

Independent Terminal Evaluation

Promoting Renewable Energy Based Mini Grids for Productive Uses
in Rural Areas in the Gambia

UNIDO Project number: GF/GAM/11/001

UNIDO ID: 103023, GEF ID: 3922



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

UNIDO INDEPENDENT EVALUATION DIVISION

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Abbreviations and acronyms

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ASNAP	Agribusiness in Sustainable Natural African Plant Products
CO ₂	Carbon Dioxide
ECC	Energy and Climate Change
ECOWAS	Economic Commission of West African States
ECREEE	ECOWAS Centre for Renewable Energy and Energy Efficiency
EE	Energy Efficiency
EIA	Environmental Impact Assessment
ERP	Enterprise Resource Planning System
ET	Evaluation Team
EVA	UNIDO Office for Independent Evaluation
EU	European Union
FP	Focal Point
GCCI	Gambia Chamber of Commerce & Industry
GBA	Great Banjul Area
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gases
GoG	Government of The Gambia
GREC	Gambia Renewable Energy Centre
GTTI	The Gambia Technical Training Institute
IEE	Industrial Energy Efficiency
MBO	Management by Objectives
M&E	Monitoring and Evaluation
MoE	Ministry of Energy
MoU	Memorandum of Understanding
MTE	Mid-Term Evaluation
NAWEC	National Water and Electricity Company
NEA	National Environment Agency
NGO	Non-Governmental Organization

NPM	National Project Manager
ODG/EVA	Office of the Director General / UNIDO Office for Independent Evaluation
PAA	Project Administrative Assistant
PC	Project Component
PD	Project Document
PIF	Project Identification Form
PIR	Project Implementation Report
PMC	Project Management Committee
PMIS	GEF Project Management Information System
PMO	Project Management Office
PPA	Power Purchasing Agreement
PPG	Project Preparation Grant
PRSP	Poverty Reduction Strategy Paper
PSC	Project Steering Committee
PURA	Gambia Public Utilities Regulatory Authority
PV	Photovoltaic Technology
QAE	Quality at Entry
RBM	Results Based Management
RE	Renewable Energy
REAGAM	Renewable Energy Association of The Gambia
RFP	Request for Proposal
RRE	Renewable and Rural Energy Unit
SPWA	Strategic Program for West Africa
TOC	Theory of Change
ToR	Terms of Reference
ToT	Training of Trainers
UNDAF	United Nations Development Assistance Framework

Glossary of evaluation terms

Term	Definition
Baseline	The situation, prior to an intervention, against which progress can be assessed.
Effect	Intended or unintended change due directly or indirectly to an intervention.
Effectiveness	The extent to which the development intervention's objectives were achieved, or are expected to be achieved.
Efficiency	A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results.
Impact	Positive and negative, intended and non-intended, directly and indirectly, long term effects produced by a development intervention.
Indicator	Quantitative or qualitative factors that provide a means to measure the changes caused by an intervention.
Lessons learned	Generalizations based on evaluation experiences that abstract from the specific circumstances to broader situations.
Logframe (logical framework approach)	Management tool used to facilitate the planning, implementation and evaluation of an intervention. It involves identifying strategic elements (activities, outputs, outcome, impact) and their causal relationships, indicators, and assumptions that may affect success or failure. Based on RBM (results based management) principles.
Outcome	The likely or achieved (short-term and/or medium-term) effects of an intervention's outputs.
Outputs	The products, capital goods and services which result from an intervention; may also include changes resulting from the intervention which are relevant to the achievement of outcomes.
Relevance	The extent to which the objectives of an intervention are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donor's policies.
Risks	Factors, normally outside the scope of an intervention, which may affect the achievement of an intervention's objectives.
Sustainability	The continuation of benefits from an intervention, after the development assistance has been completed.
Target groups	The specific individuals or organizations for whose benefit an intervention is undertaken.

Executive Summary

Executive summary

This evaluation has been conducted by an international consultant, Mr. Tequam Tesfamariam and a national consultant, Mr. Suwareh Jabai. The evaluation covered the whole project duration starting October 25, 2011(project commencement date) to December 30, 2017(project termination date).

The purpose of the Terminal Evaluation is to assess to what extent the project has achieved the expected results of developing and promoting a market environment that stimulates investments in renewable energy based mini-grids for productive uses in rural areas of The Gambia.

Key Findings of the Evaluation

(a) Project Identification and Formulation

Project formulation

Selection of demonstration projects during the project formulation phase was aimed to ensure that the selected pilot projects are incremental, replicable and technically feasible. As has been explained in section 3.1 of the main body of this report, project formulation was done with the involvement of relevant stakeholders. During the project formulation a clear procedure on the disbursement of fund has been established. However, there were some weaknesses in identifying reliable project partner that could timely avail the required co-finance for the implementation of one of the pilot projects.

Taking into consideration strengths and weaknesses indicated above project identification and formulation is rated as **Satisfactory(S)**.

Project Design

At the project design phase the Project Logical Framework and targets has been clearly developed, and the Specific, Measurable, Achievable, Relevant and Time-bound (SMART) indicators have been set that allowed proper management and monitoring of project results. The project design is therefore rated as **Highly Satisfactory (HS)**.

(b) Project Implementation

Effectiveness: Taking into consideration the evaluation results of Component 1(Moderately Satisfactory), Component 2(Moderately Satisfactory), Component 3 (Highly Satisfactory) and Component 4 (Highly Satisfactory) indicated in the main body of the evaluation report the overall effectiveness of the implementation of the pilots project is rated as **Moderately Satisfactory (MS)**

Efficiency: All efforts have been undertaken to ensure the cost-effectiveness of project results by UNIDO (Implementation Agency), the Project Management Office and the national project partners. Despite these efforts the GEF grant project budget has been totally consumed. There is No budget left to implement project activities that have not been completed to date. Moreover, no data on the actual expenditure of project co-finance is available to evaluate the overall budget utilization efficiency..

Taking into consideration the fulfillment of the project objective and the efficiency in utilizing the project budget efficiency is rated as **Moderately Satisfactory (MS)**.

Sustainability: Qcell and Mbolo pilot demonstration projects have been successfully implemented and are currently functioning in a sustainable manner. However, it will not be possible to confirm at this stage the sustainability of the remaining pilot project activities. Gamwind Pilot is not currently functioning due to malfunctioning of the wind turbines. NAWEC's Wind Turbine Pilot Project due to the lack of co-finance has not even been started. Moreover, NAWEC /Kaur Solar PV Hybrid System because of lack of synchronization to the existing installed system and Bijilo due to the installation of less capacity battery bank are still not implemented according to the contract until this date.

On the other hand with the newly elected democratic government the risk of sustainability due to socio-political, institutional and governance is very low. Moreover, there is no environmental risk that will jeopardize the project sustainability.

Taking into consideration the above assessment sustainability of the pilot demonstration projects is rated as **Moderately Likely (ML)**

Assessment of Monitoring and Evaluation systems:

The budget allocated to evaluate project progress at the end of each of the project milestones was not enough to carry out periodical monitoring on critical project milestones and is therefore rated as **Satisfactory(S)**

Project Coordination and Management:

There were no complaint from the relevant stakeholders and project development partners in relation to the project management and coordination. Project Coordination and management is therefore rated as **Highly Satisfactory (HS)**.

(c) Gender mainstreaming:

As has been explained in section 3.4 of the main body of this report, the issue of gender was well addressed in the implementation Mbolo Pilot Demonstration Project. In this pilot project Gambian women and girls were the main work force in the project implementation. However, woman participation in the project management was observed to be minimal. For this reason gender mainstreaming is rated as **Satisfactory (S)**

In general, taking into consideration the findings of the terminal evaluation and the of the project implementation the overall project performance is rated as **SATISFACTORY (S)**

Conclusions, recommendations and lessons learned

- ✓ The project in general was successful in meeting its end-of-project objectives and outcomes. Over the past years the project has made major contribution to the promotion and delivery of commercially and technically sustainable energy services. The project has also contributed in the formulation of Renewable Energy Act and in supporting to increased public awareness on the renewable energy sector. It therefore provided an excellent platform for The Gambia to continue to expand its activities in the area of low-carbon development, renewable energy and energy efficiency and has created important synergies with the National Policy on Climate Change;
- ✓ Projects that are financed by external donors such as this project is not most of the time sustainable after project phase out. This is especially so in developing countries such as The Gambia where governments cannot afford to allocate budget to ensure project sustainability. Donors under these circumstances can play important role by providing financial assistance to governments to ensure project sustainability. In this particular case , donors can assist the Government of The Gambia by providing financial assistance to sensitize and encourage the private investors to invest on the RE;
- ✓ Global objectives of the greenhouse gases emission reduction have not been precisely assessed because key activities to quantify their attainment were not carried out under this project to check emission factors and assess the validity of real emission reductions that this project has delivered. It is therefore important to carry out survey to assess the actual impacts of the project before project closure. To carry out this type of assessment hiring independent consultant specialized in this field of study would have been of paramount importance;
- ✓ The delay in the implementation of the project was mainly due to lack of co-finance. When any project developer or government for that matter fails to secure the counterpart fund as planned the contract should be terminated and the project should be immediately transferred to another developer who can avail the needed co-finance in order not to lose additional time in project implementation.
- ✓ There are some project activities that have not been completed to date. The GEF budget is fully consumed and there no GEF Grand Fund will be available to implement these project activities. The Ministry of Petroleum and Energy has to therefore make sure that adequate budget is allocated and appropriate follow up is made to ensure that the pilot projects are completed in a satisfactory manner.
- ✓ This project sets an example for the GEF Strategic Program for West Africa (SPWA) and has shown successful project implementation and is a major pioneer in providing market environment that stimulates investments in renewable energy based mini grids for productive uses in rural areas. The success stories of this project should

therefore be disseminated among the ECOWAS countries and it is therefore important that UNIDO organizes regional renewable energy workshop to share success stories of this project;

- ✓ In the project document was initially planned to complete the pilot demonstration projects in four years. This plan seems to have been prepared without taking into consideration the scope and volume of work of some of the pilot projects and was later realized the time allocated was not enough to implement project of this size. In 2014 the plan was revised taking into account the scope and volume of work of each of the pilot projects. In the future when planning similar projects it will important to understand the scope and volume of work and prepare reasonable plan at the early stage of the project implementation;
- ✓ No information on the actual expenditure of the co-finance of the pilot projects was made available to the consultant. This is due to lack of regular reporting from the side of the project developers to the Project Office. In future GEF projects it would be important to establish reporting mechanism between the project developers, PMU and UNIDO to obtain up to date information on the actual co-finance expenditure on a regular basis;
- ✓ Co-finance was the main cause of the project delay in project implementation. To minimize such delay in future projects, UNIDO and GEF should request the project developer to either submit performance bond or deposit some percentage of the co-finance prior to project commencement;
- ✓ The emission factors used to calculate the emission reductions of the program were not done in a scientific and verifiable way. It is therefore recommended to use the approved baseline and monitoring methodologies as per the prescribed GEF methodologies to calculate emission reduction. This will provide a stronger basis for leveraging any carbon finance to support projects in the future; Mbolu Solar PV and Wind Turbine Hybrid System and Q-cell have achieved their objectives in a highly satisfactory manner, and have been major strengths of the project from which best practices should be captured for dissemination and replication at the national and regional level;
- ✓ Government should dully implement the PPA that has been prepared during the project so that private investors will be encouraged to invest on RE and supply additional power to the grid to minimize the power shortage in the country;
- ✓ When implementing UNIDO/GEF project in the future it is important that co-financing is made precondition for the project developer to either submit performance bond or deposit some percentage of the co-finance prior to project commencement;

1. Evaluation objectives, methodology and process

The terminal evaluation (TE) will cover the whole duration of the project starting from September 2011 to the end of December 2017. The terminal evaluation will assess project performance against the evaluation criteria: relevance, effectiveness, efficiency, sustainability and impact. Mr. Tequam Tesfamariam the international consultant and Mr. Sewareh Jabai the national consultant conducted field assessment during six day of mission from the 20th to the 25th of November 2017.

The terminal evaluation will enable the Government, the national GEF Operational Focal Point (OFP), counterparts, the GEF, UNIDO and other stakeholders and donors to verify prospects for development impact and to promote sustainability, providing an analysis of the attainment of global environmental objectives, delivery and completion of project outputs/activities, and outcomes/impacts based on indicators, and management of risks. The assessment included re-examination of the relevance of the objectives and other elements of project design according to the evaluation parameters defined in the TOR provided to the consultants.

The TE has an additional purpose of drawing lessons and developing recommendations for UNIDO and the GEF to help improve the selection enhance the design and implementation of similar future projects and activities in the country and on a global scale. The terminal evaluation report is expected to highlight examples of good practices for other countries in the region to learn from their experience.

In this particular project, the terminal evaluation is expected to assess if the project has achieved or is likely to achieve its main objective of creating a market environment conducive to investments in renewable energy aimed at demonstrating technical feasibility and commercial viability of renewable energy projects. In meeting such expectation the terminal evaluation was conducted in accordance with the UNIDO Evaluation, the UNIDO Guidelines for GEF Agencies, the GEF Monitoring and Evaluation Policy of the GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies.

During the evaluation different methods were used to ensure that data gathering and analysis delivered is evidence-based qualitative and quantitative information from diverse sources such as desk and literature review, individual interviews and focus group meetings, and from direct site observation. This approach enabled the consultant to assess the status of the project through quantitative means and also provide reasons why certain results were achieved or not achieved and triangulate information that are reliable input to the overall evaluation findings.

The mixed methodologies used during evaluation mission are as follows:

- a) Review of the original project document, monitoring reports (such as progress and financial reports to UNIDO and UNIDO-GEF annual Project Implementation Reports (PIRs), mid-term review (MTR) report, back-to-office mission report(s), end-of-contract report(s) and correspondences between the project office and UNIDO and between UNIDO and GEF.
- b) Notes from the Project Management Committee and Project Steering Committee.

- c) Interviews with project management and technical support including staff and management at UNIDO HQ and in the field with the staff associated with the project's day to day management.
- d) Interviews with project partners and stakeholders, including government counterparts, GEF OFP, project stakeholders, and co-financing partners among others.
- e) On-site observation of results achieved by demonstration projects, including interviews of actual and potential beneficiaries of renewable energy technologies.
- f) Interviews with the intended users and other stakeholders involved in the project.
- g) Interviews with the relevant UNIDO Regional Bureau for Africa to find out the extent of involvement in the project, and members of the project management team and the various national and sub-regional authorities dealing with project activities

In those cases where baseline information for relevant indicators was not available, the evaluation team used a proxy-baseline through recall and secondary information.

2.1. Brief country context

The Gambia is a relatively small (11,300 sq km) country located on the West African coast. It has a population of approximately 1.74 million (est. July 2008) with one of the highest growth rates in West Africa. Approximately one third of the population lives around the capital, Banjul within the Greater Banjul Area (GBA) and the remaining population in rural areas.

According to the 2013 population census, the population of The Gambia is 1.8 million with a population growth rate of 2.77 (Census preliminary results, 2013). The percentage of population in the rural areas is 62.88 while that of the urban area is 37.12. The life expectancy for males is 56 years while that for females is 59 years. The infant mortality rate per 1,000 live births is 84 while maternal mortality rate (per 100,000 live births) is 730.

The Gambia according to the UNDP Human Development Index ranks 160th out of 179 nations with a capital income of US 290 dollars per annum. In 2013 GDP of The Gambia amounted \$914.3 million, with a GDP growth of 5.6%, and an inflation rate of 5.7 %. (World Bank Country Data and Statistics, August 2005)

The economy is primarily agrarian, with agriculture employing about 70% of the labor force and accounts for about 30% of GDP. The Gambia has a liberal, market-based economy characterized by traditional subsistence agriculture, a historic reliance on groundnuts (peanuts) for export earnings, low import duties, minimal administrative procedures, and a vibrant tourism industry. However, the real economy heavily rely on agriculture. This sector is dominated by groundnut production and this exposed the economy of the country to extreme weather and price volatility in international commodity markets. In 2010, GDP was estimated at US\$1,040 billion with a real GDP growth rate of 6.1%. Per capita GDP and GNP in the same year were US\$556 and US\$605, respectively (CBG Annual Report 2010, CBG MPC Press Release May 2012).

