed between project design and implementation (which may be related to securing and disbursing funds) and the level of any formal changes made to the project design.

Stakeholders' participation and cooperation
Responsiveness to human rights and gender equity
Communication and public awareness

Likelihood of Impact

Based on the articulation of long-lasting effects in the reconstructed TOC *(i.e. from project outcomes, via intermediate states, to impact),* the evaluation will assess the likelihood of the intended, positive impacts becoming a reality. Project objectives or goals should be incorporated in the TOC, possibly as intermediate states or long-lasting impacts. The Evaluation Office's approach to the use of TOC in project evaluations is outlined in a guidance note available on the Evaluation Office website, https://www.unenvironment.org/about-un-environment/evaluation and is supported by an excel-based flow chart, 'Likelihood of Impact Assessment Decision Tree'. Essentially the approach follows a 'likelihood tree' from project outcomes to impacts, taking account of whether the assumptions and drivers identified in the reconstructed TOC held. Any unintended positive effects should also be identified and their causal linkages to the intended impact described.

The evaluation will also consider the likelihood that the intervention may lead, or contribute to, unintended negative effects (e.g. will vulnerable groups such as those living with disabilities and/or women and children, be disproportionally affected by the project?). Some of these potential negative effects may have been identified in the project design as risks or as part of the analysis of Environmental, Social and Economic Safeguards.[45]

The evaluation will consider the extent to which the project has played a catalytic role or has promoted scaling up and/or replication[46] as part of its Theory of Change and as factors that are likely to contribute to longer term impact.

Ultimately UNEP and all its partners aim to bring about benefits to the environment and human well-being. Few projects are likely to have impact statements that reflect such long-term or broad-based changes. However, the evaluation will assess the likelihood of the project to make a substantive contribution to the long-lasting changes represented by the Sustainable Development Goals and/or the intermediate-level results reflected in UNEP's Expected Accomplishments and the strategic priorities of funding partners.

Factors affecting this criterion may include:
Quality of Project Management and Supervision (including adaptive management)
Stakeholders participation and cooperation
Responsiveness to human rights and gender equity
Country ownership and driven-ness
Communication and public awareness

Financial Management

Financial management will be assessed under three themes: *adherence* to UNEP's financial policies and procedures, *completeness* of financial information and *communication* between financial and project management staff. The evaluation will establish the actual spend across the life of the project of funds secured from all donors. This expenditure will be reported, where possible, at output level and will be compared with the approved budget. The evaluation will verify the application of proper financial management standards and adherence to UNEP's financial management policies. Any financial management issues that have affected the timely delivery of the project or the quality of its performance will be highlighted. The evaluation will record where standard financial documentation is missing,

[45] *Further information on Environmental, Social and Economic Safeguards (ESES) can be found at http://wedocs.unep.org/handle/20.500.11822/8718*

[46] *Scaling up refers to approaches being adopted on a much larger scale, but in a very similar context. Scaling up is often the longer-term objective of pilot initiatives. Replication refers to approaches being repeated or lessons being explicitly applied in new/different contexts e.g. other geographic areas, different target group etc. Effective replication typically requires some form of revision or adaptation to the new context. It is possible to replicate at either the same or a different scale.*

inaccurate, incomplete or unavailable in a timely manner. The evaluation will assess the level of communication between the Project/Task Manager and the Fund Management Officer as it relates to the effective delivery of the planned project and the needs of a responsive, adaptive management approach.

Factors affecting this criterion may include:
Preparation and readiness
Quality of project management and supervision

Efficiency

The evaluation will assess the extent to which the project delivered maximum results from the given resources. This will include an assessment of the cost-effectiveness and timeliness of project execution. Focussing on the translation of inputs into outputs, cost-effectiveness is the extent to which an intervention has achieved, or is expected to achieve, its results at the lowest possible cost. Timeliness refers to whether planned activities were delivered according to expected timeframes as well as whether events were sequenced efficiently. The evaluation will also assess to what extent any project extension could have been avoided through stronger project management and identify any negative impacts caused by project delays or extensions. The evaluation will describe any cost or time-saving measures put in place to maximise results within the secured budget and agreed project timeframe and consider whether the project was implemented in the most efficient way compared to alternative interventions or approaches.

The evaluation will give special attention to efforts made by the project teams during project implementation to make use of/build upon pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities[47] with other initiatives, programmes and projects etc. to increase project efficiency. The evaluation will also consider the extent to which the management of the project minimised UNEP's environmental footprint.

The factors underpinning the need for any project extensions will also be explored and discussed. As management or project support costs cannot be increased in cases of 'no cost extensions', such extensions represent an increase in unstated costs to implementing parties.

Factors affecting this criterion may include:
Preparation and readiness (e.g. timeliness)
Quality of project management and supervision
Stakeholders participation and cooperation

Monitoring and Reporting

The evaluation will assess monitoring and reporting across three sub-categories: monitoring design and budgeting, monitoring implementation and project reporting.

i. Monitoring Design and Budgeting

Each project should be supported by a sound monitoring plan that is designed to track progress against SMART[48] results towards the provision of the project's outputs and achievement of project outcomes, including at a level disaggregated by gender, marginalisation or vulnerability, including those living with disabilities.. In particular, the evaluation will assess the relevance and appropriateness of the project indicators as well as the methods used for tracking progress against them as part of conscious results-based management. The evaluation will assess the quality of the design of the monitoring plan as well as the funds allocated for its implementation. The adequacy of resources for mid-term and terminal evaluation/review should be discussed if applicable.

