TERMINAL EVALUATION REPORT

TERMINAL EVALUATION OF THE PROJECT PROMOTING SUSTAINABLE ELECTRICITY PRODUCTION IN RURAL AREAS OF MALI THROUGH HYBRID TECHNOLOGIES
(No. 4903 SGIP).
Award PNUD 00089433 / ID PNUD 00095678 / ID GEF 5819

GEF FOCAL AREA : CLIMATE CHANGE – MITIGATION

STRATEGIC PROGRAM OF GEF 5 :
CCM3 PROMOTE INVESTMENT IN RENEWABLE ENERGY TECHNOLOGIES
IMPLEMENTING AGENCY : MALIAN MINISTRY OF ENERGY AND WATER

REGION : AFRICA
COUNTRY : MALI

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List of acronyms and abbreviations

AER-Mali	Malian National Agency for Renewable Energy
AfDB	African Bank for Development
AMADER	Malian Agency for the Development of Domestic Energy and Rural Electrification
ANADEB	Malian National Agency for Development of bio-fuels
APR	Annual Performance Report
AWP	Annual Work Plan
CBO	Community Based Organization
CDM	Clean Development Mechanism
EDM	Malian National Electricity Utility
EU	European Union
GEF	Global Environment Facility
GHG	Green House Gas
kWp	Kilowatt peak
kWh	Kilowatt-hour
MEE	Malian Ministry of Energy and Water
MFP	Multi-Functional Platform
M&E	Monitoring and Evaluation
MTR	Mid-Term Review
MWh	Megawatt-hour
NGO	Non-Governmental Organization
PC	Project Coordinator
PIF	Project Identification Form
PMU	Project Management Unit
SE4ALL	Sustainable Energy for All
tCO2e	Ton of Carbon Dioxide Equivalent
TE	Terminal Evaluation
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar

Glossary of evaluation-related terms

Term	Definition
Assumptions	Hypotheses about factor or risks which could affect the progress or success of a development intervention.
Baseline	The situation, prior to an intervention, against which progress can be assessed.
Effectiveness	The extent to which the intervention achieved, or is expected to achieve, its objectives, and its results, including any differential results across groups
Efficiency	The extent to which the intervention delivers, or is likely to deliver, results in an economic and timely way
Evaluation	The systematic and objective assessment of an ongoing or completed Project, programme or policy, its design, implementation and results. The aim is to determine the relevance and fulfilment of objectives, development efficiency, effectiveness, impact and sustainability.
Impact	The extent to which the intervention has generated or is expected to generate significant positive or negative, intended or unintended, higher-level effects
Relevance	The extent to which the intervention objectives and design respond to beneficiaries, global, country, and partner/institution needs, policies, and priorities, and continue to do so if circumstances change.
Sustainability	The extent to which the net benefits of the intervention continue or are likely to continue.

1. Executive Summary

1.1 Project information

This report presents the findings of the Terminal Evaluation (TE) of the UNDP-implemented and GEF-funded Project "Promoting sustainable electricity production in rural areas of Mali through hybrid technologies".

Table 1: Project Information Table

Project Title	*Promoting sustainable electricity production in rural areas of Mali through hybrid technologies*		
UNDP Project ID:	00095678	**CEO Endorsement date**	23rd December 2016
GEF Project ID:	00089433	**Project Document (ProDoc) Signature by UNDP (Date project began)**	25th January 2017
Country	Mali	**Inception Workshop Date**	24th May 2017
Focal Area	Climate Change - Mitigation	**Mid-Term Review Completion Date**	N/A (No MTR for this project)
GEF Operational Programme or Strategic Priorities/Objectives	CCM3 Promote investment in renewable energy technologies	**Terminal Evaluation Completion date**	31 October 2021
Region	West Africa	**Planned Closing Date**	December 2020
Execution Partner	Ministry of Energy and Water of Mali (MEE) acting through AER-Mali and AMADER		
PDF/PPG	At approval (US$M)	At PDF/PPG completion (US$M)	
GEF PDF/PPG grants for project preparation	65,000	63,751.60	
Co-financing for project preparation	0	0	
Project Financing	At CEO Endorsement (US$M)	At TE (US$M)	
[1] UNDP contribution	11,000,000	500,000	
[2] Government	13,012,393	10,313,096	
[3] Total co-financing [1 + 2]	24,012,393	10,813,096	
[4] Total GEF funding	1,158,744	1,158,744	
[5] Total Project Funding [3 + 4]	25,171,137	11,971,840	

The Republic of Mali is a landlocked country located in West Africa, whose estimated population is 19.6 million in 2019 of which approximately 57% lives in rural areas and produces most of the country´s livelihood. Mali's energy situation is characterized by a biomass-dominated balance sheet that accounts for 76 per cent of primary energy, followed by 20 per cent for hydrocarbon imports and 4 per cent for electricity. Energy consumption in Mali is dominated by the residential sector, which basically relies on biomass. Wood and charcoal are mainly used as cooking or heating fuels, a situation that results in strong pressure on the country's forest resources. According to national statistics for 2017, national average for access to electricity was 42 per cent. This national average disguise the fact that a sizeable portion of Malians who live in the rural areas do not have access to electricity, the figure for this section of society being reported as 19 per cent in 2017.