With this type of economic set up and level of development the challenge lies in the fact that the population of the country would double every 16 years, exerting enormous pressure on the country's environment and natural resources, resulting in serious environmental problems such as soil degradation, poor sanitation, loss of forest cover and biodiversity.

2.2. Sector-Specific Issues of Concern to the Project

The Gambia relies almost entirely on imported fossil fuels and traditional biomass to meet its energy requirements. The high cost of imported fossil fuels and the volatile price of oil on the international markets create a significant burden on the Government and the National Water and Electricity Company (NAWEC) of the Gambia.

As a result there is an unreliable supply of electricity with considerable load shedding, and the electricity tariffs in The Gambia are some of the highest in Africa. In addition to the high costs, the limited supply of modern energy services has negatively impacted the potential for investments and industrial production capacity in the country. The reliance on fossil fuels for electricity generation results in relatively high greenhouse gas (GHG) emissions. In 2000 the GHG from electricity generation in The Gambia was 81,378 tons of CO₂, and within the energy sector, electricity generation accounted for 40% of the country's annual CO₂ emissions.

Using the same methodology the emissions from electricity generation in 2009 was estimated to be 186,000 tons of CO₂. Projections have been made that if The Gambia continues its electricity expansion using HFO and diesel then GHG emissions for the country will further escalate. Given the country's economic growth prospects, there is bound to be an increase in energy demand. Keeping in view the country's reliance on fossil fuels, an increase in energy demand will imply the country's energy supply infrastructure will be increasingly locked into a GHG intensive future under the business-as-usual scenario. This is despite the country being endowed with renewable energy resources that could be developed to support economic growth and minimize GHG emissions at the same time.

Based on the high cost of imported fossil fuels and the greater opportunities on the renewable energy sub-sector, government embarked on the expansion of the sub-sector. In principle, government introduced tax incentives in the renewable energy materials and equipment to reduce its initial high cost. It is the view of government that the new trend of economic growth will result to high energy demand. Therefore Government found it necessary to take concrete efforts to regulate the sub-sector.

Under the leadership of the Ministry of Energy (now Ministry of Petroleum and Energy) and the regulating authority, a team was established to create awareness. In 2009, practical efforts for raising public awareness of renewable energy and energy efficiency in the Gambia started. The Ministry of Energy organized a National Sensitization Tour on Energy Efficiency Campaign in 2009, which was financed by UNIDO. A team of local experts from NAWEC, NEA, PURA and MOE toured the entire nation in a two weeks campaign to sensitize the general public about the use of renewable energy and its safety. The team worked with community leaders in every major town and villages across the country, spreading the message " Save Energy Save Money and Save the Environment".

2.3. Project summary

(i) Project Factsheet

Project Title	SPWA-CC: Promoting Renewable Energy Based Mini Grids for Productive Uses in Rural Areas in The Gambia
UNIDO project No. and/or SAP ID	GFGAM11001 / SAP ID: 103023
GEF project ID	3922
Region	Africa
Country(is)	Gambia
GEF focal area(s) and operational program	Climate Change CC-3
GEF implementing agency	UNIDO
GEF executing partners (counterparts)	Gambia Renewable Energy Center (GREC), Ministry of Petroleum and Energy, the National Environment Agency (NEA), the National Water and Electricity Company
Project Objective	To develop and promote a market environment that will stimulate investments in renewable energy based mini-grids for productive uses in rural areas of The Gambia
TE objective	To conduct a systematic and impartial assessment of the project implementation in line with UNIDO and GEF Evaluation policies.
Project size (FSP, MSP, EA)	FSP
Project CEO endorsement / Approval date	27 July 2011
Project implementation start date (First PAD issuance date)	5 September 2011
Original expected implementation end date (indicated in CEO endorsement/Approval document)	26 June 2014
First revised expected implementation end date	31 December 2014
Second revised expected implementation end date	31 december 2017
Actual implementation end date	31 December 2017
GEF project grant (excluding PPG, in USD)	1,758,182
GEF PPG (if applicable, in USD)	60,000

UNIDO co-financing (in USD)	200,000 (in-kind)
Total co-financing at CEO endorsement (in USD)	3,976,030 (in-kind)
Co-financers	Government agencies, NGOs and the private sector
Materialized co-financing at project completion (in USD)	Reliable information on the actual co-finance has not been obtained
Total project budget(excluding PPG and agency support cost, in USD; i.e., GEF project grant + total co-financing at CEO endorsement)	5,794,220
Mid-term review date	October 2014
Terminal evaluation date	December, 2017

(ii) Previous Project history

Prior to project implementation the Government of The Gambia has prepared the ground work to implement the UNIDO-GEF project. To that effect the following tasks have been accomplished by the Government of The Gambia prior to project implementation:

The Government of The Gambia, with a Cabinet Directive on 6th March 2008 started prioritizing Renewable Energy by introducing a zero import duty & Sales Tax on the importation of solar photovoltaic (PV) panels, solar water heaters, wind energy equipment and energy efficient bulbs. The Government of the Gambia has also created a Renewable Energy Fund for purpose of financing renewable energy projects from the private sector. The Government has also accorded special priority to improving access to electricity and to promoting renewable energy through the following policies and institutional measures.

Energy Action Plan, 2010: The Ministry of Energy is publishing an Energy Strategy and Action Plan for the period 2010 – 2014. The Energy Action Plan proposed nine key objectives (and budget) for these four years, in line with the objectives of the Energy Policy. The objective of the energy policy is to promote the use of renewable energy and energy efficiency, and strengthen the institutional framework.

Energy Policy, 2005: The Gambia's Energy Policy was approved by the Secretary of State in June 2005. The policy sets out the objectives for the energy sector and also the aims to promote the renewable energy sub-sector.

Electricity Act, 2005: The Electricity Act was enacted in 2005 to promote the development of the electricity sub-sector in The Gambia, encourage private investment in the sector, promote competition and set out the responsibilities to the electricity service providers.

First National Communication, 2003: The First National Communication submitted to the UNFCCC identified a number of mitigation options to reduce GHG emissions.

Poverty Reduction Strategy Paper (PRSP): The action plan for the implementation of the PRSP II for the period 2007-2011, with its overall goal to eradicate poverty, contains priority interventions in all sectors including energy. The Government of The Gambia, through the Energy Action Plan, has identified the increase in the use of renewable energy, in both rural and urban areas, as a priority strategy to achieve its policy objective regarding renewable energy.

ECOWAS/UEMOA White Paper for a Regional Policy for “increasing access to energy services for populations in rural and peri-urban Areas in order to achieve the Millennium Development Goals.” Recognizing the importance of increasing access to modern energy services as a precondition for the attainment of the MDGs, the White Paper, which was finalized in 2006, concluded that access to modern energy services was central to the attainment of MDGs in the region and that decentralized renewable energy system does effectively contribute towards increasing access.

The above indicated previous efforts by the Government of the Gambia paved the way for UNIDO and GEF to formulate the UNIDO-GEF RE project. This project is in line with the strategic as well as specific objectives of the Gambian key policy documents of the Government.

Project implementation started in September 2011 and the initial project end date was set as June 2014. The project implementation end date was again revised to December 2014 and then to May 2015 and with further delay in the project in 2015 it was extended to December 2017. Mid-term evaluation took place from October-December 2014 for the period covering September 2011 to the end of 2014.

3. Project Assessment

With the involvement of relevant stakeholders the M&E design incorporated measures to minimize possible concerns that may arise during the project implementation. However, there were also weaknesses during project formulation that resulted in extended delay in project implementation.

3.1. Project identification and Formulation

The strongest side of this project is that it was formulated with the participation of local stakeholders. The Project was identified and prepared through cooperation and involvement local stakeholders. The Logical Framework, targets and SMART indicators were well addressed and adequately developed that allowed proper adaptive management and monitoring of project results. Project activities, in general, were well-focused on the major issues of developing and promoting a market environment that will stimulate investments in renewable energy in the rural areas of The Gambia.

When a project is formulated private companies that are interested to invest in renewable energy were identified. In this particular case, out of the twenty feasibility studies, six demonstration projects were chosen based on the criteria set in advance. The Project Management (PM) and the Project Steering Committee discussed on the feasibility and financial studies during the validation workshop and have made joint decision taking into consideration the least-cost option for implementing the projects on companies that will participate in the project. After the choice of the company, it has become part of the Project

Document that has to be approved by the GEF. Consequently, a detailed ToR for the project has been prepared, which then went to the MD for approval of a waiver from competitive bidding. Once the approval was given, a Request for Proposal (RFP) was issued to the company. The company based on the RFP submitted a detailed project proposal containing outlined descriptions, bill of quantities and technical details to the PM to check if the costs and viability of the detailed project proposal. It is only if the RFP is viable, sustainable and the least-costs option the PM will approve it and sends it to procurement of UNIDO to prepare a Grant contract with the private company.

Despite the efforts that were made by the project management as explained above one of the pilot projects namely NAWEC Wind Turbine Project could not secure co-finance for a long time and this pilot project has not been even stated until the project termination date. Such an extended delay in the implementation of this pilot project would not have occurred had proper investigation on the financial capacity of NAWEC at the time of the project identification and formulation phase was made. Such delay could not have occurred had it been made prerequisite for the project development partners to submit either project performance bond or deposit portion of the co-finance commitment prior to project commencement.

Taking into account the above assessment project identification and formulation is rated as **SATISFACTORY**

3.2. Project Design

The project is in line with the strategic and specific objectives of the Gambian key policy and strategy and it has provided the additional international expertise and financing inputs needed to support and effectively leverage national efforts, and has contributed to the development of the human, institutional and industrial capacity and has supported the operationalization of the renewable energy related goals of the Energy Strategy and Action Plan and Energy Policy of the Gambia.

The assessment of project design evaluates the adequateness of the project to address the imminent problems. GEF-supported projects are required to have and are evaluated against a clear thematically focused development objective, the attainment of which can be determined by a set of verifiable indicators. The projects are expected to be prepared in a participatory manner and with contributions of national stakeholder and/or target beneficiaries. It is required to formulate the project based on the logical framework approach, which was the case with this Full-Size Project (FSP).

The project document has been prepared based on results of various studies, assessment of the relevant programs running in The Gambia and in consultations with stakeholders, surveys etc. Also, some new approaches in renewable energy, including a special project on RE with gender mainstreaming have been introduced to stakeholders to raise their interest in the project activities.

The UNIDO approach in renewable energy focuses not only on technical improvement and implementation of demonstration projects, but also on improvement in policy, management, investment strategy, operations, and financing.

The overall project design was relevant, with its strength of the involvement of local stakeholders in project identification and formulation. The Logical Framework with its outcomes and outputs, and target with measurable target indicators allowed it to use adaptive management to monitoring of project results.

Project identification assessment criteria derived from logical framework methodology was used to establish process and set up step analysis to design the project in a systematic and structured way. The design addressed problems related RE and was based on need assessment. Verification and Assumptions were adequate and important external factors and risks were identified and have also incorporated relevant environmental and social considerations into the design. The project outcome in the design are clear, realistic, relevant, addressed the problem identified and also provided a clear description of the benefit or improvement that will be achieved after project completion.

Taking into consideration the above accomplished tasks project identification and formulation is rated as **HIGHLY SATISFACTORY (HS)**

3.3. Implementation Performance

3.3.1 Project Ownership and Relevance

The Government of The Gambia, with a Cabinet Directive on 6th March 2008 started prioritizing Renewable Energy by introducing a zero import duty & Sales Tax on the importation of solar photovoltaic (PV) panels, solar water heaters, wind energy equipment and energy efficient bulbs. The Government of the Gambia has also created a Renewable Energy Fund for purpose of financing renewable energy projects from the private sector.

The Project is consistent with the focal areas/operational program strategies of GEF and is in line with the national development, energy and environmental priorities and strategies of the Government of the Gambia.

The project is in line with the strategic and specific objectives of The Gambian key policy and strategy and it has provided the additional international expertise and financing inputs needed to support and effectively leverage national efforts, and has contributed to the development of the human, institutional and industry capacity, and supporting structure necessary to realize the renewable energy related goals of the Energy Strategy and Action Plan and Energy Policy of The Gambia. This project also assisted the Government in resolving the current power shortage of some communities in the rural areas of The Gambia while at the same time created business opportunity by creating awareness in the private sector to invest in the renewable energy sector. The fruitful investment made on renewable energy by Qcell, Mbolo Association and Gamwind are classical examples that can be cited in this regard.

The involvement of the Government of The Gambia and local stakeholders in the implementation of this project was adequate. A Project Steering Committee (PSC) consisting of representatives of government institutions and of stakeholders and beneficiaries was organized. The PSC convenes on a regular basis and has played key role in the implementation of the project. The Chair of the PSC is the Director of NEA and also the GEF Operational Focal Point in The Gambia.

Taking into consideration the role this project played in implementing the RE policy and strategy of the Government of The Gambia and the extent of involvement of the major stakeholders, the relevance and ownership of this project is rated as **HIGHLY SATISFACTORY (HS)**.

3.3.2 Effectiveness

Project Component 1: “Demonstration of the techno- economic viability of renewable energy projects in rural areas of The Gambia”

Output 1.1: 6 renewable projects installed to demonstrate the technical feasibility and commercial viability of such projects

Output 1.2: The 6 projects are independently evaluated and the lessons learned from the projects are widely disseminated to national, regional and international stakeholders.

For the preparation of the component 1 of the Project, and prior to the preparation for the project document for CEO Endorsement, there was a consultation workshop with all concerned stakeholders for renewable energy in the Gambia. After the consultation workshop, twenty feasibility studies on renewable energy for productive uses were prepared. Out of these twenty project concepts received, six were selected and based on project viability, replicability, CO2 impact, and technological and financial viability.

Accordingly, the following pilot demonstration projects were identified and made part of the project document under component 1:

1. Tanji wind
2. NAWEC Hybrid Mini-Grid
3. NAWEC Gam Wind
4. Woman Education
5. ASNAPP
6. Qcell Repeater Stations

During the first year of project implementation some of these demonstration pilot projects failed to secure co-finance. It was therefore necessary to replaced them by other projects and also transferred those to other project developers that have capacity to of co-finance the pilot projects. Accordingly, Tanji Wind has been replaced by 600 kW Wind Turbine and was transferred to NAWEC and ASNAPP is replaced by Grid-Tie PV System and was transferred to Bijilo Medical Center.

The status of implementation of the pilot demonstration projects indicated above under component 1 at the time of the terminal evaluation is summarized below.

(1) QCell Solar-Wind Repeater stations (84kW)

As a beneficiary of the GEF/UNIDO 4 project grant, Qcell installed 10 new repeater stations using solar and wind technology in 10 different rural communities across the country. The investment made by Qcell did not only off-set the business as usual case of diesel gen-set but also provided surplus power to 10 health centers within the respective communities.

In addition to this investment Qcell invested on solar system made up of 9 solar modules of 250 WP at each site and backup generator of 6.0 kVA capacity. The solar capacity was later

upgraded to 23 modules of 250 WP at each site thus making the total installed capacity to 97.5 kW. The 10 Qcell hybrid systems are designed to provide 230 V/ 50 Hz excess energy to 10 health facilities continuously.

Qcell Pilot Project has been successfully completed and is also generating and supplying excess power to 10 Health centers in the rural areas. Qcell have managed to upscale the pilot demonstration project on renewable energy.

Taking into account the successful implementation of this pilot project and the extra ordinary effort made to upscale RE project the performance of this pilot project is rated as **Highly Satisfactory (HS)**.

(2) Mbolo Women Association Solar PV- Wind Turbine Hybrid System

Mbolo Women Association proposed to generate 8.3 kW using solar PV and wind turbine hybrid system. The Women Association signed contract with UNIDO in early 2012. System was installed and commissioned in August 2012 and final inspection was done in October 2012. The Association successfully completed the system and was awarded certificate completion in November 2012. Since then the Association managed to produce excess power and started feeding in to the central grid. The Association has submitted PPA to get permit to sell the access power to NAWEC but NAWEC has not responded to their request and they are forced to disconnect the supply of the excess power to the grid and attempted to use this power for some other activities of minor importance to the Association.