[47] *Complementarity with other interventions during project design, inception or mobilization is considered under Strategic Relevance above.*
[48] *SMART refers to results that are specific, measurable, achievable, relevant and time-oriented. Indicators help to make results measurable.*

Monitoring of Project Implementation

The evaluation will assess whether the monitoring system was operational and facilitated the timely tracking of results and progress towards projects objectives throughout the project implementation period. This assessment will include consideration of whether the project gathered relevant and good quality baseline data that is accurately and appropriately documented. This should include monitoring the representation and participation of disaggregated groups (including gendered, marginalised or vulnerable groups, such as those living with disabilities) in project activities. It will also consider the quality of the information generated by the monitoring system during project implementation and how it was used to adapt and improve project execution, achievement of outcomes and ensure sustainability. The evaluation should confirm that funds allocated for monitoring were used to support this activity.

Project Reporting

UNEP has a centralised project information management system (Anubis) in which project managers upload six-monthly progress reports against agreed project milestones. This information will be provided to the Evaluation Consultant(s) by the Evaluation Manager. Some projects have additional requirements to report regularly to funding partners, which will be supplied by the project team (e.g. the Project Implementation Reviews and Tracking Tool for GEF-funded projects). The evaluation will assess the extent to which both UNEP and donor reporting commitments have been fulfilled. Consideration will be given as to whether reporting has been carried out with respect to the effects of the initiative on disaggregated groups.

Factors affecting this criterion may include:
Quality of project management and supervision
Responsiveness to human rights and gender equity (e.g disaggregated indicators and data)

Sustainability

Sustainability[49] is understood as the probability of project outcomes being maintained and developed after the close of the intervention. The evaluation will identify and assess the key conditions or factors that are likely to undermine or contribute to the endurance of achieved project outcomes (ie. 'assumptions' and 'drivers'). Some factors of sustainability may be embedded in the project design and implementation approaches while others may be contextual circumstances or conditions that evolve over the life of the intervention. Where applicable an assessment of bio-physical factors that may affect the sustainability of project outcomes may also be included.

i. Socio-political Sustainability

The evaluation will assess the extent to which social or political factors support the continuation and further development of project outcomes. It will consider the level of ownership, interest and commitment among government and other stakeholders to take the project achievements forwards. In particular the evaluation will consider whether individual capacity development efforts are likely to be sustained.

Financial Sustainability

Some project outcomes, once achieved, do not require further financial inputs, e.g. the adoption of a revised policy. However, in order to derive a benefit from this outcome further management action may still be needed e.g. to undertake actions to enforce the policy. Other project outcomes may be dependent on a continuous flow of action that needs to be resourced for them to be maintained, e.g. continuation of a new resource management approach. The evaluation will assess the extent to which project outcomes are dependent on future funding for the benefits they bring to be sustained. Secured future funding is only relevant to financial sustainability where the project's outcomes have been extended into a future project

[49] *As used here, 'sustainability' means the long-term maintenance of outcomes and consequent impacts, whether environmental or not. This is distinct from the concept of sustainability in the terms 'environmental sustainability' or 'sustainable development', which imply 'not living beyond our means' or 'not diminishing global environmental benefits' (GEF STAP Paper, 2019, Achieving More Enduring Outcomes from GEF Investment)*

phase. Even where future funding has been secured, the question still remains as to whether the project outcomes are financially sustainable.

Institutional Sustainability

The evaluation will assess the extent to which the sustainability of project outcomes (especially those relating to policies and laws) is dependent on issues relating to institutional frameworks and governance. It will consider whether institutional achievements such as governance structures and processes, policies, sub-regional agreements, legal and accountability frameworks etc. are robust enough to continue delivering the benefits associated with the project outcomes after project closure. In particular, the evaluation will consider whether institutional capacity development efforts are likely to be sustained.

Factors affecting this criterion may include:
Stakeholders participation and cooperation
Responsiveness to human rights and gender equity (e.g. where interventions are not inclusive, their sustainability may be undermined)
Communication and public awareness
Country ownership and driven-ness

Factors Affecting Project Performance and Cross-Cutting Issues

(These factors are rated in the ratings table but are discussed within the Main Evaluation Report as cross-cutting themes as appropriate under the other evaluation criteria, above. Where the issues have not been addressed under other evaluation criteria, the consultant(s) will provide summary sections under the following headings.)

i. Preparation and Readiness

This criterion focuses on the inception or mobilisation stage of the project (i.e. the time between project approval and first disbursement). The evaluation will assess whether appropriate measures were taken to either address weaknesses in the project design or respond to changes that took place between project approval, the securing of funds and project mobilisation. In particular the evaluation will consider the nature and quality of engagement with stakeholder groups by the project team, the confirmation of partner capacity and development of partnership agreements as well as initial staffing and financing arrangements. *(Project preparation is included in the template for the assessment of Project Design Quality).*

Quality of Project Management and Supervision

In some cases 'project management and supervision' will refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping and supervision provided by UNEP.

The evaluation will assess the effectiveness of project management with regard to: providing leadership towards achieving the planned outcomes; managing team structures; maintaining productive partner relationships (including Steering Groups etc.); maintaining project relevance within changing external and strategic contexts; communication and collaboration with UNEP colleagues; risk management; use of problem-solving; project adaptation and overall project execution. Evidence of adaptive management should be highlighted.

Stakeholder Participation and Cooperation

Here the term 'stakeholder' should be considered in a broad sense, encompassing all project partners, duty bearers with a role in delivering project outputs and target users of project outputs and any other collaborating agents external to UNEP and the Executing Agency. The assessment will consider the quality and effectiveness of all forms of communication and consultation with stakeholders throughout the project life and the support given to maximise collaboration and coherence between various stakeholders,

including sharing plans, pooling resources and exchanging learning and expertise. The inclusion and participation of all differentiated groups, including gender groups should be considered.

Responsiveness to Human Rights and Gender Equity

The evaluation will ascertain to what extent the project has applied the UN Common Understanding on the human rights-based approach (HRBA) and the UN Declaration on the Rights of Indigenous People. Within this human rights context the evaluation will assess to what extent the intervention adheres to UNEP's Policy and Strategy for Gender Equality and the Environment[50].