As a response to these challenges, the UNDP-implemented and GEF-funded project "Promoting Sustainable Electricity Production in Rural Areas of Mali through Hybrid Technologies" was implemented with the overall objective of promoting the establishment of small renewable energy networks/mini-grids using photovoltaic (PV) energy in a hybrid system with multi-functional platforms. The project main strategic objective was to promote investments in renewable energies in rural areas of Mali. This was to be achieved through the delivery of 4 project components:

- **Component 1**: Development of strategic and regulatory instruments for hybrid mini grids combined to multi-functional platforms.
- **Component 2**: Capacity building in the management of hybrid mini-grid systems combined with multi-functional platforms.
- **Component 3**: Viable business model for hybrid mini grids combined with multi-functional platforms across 15 villages.
- **Component 4**: Awareness creation and dissemination of projects results.

While delivering on these 4 components, the project was envisaged to mobilize significant private sector investment during the four-year implementation period to implement the project in 15 pilot villages, for an initial total installed capacity of 147 kW of PV energy. During the project period, these 15 pilot villages were meant to produce a total of 416 MWh of electricity and then generate an annual production of 244 MWh, maintained over the expected 20-year lifetime of the PV systems, to avoid a cumulative emission of 4,216 tCO_2e.

To compile this report, the Evaluator has conducted an independent assessment of the achievement of project results against what was planned. The TE report documents project achievements, draws main conclusions, recommendations, and lessons. Lessons are drawn from the project´s experience and critically assess the impacts achieved by hybrid multifunctional platforms and the benefits in terms of improving access to energy given Mali´s solar energy resources.

Table 2: Evaluation Score Table

1.Monitoring & Evaluation (M&E)	**Rating**
M&E Design at Entry	4
M&E Plan Implementation	4
Overall quality of M&E	4
2.Implementing Agency (IA) and Executing Agency (EA) Execution	**Rating**
Quality of UNDP Implementation/Oversight	5

Quality of Implementing Partner Execution	4
Overall quality of Implementation/Execution	4 to 5
3.Assessment of Outcomes	**Rating**
Relevance	5
Effectiveness	4
Efficiency	3
Overall Project Outcome Rating	4 to 5
4.Sustainability	**Rating**
Financial Sustainability	3
Institutional framework and governance sustainability	4
Environmental sustainability	4
Overall likelihood of Sustainability	4

Ratings for Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight, Execution, Relevance: 6 = Highly Satisfactory (HS); 5 = Satisfactory (S); 4 = Moderately Satisfactory (MS); 3 = Moderately Unsatisfactory (MU); 2 = Unsatisfactory (U); 1 = Highly Unsatisfactory (HU); Unable to Assess (U/A).
Sustainability ratings: 4 = Likely (L); 3 = Moderately Likely (ML); 2 = Moderately Unlikely (MU);
1 = Unlikely (U); Unable to Assess (U/A). See Annex 9 for more details.

1.2 Summary of findings, conclusions and lessons learned.

A) Impacts

Initially 15 sites were targeted with the intervention for a solar capacity of 147 kW, however during implementation it was found that most of the targeted sites were under the electrification mandate of AMADER, meaning the same sites could not be electrified by AER-Mali. Consultations between national stakeholders took place and resulted in proposing new sites. In the end, solar hybrid mini grids were constructed on 8 sites for a solar capacity of 126 kWp and a total capacity of 187 kW. Though the adaptive management approach yielded several benefits in terms of enabling the project move forward amid site identification difficulties, improving security in the beneficiary villages and creating employment, the project also resulted in less CO2 emissions reduction as initially planned.

B) Project Design and Adaptive Management

One of the main objectives of the project was to mobilize private sector investments in Multifunctional Platform Mini grids. The project inception documents however did not set clear targets in terms of how the expected private sector contribution would come. The lack of clarity on targets for private sector participation created room for interpretation whether the contribution was to be embedded in the business model for mini grids in the form of co-finance or would be limited to procuring installation services from the private sector.