Women Association Mbolo and the Project Office jointly conducted gender based training in renewable energy from 21 to 26 July 2014, where over 30 women have undertook the intermediate hands-on training courses and based on the feedback of trained women, the Ministry of Energy (now Ministry of Petroleum and Energy) targets that 50% of the funding from the RE Fund should be earmarked for projects that will be managed by women.

Mbolo runs a training center for women to teach them sewing, gardening and share Information on RE technology. Before the GEF/UNIDO 4 Project intervention Mbolo had no electricity to operate the sewing machine for training and also to provide income to the local women. The project was able to install a solar and wind standalone hybrid system of 8.3 kW capacities at the Center to provide power for the sewing machines, computers and for lighting. The project generated money for the Center and it has already influenced the development of renewable energy with high replication potential. The project has received hundreds of visitors to see the state of the art of this project. In collaboration with the GEF/UNIDO Mbolo has executed two trainings in renewable energy. These are in the design, installation and maintenance of standalone PV hybrid for 30 Gambians and mainstreaming gender on renewable energy that trained 30 young woman and girls from all over the country. Moreover, Mbolo was also used as a regional case study for gender and energy forum organized by ECOWAS Center for Renewable Energy Efficiency (ECREEEE) in Sierra Leone from 7 to 9 May 2013. Since the intervention, capacity building and training on woman has been a great success and Mbolo was able to secure funding from GEF Small Grant to run a one year hand on training on solar PV installation for 14 Gambian women and girls. Besides, a joint UNIDO-UN Women Mission visited Mbolo on the 22nd June 2016 and witnessed the success stories of Mbolo in relation to renewable energy and women empowerment. This pilot project showed outstanding achievements and has served as demonstration site on renewable energy and woman empowerment not only for The Gambia but also for the region.

Taking into account the effective implementation of the pilot demonstration project, and the fact that issue of gender has been addressed very well by building the capacity of The Gambian young woman and girls in the installation, operation and maintenance of standalone PV hybrid, this pilot project is rated as **Highly Satisfactory (HS)**.

(3) Gamwind project – Two Wind Turbines

The project installed two re-conditioned 450 kVA wind turbine at Solifor in Tanji along the cost in August 2012. The pilot project is innovative and is the first wind farm in West Africa that used refurbished wind turbines. Besides it provided technical cooperation to develop the Power Purchase Agreement documents which were not available in the country before the project.

NAWEC and Gamwind signed a Power Purchasing Agreement on 18th November, 2010 and Gamwind signed a Grant Contract with UNIDO in September 2011. Wind turbines started working in August, 2012. Final inspection of the system was completed in August 2012. The two wind turbines generated 731,737 KW of electricity, within availability of 90%, during the period July 2012 to August 2013 which was estimated as the best case scenario. However, an executive Directive dated 17th of April was issued to Gamwind to close and remove the two turbines due to land permit issue and since then it has never been made functional until this date.

Starting October 2017 the new Government permitted Gamwind to access the site, rehabilitates the two turbines and make them operational as soon as possible. But, Gamwind does not seem interested to rehabilitate the turbines but would like first settle its compensation claim for the number of years the pilot project remained idle due to force majeure. Mr. Peter Weisferdt, owner of the Gamwind Pilot Project, would like to establish his case at the court to receive appropriate compensation as per the contract signed with NAWEC. UNIDO is still facilitating dialogue between MoPE and Gamwind but the issue is not yet resolved and the project is not currently providing the required power to the community.

The project has managed to successfully install the two turbines and these turbines were made operational for one year but they are not currently providing the required service to the community due to forced majeure. The pilot project is therefore rated as **Satisfactory (S)**.

(4) Bijilo Medical Center Grid Tie PV System

The initial project proposal was to develop a sustainable agriculture project by utilizing hydroponic which will require power for water pumping. However, ASNAP, the project developer could not avail the 70 % co-financing to start project implementation. It was therefore decided to float the grant allocation for open and transparent competition by potential project developers. The slot was advertised in August/September 2013 and six submissions were evaluated and the pilot project was awarded to Bijilo Medical Center.

UNIDO signed a grant contract with Bijilo Medical Center (BRC) on the 17th of July 2014. In July 2015 project materials have been procured and in April 2016 installation of the RE System has been completed. In February 2017 the installed RE System was inaugurated and final Inspection of the System was done in February 2017. The final inspection highlighted that the capacity of the battery bank installed is less than what is in the signed contract. Bijilo Medical Center is currently trying to purchase and install additional battery bank and at this stage it is not known when it will be completed. This issue has not been resolved and the intended

purpose of the pilot has not been met until the project termination date and is therefore rated as **Moderately Satisfactory (MS)**.

(5) NAWEC/Kaur Solar PV Hybrid System

Work started in February 2015 and was completed by the end of April 2015. UNIDO helped NAWEC to design the system and has provided technical assistance in the design of tender documents as well as helped in the evaluation and adjudication of the tender. Final inspection highlighted an issue of non-synchronization of the solar PV System with the existing generator.

When this project was proposed there was no plan to extend the central grid to Farafenni. At present NAWEC is supplying electricity from Farafenni Power Station to the Kaur community. As the Kaur 60 kW Solar PV Plant is not currently synchronized with the gen-sets or connected to the new 33kV line and the system is currently redundant. After negotiations between UNIDO and NAWEC, the original contract was amended to divide the last payment into several ones linked to milestones. The first payment has been released and the remaining amount to will be paid once the system has been validated and certificate of completion is issued by MOPE. The synchronization is expected to be completed shortly.

Implementation of this project on time could have improved the livelihood of the rural woman, increased the performance of SMEs and could have brought significant savings for NAWEC. But this could not be materialized. It is therefore recommended to connect the Kaur Solar PV Plant directly to the grid to export energy at least during the day until the battery bank is fixed.

The non-synchronization of the solar PV System compromised the intended purpose of this project and is therefore rated as **Moderately Satisfactory (MS)**.

(6) NAWEC 600 kW Wind Turbine for Banjul

At the beginning of the project Tanji Wind pilot Project was initially conceived to be implemented by Tanji Fisheries. However they had difficulty in mobilizing the required counterpart funding and the project was cancelled and refloated in 2014. After evaluation of the proposals received the grant allocation was given to NAWEC. UNIDO signed grant agreement with NAWEC in February 2015. ECREEE conducted feasibility study. The review of the study was finalized in November 2016.

NAWEC failed to secure land and counterpart funding for this pilot project. In October 2016 UNIDO notified NAWEC that due to lack of co-financing the project has been cancelled. It was decided to refloat the grant allocation for open and transparent competition by potential project developers. The slot was advertised in November/December 2017 and three submissions were evaluated and the pilot project was awarded to EMPAS. EMPAS is currently making the necessary preparation to start implementing the project.

This is the only pilot demonstrations projects that have not been implemented until this date and the progress of implementation of this pilot is therefore rated as zero.

Summary of the implementation status of the pilot demonstration projects is shown in the table below:

S. No	Pilot project	Project effectiveness
1	QCell Solar-Wind Repeater stations (84kW)	Highly Satisfactory(HS)
2	Mbolo Women Association Solar PV- Wind Turbine Hybrid System	Highly Satisfactory(HS)
3	Gamwind project – Two Wind Turbines	Satisfactory(S)
4	Bijilo Medical Center Grid Tie PV System	Moderately Satisfactory(MS)
5	NAWEC/Kaur Solar PV Hybrid System	Moderately Satisfactory(MS)
6	NAWEC 600 kW Wind Turbine	Project performance is rated as zero

In summary three pilot demonstration projects have been successfully implemented. However one of this pilot projects is not currently functioning due to forced majeure. Two pilot projects out of the six have not been made fully operational and one pilot is not at all implemented until the project termination date. The status of power generation capacity of the pilot demonstration projects under component 1 is shown in the table below.

Implemented pilot projects	Planned capacity (kW)	Installed capacity (kW)	Remark
1) QCell Solar-Wind Repeater stations (84kW)	900.0	900.0	Implemented and working very well
2) Mbolo Women Association Solar PV- Wind Turbine Hybrid System	8.3	8.3	Implemented and working very well
3) Gamwind project(Two Wind Turbines)	84.0	87.7	Implemented but not functioning due to forced majeure
4) NAWEC/Kaur Solar PV Hybrid System	60.0	60.0	implemented but still has some issues with capacity of battery bank
5) Bijilo Medical Center Grid Tie PV	8.4	10.0	Implemented but has unresolved technical issues
Pending Projects			
6) EMPAS	234		Not yet implemented
Total	1,294.7	1060.7	

The demonstration pilot projects that have been implemented under component 1 has the capacity to generated 1, 060.7 kW against the planned target of 1,500 KW. This is short by 0.439MW when compared to the planned target. Similarly by implementing the pilot demonstration projects about 1,092.5 t CO₂ emissions per year against planned target of

1,550 t CO₂ is expected to have been avoided. This is also in short 0.368.9 MW when compared to the planned target. According to the information obtained from the Project Office the CO₂ emission figure indicated above is calculated using the plan- target ratio shown in the project logical framework. This is not the right way to calculate GHG emission. The assessment made by the Project Office will have to be checked and verified by independent consultant specialized in this field.

Taking into account delay in the implementation of some of the pilot project activities and the shortfall in meeting the targeted CO₂ emission reduction, component 1 is rated as **MODERATELY SATISFACTORY (MS)**.

Component 2: Strategy for scaling up of renewable energy investments in The Gambia

Project Component 2 aims to develop an investment plan/strategy for renewable energy in the Gambia and to identify potential future projects.

Output 2.1: Awareness raising meetings for key market players including project developers, financial services providers, equipment installers/importers to enable the operation of the renewable energy

The output of the planned meetings under this component is to identify potential renewable energy projects that can be handed over to private investors. Under this sub component 10 to 12 of these meetings is envisaged with a target of reaching out 100 organizations.

The scaling up of investment in renewable energy is being promoted by carrying out number of awareness raising activities. As part of the awareness raising program in renewable energy, the GEF/ UNIDO 4 Project in collaboration with The Gambia Chamber of Commerce and Industry organized breakfast Forum on the 16th of September 2014. The Forum brought together 70 private companies/ institutions under the theme “Renewable energy and the Private Sector”. At this Forum papers on how to promote renewable Energy projects were presented and discussed. Moreover, various renewable energy technologies were displayed at the exhibition organized by members of the Renewable Energy Association of The Gambia (REAGAM). Field visits were also organized to solar Thermal Plant at Senegambia Beach Hotel, Solar PV Plant at Lemon Creek Hotel and Solar –wind Hybrid System at Mbolo Woman Training Center.

The GEF/UNIDO 4 Project in collaboration with REAGAM have also participated in the FCCI Trade fair Gambia International that was held from 7 to 22 March 2014. The ultimate objective of participating in the Trade Fair was to use the platform to sensitize the visitors of the trade fair on the benefits and uses of renewable energy by displaying various renewable energy technologies and the roles they play in promoting profitable business in the renewable energy sector. Similarly, on the 18th March 2015 the GEF/UNIDO 4 Project in collaboration with GCCI organized one day seminar that aimed to support Small and Medium Enterprises (SMEs) through implementing renewable energy project. This seminar brought together 40 SMEs. In this seminar presentations on the cost benefit analysis and use of renewable energy was presented and discussed.

Some of the major awareness raising activities conducted under this project is summarized below:

- ✓ 16th September, 2014: The Project Management Office (PMO) in collaboration with Gambia Chamber of Commerce and Industry (GCCI) organized a Renewable Energy Breakfast Forum. Over 70 participants from private companies/institutions attended.
- ✓ 7th to 22nd March, 2015: PMO participated in the GCCI Trade Fair Gambia through public sensitization on the benefits and uses of RE technologies.
- ✓ 18th March, 2015: PMO organized, in collaboration with GCCI, a seminar entitled: “Supporting Small and Medium Enterprises through RE” for 40 SMEs.
- ✓ 24th March, 2015: PMO in collaboration with PURA organized sensitization seminar on the RE Act 2013 for 40 Gambian media practitioners.
- ✓ 21st October, 2015: PMO in collaboration with Women’s Bureau organized a seminar on Renewable Energy for Gender Policy/ Decision Makers.
- ✓ 4th November, 2015: PMO in collaboration with The Gambia Association of Non-Governmental Organization (TANGO) organized seminar on renewable energy for NGOs in The Gambia.
- ✓ PMO also made presentations at various institutions and training workshops about the GEF 4 RE Project.

However, the awareness raising activities carried out under this component has not gone as far as identifying 20 renewable energy projects that can be handed over to investors indicated in the project document in terms of scale up of renewable energy investment .

Output 2.2: Detailed investment plan/strategy for the dissemination of renewable energy Projects in rural areas

National consultant was recruited to work with the international consultant to prepare detailed RE Investment Plan/Strategy. However, formulation of the investment plan strategy was delayed for the simple reason that UNIDO could not recruit the international consultant on time to lead the work. Finally, UNIDO hired ECREEE to support this activity and on the 5th of July 2017 final draft RE Investment Plan/Strategy was prepared and validated.

Some private investors such as Africell and Petrogas showed interest to invest on RE particularly solar energy to replicate the pilot projects. Similarly, Qcell is currently making additional investment to further scale up the Solar-Wind Repeater stations and has also the plan to supply the surplus power to the health facility of the nearby communities. The other company that showed interest to replicate the pilot project is Q-cell, Mbolo Association and Lemond Creek Hotel.

According to the information obtained in the field, investment on Renewable Energy Project will provide better profit when compared to other business opportunities in The Gambia. Renewable Energy projects have internal rate of return (IRR) of less than 10 % and payback period is less than four years. Private investors such as Mohan Energy is therefore interested to invest on RE and are ready to sell power to NAWEC at the rate cheaper than the prevailing market price.

Taking into consideration the formulation of detailed investment plan/strategy and the scale of efforts that have been made to replicate and up scaling the pilot projects and the weakness

observed in the identification bankable RE Projects, component 2 is rated as **SATISFACTORY (S)**

Component 3: Development of a renewable energy law, policy and action plan with the objective of strengthening operational zing Legal and regulatory frameworks that promote and support renewable energy

Output 3.1: Development of a renewable energy law and supporting policy and action plan

Output 3.2: Standard Power Purchase Agreements for renewable energy projects developed

The following major tasks were expected to be accomplished under Component 3

1) Development of a Renewable Energy Law with supporting policy, strategy and action plan presented to the Government

2) Standard Power Purchase Agreements developed for renewable energy projects

Task I: Preparation of a Standardized Small Power Purchase Agreement

Task II: Preparation of a Small Power Purchase Tariff Methodology

Task III: Meeting to work through finalised SPPA and calculation of project likely tariffs.

Under this Component the following project outputs have been successfully completed:

- ✓ Technical assistance was provided to the Ministry of Energy (now Ministry of Petroleum and Energy) and Public Utilities Regulatory Authority (PURA) and NAWEC to prepare Renewable Energy law and Standard Power Purchase Agreement (SPPA) for Renewable Energy with a clear feed –in- tariff (FIT). The Ministry of Energy submitted the draft renewable energy to the Ministry of Justice to frame it into RE bill. The National Assembly enacted the Renewable Energy Bill in December 2013 and the President of the Republic of The Gambia approved the Renewable Energy on the 30th of December 2013. This made Gambia among the few countries in the Sub-region that have law on RE.
- ✓ The Power Purchasing Agreement (PPA) and the Feed-In-Tariff prepared by PURA have also been approved by the Government of The Gambia in September 2013. In collaboration with PURA, the GEF/UNIDO 4 Project organized a one day sensitization on the Renewable Energy Act for the Gambian media on the 24th of March 2015. The seminar brought together 40 experts from the media
- ✓ Calculation methodology for renewable Energy FIT calculation has also been developed and validated in December 2012.

As can be seen above the first activity of formulating the RE Act has been successfully accomplished. The standard power purchase Agreement and power purchase tariff methodology have also been prepared and reviewed by stakeholders.

Planned project activities under this component are fully implemented and are therefore rated as **HIGHLY SATISFACTORY (HS)**.

Component 4: Strengthening institutional capacity of GREC and other institutions to support the market of renewable energy

Output 4.1: Institutional strengthening for national institutions to enable support for the renewable energy market

Output 4.2: Training programs developed and conducted for all stakeholders

Under this component the following two major tasks are planned to be accomplished at two levels.