In particular the evaluation will consider to what extent project-implementation and monitoring have taken into consideration: (i) possible inequalities (especially those related to gender) in access to, and the control over, natural resources; (ii) specific vulnerabilities of disadvantaged groups (especially women, youth and children and those living with disabilities) to environmental degradation or disasters; and (iii) the role of disadvantaged groups (especially those related to gender) in mitigating or adapting to environmental changes and engaging in environmental protection and rehabilitation.

Environmental and Social Safeguards

UNEP projects address environmental and social safeguards primarily through the process of environmental and social screening at the project approval stage, risk assessment and management (avoidance, minimization, mitigation or, in exceptional cases, offsetting) of potential environmental and social risks and impacts associated with project and programme activities. The evaluation will confirm whether UNEP requirements[51] were met to: *review* risk ratings on a regular basis; *monitor* project implementation for possible safeguard issues; *respond* (where relevant) to safeguard issues through risk avoidance, minimization, mitigation or offsetting and r*eport* on the implementation of safeguard management measures taken. UNEP requirements for proposed projects to be screened for any safeguarding issues; for sound environmental and social risk assessments to be conducted and initial risk ratings to be assigned are evaluated above under Quality of Project Design).

The evaluation will also consider the extent to which the management of the project minimised UNEP's environmental footprint.

Country Ownership and Driven-ness

The evaluation will assess the quality and degree of engagement of government / public sector agencies in the project. While there is some overlap between Country Ownership and Institutional Sustainability, this criterion focuses primarily on the forward momentum of the intended projects results, ie. either a) moving forwards from outputs to project outcomes or b) moving forward from project outcomes towards intermediate states. The evaluation will consider the involvement not only of those directly involved in project execution and those participating in technical or leadership groups, but also those official representatives whose cooperation is needed for change to be embedded in their respective institutions and offices (e.g. representatives from multiple sectors or relevant ministries beyond Ministry of Environment). This factor is concerned with the level of ownership generated by the project over outputs and outcomes and that is necessary for long term impact to be realised. Ownership should extend to all gendered and marginalised groups.

Communication and Public Awareness

The evaluation will assess the effectiveness of: a) communication of learning and experience sharing between project partners and interested groups arising from the project during its life and b) public

[50] *The Evaluation Office notes that Gender Equality was first introduced in the UNEP Project Review Committee Checklist in 2010 and, therefore, provides a criterion rating on gender for projects approved from 2010 onwards. Equally, it is noted that policy documents, operational guidelines and other capacity building efforts have only been developed since then and have evolved over time. https://wedocs.unep.org/bitstream/handle/20.500.11822/7655/-Gender_equality_and_the_environment_Policy_and_strategy-2015Gender_equality_and_the_environment_policy_and_strategy.pdf.pdf?sequence=3&isAllowed=y*

[51] *For the review of project concepts and proposals, the Safeguard Risk Identification Form (SRIF) was introduced in 2019 and replaced the Environmental, Social and Economic Review note (ESERN), which had been in place since 2016. In GEF projects safeguards have been considered in project designs since 2011.*

awareness activities that were undertaken during the implementation of the project to influence attitudes or shape behaviour among wider communities and civil society at large. The evaluation should consider whether existing communication channels and networks were used effectively, including meeting the differentiated needs of gendered or marginalised groups, and whether any feedback channels were established. Where knowledge sharing platforms have been established under a project the evaluation will comment on the sustainability of the communication channel under either socio-political, institutional or financial sustainability, as appropriate.

Section 3. EVALUATION APPROACH, METHODS AND DELIVERABLES

The Terminal Evaluation will be an in-depth evaluation using a participatory approach whereby key stakeholders are kept informed and consulted throughout the evaluation process. Both quantitative and qualitative evaluation methods will be used as appropriate to determine project achievements against the expected outputs, outcomes and impacts. It is highly recommended that the consultant(s) maintains close communication with the project team and promotes information exchange throughout the evaluation implementation phase in order to increase their (and other stakeholder) ownership of the evaluation findings. Where applicable, the consultant(s) will provide a geo-referenced map that demarcates the area covered by the project and, where possible, provide geo-reference photographs of key intervention sites (e.g. sites of habitat rehabilitation and protection, pollution treatment infrastructure, etc.)

The findings of the evaluation will be based on the following: [This section should be edited for each evaluation]

(a) A **desk review** of:

Relevant background documentation;
Project design documents (including minutes of the project design review meeting at approval); Annual Work Plans and Budgets or equivalent, revisions to the project (Project Document Supplement), the logical framework and its budget;
Project reports such as six-monthly progress and financial reports, progress reports from collaborating partners, meeting minutes, relevant correspondence and including the Project Implementation Reviews (PIRs); supervision mission reports, etc.;
GEF Tracking Tool
Steering Committee Minutes;
Quarterly expenditure reports, co-financing records, budget revisions,
Technical reports on project Outputs, studies, publications, outreach material, etc.;
Terminal Report (or draft) of the project including final project output, audit report, and final financial statements;
Other reports deemed useful to the terminal evaluation of the project.

Interviews (individual or in group) with:

UNEP Task Manager (TM);
Project Management Unit, including the Project Manager within the Executing Agency;
UNEP U4E Initiative Programme Manager and U4E international experts;
UNEP Fund Management Officer (FMO);
Portfolio Manager and Sub-Programme Coordinator, where appropriate;
Project partners, (listed in para 30);
Relevant resource persons;
Representatives from civil society and specialist groups (such as trade associations, consumer associations, etc).

Surveys (in case of trave restrictions occasioned by the COVID-19 Pandemic, online survey may be particularly useful as a data collection method).

Field visits (to be determined based on the COVID-19 situation in the country and related travel/meeting restrictions)

Other data collection tools as may be deemed useful.

Evaluation Deliverables and Review Procedures

The evaluation consultant will prepare:

Inception Report: (see Annex 1 for links to all templates, tables and guidance notes) containing an assessment of project design quality, a draft reconstructed Theory of Change of the project, project stakeholder analysis, evaluation framework and a tentative evaluation schedule.