- Institutional strengthening to enable support for the renewable energy market.
- Training programs have been developed and conducted for all stakeholders at the expert level and also provide the technical and financial capacity and tools and implement renewable energy projects and provide training to other professionals and offer advice on RE.

Under Component 4, GREC and other institutions at the end of the project life are expected to be in a position to support the market for renewable energy. To this effect the following results have been achieved:

With the support of this project in depth technical capacity has been built at key institutions such as the Ministry of Energy and Petroleum as well as other relevant stakeholders in order to strengthen the local capacity on renewable energy. Building the capacity will enable NAWEC and PURA to develop their own RE project that will help minimize GHG emissions.

Under this component series of trainings have been provided to The Gambia Technical Training Institute (GTTI) and Chamen Electrical Training Institute, NAWEC Training Center, University of Gambia (UTG) and National Training Authority so that they will be able to offer further training in renewable Energy beyond GEF/UNIDO 4 Project.

The project has also executed the following additional trainings.

- ✓ The Project Management Office in collaboration with Mbolo Association has conducted design, installation and maintenance of standalone PV Hybrid System for 30 Gambian Technicians and experts from 15th to 20th October 2012
- ✓ Training of Trainers on RE Technologies was conducted from 7th to 11 of July 2014 for 30 Gambians
- ✓ Mainstreaming gender on renewable energy hand on training for 30 young women and girls was conducted from 21 to 26 of July and from 10 to 14 of November 2014
- ✓ Renewable Energy curriculum development training was conducted from 24 to 28 November 2014 for 25 Gambians

In total 115 Gambians including women and girls were trained by the GEF/UNIDO 4 Project. Some of the above trainings were conducted by the Energy Center, Kwame Nukumah University of Science and Technology (KNUST), Kumasi, Ghana. Prior to conducting these trainings KNUST team did a capacity need assessment on renewable energy for The Gambia in January 2014.

Taking into consideration the above assessment this component is rated as **HIGHLY SATISFACTORY (HS)**

Component 5: Project Management and Coordination

The Project Component 5 is on project management and coordination. We have visited the project Office a number of times and have discussed with the National Project Coordinator Moses G. Campbell of UNIDO/GEF5 Project and the Project Assistance Mr. Peter D. Mendy who also served under GEF4 to find out if there were problems in the project management and coordination during the project implementation. During our discussion with the project team we have not heard any complaint in relation to management and coordination of project activities. We have not also heard any complained from the major partners and stakeholders as regard to the project management.

The Project Management and Coordination were using tools such as the monitor & evaluation policy, as well as the SMART indicators as part of the Project Logical Framework. The Project Office has systematical organized project documents and was easily made available to us for our review and assessment of the project.

The following office and committees have been organized to smoothly run and coordinate the project.

Project steering committee (PSC): This was established in March 2012. This committee is created to oversee and guide several meetings during the project implementation.

Project Management Committee (PMC): The committee was established on 17th July, 2014 and it met twice.

Project Management Office (PMO): This was established in July, 2012. National Project Manager, Dodou S. Gaye was recruited in June, 2012 and a Project Assistant, Peter D. Mendy recruited in March, 2013. For ease of mobility, PMO has Project Vehicle which was purchased and delivered in April, 2013.

Sometime during the project implementation the pace of project progress was not found by the client up to its expectation was decided to replace the previous National Project Manager, Mr. Moses G. Campbell who served as project manager until the project termination date. The Project Office developed and launched Project Website in June 2015. The project website is "gefundore.gm". Four officers were trained on the website management and administration.

Project Mid-Term Evaluation was conducted by an independent consultant during the period October - December 2014 and has assessed project progress as satisfactory.

Based on the assessment above the project management and coordination is rated as **HIGHLY SATISFACTORY(S)**

Taking into consideration the overall assessment made under section 3.3.2 the overall project implementation effectiveness is rated as **SATISFACTORY(S)**

3.3.3. Efficiency

This subchapter gives an overview on the extent to which the Project has produced the results (outputs and outcomes) within the expected time frame.

There is considerable delay in the implementation of some of the pilot demonstration project activities. These will obviously have serious implication in the disbursement of project budget. The pilot demonstration projects were initially planned to be completed in four years. However, two of the pilot demonstration projects are not fully implemented and one pilot demonstration project has not been even started in the seven years of the project life. The delay in the implementation of the pilot demonstration projects will adversely influence the cost effectiveness of the project due to increase in project running cost and the inflation of goods and services.

According to the information obtained from the SAP data base of 31st December 2017, the GEF grant fund has already been exhausted and no grant fund will be available to implement the remaining project activities after December 2017. Table below presents project disbursement of the GEF Fund per year.

Item	Disbursement (expenditure, incl. commitment) in 2012	Disbursement in 2013	Disbursement in 2014	Disbursement in 2015	Disbursement in 2016	Total disbursement (in USD) (2012-05 May 2016)
Staff & Int. Consultant.	45,830.45	50,843.00	50,511.48	1,000.00		148,184.93
Local travel	1,746.36	94.51	9,596.67	9,134.28		20,571.82
Staff Travel	9,699.72	4,586.38	8,243.53	9,295.11	4,235.66	31,824.74
Nat. Consultant /Staff	19,257.14	28,179.48	44,668.85	41,942.14		134,047.61
Contractual Services	963,604.04	37.39	108,511.99	206,251.86		1,278,405.28
Train/Fellowship/Student	8,915.69		0.00	7,037.53	5,408.93	15,953.22
International Meeting			4,175.70	22,738.13	-818.08	26,913.83
Premises			21.61	111.63		133.24
Equipment	15,893.02	37,222.56	4,987.54	-8,676.58		49,426.54
Other Direct Costs	24,381.97	9,301.16	14,910.54	16,150.64		64,744.31
Total (in USD)	1,089,328.39	130,264.48	245,627.91	304,984.74	8,826.51	1,770,205.52

Source: SAP database, 05 May 2016

Least Cost Option

All six demonstration projects were identified through an open and competitive process. UNIDO instituted an adjudication committee consisting on UNIDO, the GEF OFP, Ministry of Energy representative and representatives of the private sector and REAGAM to select the project developer that will benefit from the GEF Grant. When selecting the six pilot demonstration projects there was no tender bidding procedure through regular procurement, but a waiver of competitive bidding was secured. The project financial management is carried according to UNIDO rules and procedures. By using UNIDO rules and procedures every effort was made to ensure cost-effectiveness of the project.

Project Disbursement and Expenditure

Actual project activities using the co-finance have been delivered but information on the actual co-finance expenditure is not available. There is no information on the amount of co-finance that has been mobilized and utilized by the project developers. However, information /data on the actual expenditure of the GEF fund are available.

Taking into consideration the above assessment project efficiency of the project expenditure is rated as **SATISFACTORY(S)**.

3.3.4. Likelihood of Sustainability of Project Outcomes

The important aspect of sustainability of GEF projects is the sustainability of project results, as well as the likelihood of continued benefits after the GEF project ends. The implication for GEF projects is that results should be sustained even at the end of the project life. There are various risk factors that influence the sustainability of the project outcomes. Some of these risks are indicated below:

Financial risks

There was a clear co-financing plan of the project from the project partners. This was the positive side of providing waivers from competitive bidding and having known in advance who will be the project partners that is committed and willing to provide the 70 % co-finance. Despite the clear co-financing plan no money is left to implement the outstanding project activities. If the Government of Gambia is not committed to allocate budget to implement the outstanding project activities, the financial risk to complete and sustain the pending pilot project activities is expected to face financial risk. Financial risk is therefore **Moderately Likely (ML)**

Sociopolitical Risks

Project stakeholders, including government officials, renewable energy companies, and the broader public, have developed a strong sense of ownership of the project. The project has provided targeted training and awareness raising on renewable energy. It had also broad social media coverage, and brought a real societal behavioral change by integrating renewable energy in the everyday life for the citizens of the Gambia. Moreover, the new Government is committed to ensure sustainability of the project.

Given the level of awareness and project ownership by the stakeholders and the public at large and the commitment that has been shown by the government the project is not

expected to face socio-political risks that will compromise project sustainability. Socio-political risk is therefore **Unlikely (UL)**

Institutional Framework and Governance Risks

With the passing of the new Renewable Energy Law and other supporting mechanisms that would promote the Renewable Energy in the Gambia such as the Renewable Energy Fund, it is believed there will not be any institutional framework and Governance risk that will compromise project sustainability. The institutional framework and governance risk is therefore **Unlikely (UL)**

Environmental Risks

No environmental risk in connection to project sustainability has been identified. Environmental risk of this project is therefore **Unlikely (UL)**

Taking into account the above assessment livelihood of sustainability of project outcomes is rated as **MODERATELY LIKELY (ML)**

3.3.5. Project Coordination and Management

Project Management

UNIDO in close consultation with MoPE, NEA, GREC and NAWEC and according to the established UNIDO rules and regulations and applicable GEF requirements implemented the phased out project. The role of UNIDO was to maintain the oversight on the project implementation, manage the overall GEF project budget and procurement of all project services, monitor the project implementation, timely prepare financial and progress report and submit to the GEF and the Project PSC, as well as organize mandatory and non-mandatory evaluations. UNIDO has also supported the Project PSC and the PMO in co-ordinating and networking with other related initiatives and institutions in the country. UNIDO manages the implementation by an appointed Project Manager, and as well by mobilizing services of its other technical, administrative and financial branches at the Headquarters and the PMO in the Gambia. .

UNIDO staff provides quality support and advice to the project, providing the right staffing levels, continuity and frequency of field visits for the project, identifying problems in a timely manner and providing appropriate response.

The roles and responsibilities of all Project partners have been identified from the beginning as outlined in the project design and each of the partners is aware of its responsibilities.

The PSC provide strategic guidance on the project implementation and facilitates the coordination of various Government authorities, institutions and the industries. The Director of NEA is the chair of the PSC. To ensure sustainability, strategic relevance and appropriate national coordination, the PSC is established with the participation of the key stakeholders with a concrete mandate.

A Project Management Office (PMO) manages the project implementation on a daily basis. The PMO is headed by the National Project Manager, with a project assistant. The management team operates in a close network of the direct beneficiaries and involved Gambian institutions and other project stakeholders, as well as the private sector involved in

RE in the Gambia. The project management team, under the guidance of UNIDO reports to the Project Steering Committee and work in close coordination with the National technical staff representing partners' organizations.

Based on the above assessments, project coordination and management is rated as **HIGHLY SATISFACTORY (HS)**

UNIDO Implementation Approach, Supervision and Back Stopping

UNIDO implementation approach of organizing and managing project implementation was practical and workable. No issue as regards to UNIDO implementation approach and backstopping was raised during the evaluation mission.

Based on the assessment indicated above, UNIDO implementation approach, Support and back stopping is rated as **HIGHLY SATISFACTORY (HS)**

3.3.6. Assessment of Monitoring and Evaluation System

M&E Design

The Project Document contains a project M&E plan, outlining specific M&E activities, responsible parties, budgets, and timeframes. It includes the log frame, the annual work plans as well as detailed progress and activity reports. The plan also includes budgets for a mid-term and terminal project evaluation. The activities outlined in the M&E plan meet GEF minimum standards for M&E. The PD sufficiently identifies various review and evaluation processes, specific reporting requirements, and responsibilities. Especially it should be noted that this project made use of SMART targets and baseline indicators, which allowed for comprehensive adaptive management, and the same was very advantageous for this mid-term evaluation.

Therefore, M&E design of this project is rated as **HIGHLY SATISFACTORY**.

M&E Plan Implementation

The assessment showed that the Project Manager and Project Management Office (PMO) prepared detailed reports that provide information of the periodical achievements of the project with narrative link back to the outcomes, outputs and targets elaborated in the logical framework. Proper Monitoring and Evaluation procedures were followed by the Project Manager from Implementation Agency by writing very detailed and comprehensive Annual Project Implementation Reviews (PIRs) to GEF. Both UNIDO PM and PMO performed oversight of the main activities especially in the phases of installation of demonstration projects and trainings.

The PMO submitted regular project progress reports to UNIDO, PSC and PMC. A number of in-depth reports on technical evaluation and validation of the demonstration projects, the trainings and the training curricula on renewable energy were prepared by the PMO and experts in respective fields. Annual Project Implementation Reviews (PIRs) were regularly undertaken and they contained very exhaustive information on Project Implementation Progress. However, there was no independent consultant to validate the monitoring reports prepared by the project office.

For the reasons explained above implementation of M&E System is rated **SATISFACTORY (S)**.

Budget and Funding for M&E Activities

The US\$48,000 budget allocated for M&E activities at the planning stage was not sufficient for project of this scale. It might be due to lack of budget that independent consultant was not hired to carry out Monitoring and Evaluation activities at the critical phases of the project. The fact that Monitoring and Evaluation was not done on a regular basis must have negatively influenced project implementation according to plan.

Conducting M&E by independent consult at the mid- term and project end date is not enough and is therefore rated as **MODERATELY SATISFACTORY (MS)**

Monitoring of Long Term Changes

The endorsement of the Renewable Energy Law and the creation of the RE Fund hosted by Public Utilities Regulatory Authority (PURA) for funding renewable energy projects demonstrated that the project is moving in the right direction towards embedding renewable energy as part of the national strategy. There are replication (scale-up) projects that came up within the project life that truly indicate long term changes and project sustainability. The project is therefore rated as **HIGHLY SATISFACTORY**.

Assessment of Processes Affecting Achievement of Project Results

The one single aspect that has affected project results is the lack of co-financing in the implementation of one of the pilot projects. It is therefore important that the project developer has the necessary resources before making any contractual agreement with the developer. Assessment processes that are affecting achievement of project results has been minimal and is therefore rated as **UNSATISFACTORY**

Based on the evaluation under section 3.3.3 above overall assessment of monitoring and evaluation system of the project is rated as **SATISFACTORY(S)**

3.4. Gender Mainstreaming

The project designed adequately considered the gender dimension in its intervention. The project during the baseline study has included the gender issues that have to be addressed during the project implementation. There was gender imbalance in the project management team, in the steering committee and in the project management committee during the project implementation. On the other hand the participation of women in the trainings and seminars of the project was adequate. The gender issue has been fully addressed during the implementation of Mbolo pilot demonstration project. In this pilot project Gambian women and girls were the main work force in the project implementation.

“M’bolo Women Association” is community Centre in Tujereng established to provide skills training and income generation for women by providing in IT, tailoring and horticulture and by expanding its primarily planned hybrid photovoltaic and wind turbine system from 1.6kW to 8.3kW, which includes the 1.5kW wind turbine for provision of power for lighting and sewing machines, and training for renewable energy women technicians.

Mbolo Women Association has conducted gender based training in renewable energy from 21 to 26 July 2014, where over 30 women have undergone the intermediate hands-on training

courses and based on the feedback of trained women, the Ministry of Energy (now Ministry of Petroleum and Energy) targets that 50% of the funding from the RE Fund be earmarked for projects that will be managed by women. Mbolo runs training center for woman to teach them sewing, gardening and on Information technology. Before the GEF/UNIDO 4 Project intervention Mbolo had no electricity to operate the sewing machine for training and also to provide income to the local women. The project was able provide solar and wind standalone hybrid system of 8.3 kW capacity at the center to provide power for the sewing machines, computers and for lighting.

The project has received hundreds of visitors to see the state of the art of this project. In collaboration with the GEF/UNIDO Mbolo has executed two trainings in renewable energy. These are design installation and maintenance of standalone PV hybrid for 30 Gambians and mainstreaming gender on renewable energy for 30 young women and girls from all over the country. Moreover, Mbolo was also used as a regional case study for gender and energy forum organized by ECOWAS Center for Renewable Energy Efficiency (ECREEEE) in Sierra Leone from 7 to 9 May 2013. Mbolo was able to secure funding from GEF Small grant to run a one year hand on training on solar PV installation for 14 Gambian woman and girls. Besides a joint UNIDO-UN Women Mission visited Mbolo on the 22th June 2016 to understand and use it as a success story on renewable energy and women empowerment in the ECOWAS sub region. This pilot demonstration project has served as demonstration site on renewable energy and women empowerment not only for Gambia but also for the region.

A positive indirect effect on Gender was also noticed in the implementation of QCell Repeater stations demonstration project. Qcell will produce excess energy from the hybrid wind/solar system and has the plan to supply ten rural community health centers that are close to this hybrid RE system, and where women are one of the most frequented clients in these health centers.

Taking into consideration the above assessment of gender streaming the project is rated as **SATISFACTORY (S)**

Overall Project Achievement and Ratings

The evaluation team rated the project performance as required by GEF and UNIDO Evaluation Policies and Guidelines for conducting Evaluations. This summarizes the ratings according to the evaluation criteria given in the ToR, attainment of Project Objectives and Results, Sustainability of Project Outcomes, Monitoring and Evaluation, and UNIDO specific ratings as specified in Annex A of the ToR.

The summary of rating of the project based on the findings of the evaluation is presented in the form of a table (next page).

Criterion	Evaluator's summary comments	Evaluator's rating
Attainment of project objectives and results (overall rating)		Satisfactory(S)
Project implementation		
• Effectiveness	Delay in the implementation of some of the pilot demonstration projects	• Satisfactory (S)
• Relevance	The project is in line with the national policies and strategies of The Gambia	• Highly Satisfactory (HS)
• Efficiency	The GEF grant fund is fully utilized and yet some project activities have not been implemented	• Satisfactory (S)
Sustainability of project outcomes (overall rating)		Likely(L)
• Financial risks	Since GEF Grant Fund is fully utilized there will not be GEF Grant Fund to implement the remaining project activities	• Moderately Likely (ML)
• Sociopolitical risks	Stakeholders involvement during the project formulation was high and stable government is now in place	• Unlikely (UL)
• Institutional framework and governance risks	The new elected Government is committed to sustainably manage the RE project. Institutional or governance risk is expected to be minimal	• Unlikely (UL)
• Environmental risks		• Unlikely (UL)
Assessment of M&E systems (overall rating)		Satisfactory (S)
• M&E Design	The project design identified main elements of the project component , the overall objectives, outcomes ,outputs and also addressed their relationships and means of verifications	Highly Satisfactory (HS)
• M&E Plan implementation (use for adaptive management)	M&E plan was not adequately implemented. No independent consultant was hired to regular verify M&E reports prepared by Project Office	Satisfactory(S)
• Budgeting and Funding for M&E activities	The allocated of budget to carry out M&E was not sufficient for an independent consultant to carry out M&E at the critical project milestones	Moderately Satisfactory(MS)

Project Formulation		
<ul style="list-style-type: none"> FA (Situation, stakeholder, problem and objective analyses / Preparation and readiness) 	Project was formulated with high participation and involvement of relevant project stakeholders but there was weakness in identifying reliable project partner during the project formulation phase which ultimately resulted in project delay	Satisfactory (S)
Project Design		
<ul style="list-style-type: none"> Project Design (LFM, main elements of the project, i.e. overall objective, outcomes, outputs, their causal relationship, indicators, means of verification and assumptions) 	The project design clearly address the overall objective, outcomes and out puts and the means verification as indicated in logical framework of the project document	Highly Satisfactory (HS)
Project management - UNIDO specific ratings		
<ul style="list-style-type: none"> Implementation approach 	The UNIDO implementation approach of managing and coordinating the project was practical and workable	Highly Satisfactory (HS)
<ul style="list-style-type: none"> UNIDO Supervision and backstopping 	UNIDO supervision and back stopping was up to expectation of Project Office and project partners and stakeholders	Highly Satisfactory (HS)
Cross-cutting Criteria		
<ul style="list-style-type: none"> Gender Mainstreaming 	There was no Gender balance in the project management but participation of woman in the implementation of one of the pilot projects was excellent	Satisfactory (S)
Overall Project rating		Satisfactory (S)

As it can be seen in the table above taking into accounts the findings of the project evaluation the overall project rating **SATISFACTORY**

Strengths and weakness of the project

Extending the existing national grid to rural areas to provide electric power using diesel oil is not affordable in The Gambia. The project has partially filled this gap by providing reliable and affordable modern form of energy to the rural community. The project has also helped to reduce greenhouse gas emission by developing a market environment and stimulating investment in renewable energy technologies in The Gambia.

Supplying power to The Gambia using diesel oil is very expensive. Moreover, since the process of generating power using diesel emits CO₂ to the atmosphere producing power this system is not environmentally friendly. By implementing the renewable energy pilot projects have managed to supply additional power to The Gambia and has managed to some extent reduced greenhouse gas emission into the atmosphere and this can be mentioned as one of the strengths of this project. The other dimension that will demonstrate the strength of this project is the involvement of the private sector in promoting renewable energy and the level of involvement of women in the project implementation. Big private companies such as Qcell and Gamwind have been involved in the promotion of renewable energy and through this project many Gambian women and girls were trained in the installation, operation and maintenance of Renewable technologies.

One of the most visible weaknesses in this project is the significant delay in the Project Implementation which occurred due to lack of identification of reliable project partners at the time of project formulation phase.

4. Conclusions, Recommendations and Lessons Learned

4.1 Conclusions

The project in relative terms was successful in meeting its end-of-project objectives and outcomes. Over the past three and half years the project has made a major contribution to the promotion and delivery of commercially and technically sustainable energy services (for off-grid lighting, radio, TV, water pumping, and refrigeration) and solar water heating to the household, institutional, commercial, and agricultural sectors of The Gambia. The project enabled country in the formulation of RE Act and in supporting to increased public awareness in renewable energy. The project provided an excellent platform for Gambia to continue to expand its activities in the area of low-carbon development, renewable energy and energy efficiency and has created important synergies with the National Policy on Climate Change and White Paper on Energy for The Gambia.

4.2. Recommendations

4.2.1 Recommendation to Donors

Projects that are financed by external donors such as this one are not most of the time sustainable after the project life. This is specially so in the case of developing countries such as The Gambia where the governments cannot afford to allocate money to ensure project sustainability. Under these circumstances the donor can play important role by providing financial assistance to the Governments to ensure project sustainability. In this particular project donors can assist the Government of The Gambia by providing financial assistance for the Government to continue sensitizing the private investors to invest on the RE and ensure project sustainability.

4.2.2 Recommendation to UNIDO

- ✓ The process of procurement at the UNIDO HQs is lengthy and will need to be improved. Moreover when Contract negotiation is made and grants contracts are prepared a closer collaboration between UNIDO Project Manager, PMO and UNIDO Procurement is needed. UNIDO procurement should be made more user-friendly to counterparts, project partners and the private sector;
- ✓ If the project developer or the Government fails to secure the counterpart fund in a reasonable time frame it should be immediately floated and transferred to another investor in order not to lose additional time in the project implementation;
- ✓ There are some project activities that have not been completed to date. It will be therefore important that MoPE allocate adequate budget and also make close monitoring and follow up to ensure proper implementation of these activities;
- ✓ This project sets an example for the GEF Strategic Program for West Africa (SPWA) and has shown successful project implementation and is a major pioneer in providing

market environment that stimulates investments in renewable energy based mini grids for productive uses in rural areas. . UNIDO should therefore organize workshop on regional Renewable Energy GEF Project to share best practices with countries in the ECOWAS region in the implementation of RE Projects;

4.2.3 Recommendation to the Government

- ✓ The wind turbines of the Gamwind pilot demonstration project are not currently functioning. NAWEC should start discussion with Gamwind to resolve outstanding issues and rehabilitate the wind turbines to make them operational as soon as possible;

4.3. Lessons learned

- ✓ This project with its a specific Project management arrangement consisting of a fully functional Project Management Office (PMO) at a national level under the lead of UNIDO Project Manager, directed by the Project Steering Committee (PSC) and Project Management Committee (PMC). This type of arrangement in project management can be considered as the best practice that can be replicated to implement similar project;
- ✓ In the project document it was initially planned to complete the pilot demonstration projects in four years. This plan was prepared without taking into consideration the scope and volume of work and was later realized to be very short to implement project of this size and magnitude. In the future when planning similar projects it is important to understand the scope and volume of work at the project formulation phase and prepare reasonable and workable plan;
- ✓ Most of the delay in the implementation of the pilot demonstration projects occurred due lack of the co-finance. When counterpart fund could not be secured in a reasonable time frame the project should be floated and transferred to a new investor without losing additional time to implement the pilot project;
- ✓ There is no information on the actual expenditure of the co-finance by the pilot project partners. This is due to lack of regular reporting to the Project Office from the part of the project developers. When implementing similar project in the future it is important to establish reporting mechanism that will provide information on the actual expenditure of co-finance to the project office on a regular basis;
- ✓ The project plan has been revised three times. This is partly due to lack of understanding of the scope of work at the project formulation phase. This has not only delayed project implementation but also made UNIDO and the other implementing partners to allocate underestimated and misleading budget. From this experience lesson can be drawn on the need to analyse in advance the scope of work and prepare realistic plan with realistic timeframe so that time will not be wasted in revising the plan ;

- ✓ Global and development objectives have not been precisely assessed because key activities to quantify their attainment were not carried out to assess the validity of real emission reductions the project has delivered. It is therefore imperative to carry out suppliers and end-users survey to assess the actual impacts of the project before project closure. In this regard hiring independent consultant specialized in this field is of paramount importance;
- ✓ Mbolo Solar PV and Wind Turbine Hybrid System and Q-cell have achieved their objectives in a highly satisfactory manner, and have been major strengths of the project from which best practices should be captured to disseminate and replicate these practices at the national and regional level;
- ✓ Government should dully implement the PPA that has been prepared during the project so that private investors could be encouraged to invest on RE and supply additional power to the grid to minimize the power shortage in the country;
- ✓ When implementing similar projects in the future it is important to make it a precondition for the project developer to either submit performance bond or deposit part of the co-finance prior to project commencement;

Annex A: Terms of References for the evaluation

Independent terminal evaluation of the UNIDO project:

SPWA-CC: Promoting Renewable Energy Based Mini Grids for Productive Uses in Rural Areas in The Gambia

UNIDO Project number: GF/GAM/11/001
UNIDO ID: 103023
GEF ID: 3922

AUGUST 2017

Project background and overview

1. Project factsheet

Project Title	SPWA-CC: Promoting Renewable Energy Based Mini Grids for Productive Uses in Rural Areas in The Gambia
UNIDO project No. and/or SAP ID	GFGAM11001 / SAP ID: 103023
GEF project ID	3922
Region	Africa
Country(ies)	Gambia
GEF focal area(s) and operational programme	Climate Change CC-3
GEF implementing agency(ies)	UNIDO
GEF executing partner(s)	Gambia Renewable Energy Center (GREC), Department of State for Energy, the National Environment Agency (NEA), the National Water and Electricity Company
Project size (FSP, MSP, EA)	FSP
Project CEO endorsement / Approval date	27 July 2011
Project implementation start date (First PAD issuance date)	5 September 2011
Original expected implementation end date (indicated in CEO endorsement/Approval document)	26 June 2014
Revised expected implementation end date (if applicable)	31 December 2014
Actual implementation end date	31 December 2017
GEF project grant (excluding PPG, in USD)	1,758,182
GEF PPG (if applicable, in USD)	60,000
UNIDO co-financing (in USD)	200,000 (in-kind)
Total co-financing at CEO endorsement (in USD)	3,976,030 (in-kind)
Materialized co-financing at project completion (in USD)	
Total project cost (excluding PPG and agency support cost, in USD; i.e., GEF project grant + total co-financing at CEO endorsement)	5,794,220
Mid-term review date	October 2014
Planned terminal evaluation date	October- December, 2017

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2. Project background and context

The Gambia is a relatively small (11,300 sq km) country on the West African coast. It has a population of approximately 1.74 million (est. July 2008) with one of the highest growth rates in West Africa. Approximately one third of the population is based around the capital, Banjul – within the Greater Banjul Area (GBA) – with the remaining population in rural areas. The per capita income in The Gambia is about USD 4962 making it one of the poorest nations in Africa and the country is ranked at 168 out of 177 in the UNDP Human Development Index (HDI) for 2007.

The main economic activities are agricultural production and the growing services sector, contributing to more than 90% to the GDP. Agriculture contributes about 33% of the GDP and provides the main source of income, employment and food supply to the majority of the population. Approximately 75% of the population is involved in agricultural activities. The lack of reliable, affordable power and the high cost of energy are seriously limiting investment in The Gambia and are limiting growth in productive sectors such as the agro-processing and manufacturing sectors.

The Gambia's energy supplies come from four main sources – firewood, petroleum products, butane gas and solar. The energy consumption per capita (kilogram oil equivalent, (koe)) of The Gambia in 2007 was 81 koe. The electricity power system is fairly small providing coverage of about 20% nationally and about 40% in the Greater Banjul Area (GBA). The National Water and Electricity Company (NAWEC) is responsible for the supply of electricity in The Gambia. NAWEC operates a power station in GBA plus six provincial systems as well as purchasing power from two Independent Power Producers (IPPs); one commercial and one social.

Almost all electricity is generated from heavy fuel oil (HFO) and light fuel oil (LFO). There is one grid- connected 150 kVA wind turbine at Batakunku. In addition there are numerous privately owned diesel based generating sets. Current electricity production capacity is insufficient to meet the demand of the urban and rural areas and therefore requires significant investments. The opportunities for the use of the renewable energy resources are numerous including grid, mini-grid and off-grid electricity generation as well as solar water heating, solar drying and wind water pumping.

The project seeks to address most of the existing barriers to the wide scale adoption of renewable energy technologies in The Gambia through an integrated and catalytic approach that combines interventions aimed at creating a market environment conducive to investments in renewable energy projects and pilot projects aimed at demonstrating technical feasibility and commercial viability of renewable energy projects. It is envisaged that these interventions, seen together, will catalyse greater investments in renewable energy projects in the Gambia and provide useful lessons in the region.

The selected project strategy will build on two favourable factors namely; the high commitment by the government to the development of renewable energy, and significant interest by the private sector to invest on the energy sector in general as demonstrated by the existence of an independent power producer in the country.

Primary target beneficiaries of the project are energy policy-making and implementing institutions, primarily the Ministry of Energy and GREC, potential energy generators (managers, developers and engineers), rural energy users, training institutes, energy professionals and service providers and the financial sector.

The project is funded through a GEF grant, amounting to USD 1,758,182 (and PPG Grant of USD 60,000), a UNIDO contribution of USD 200,000 (in kind); and the counterparts' co-financing of USD 5,650,000 (cash and in kind), which amount to total project budget of USD 7,668,182. Co-financers are government agencies, NGOs, as well as the private sector.

The project implementation started in September 2011 and the initial project end date was in June 2014. The same was revised to December 2014 and finally to May 2015.

External terminal as well as mid-term evaluation are foreseen in the project document, with the purpose of conducting a systematic and impartial assessment of the project in line with UNIDO and GEF Evaluation policies. Mid-term evaluation took place from October-December 2014 covering the time period from September 2011 – end of 2014. The terminal evaluation is planned to take place between **October- December, 2017**.