Preliminary Findings Note: typically in the form of a PowerPoint presentation, the sharing of preliminary findings is intended to support the participation of the project team, act as a means to ensure all information sources have been accessed and provide an opportunity to verify emerging findings. In the case of highly strategic project/portfolio evaluations or evaluations with an Evaluation Reference Group, the preliminary findings may be presented as a word document for review and comment.

Draft and Final Evaluation Report: (see links in Annex 1) containing an executive summary that can act as a stand-alone document; detailed analysis of the evaluation findings organised by evaluation criteria and supported with evidence; lessons learned and recommendations and an annotated ratings table.

An **Evaluation Brief,** (a 2-page overview of the evaluand and key evaluation findings) for wider dissemination through the UNEP website may be required. This will be discussed with the Evaluation Manager no later than during the finalization of the Inception Report.

Review of the draft evaluation report. The evaluation team will submit a draft report to the Evaluation Manager and revise the draft in response to their comments and suggestions. Once a draft of adequate quality has been peer-reviewed and accepted, the Evaluation Manager will share the cleared draft report with the Task Manager and Project Manager, who will alert the Evaluation Manager in case the report contains any blatant factual errors. The Evaluation Manager will then forward revised draft report (corrected by the evaluation consultant where necessary) to other project stakeholders, for their review and comments. Stakeholders may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions as well as providing feedback on the proposed recommendations and lessons. Any comments or responses to draft reports will be sent to the Evaluation Manager for consolidation. The Evaluation Manager will provide all comments to the evaluation consultant for consideration in preparing the final report, along with guidance on areas of contradiction or issues requiring an institutional response.

Based on a careful review of the evidence collated by the evaluation consultants and the internal consistency of the report, the Evaluation Manager will provide an assessment of the ratings in the final evaluation report. Where there are differences of opinion between the evaluator and the Evaluation Manager on project ratings, both viewpoints will be clearly presented in the final report. The Evaluation Office ratings will be considered the final ratings for the project.

The Evaluation Manager will prepare a **quality assessment** of the first draft of the main evaluation report, which acts as a tool for providing structured feedback to the evaluation consultants. The quality of the final report will be assessed and rated against the criteria specified in template listed in Annex 1 and this assessment will be appended to the Final Evaluation Report.

At the end of the evaluation process, the Evaluation Office will prepare a **Recommendations Implementation Plan** in the format of a table, to be completed and updated at regular intervals by the Task Manager. The Evaluation Office will track compliance against this plan on a six-monthly basis for a maximum of 18 months.

The Evaluation Consultant

For this evaluation, one independent consultant will work under the overall responsibility of the Evaluation Office represented by an Evaluation Manager (Pauline Marima), in consultation with the UNEP Task

Manager (Ruth Zugman Do Coutto), UNEP consultant (Julien Lheureux), Climate & Energy Branch Fund Management Officer (Amanda Lees), Climate Mitigation Unit Fund Management Officer (Leena Darlington), Head of Energy & Climate Branch (Mark Radka), Head of the UNEP U4E Initiative (Paul Kellett), and the Coordinator of UNEP Sub-programme on Climate Change (Niklas Hagelberg). The consultant will liaise with the Evaluation Manager on any procedural and methodological matters related to the evaluation. It is, however, the consultant's individual responsibility to arrange for their travel, visa, obtain documentary evidence, plan meetings with stakeholders, organize online surveys, and any other logistical matters related to the assignment. The UNEP Task Manager and project teams will, where possible, provide logistical support (formal introductions, meetings etc.) allowing the consultant to conduct the evaluation as efficiently and independently as possible.

The consultant will be hired the over the period **October 2020 to May 2021** during which time the evaluation deliverables listed in Section 11 'Evaluation Deliverables' above should be submitted.

S/he should have: an advanced university degree, at least 5 years' experience in the area of climate change, energy, and preferably energy efficiency in lighting, and previous experience in evaluation of programs and projects. Knowledge of **English** and **French** language along with excellent writing skills in English is required. Experience in managing partnerships, knowledge management and communication is desirable for all evaluation consultants.

The consultant will be responsible, in close consultation with the Evaluation Office of UNEP, for overall management of this evaluation and timely delivery of the outputs described in Section 11 Evaluation Deliverables, above. The consultant will ensure that all evaluation criteria and questions are adequately covered. Detailed guidelines for the Evaluation Consultant can be found on the Evaluation Office of UNEP website: (http://web.unep.org/evaluation/working-us/working-us).

Specific Responsibilities:

In close consultation with the Evaluation Manager, the evaluation consultant will be responsible for the overall management of the evaluation and timely provision of its outputs, data collection and analysis and report-writing. More specifically:

Inception phase of the evaluation, including:
preliminary desk review and introductory interviews with project staff;
draft the reconstructed Theory of Change of the project;
prepare the evaluation framework;
develop the desk review and interview protocols;
draft the survey protocols (if relevant);
develop and present criteria for country and/or site selection for the evaluation mission;
plan the evaluation schedule;
prepare the Inception Report, incorporating comments until approved by the Evaluation Manager

Data collection and analysis phase of the evaluation, including:
conduct further desk review and in-depth interviews with project implementing and executing agencies, project partners and project stakeholders;
(where appropriate and agreed) conduct an evaluation mission in the project country, visit the project locations, interview project partners and stakeholders, including a good representation of local communities. Ensure independence of the evaluation and confidentiality of evaluation interviews.
regularly report back to the Evaluation Manager on progress and inform of any possible problems or issues encountered and;
keep the Project/Task Manager informed of the evaluation progress.