3. Project objective and structure

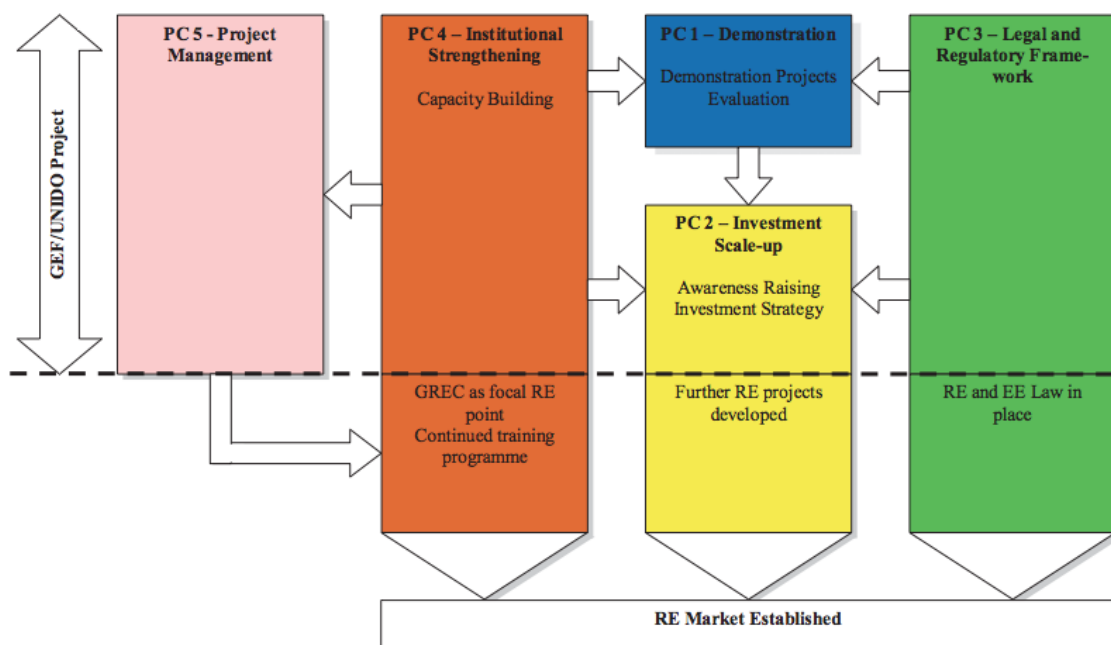
The overall project objective is to develop and promote a market environment that will stimulate investments in renewable energy based mini-grids for productive uses in rural areas of The Gambia.

The project consists of four technical components as below:

- **Project Component 1 (PC1)** will demonstrate the technical feasibility and commercial viability of renewable energy based projects including mini-grids. These will create best practice examples for the country for further dissemination and to help raise awareness. The pilots have been selected on a number of criteria including their GHG emission reductions and their replicability as outlined below:
 - 1 x 450 kW wind turbine for fish processing – this can be replicated at other fisheries along the coast as well as for other processing along the coast – for example briquetting of agrowaste e.g. ground nut shells near Denton Bridge.
 - 2 x 450 kW wind turbines on grid – this can be replicated at other sites along the coast with access to the GBA grid.
 - 1 x 60 kW PV hybrid mini grid at Kaur – this can be replicated and expanded at each of NAWEC's six provincial grids as well as at new sites or rural electrification. In addition large scale PV could be installed in The Gambia close to any demand, in the short term this would be on the GBA grid.
 - 10 x PV/wind/diesel hybrid transceiver stations plus health centres – this can be replicated and expanded across the country for all telecommunication energy needs by all companies.
 - 1 x PV/wind women's workshop, 2 x PV agriculture projects, – both of these small scale projects can be replicated across The Gambia and can help in local income generation without the need to resort to polluting and expensive diesel fuel.

- **Project component 2 (PC2)** will help develop the market for renewable energy through the preparation of an investment strategy.
- **Project Component 3 (PC3)** will strengthen the policies and regulatory framework to effectively promote and support renewable energy market environment
- **Project Component 4 (PC4)** will strengthening the institutional capacity as well as address the insufficient technical capacity to identify, develop and implement renewable energy projects within institutions and other market players.
- **Project Component 5 (PC5)** will focus on the management of the project.

The following figure shows how the project components interact together in facilitating the development of a renewable energy market in The Gambia.



4. Mid-term Evaluation

A mid-term evaluation, as mentioned in the project document, was conducted from October – December 2014, covering a time period from September 2011 – end of 2014.

Three demonstration projects are fully implemented, two demonstration projects are under implementation, three viable bids were received for the sixth demonstration project, awareness raising is done, development objective and societal change in view of regarding renewable energy as a viable, sustainable and reasonable source of energy is reached, most of the trainings were done, beneficiaries reached, and Renewable Energy Act passed. The impacts and readiness for replication and scaling up of the demonstration projects in the private sector is already visible in the cases of the installation of a 60kW Solar Photovoltaic RE System at the Lemon Creek Hotel and new renewable energy installations in the neighbourhood of Mbolo. Results of the evaluation criteria are summarized below:

Design: highly satisfactory

Relevance: highly satisfactory

Effectiveness: highly satisfactory

Efficiency: satisfactory

Sustainability: moderately unlikely, owing to, amongst others, socio-political risks

M&E: satisfactory

Project management: highly satisfactory

5. Project implementation and execution arrangements

UNIDO will be the GEF Implementing Agency (IA) for the project. The project will be directly executed by UNIDO in collaboration with the Ministry of Energy and the National Environment Agency (NEA). UNIDO will be responsible for the general management and monitoring of the project, and reporting on the project performance to the GEF. UNIDO will be in charge of procuring the international expertise, technologies, services etc needed to deliver the outputs planned under the five project components. UNIDO will also manage, supervise and monitor the work of the international teams and ensure that deliverables are technically sound and consistent with the requirements of the project.

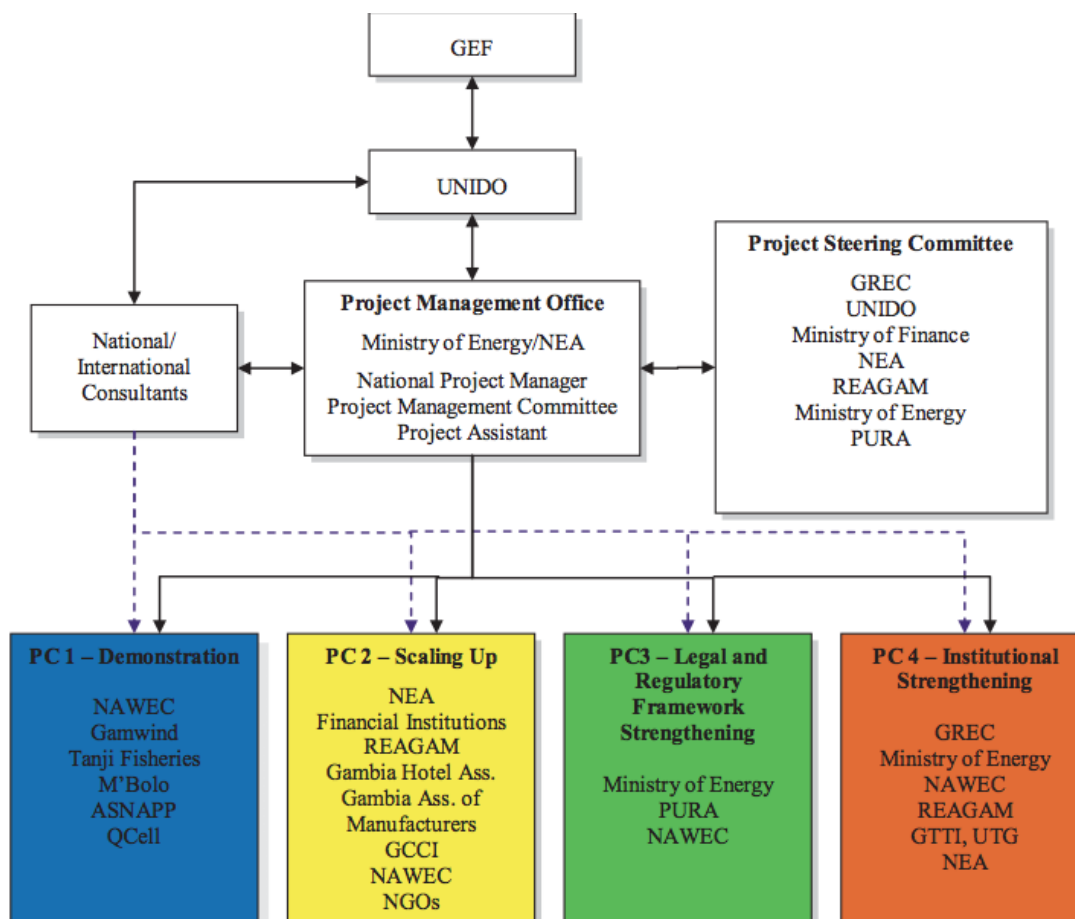
The Ministry of Energy (MoE) will have overall project coordination responsibility.

A **Project Management Office (PMO)** will be hosted by the Gambia Renewable Energy Center (GREC) – an institution established by MoE. The PMO will consist of the National Project Manager (NPM) and a Project Administrative Assistant (PAA). Operating as an entity, the PMO will be responsible for the day-to-day management, monitoring and evaluation of project activities as in the agreed project work plan.

A **Project Management Committee** will be established to guide the management of the project. This Project Management Committee will be chaired by the Ministry of Energy (MoE) and will include a representative from the National Environment Agency (NEA) and the Ministry of Finance as well as the National Project Manager and the Project Assistant.

A **Project Steering Committee** will be established for periodically reviewing and monitoring project implementation progress, facilitate co-ordination between project partners, provide transparency and guidance, and ensuring ownership, support and sustainability of the project results. The Steering Committee will have a balanced representation from key ministries, public institutions, private sector, NGOs, UNIDO and other international organizations partnering in the project or having relevant ongoing programmes.

Project implementation arrangement is illustrated in the following figure:



6. Budget information

The project is funded through a GEF grant, amounting to USD 1,758,182 (and PPG Grant of USD 60,000), a UNIDO contribution of USD 200,000 (in kind); and the counterparts' co-financing of USD 5,650,000 (cash and in kind), which amount to total project budget of USD 7,668,182. Co-financers are government agencies, NGOs, as well as the private sector.

Some financial details are shown below:

	<i>Project Preparation a</i>	<i>Project b</i>	<i>Total c = a + b</i>	<i>Agency Fee</i>
GEF financing	60,000	1,758,182	1,818,182	181,818
Co-financing	90,000	3,976,030	4,066,030	
Total	150,000	5,734,212	5,884,212	

Source: project document; attachment to CEO approval

	GEF Financing	Co-Financing (USD 000)	Total (USD 000)
1. Demonstration of the techno-economic viability of renewable energy projects in rural areas of The Gambia	1288.41	3499.51	4787.92

2. Strategy for scaling up of renewable energy investments in The Gambia	70.36	13.64	84
3. Strengthening the legal and regulatory framework for the renewable energy sector	22	240	262
4. Strengthening institutional capacity through focussed capacity building	229.56	58.44	288
5. Project management and coordination	147.86	164.44	312.3
Total	1758.19	3976.03	5734.22

Source: project document; attachment to CEO approval

Co-financing Source Breakdown is as follows:

Name of Co-financier (source)	Classification	Type	Project	%*
UNIDO	Implementing Agency	Grant/In kind	200,000.00	5.0
Government of The Gambia	National Government	In-kind	60,000.00	1.5
Government of The Gambia	National Government	Cash	115,000.00	2.9
European Union Delegation	Multi-lateral	Cash	231,000.00	5.8
NAWEC	Utility	Cash	336,000.00	8.5
GAMWIND	Private sector	Cash	640,000.00	16.1
Q-Cell	Private sector	Cash	2,000,000.00	50.3
M-Bolo	NGO	Cash	77,500.00	1.9
GAMSOLAR	NGO	Cash	117,500.00	3
Tanji Community	Community	Cash/Kind	199,030.00	5
Total Co-financing			3,976,030	100

Source: Project document; attachment to CEO approval

UNIDO GEF-grant disbursement breakdown:

Item	Disbursement (expenditure, incl. commitment) in 2012	Disbursement in 2013	Disbursement in 2014	Disbursement in 2015	Disbursement in 2016	Total disbursement (in USD) (2012-05 May 2016)
Staff & Intern Consu	45,830.45	50,843.00	50,511.48	1,000.00		148,184.93
Local travel	1,746.36	94.51	9,596.67	9,134.28		20,571.82
Staff Travel	9,699.72	4,586.38	8,243.53	9,295.11	4,235.66	31,824.74
Nat.Consult./Staff	19,257.14	28,179.48	44,668.85	41,942.14		134,047.61
Contractual Services	963,604.04	37.39	108,511.99	206,251.86		1,278,405.28
Train/Fellowship/Stu	8,915.69		0.00	7,037.53	5,408.93	15,953.22
International Meetin			4,175.70	22,738.13	-818.08	26,913.83
Premises			21.61	111.63		133.24
Equipment	15,893.02	37,222.56	4,987.54	-8,676.58		49,426.54
Other Direct Costs	24,381.97	9,301.16	14,910.54	16,150.64		64,744.31
Total (in USD)	1,089,328.39	130,264.48	245,627.91	304,984.74	8,826.51	1,770,205.52

Source: SAP database, 05 May 2016

II. Scope and purpose of the evaluation

The terminal evaluation (TE) will cover the whole duration of the project from its starting date in September 2011 to the estimated completion date in **December 2017**. It will assess project performance against the evaluation criteria: relevance, effectiveness, efficiency, sustainability and impact.

The TE has an additional purpose of drawing lessons and developing recommendations for UNIDO and the GEF that may help improving the selection, enhancing the design and implementation of similar future projects and activities in the country and on a global scale upon project completion. The terminal evaluation report should include examples of good practices for other projects in the focal area, country, or region.

The terminal evaluation should provide an analysis of the attainment of the project objective(s) and the corresponding technical components or outputs. Through its assessments, the terminal evaluation should enable the Government, the national GEF Operational Focal Point (OFP), counterparts, the GEF, UNIDO and other stakeholders and donors to verify prospects for development impact and promoting sustainability, providing an analysis of the attainment of global environmental objectives, project objectives, delivery and completion of project outputs/activities, and outcomes/impacts based on indicators, and management of risks. The assessment includes re-examination of the relevance of the objectives and other elements of project design according to the project evaluation parameters defined in chapter VI.

The key question of the terminal evaluation is whether the project has achieved or is likely to achieve its main objective of creating a market environment conducive to investments in renewable energy projects and pilot projects aimed at demonstrating technical feasibility and commercial viability of renewable energy projects.

III. Evaluation approach and methodology

The terminal evaluation will be conducted in accordance with the UNIDO Evaluation Policy¹, the UNIDO Guidelines for the Technical Cooperation Programme and Project Cycle², the GEF Guidelines for GEF Agencies in Conducting Terminal Evaluations³, the GEF Monitoring and Evaluation Policy⁴ and the GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies⁵.

It will be carried out by an independent evaluation team, as an independent in-depth evaluation using a participatory approach whereby all key parties associated with the project are kept informed

¹ UNIDO. (2015). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/(M).98/Rev.1)

² UNIDO. (2006). Director-General's Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAI.17/Rev.1, 24 August 2006)

³ GEF. (2008). Guidelines for GEF Agencies in Conducting Terminal Evaluations (Evaluation Office, Evaluation Document No. 3, 2008)

⁴ GEF. (2010) The GEF Monitoring and Evaluation Policy (Evaluation Office, November 2010)

⁵ GEF. (2011). GEF Minimum Fiduciary Standards: Separation of Implementation and Execution Functions in GEF Partner Agencies (GEF/C.41/06/Rev.01, 3 November 2011, prepared by the Trustee)

and regularly consulted throughout the evaluation. The evaluation team will liaise with the UNIDO Independent Evaluation Division (ODG/EVQ/IEV) on the conduct of the evaluation and methodological issues.

The evaluation team will be required to use different methods to ensure that data gathering and analysis deliver evidence-based qualitative and quantitative information, based on diverse sources, as necessary: desk studies and literature review, statistical analysis, individual interviews, focus group meetings, surveys and direct observation. This approach will not only enable the evaluation to assess causality through quantitative means but also to provide reasons for why certain results were achieved or not and to triangulate information for higher reliability of findings. The specific mixed methodological approach will be described in the inception report.

The evaluation team will develop interview guidelines. Field interviews can take place either in the form of focus-group discussions or one-to-one consultations.

The methodology will be based on the following:

1. A desk review of project documents, including, but not limited to:
 - (a) The original project document, monitoring reports (such as progress and financial reports to UNIDO and UNIDO-GEF annual Project Implementation Reports (PIRs)), mid-term review (MTR) report, output reports (case studies, action plans, sub-regional strategies, etc.), back-to-office mission report(s), end-of-contract report(s) and relevant correspondence.
 - (b) If applicable, notes from the meetings of committees involved in the project (e.g. approval and steering committees).
 - (c) Other project-related material produced by the project.
2. The evaluation team will use available models of (or reconstruct if necessary) theory of change for the different types of intervention (enabling, capacity, investment, demonstration). The validity of the theory of change will be examined through specific questions in interviews and possibly through a survey of stakeholders.
3. Counterfactual information: In those cases where baseline information for relevant indicators is not available, the evaluation team will aim at establishing a proxy-baseline through recall and secondary information.
4. Interviews with project management and technical support including staff and management at UNIDO HQ and in the field and – if necessary - staff associated with the project’s financial administration and procurement.
5. Interviews with project partners and stakeholders, including, among others, government counterparts, GEF OFP, project stakeholders, and co-financing partners as shown in the corresponding sections of the project documents.
6. On-site observation of results achieved by demonstration projects, including interviews of actual and potential beneficiaries of improved technologies.
7. Interviews and telephone interviews with intended users for the project outputs and other stakeholders involved in the project. The evaluation team shall determine whether to seek additional information and opinions from representatives of any donor agency(ies) or other organizations.

8. Interviews with the relevant UNIDO Regional Bureau for Africa, to the extent that it was involved in the project, and members of the project management team and the various national and sub-regional authorities dealing with project activities as necessary. If deemed necessary, the evaluation team shall also gain broader perspectives from discussions with relevant GEF Secretariat staff.
9. Other interviews, surveys or document reviews as deemed necessary by the evaluation team and/or UNIDO, ODG/EVQ/IEV for triangulation purposes.
10. The inception report will provide details on the methodology used by the evaluation team and include an evaluation matrix.

IV. Evaluation team composition

The evaluation team will be composed of one international evaluation consultant acting as the team leader and one national consultant(s). The consultants will be contracted by UNIDO. The tasks of each team member are specified in the job descriptions annexed to these terms of reference.

The evaluation team might be required to provide information relevant for follow-up studies, including terminal evaluation verification on request to the GEF partnership up to three years after completion of the terminal evaluation.

Members of the evaluation team must not have been directly involved in the design and/or implementation of the projects/programme under evaluation.

The UNIDO project manager and the project teams in the participating countries will support the evaluation team. The UNIDO GEF Coordinator and the GEF OFP will be briefed on the evaluation and provide support to its conduct. GEF OFP will, where applicable and feasible, also be briefed and debriefed at the start and end of the evaluation mission.

V. Time schedule and deliverables

The evaluation is scheduled to take place from **October to December 2017**. The evaluation mission is planned for **October 2017**. At the end of the field mission, there will be a presentation of the preliminary findings for all stakeholders involved in this project/programme in the participating country.

At the end of the evaluation field mission, a debriefing should also be conducted inviting local stakeholders (incl. government and parties involved in the evaluation). After the evaluation mission, the international evaluation consultant will come to UNIDO HQ for debriefing and presentation of the preliminary findings of the terminal evaluation.

The draft TE report will be submitted 4 to 6 weeks after the end of the mission. The draft TE report is to be shared with the UNIDO PM, ODG/EVQ/IEV, the UNIDO GEF Coordinator and the GEF OFP and other relevant stakeholders for receipt of comments. The ET is expected to revise the draft TE report based on the comments received, edit the language and form and submit the final version of the TE report in accordance with UNIDO ODG/EVQ/IEV standards.

VI. Project evaluation parameters

The evaluation team will assess the project performance guided by the parameters and evaluations questions provided in this section. In addition to the qualitative assessment based on the evidence gathered in the evaluation, the evaluation team will rate the project on the basis of the **rating criteria for the parameters described in the following sub-chapters, A to I.**

Ratings will be presented in the form of tables with each of the criteria / aspects rated separately and with **brief justifications for the rating** based on the findings and the main analyses (see **Error! Reference source not found.** to **Error! Reference source not found.**) in **Error! Reference source not found.** **Error! Reference source not found.** presents the template for summarizing the overall ratings.

For GEF projects: As per the GEF's requirements, the evaluation report should also provide information on project identification, time frame, actual expenditures, and co-financing in the format in **Error! Reference source not found.**, which is modeled after the GEF's project identification form (PIF).

A. Project identification and design

Project identification assessment criteria derived from the logical framework approach (LFA) methodology, establishing the process and set up of steps and analyses required to design a project in a systematic and structured way, e.g. situation, stakeholder, problem and objective analyses. The aspects to be addressed by the evaluation include inter alia the extent to which:

- a) The situation, problem, need / gap was clearly identified, analysed and documented (evidence, references). The project design was based on a needs assessment
- b) Stakeholder analysis was adequate (e.g. clear identification of end-users, beneficiaries, sponsors, partners, and clearly defined roles and responsibilities in the project(s)).
- c) The project took into account and reflects national and local priorities and strategies
- d) ISID-related issues and priorities were considered when designing the project
- e) Relevant country representatives (from government, industries, gender groups, custom officers and civil society - including the GEF OFP for GEF projects), were appropriately involved and participated in the identification of critical problem areas and the development of technical cooperation strategies.

Project design quality assessment criteria derive from the logical framework approach (LFA) methodology, leading to the establishment of LogFrame Matrix (LFM) and the main elements of the project, i.e. overall objective, outcomes, outputs, to defining their causal relationship, as well as indicators, their means of verification and the assumptions. The evaluation will examine the extent to which:

- f) The project's design were adequate to address the problems at hand;
- g) The project had a clear thematically focused development objective;
- h) The project outcome was clear, realistic, relevant, addressed the problem identified and provided a clear description of the benefit or improvement that will be achieved after project completion;
- i) Outputs were clear, realistic, adequately leading to the achievement of the outcome;

- j) The attainment of overall development objective, outcome and outputs can be determined by a set of SMART verifiable indicators;
- k) The results hierarchy in the LFM, from activities to outputs, outcome and overall objective, is logical and consistent.
- l) Verification and Assumptions were adequate, identifying important external factors and risks;
- m) All GEF-4 and GEF-5 projects have incorporated relevant environmental and social considerations into the project design / GEF-6 projects have followed the provisions specified in UNIDO/DGAI.23: UNIDO Environmental and Social Safeguards Policies and Procedures (ESSPP).

B. Implementation Performance

Implementation assessment criteria to be applied are shown below and correspond to DAC criteria, as well as to good programme/project management practices.

a) Relevance and ownership

The evaluation will examine the extent to which the project is relevant to the:

- i. National development and environmental priorities and strategies of the Government and the population, and regional and international agreements. See possible evaluation questions under “Country ownership/drivenness” below.
- ii. Target groups: relevance of the project’s objectives, outcomes and outputs to the different target groups of the interventions (e.g. companies, civil society, beneficiaries of capacity building and training, etc.).
- iii. GEF’s focal areas/operational programme strategies: In retrospect, were the project’s outcomes consistent with the GEF focal area(s)/operational program strategies? Ascertain the likely nature and significance of the contribution of the project outcomes to the wider portfolio of POPs.
- iv. Does the project remain relevant taking into account the changing environment?

b) Effectiveness

- i. Achievement of expected outcomes:
 - What outputs and outcomes has the project achieved so far (both qualitative and quantitative results)?
 - To what extent have the expected outcomes, outputs and long-term objectives been achieved or are likely to be achieved?
 - Has the project generated any results that could lead to changes of the assisted institutions?
 - Have there been any unplanned effects?
 - Are the project outcomes commensurate with the original or modified project objectives?
 - If the original or modified expected results were described as merely outputs/inputs, were there any real outcomes of the project and, if so, were these commensurate with realistic expectations from the project?
 - If there was a need to reformulate the project design and the project results framework given changes in the country and operational context, were such modifications properly documented?
- ii. How do the stakeholders perceive the quality of outputs? Were the targeted beneficiary groups actually reached?

- iii. Longer-term impact: Identify actual and/or potential longer-term impacts or at least indicate the steps taken to assess these (see also below “monitoring of long term changes”). Wherever possible, evaluators should indicate how findings on impacts will be reported in future.
- iv. Catalytic or replication effects: Describe any catalytic or replication effects: the evaluation will describe any catalytic or replication effect both within and outside the project. If no effects are identified, the evaluation will describe the catalytic or replication actions that the project carried out. No ratings are requested for the project’s catalytic role.

c) Efficiency

The extent to which:

- i. The project cost was effective? Was the project using the most cost-efficient options?
- ii. Has the project produced results (outputs and outcomes) within the expected time frame? Was project implementation delayed, and, if it was, did that affect cost effectiveness or results? Wherever possible, the evaluator should also compare the costs incurred and the time taken to achieve outcomes with that for similar projects. Are the project’s activities in line with the schedule of activities as defined by the project team and annual work plans? Are the disbursements and project expenditures in line with budgets?
- iii. Have the inputs from the donor, UNIDO and Government/counterpart been provided as planned, and were they adequate to meet the requirements? Was the quality of UNIDO inputs and services as planned and timely?
- iv. Was there coordination with other UNIDO and other donors’ projects, and did possible synergy effects happen?
- v. Were there delays in project implementation and if so, what were their causes?

d) Assessment of risks to sustainability of project outcomes

Sustainability is understood as the likelihood of continued benefits after the GEF project ends.

Assessment of sustainability of outcomes will be given special attention but also technical, financial and organization sustainability will be reviewed. This assessment should explain how the risks to project outcomes will affect continuation of benefits after the GEF project ends. It will include both exogenous and endogenous risks. The following four dimensions or aspects of risks to sustainability will be addressed:

- i. **Financial risks.** Are there any financial risks that may jeopardize sustainability of project outcomes? What is the likelihood of financial and economic resources not being available once GEF assistance ends? (Such resources can be from multiple sources, such as the public and private sectors or income-generating activities; these can also include trends that indicate the likelihood that, in future, there will be adequate financial resources for sustaining project outcomes.) Was the project successful in identifying and leveraging co-financing?
- ii. **Sociopolitical risks.** Are there any social or political risks that may jeopardize sustainability of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? Do the various key stakeholders see that it is in their interest that project benefits continue to flow? Is there sufficient public/stakeholder awareness in support of the project’s long-term objectives?
- iii. **Institutional framework and governance risks.** Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits? Are requisite systems for accountability and transparency and required technical know-how in place?

- iv. **Environmental risks.** Are there any environmental risks that may jeopardize sustainability of project outcomes? Are there any environmental factors, positive or negative, that can influence the future flow of project benefits? Are there any project outputs or higher level results that are likely to have adverse environmental impacts, which, in turn, might affect sustainability of project benefits? The evaluation should assess whether certain activities will pose a threat to the sustainability of the project outcomes.

e) Assessment of monitoring and evaluation (M&E) systems

- i. **M&E design.** Did the project have an M&E plan to monitor results and track progress towards achieving project objectives? The evaluation will assess whether the project met the minimum requirements for the application of the Project M&E plan (see annex 3).
- ii. **M&E plan implementation.** The evaluation should verify that an M&E system was in place and facilitated timely tracking of progress toward project objectives by collecting information on chosen indicators continually throughout the project implementation period; annual project reports were complete and accurate, with well-justified ratings; the information provided by the M&E system was used during the project to improve performance and to adapt to changing needs; and the project had an M&E system in place with proper training for parties responsible for M&E activities to ensure that data will continue to be collected and used after project closure. Was monitoring and self-evaluation carried out effectively, based on indicators for outputs, outcomes and impacts? Are there any annual work plans? Was any steering or advisory mechanism put in place? Did reporting and performance reviews take place regularly?
- iii. **Budgeting and Funding for M&E activities.** In addition to incorporating information on funding for M&E while assessing M&E design, the evaluators will determine whether M&E was sufficiently budgeted for at the project planning stage and whether M&E was adequately funded and in a timely manner during implementation.

f) Monitoring of long-term changes

The M&E of long-term changes is often incorporated in GEF-supported projects as a separate component and may include determination of environmental baselines; specification of indicators; and provisioning of equipment and capacity building for data gathering, analysis, and use. This section of the evaluation report will describe project actions and accomplishments towards establishing a long-term monitoring system. The evaluation will address the following questions:

- i. Did the project contribute to the establishment of a long-term monitoring system? If it did not, should the project have included such a component?
- ii. What were the accomplishments and shortcomings in establishment of this system?
- iii. Is the system sustainable — that is, is it embedded in a proper institutional structure and does it have financing? How likely is it that this system continues operating upon project completion?
- iv. Is the information generated by this system being used as originally intended?

g) Assessment of processes affecting achievement of project results

Among other factors, when relevant, the evaluation will consider a number of issues affecting project implementation and attainment of project results. The assessment of these issues can be

integrated into the analyses of project design, relevance, effectiveness, efficiency, sustainability and management as the evaluators deem them appropriate (it is not necessary, however it is possible to have a separate chapter on these aspects in the evaluation report). The evaluation will consider, but need not be limited to, the following issues that may have affected project implementation and achievement of project results:

- i. **Preparation and readiness / Quality at entry.** Were the project's objectives and components clear, practicable, and feasible within its time frame? Were counterpart resources (funding, staff, and facilities), and adequate project management arrangements in place at project entry? Were the capacities of executing institution and counterparts properly considered when the project was designed? Were lessons from other relevant projects properly incorporated in the project design? Were the partnership arrangements properly identified and the roles and responsibilities negotiated prior to project approval?
- ii. **Country ownership/driverness.** Was the project concept in line with the sectoral and development priorities and plans of the country—or of participating countries, in the case of multi-country projects? Are project outcomes contributing to national development priorities and plans? Were relevant country representatives from government and civil society involved in the project? Was the GEF OFP involved in the project design and implementation? Did the recipient government maintain its financial commitment to the project? Has the government—or governments in the case of multi-country projects—approved policies or regulatory frameworks in line with the project's objectives?
- iii. **Stakeholder involvement and consultation.** Did the project involve the relevant stakeholders through continuous information sharing and consultation? Did the project implement appropriate outreach and public awareness campaigns? Were the relevant vulnerable groups and powerful supporters and opponents of the processes involved in a participatory and consultative manner? Which stakeholders were involved in the project (e.g., NGOs, private sector, other UN Agencies) and what were their immediate tasks? Did the project consult with and make use of the skills, experience, and knowledge of the appropriate government entities, nongovernmental organizations, community groups, private sector entities, local governments, and academic institutions in the design, implementation, and evaluation of project activities? Were perspectives of those who would be affected by project decisions, those who could affect the outcomes, and those who could contribute information or other resources to the process taken into account while taking decisions?
- iv. **Financial planning.** Did the project have appropriate financial controls, including reporting and planning, that allowed management to make informed decisions regarding the budget and allowed for timely flow of funds? Was there due diligence in the management of funds and financial audits? Did promised co-financing materialize? Specifically, the evaluation should also include a breakdown of final actual project costs by activities compared to budget (variances), financial management (including disbursement issues), and co-financing.
- v. **UNIDO's supervision and backstopping.** Did UNIDO staff identify problems in a timely fashion and accurately estimate their seriousness? Did UNIDO staff provide quality support and advice to the project, approve modifications in time, and restructure the project when needed? Did UNIDO provide the right staffing levels, continuity, skill mix, and frequency of field visits for the project?
- vi. **Co-financing and project outcomes and sustainability.** Did the project manage to mobilize the co-financing amount expected at the time of CEO Endorsement? If there was a difference in the level of expected co-financing and the co-financing actually mobilized, what were the reasons for the variance? Did the extent of materialization of co-financing affect

project outcomes and/or sustainability, and, if so, in what ways and through what causal linkages?

- vii. **Delays and project outcomes and sustainability.** If there were delays in project implementation and completion, what were the reasons? Did the delays affect project outcomes and/or sustainability, and, if so, in what ways and through what causal linkages?
- viii. **Implementation and execution approach.** Is the implementation and execution approach chosen different from other implementation approaches applied by UNIDO and other agencies? Does the approach comply with the principles of the Paris Declaration? Is the implementation and execution approach in line with the GEF Minimum Fiduciary Standards: Separation of Implementation and Execution Functions in GEF Partner Agencies (GEF/C.41/06/Rev.01) and the relevant UNIDO regulations (DGAI.20 and Procurement Manual)? Does the approach promote local ownership and capacity building? Does the approach involve significant risks? In cases where Execution was done by third parties, i.e. Executing Partners, based on a contractual arrangement with UNIDO was this done in accordance with the contractual arrangement concluded with UNIDO in an effective and efficient manner?
- ix. **Environmental and Social Safeguards.** If a GEF-5 project, has the project incorporated relevant environmental and social risk considerations into the project design? What impact did these risks have on the achievement of project results?

h) Project coordination and management

The extent to which:

- i. The national management and overall coordination mechanisms have been efficient and effective? Did each partner have assigned roles and responsibilities from the beginning? Did each partner fulfil its role and responsibilities (e.g. providing strategic support, monitoring and reviewing performance, allocating funds, providing technical support, following up agreed/corrective actions)?
- ii. The UNIDO HQ-based management, coordination, monitoring, quality control and technical inputs have been efficient, timely and effective (e.g. problems identified timely and accurately; quality support provided timely and effectively; right staffing levels, continuity, skill mix and frequency of field visits)?

i) Assessment of gender mainstreaming

Gender mainstreaming assessment criteria are provided in the table below. Guidance on integrating gender is included in Annex 4.