Reporting phase, including:
draft the Main Evaluation Report, ensuring that the evaluation report is complete, coherent and consistent with the Evaluation Manager guidelines both in substance and style;

liaise with the Evaluation Manager on comments received and finalize the Main Evaluation Report, ensuring that comments are taken into account until approved by the Evaluation Manager
prepare a Response to Comments annex for the main report, listing those comments not accepted by the evaluation consultant and indicating the reason for the rejection; and
(where agreed with the Evaluation Manager) prepare an Evaluation Brief (2-page summary of the evaluand and the key evaluation findings and lessons)

Managing relations, including:
maintain a positive relationship with evaluation stakeholders, ensuring that the evaluation process is as participatory as possible but at the same time maintains its independence;
communicate in a timely manner with the Evaluation Manager on any issues requiring its attention and intervention.

Schedule of the evaluation

The table below presents the tentative schedule for the evaluation.

Table 3. Tentative schedule for the evaluation

Milestone	Tentative Dates
Evaluation Initiation Meeting	October 2020
Inception Report	November 2020
Evaluation Mission	November – December 2020
Telephone interviews, surveys etc.	November 2020 – February 2021
Presentation on preliminary findings	February 2021
Draft report to Evaluation Manager (and Peer Reviewer)	February 2021
Draft Report shared with UNEP Project Manager and team	March 2021
Draft Report shared with wider group of stakeholders	April 2021
Final Report	May 2021
Final Report shared with all respondents	May 2021

Contractual Arrangements

Evaluation consultant will be selected and recruited by the Evaluation Office of UNEP under an individual Special Service Agreement (SSA) on a "fees only" basis (see below). By signing the service contract with UNEP /UNON, the consultant certifies that they have not been associated with the design and implementation of the project in any way which may jeopardize their independence and impartiality towards project achievements and project partner performance. In addition, they will not have any future interests (within six months after completion of the contract) with the project's executing or implementing units. All consultants are required to sigh the Code of Conduct Agreement Form.

Fees will be paid on an instalment basis, paid on acceptance by the Evaluation Manager of expected key deliverables. The schedule of payment is as follows:

Table 5: Schedule of Payment for the consultant:

Deliverable	Percentage Payment
Approved Inception Report (document 9 in Annex 1)	30%
Approved Draft Main Evaluation Report (document 16 in Annex 1)	40%

Approved Final Main Evaluation Report	30%

Fees only contracts: Air tickets will be purchased by UNEP and 75% of the Daily Subsistence Allowance for each authorised travel mission will be paid up front. Local in-country travel will only be reimbursed where agreed in advance with the Evaluation Manager and on the production of acceptable receipts. Terminal expenses and residual DSA entitlements (25%) will be paid after mission completion.

The consultant may be provided with access to UNEP's information management system and if such access is granted, the consultants agree not to disclose information from that system to third parties beyond information required for, and included in, the evaluation report.

In case the consultant is not able to provide the deliverables in accordance with these guidelines, and in line with the expected quality standards by the UNEP Evaluation Office, payment may be withheld at the discretion of the Director of the Evaluation Office until the consultant has improved the deliverables to meet UNEP's quality standards.

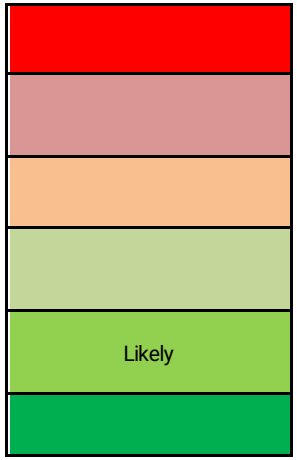
If the consultant fails to submit a satisfactory final product to UNEP in a timely manner, i.e. before the end date of their contract, the Evaluation Office reserves the right to employ additional human resources to finalize the report, and to reduce the consultants' fees by an amount equal to the additional costs borne by the Evaluation Office to bring the report up to standard.

Annex VI: Likelihood of Impact Decision Tree

		Likelihood of impact						Likelihood of impact					
		HU	U	MU	ML	L	HL	HU	U	MU	ML	L	HL
Drivers to support transition from Outputs to Project Outcomes are …	**Partially in place**	Not in place	Partially in place	Partially in place	In place	In place	In place		1	1			
Assumptions for the change process from Outputs to Project Outcomes …	**Partially hold**	Do not hold	Partially hold	Partially hold	Hold	Hold	Hold		1	1			
Proportion of Project Outcomes fully or partially achieved?	**Some**	None	Some	Some	Some	Some	All		1	1	1	1	
Which Project Outcomes? (the most important to attain intermediate states / impact or others)	**The most important to attain intermediate states/impacts**	n/a	Others	Others	Most important	Most important	n/a				1	1	
Level of Project Outcome achievement?	**Partial**	n/a	Partial	Full	Partial	Full	Full		1		1		
Drivers to support transition from Project Outcome(s) to Intermediate States are …	**Partially in place**	n/a	Not in place	Not in place	Partially in place	Partially in place	In place				1	1	
Assumptions for the change process from Project Outcomes to Intermediate States …	**Hold**	n/a	Do not hold	Do not hold	Partially hold	Hold	Hold					1	1

Proportion of Intermediate States achieved?	**All**	n/a	n/a	None	None	Some	All				1
Level of Intermediate State achievement?	**Full**	n/a	n/a	n/a	n/a	Partial	Full				1
Drivers to support transition from Intermediate States to Impact are …	**Partially in place**	n/a	Not in place	Not in place	Not in place	Partially	In place			1	
Assumptions for the change process from Intermediate States to Impact …	**Hold**	n/a	Do not hold	Do not hold	Do not hold	Partially	Hold				1
								0	4	3	4	5	4

OVERALL RATING



Annex VII: Quality Assessment of the Evaluation Report

Evaluand Title:

Terminal Review of the UNEP-GEF Project "Promotion of Energy Efficiency in Public Lighting in Côte d'Ivoire" (GEF ID 3876)

All UNEP evaluations are subject to a quality assessment by the Evaluation Office. This is an assessment of the quality of the evaluation product (i.e. evaluation report) and is dependent on more than just the consultant's efforts and skills.