The evaluation will consider, but need not be limited to, the following issues that may have affected gender mainstreaming in the project:

- Did the project/programme design adequately consider the gender dimensions in its interventions? If so, how (at the level of project outcome, output or activity)?
- Was a gender analysis included in a baseline study or needs assessment (if any)?
- How gender-balanced was the composition of the project management team, the Steering Committee, experts and consultants and the beneficiaries?
- Have women and men benefited equally from the project's interventions? Do the results affect women and men differently? If so, why and how? How are the results likely to affect gender relations (e.g., division of labour, decision-making authority)?

- Are women/gender-focused groups, associations or gender units in partner organizations consulted/included in the project?
- To what extent were socioeconomic benefits delivered by the project at the national and local levels, including consideration of gender dimensions?

VII. Deliverables and Reporting

Inception report

These terms of reference (TOR) provide some information on the evaluation methodology, but this should not be regarded as exhaustive. After reviewing the project documentation and initial interviews with the project manager, the evaluation team will prepare a short inception report that will operationalize the TOR relating to the evaluation questions and provide information on what type of and how the evidence will be collected (methodology). It will be discussed with and approved by the responsible in the UNIDO Independent Evaluation Division.

The inception report will focus on the following elements: preliminary project theory model(s); elaboration of evaluation methodology including quantitative and qualitative approaches through an evaluation framework (“evaluation matrix”); division of work between the international evaluation consultants; mission plan, including places to be visited, people to be interviewed and possible surveys to be conducted and a debriefing and reporting timetable⁶.

Evaluation report format and review procedures

The draft report will be delivered to UNIDO Independent Evaluation Division (the suggested report outline is in annex 1) and circulated to UNIDO staff, the GEF OFP, and national stakeholders associated with the project for factual validation and comments. Any comments or responses, or feedback on any errors of fact to the draft report provided by the stakeholders will be sent to UNIDO ODG/EVQ/IEV for collation and onward transmission to the project evaluation team who will be advised of any necessary revisions. On the basis of this feedback, and taking into consideration the comments received, the evaluation team will prepare the final version of the terminal evaluation report.

The evaluation team will present its preliminary findings to the national stakeholders at the end of the field visit and take into account their feed-back in preparing the evaluation report. A presentation of preliminary findings will take place at UNIDO HQ after the field mission.

The terminal evaluation report should be brief, to the point and easy to understand. It must explain the purpose of the evaluation, exactly what was evaluated, and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons. The report should provide information on when the evaluation took place, the places visited, who was involved and be presented in a way that makes the information accessible and comprehensible. The report should include an executive summary that encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.

Findings, conclusions and recommendations should be presented in a complete, logical and balanced manner. The evaluation report shall be written in English and follow the outline given in annex 1.

⁶ The evaluator will be provided with a Guide on how to prepare an evaluation inception report prepared by the UNIDO Independent Evaluation Division.

Evaluation work plan and deliverables

The “Evaluation Work Plan” includes the following main products/deliverables:

INCEPTION PHASE:

1. Desk review, briefing by project manager and development of methodology: Following the receipt of all relevant documents, and consultation with the Project Manager about the documentation, including reaching an agreement on the methodology, the desk review could be completed.
2. Inception report: At the time of departure to the field mission, all the received material has been reviewed and consolidated into the Inception report.

FIELD MISSION:

3. Field mission: The principal responsibility for managing this evaluation lies with UNIDO. It will be responsible for liaising with the project team to set up the stakeholder interviews, arrange the field missions, coordinate with the Government. At the end of the field mission, there will be a presentation of preliminary findings to the key stakeholders in the country where the project was implemented.
4. Preliminary findings from the field mission: Following the field mission, the main findings, conclusions and recommendations would be prepared and presented in the field and at UNIDO Headquarters.

REPORTING:

5. Data analysis/collation of the data/information collected
6. A draft terminal evaluation report will be forwarded electronically to the UNIDO Independent Evaluation Division and circulated to main stakeholders.
7. Final terminal evaluation report will incorporate comments received.

VIII. Quality assurance

All UNIDO terminal evaluations are subject to quality assessments by the UNIDO Independent Evaluation Division. Quality assurance and control is exercised in different ways throughout the evaluation process (briefing of consultants on methodology and process by the UNIDO, ODG/EVQ/IEV, providing inputs regarding findings, lessons learned and recommendations from other UNIDO evaluations, review of inception report and evaluation report by UNIDO, ODG/EVQ/IEV). The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality, attached as Annex 4. The applied evaluation quality assessment criteria are used as a tool to provide structured feedback. UNIDO, ODG/EVQ/IEV should ensure that the evaluation report is useful for UNIDO in terms of organizational learning (recommendations and lessons learned) and is compliant with UNIDO’s evaluation policy and these terms of reference. The draft and final terminal evaluation report are reviewed by the UNIDO Independent Evaluation Division, which will submit the final report to the GEF Evaluation Office and circulate it within UNIDO together with a management response sheet.

Annex B: List of persons met (Interviewees)

(a) UNIDO, Vienna Mission: 14-16 November 2017

Name	Title	Agency/Institution	Date/ Location
Mr. Alois Posekufa Mhlanga	Project Manager / Industrial Development Officer	UNIDO	15 th November 2017, Vienna, Austria
Ms. Daniela Izábal Nogueda	Project assistant	UNIDO	15 th November 2017, Vienna, Austria
Mr. Javier Guarnizo	Head of Evaluation Division (IEV)	UNIDO	15 th November 2017, Vienna, Austria
Mr. Conde	Head Africa Bureau	UNIDO	15 th November 2017, Vienna Austria
Ms. Plouthakina	Quality Monitoring Division	UNIDO	Was booked but I interview did not take place

(b) Gambia Mission: 20-25 November 2017

Name	Title	Agency/Institution	Date/ Location
Mr. Kemo K. Ceesay	Director of Energy	Energy Ministry of Petroleum and Energy	20 th November 2017, Banjul, Gambia, Office of the Director
Mr. Moses G. Campbell	National Project Coordinator	Project Management (PMO) Office	20 th November 2017, Project Office, C/o Ministry of Energy, Banjul, Gambia
Mr. Peter D. Mendy	Project Assistant	Project Management (PMO) Office	20 th November 2017, Project Office, C/o Ministry of Energy, Banjul, Gambia
Mr. Momdou Jama Suwareh	National Environment Agency(NEA)	Executive Director and GEF Focal Point	21 th November 2017, Jimpex Road, Kanifing
Mr. Peter, Weissferdt	Gamwind Ltd Wind Power	Owner and Managing Director of the white Horse Residence	21 th November 2017, Tujereng, Kombo South District
Ms Sylvia L Gracia Mr. Touary Mr. Doudu Gaye	M'bolo Association	Senior Administration Management	21 th November 2017, Banjul, Gambia, M'bolo Association and Project Site in Tujereng

Mr. Muhammed Jah	Qcell	Chief Executive Officer	21 th November 2017 Qcell Head Office , Kairaba Avenue
Dr. Musa Touray	Bijilo Medical Centre	Resident Manager	21 th November 2017, Banjul, Gambia, Bijilo Medical Centre and project site
Mr. Edrissa Jarjue	National Water and Electricity Company (NAWEC)	Head of Renewable Energy Unit	22 th November 2017, National Water and Electricity Company (NAWEC) office Pipe line Road, Banjul, Gambia
Mr. Momodou Mass Jobe	EMPAS	General Manager	Old Jeshwang Petrol Station, Kanifing
	Ministry of Finance and Economic Affairs (MoFEA)	They were not available to meet us at the scheduled time and place	24 th November 2017, Quadrangle, Banjul
Mr. Ousman Bojang	Ministry of Trade, Industry, regional Integration & Employment	Senior Trade Economist	24 th November 2017, Banjul, Gambia, Office of the Ministry Independence Drive
Mr. Momodou Lamin Sompo Ceesay	Public Utilities Regulatory Authority (PURA)	Director, Energy and Water regulation	23 th November 2017, Public Utilities Regulation Authority, Banjul, Gambia.
Mr. Chriss Dean Mr. A. Dass	Renewable Energy Association of The Gambia (REAGAM)		23 th November 2017, C/o Ministry of Energy Banjul, Gambia
Mr. Amadou Sowe Musa Njie	Gambia Technical Training Institute (GTTI)	SMCA Teacher BOM	24 th November 2017, Banjul, Gambia, Kanifing
	European Delegation to The Gambia	They were not available to meet the consultant at the scheduled time and venue	
Mr. Nicola Bugati,	ECREEE	Senegal, tel. 00238 2604641	Telephone call on the 25 th November 2017
Mr. Victor I Djemba	UR covering the Gambia	Ghana , Dakar, tel. 00221338596774	Telephone call on the 25 th November 2017

Annex C: List of documents reviewed

S. No	Title of the Document	Date of publication
1	UNIDO/GEF 4 Project In Gambia, Status Report on Pending Projects	June 2017
2	Summary Report on Project Activities(July 2012 – August 2015)	August September 2015
3	UNIDO/GEF 5 Project-GFGAM 130110, Final Works Completion Inspection Report for Bijilo Medical Centre (MNC) 10 kW Solar PV Project	May 2017
4	Feed in Tariff Model and Standard PPA(Draft Report, August 2012	August 2012
5	Training Workshop on Design, Renewable Energy and Maintenance of Renewable Energy Stand Alone System in Gambia(Tujereng, 15-20 October 2012	-----
6	Train-The-Trainers Renewable Energy Expert training(Homer training Manual)	July 2014
7	Back-To- Office Report on PMO's Field Visits to Qcell Project Site (19-21 September 2014	-----
8	Summary of GEF 4 Project Implementation and Lesson learnt	November 2017
9	GEF Project 4 in The Gambia	December 2015
10	UNIDO(PIR) Annual Project Implementation Report for Fiscal Year 2013(July 1,2012-June 30 2013)	June 2013
11	UNIDO Project Mid-Term Review Report(PIR) for Fiscal Year 2014(July 1, 2013-June 30 2014)	June 2014
12	UNIDO Annual Project Implementation Report(PIR) for fiscal Year 2017(July 2016-June 2017)	June 2017
13	UNIDO/GEF Project , Draft renewable Energy Bill	February 2014
14	Gambia Electricity Sector Road Map	August 2017
15	Renewable Energy Investment Strategy for Gambia	June 2017
16	Gambia National Development Plan(2018-2021)	August 2017
17	Gender Impact and Baseline Assessment Report on Renewable Energy Project In The Gambia	-----
18	Renewable Energy Act of 2013	-----
19	Mainstreaming and RE Training phase 1 Report	-----

20	Mainstreaming and RE Training phase 2 Report	-----
21	Capacity Needs Assessment Report	June 2017
22	Report on Wind Turbine At Janji Fishing Community	-----
23	Gamwind Project final report	-----
24	Kaur 60 kW Hybrid system	-----
25	Mbolo Project Report	-----
26	Qcell Final Inspection report	-----
27	UNIDO Mini-Grid 250 KW EMPAS Proposal	-----
28	UN Woman Mission Report	-----
29	Final Report on RE Seminar for NGOs	-----
30	Renewable Energy Breakfast Forum Report	-----
31	Renewable Energy Curriculum development Training report	-----
32	Report on the Workshop of RE Act 2013	-----
33	Report On the RE Seminar for gender Policy Makers	-----

Annex D: Summary on Project Identification and Financial Data

The evaluation report should provide information on project identification, time frame, actual expenditures, and co-financing in the following format, which is modeled after the project identification form (PIF).

I. Dates

Milestone	Expected date	Actual date
Project CEO endorsement/approval date	April 2011	
Project implementation start date (PAD issuance date)	July 2011	
Original expected implementation end date (indicated in CEO endorsement/approval document)		
Revised expected implementation end date (if any)	October 25, 2011	
Terminal evaluation completion	December 30, 2017	
Planned tracking tool date		

II. Project framework

Project component	Activity type	GEF financing (in USD)		Co-financing (in USD)	
		Approved	Actual	Promised	Actual
1. Project Component 1:	“Demonstration of the techno- economic viability of renewable energy projects in rural areas of The Gambia”	1,288,410	1,288,410	3,499,510	3,499,510
Project component 2:	“Strategy for scaling up of renewable energy investments in The Gambia”	70,360	70,360	13,640	13,640
Component 3:	“Strengthening the legal and regulatory framework for the renewable energy sector”	22,000	22,000	240,000	240,000
Project Component 4:	“Strengthening institutional capacity through focused capacity building”	229,560	229,560	58,440	58,440
Component 5:	“Management and Coordination of the project”	147,858	147,860	164,444	164,440
Total (in USD)		1,758,188	1,748,190	3,976,034	3,976,030

Activity types are:

Experts, researches hired

Technical assistance, Workshop, Meetings or experts consultation scientific and technical analysis, experts researches hired

Promised co-financing refers to the amount indicated on endorsement/approval.

III. Co-financing

Source of co-financing (name of specific co-financiers)	Type of co-financier (e.g. government, GEF agency(ies), Bilateral and aid agency (ies), multilateral agency(ies), private sector, NGO/CSOs, other)	Type of co-financing	Project preparation – CEO endorsement/ approval stage (in USD)		Project implementation stage (in USD)		Total (in USD)	
			Expected	Actual	Expected	Actual	Expected	Actual
UNIDO	Implementing Agency	Grant/ In kind	90,000	90,000	200,000	200,000		
Government of The Gambia	National Government	Grant/In kind	-	-	60,000			
Government of The Gambia	National Government	Grant /In cash	-	-	115,000			
European Union Delegation	multilateral	Grant/In cash	-	-	231,000			
NAWEC	Utility	In cash	-	-	336,000			
Gamind	Private	In cash	-	-	640,000			
Qcell	Private	In cash	-	-	2,000,000			
Mbolo	NGO	In cash	-	-	77,500			
Gamsolar	NGO	In cash	-	-	117,500			
Tanji community	Community	In cash	-	-	199,030			
Total co-financing (in USD)			90,000	90,000	5,650,000			

Expected amounts are those submitted by the GEF agencies in the original project appraisal document. Co-financing types are grant, soft loan, hard loan, guarantee, in kind, or cash.

Additional financial data on Project budget expenditure

UNIDO GEF-grant disbursement breakdown: (Source: SAP database, 05 May 2016)

Item	Disbursement (expenditure, incl. commitment) in 2012	Disbursement in 2013	Disbursement in 2014	Disbursement in 2015	Disbursement in 2016	Total disbursement (in USD) (2012-05 May 2016)
Staff & Int. Consult.	45,830.45	50,843.00	50,511.48	1,000.00		148,184.93
Local travel	1,746.36	94.51	9,596.67	9,134.28		20,571.82
Staff Travel	9,699.72	4,586.38	8,243.53	9,295.11	4,235.66	31,824.74
Nat.Consult./Staff	19,257.14	28,179.48	44,668.85	41,942.14		134,047.61
Contractual Services	963,604.04	37.39	108,511.99	206,251.86		1,278,405.28
Train/Fellowship/Stu	8,915.69		0.00	7,037.53	5,408.93	15,953.22
International Meeting			4,175.70	22,738.13	-818.08	26,913.83
Premises			21.61	111.63		133.24
Equipment	15,893.02	37,222.56	4,987.54	-8,676.58		49,426.54
Other Direct Costs	24,381.97	9,301.16	14,910.54	16,150.64		64,744.31
Total (in USD)	1,089,328.39	130,264.48	245,627.91	304,984.74	8,826.51	1,770,205.52