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
Quality of the Executive Summary: The Summary should be able to stand alone as an accurate summary of the main evaluation product. It should include a concise overview of the evaluation object; clear summary of the evaluation objectives and scope; overall evaluation rating of the project and key features of performance (strengths and weaknesses) against exceptional criteria (plus reference to where the evaluation ratings table can be found within the report); summary of the main findings of the exercise, including a synthesis of main conclusions (which include a summary response to key strategic evaluation questions), lessons learned and recommendations.	Final report: The executive summary is too long. All the review criteria are summarized, there is no synthesis of key features of performance. The strategic questions are not answered.	**4**
I. Introduction A brief introduction should be given identifying, where possible and relevant, the following: institutional context of the project (sub-programme, Division, regions/countries where implemented) and coverage of the evaluation; date of PRC approval and project document signature); results frameworks to which it contributes (e.g. Expected Accomplishment in POW); project duration and start/end dates; number of project phases (where appropriate); implementing partners; total secured budget and whether the project has been evaluated in the past (e.g. mid-term, part of a synthesis evaluation, evaluated by another agency etc.) Consider the extent to which the introduction includes a concise statement of the purpose of the evaluation and the key intended audience for the findings?	Final report: All required elements are covered in the introduction.	**5**
II. Evaluation Methods A data collection section should include: a description of evaluation methods and information sources used, including the number and type of respondents; justification for methods used (e.g. qualitative/ quantitative; electronic/face-to-face); any selection criteria used to identify respondents, case studies or sites/countries visited; strategies used to increase stakeholder engagement and consultation; details of how data were verified (e.g. triangulation, review by stakeholders etc.). Methods to ensure that potentially excluded groups (excluded by gender, vulnerability or marginalisation) are reached and their experiences captured effectively, should be made explicit in this section. The methods used to analyse data (e.g. scoring; coding; thematic analysis etc.) should be described. It should also address evaluation limitations such as: low or imbalanced response rates across different groups; gaps in	Final report: Most of the required elements are presented. More details could have been given about the choice of the potential respondents, especially for the members of the households who participated in the pilot project.	**4**

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
documentation; extent to which findings can be either generalised to wider evaluation questions or constraints on aggregation/disaggregation; any potential or apparent biases; language barriers and ways they were overcome. Ethics and human rights issues should be highlighted including: how anonymity and confidentiality were protected and strategies used to include the views of marginalised or potentially disadvantaged groups and/or divergent views. Is there an ethics statement?		
III. The Project This section should include: • *Context:* Overview of the main issue that the project is trying to address, its root causes and consequences on the environment and human well-being (i.e. synopsis of the problem and situational analyses). • *Results framework*: Summary of the project's results hierarchy as stated in the ProDoc (or as officially revised) • *Stakeholders:* Description of groups of targeted stakeholders organised according to relevant common characteristics • *Project implementation structure and partners:* A description of the implementation structure with diagram and a list of key project partners • *Changes in design during implementation:* Any key events that affected the project's scope or parameters should be described in brief in chronological order • *Project financing*: Completed tables of: (a) budget at design and expenditure by components (b) planned and actual sources of funding/co-financing	Final report: Satisfactory section despite limited elements on the co-financing.	**5**
IV. Theory of Change The *TOC at Evaluation* should be presented clearly in both diagrammatic and narrative forms. Clear articulation of each major causal pathway is expected, (starting from outputs to long term impact), including explanations of all drivers and assumptions as well as the expected roles of key actors. This section should include a description of how the *TOC at Evaluation*[52] was designed (who was involved etc.) and applied to the context of the project? Where the project results as stated in the project design documents (or formal revisions of the project design) are not an accurate reflection of the project's intentions or do not follow UNEP's definitions of different results levels, project results may need to be re-phrased or reformulated. In such cases, a summary of the project's results hierarchy should be presented for: a) the results as stated in the approved/revised Prodoc logframe/TOC and b) as formulated in the *TOC at Evaluation*. *The two results hierarchies should be presented as a two-column table to show clearly that, although wording and placement may have changed, the results 'goal posts' have not been 'moved'.* Check that the project's effect on equality (i.e. promoting human rights, gender equality and inclusion of those living with disabilities	Final report: Inconsistencies between the reformation justification table and the reconstructed TOC have been corrected. The diagram is visually ok but does not include all the drivers and assumptions mentioned in the causal pathways narrative. The causal pathways are detailed at every result statements level. The reformulation of outputs and outcomes are not fully in line with UNEP result definitions. Some outputs are still formulated as completed activities and the revised outcome 2 do not refer to a behavioral change for instance.	**4**

[52] During the Inception Phase of the evaluation process a *TOC at Evaluation Inception* is created based on the information contained in the approved project documents (these may include either logical framework or a TOC or narrative descriptions), formal revisions and annual reports etc. During the evaluation process this TOC is revised based on changes made during project intervention and becomes the *TOC at Evaluation*.

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
and/or belonging to marginalised/vulnerable groups) has been included within the TOC as a general driver or assumption where there was no dedicated result within the results framework. If an explicit commitment on this topic was made within the project document then the driver/assumption should also be specific to the described intentions.		
V. Key Findings **A. Strategic relevance:** This section should include an assessment of the project's relevance in relation to UNEP's mandate and its alignment with UNEP's policies and strategies at the time of project approval. An assessment of the complementarity of the project at design (or during inception/mobilisation[53]), with other interventions addressing the needs of the same target groups should be included. Consider the extent to which all four elements have been addressed: i. Alignment to the UNEP Medium Term Strategy (MTS) and Programme of Work (POW) ii. Alignment to Donor/GEF Strategic Priorities iii. Relevance to Regional, Sub-regional and National Environmental Priorities iv. Complementarity with Existing Interventions	Final report: The Complementarity with Existing Interventions sub-criterion was not understood properly. What is presented here does not assess how well the project, either at design stage or during the project inception or mobilization , took account of ongoing and planned initiatives that address similar needs of the same target groups. What is presented here under this sub-criterion is a list of initiatives with similar objectives. This list would be relevant for the sub-criterion "Relevance to Regional, Sub-regional and National Environmental Priorities".	**4**
B. Quality of Project Design To what extent are the strength and weaknesses of the project design effectively summarized?	Final report: Satisfactory section	**5**
C. Nature of the External Context For projects where this is appropriate, key external features of the project's implementing context that limited the project's performance (e.g. conflict, natural disaster, political upheaval[54]), and how they affected performance, should be described.	Final report: Discussion about the political turmoil could have been more developed, and a few words about the COVID-19 could have been added.	4
D. Effectiveness **(i) Outputs and Project Outcomes:** How well does the report present a well-reasoned, complete and evidence-based assessment of the a) availability of outputs, and b) achievement of project outcomes? How convincing is the discussion of attribution and contribution, as well as the constraints to attributing effects to the intervention. The effects of the intervention on differentiated groups, including those with specific needs due to gender, vulnerability or marginalisation, should be discussed explicitly.	Final report: The availability of outputs is properly discussed, nevertheless more quantitative details would have added value (number of participants to workshops, gender ratio etc.). Discussions of attribution and contribution should have been led about the achievements of outcomes. The sources of some evidence are missing to justify the rating of some outcomes.	**3**

[53] A project's inception or mobilization period is understood as the time between project approval and first disbursement. Complementarity during project implementation is considered under Efficiency, see below.
[54] Note that 'political upheaval' does not include regular national election cycles, but unanticipated unrest or prolonged disruption. The potential delays or changes in political support that are often associated with the regular national election cycle should be part of the project's design and addressed through adaptive management of the project team.

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
	The following statement is weak for instance: "*the PEEPL project considers that some level of awareness creation among the Ivorian population about energy efficient lighting products had been achieved because there is evidence in the market that generally, the sale of energy efficient lamps had increased*". The ratings of the achievements of outcomes should be considered with precaution.	
(ii) Likelihood of Impact: How well does the report present an integrated analysis, guided by the causal pathways represented by the TOC, of all evidence relating to likelihood of impact? How well are change processes explained and the roles of key actors, as well as drivers and assumptions, explicitly discussed? Any unintended negative effects of the project should be discussed under Effectiveness, especially negative effects on disadvantaged groups.	Final report: The evidence presented to assess the drivers and assumptions are limited.	3
E. Financial Management This section should contain an integrated analysis of all dimensions evaluated under financial management and include a completed 'financial management' table. Consider how well the report addresses the following: • *Adherence* to UNEP's financial policies and procedures • *completeness* of financial information, including the actual project costs (total and per activity) and actual co-financing used • *communication* between financial and project management staff 32.	Final report: The communication sub-section is unclear. Evidence should be made more explicit.	**4**
F. Efficiency To what extent, and how well, does the report present a well-reasoned, complete and evidence-based assessment of efficiency under the primary categories of cost-effectiveness and timeliness including: • Implications of delays and no cost extensions • Time-saving measures put in place to maximise results within the secured budget and agreed project timeframe • Discussion of making use during project implementation of/building on pre-existing institutions, agreements and partnerships, data sources, synergies and complementarities with other initiatives, programmes and projects etc. • The extent to which the management of the project minimised UNEP's environmental footprint.	Final report: This section is well detailed	**5**

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
G. Monitoring and Reporting How well does the report assess: • Monitoring design and budgeting *(including SMART results with measurable indicators, resources for MTE/R etc.)* • Monitoring of project implementation *(including use of monitoring data for adaptive management)* • Project reporting *(e.g. PIMS and donor reports)*	Final report: This section meets minimum requirements	**4**
H. Sustainability How well does the evaluation identify and assess the key conditions or factors that are likely to undermine or contribute to the persistence of achieved project outcomes including: • Socio-political Sustainability • Financial Sustainability • Institutional Sustainability	Final report: Satisfactory section	5
I. Factors Affecting Performance These factors are <u>not</u> discussed in stand-alone sections but are **integrated in criteria A-H as appropriate**. Note that these are described in the Evaluation Criteria Ratings Matrix. To what extent, and how well, does the evaluation report cover the following cross-cutting themes: • Preparation and readiness • Quality of project management and supervision[55] • Stakeholder participation and co-operation • Responsiveness to human rights and gender equity • Environmental and social safeguards • Country ownership and driven-ness • Communication and public awareness	Final report: Satisfactory section	5
VI. Conclusions and Recommendations **i. Quality of the conclusions:** The key strategic questions should be clearly and succinctly addressed within the conclusions section. It is expected that the conclusions will highlight the main strengths and weaknesses of the project and connect them in a compelling story line. Human rights and gender dimensions of the intervention (e.g. how these dimensions were considered, addressed or impacted on) should be discussed explicitly. Conclusions, as well as lessons and recommendations, should be consistent with the evidence presented in the main body of the report.	Final report: Answers to the strategic questions should be explicitly given.	**4**
ii) Quality and utility of the lessons: Both positive and negative lessons are expected and duplication with recommendations should be avoided. Based on explicit evaluation findings, lessons should be rooted in real project experiences or derived from problems encountered and mistakes made that should be avoided in the future. Lessons are intended to be adopted any time they are deemed to be relevant in the future and must have the potential for wider application (replication and generalization) and use and should briefly describe the context from which they are derived and those contexts in which they may be useful.	Final report: The lessons learned are well presented and justified.	**5**
iii) Quality and utility of the recommendations:	Final report:	**4**

[55] In some cases 'project management and supervision' will refer to the supervision and guidance provided by UNEP to implementing partners and national governments while in others, specifically for GEF funded projects, it will refer to the project management performance of the executing agency and the technical backstopping provided by UNEP.

	UNEP Evaluation Office Comments	Final Report Rating
Substantive Report Quality Criteria		
To what extent are the recommendations proposals for specific action to be taken by identified people/position-holders to resolve concrete problems affecting the project or the sustainability of its results? They should be feasible to implement within the timeframe and resources available (including local capacities) and specific in terms of who would do what and when. At least one recommendation relating to strengthening the human rights and gender dimensions of UNEP interventions, should be given. Recommendations should represent a measurable performance target in order that the Evaluation Office can monitor and assess compliance with the recommendations. In cases where the recommendation is addressed to a third party, compliance can only be monitored and assessed where a contractual/legal agreement remains in place. Without such an agreement, the recommendation should be formulated to say that UNEP project staff should pass on the recommendation to the relevant third party in an effective or substantive manner. The effective transmission by UNEP of the recommendation will then be monitored for compliance. Where a new project phase is already under discussion or in preparation with the same third party, a recommendation can be made to address the issue in the next phase.	3 recommendations are presented. They are actionable even though they do not have a measurable performance target.	
VII. Report Structure and Presentation Quality		
i) Structure and completeness of the report: To what extent does the report follow the Evaluation Office guidelines? Are all requested Annexes included and complete?	Final report: The report follows Evaluation Office guidelines. There is no Annexes about co-financing data and no Evaluation framework.	**4**
ii) **Quality of writing and formatting:** Consider whether the report is well written (clear English language and grammar) with language that is adequate in quality and tone for an official document? Do visual aids, such as maps and graphs convey key information? Does the report follow Evaluation Office formatting guidelines?	Final report: The report is well written with an adequate tone and follows Evaluation office formatting guidelines.	5
OVERALL REPORT QUALITY RATING		**4.3**

A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1. The overall quality of the evaluation report is calculated by taking the mean score of all rated quality criteria.

At the end of the evaluation, compliance of the evaluation process against the agreed standard procedures is assessed, based on the table below. *All questions with negative compliance must be explained further in the table below.*

Evaluation Process Quality Criteria	Compliance	
	Yes	No
Independence:		
1. Were the Terms of Reference drafted and finalised by the Evaluation Office?	X	
2. Were possible conflicts of interest of proposed Evaluation Consultant(s) appraised and addressed in the final selection?	X	
3. Was the final selection of the Evaluation Consultant(s) made by the Evaluation Office?	X	
4. Was the evaluator contracted directly by the Evaluation Office?	X	
5. Was the Evaluation Consultant given direct access to identified external stakeholders in order to adequately present and discuss the findings, as appropriate?	X	
6. Did the Evaluation Consultant raise any concerns about being unable to work freely and without interference or undue pressure from project staff or the Evaluation Office?		X
7. If Yes to Q6: Were these concerns resolved to the mutual satisfaction of both the Evaluation Consultant and the Evaluation Manager?		
Financial Management:		
8. Was the evaluation budget approved at project design available for the evaluation?	X	
9. Was the final evaluation budget agreed and approved by the Evaluation Office?	X	
10. Were the agreed evaluation funds readily available to support the payment of the evaluation contract throughout the payment process?	X	
Timeliness:		
11. If a Terminal Evaluation: Was the evaluation initiated within the period of six months before or after project operational completion? Or, if a Mid Term Evaluation: Was the evaluation initiated within a six-month period prior to the project's mid-point?	X	
12. Were all deadlines set in the Terms of Reference respected, as far as unforeseen circumstances allowed?		X
13. Was the inception report delivered and reviewed/approved prior to commencing any travel?		
Project's engagement and support:		
14. Did the project team, Sub-Programme Coordinator and identified project stakeholders provide comments on the evaluation Terms of Reference?	X	
15. Did the project make available all required/requested documents?	X	
16. Did the project make all financial information (and audit reports if applicable) available in a timely manner and to an acceptable level of completeness?	X	
17. Was adequate support provided by the project to the evaluator(s) in planning and conducting evaluation missions?	X	
18. Was close communication between the Evaluation Consultant, Evaluation Office and project team maintained throughout the evaluation?	X	
19. Were evaluation findings, lessons and recommendations adequately discussed with the project team for ownership to be established?	X	
20. Did the project team, Sub-Programme Coordinator and any identified project stakeholders provide comments on the draft evaluation report?	X	
Quality assurance:		
21. Were the evaluation Terms of Reference, including the key evaluation questions, peer-reviewed?	X	
22. Was the TOC in the inception report peer-reviewed?	X	
23. Was the quality of the draft/cleared report checked by the Evaluation Manager and Peer Reviewer prior to dissemination to stakeholders for comments?	X	
24. Did the Evaluation Office complete an assessment of the quality of both the draft and final reports?	X	
Transparency:		
25. Was the draft evaluation report sent directly by the Evaluation Consultant to the Evaluation Office?	X	
26. Did the Evaluation Manager disseminate (or authorize dissemination) of the cleared	X	

draft report to the project team, Sub-Programme Coordinator and other key internal personnel (including the Reference Group where appropriate) to solicit formal comments?		
27. Did the Evaluation Manager disseminate (or authorize dissemination) appropriate drafts of the report to identified external stakeholders, including key partners and funders, to solicit formal comments?	**X**	
28. Were all stakeholder comments to the draft evaluation report sent directly to the Evaluation Office	**X**	
29. Did the Evaluation Consultant(s) respond adequately to all factual corrections and comments?	**X**	
30. Did the Evaluation Office share substantive comments and Evaluation Consultant responses with those who commented, as appropriate?	**X**	

Provide comments / explanations / mitigating circumstances below for any non-compliant process issues.

Process Criterion Number	**Evaluation Office Comments**
12	It must be noted that the evaluation process experienced several unusual delays. The first hired consultant was replaced at Draft Report stage. It took some time to hire a new suitable consultant.