C) Project Performance

- **Relevance:** The project was well aligned with Government of Mali priorities and targets. The project was a relevant step towards universal access and rural electrification targets.
- **Effectiveness:** the project achieved many of the output level targets and moderately met expectations on its cumulated outcome level targets.
    - *Strategic and institutional framework for MFP/PV hybrid mini grids:* The project completed a study on the elaboration of a strategic and regulatory framework for MFP/PV hybrid mini-grids. Some of the output level objectives such as the adoption of a policy instrument or performance-based incentives were not relevant anymore given the community-based approach that was taken. The final evaluation for the achievement of all outputs on this outcome is satisfactory. The Evaluation recommends making the completed study publicly available.
    - *Capacity building on turnkey solutions:* The project has built the capacity of several stakeholders and developed training material. The project also developed a guide for PMF based mini grids, the guide was however not published on a platform where it can be permanently accessed. Advisory services to business proponents became also irrelevant given the community-based approach. The final rating for this outcome is therefore moderately satisfactory. The Evaluation recommends making all training material that were developed publicly available.
    - *An operational business model:* The project has promoted a community-based business model for mini-grids which tends to be working at the time of the Evaluation. The project also identified pilot sites but did not defined the potential for institutional investment models. While the project successfully procured companies for the installation of systems, the reviewed documents did not mention specific partnerships that were developed for the operation of mini grids beyond the project implementation. This can however be attributed to the community-based approach taken where CBOs are meant to be in charge. Additional measures for sustainability beyond 2 years are however due. These measures for improving the long term sustainability of the project given the approach taken are provided in recommendation 3. The Evaluation of this outcome is overall moderately satisfactory. The Evaluation recommends finalizing asset ownership and O&M responsibility transfer activities to improve the long-term sustainability of the approach taken.
    - *Awareness raising and lessons learned dissemination:* The project has raised awareness nationally for the reproducibility of PMF based mini grids. Lessons learnt manuals however are yet to be published on platforms where they can be accessed also internationally. The evaluation on this outcome is therefore as well moderately satisfactory.
- **Efficiency:** Co-financing by the country initially was estimated at USD 13 million with USD 0.5 million in cash and the remaining in-kind. Through the support given by the national partner AER-Mali to the project implementation, it is estimated that most of the in-kind contribution was honored to an amount which has been assessed at 80% of initial pledges. Cash contributions however by the country never materialized. The high in-kind contribution by the country did not get directly reflected on the size of final assets, which tends to lower the economic value achieved and therefore the overall project efficiency. The Evaluation provides a specific recommendation on this point. The project overall efficiency is therefore moderately unsatisfactory.

- **Sustainability:** The lack of a plan for long term maintenance of the installed assets is the main threat to the project sustainability. Approved tariffs, and the setting of CBOs are likely to result in the resilience of the project´s outcomes and a pathway towards broader adoption with socio-economic, environmental and gender sensitive benefits, provided recommendation 3 is implemented. The overall sustainability rating is therefore moderately satisfactory.

1.3 Summary of recommendations

The below recommendations, not ordered by priority, are equally important as a result of the Terminal Evaluation.

Recommendation 1: It is recommended to AER-Mali that specific sector knowledge which has been produced as part of the project implementation be availed to the public through AER-Mali website.

The project has produced important sector knowledge that could be used for scaling-up opportunities or benchmarks for similar interventions. These include lessons learnt from the use of MFPs as a mean for improving productive use in solar PV mini-grids, a guide for the deployment of solar PV hybrid mini-grids based on the project´s experience in Mali, material for community's awareness creation for MFPs, material on the setting of CBOs as O&M actors and a regulatory framework study which will be the basis for any future regulatory revision. Some international studies based on Levelized Cost for Electricity have been published of lately and provide an optimistic ground for benchmarks predictions[1]. Those studies however often do not account other key success factors such as community's sensitization, awareness raising activities and real O&M costs for operating solar hybrid mini grids in far remote areas. Also, the services provided by mini grids, beyond electricity supply are expected to be the game changer for establishing commercially viable business models for solar hybrid min grids across Africa. We therefore recommend that the lessons learnt in Mali are compiled as part of final project implementation package and availed to the public as a contribution to sector development and knowledge dissemination beyond the project´s boundaries, as a way of supporting a paradigm shift for rural electrification activities in Africa.

Recommendation 2: It is recommended to MEE to provide a policy note for a simplified administrative procedure on the implementation of solar PV hybrid mini grids that additionally sell non-electricity-based services in Mali, including through MFPs.

To achieve universal access to energy by 2030 in Mali, many of the underserved regions will have to replicate solar PV mini grid systems with MFPs. The project has paved the way to other rural electrification efforts by introducing an operationally viable business model for operating mini-grids provided CAPEX is secured, which promotes productive use and additional services to communities through MPFs, resulting on additional revenue streams to mini-grid operators supported by MFPs. The project has also demonstrated that long term revenue streams are possible in rural electrification efforts if beneficiaries are facilitated productive use for energy. The private sector could therefore

[1] https://www.eia.gov/outlooks/aeo/pdf/electricity_generation.pdf

be more interested in supporting the Government reduce energy access gaps provided that productive use pre-requisites are embedded in projects structures with little entry barriers. Licensing mini grid operators therefore goes beyond licensing electricity generation and distribution activities, rather enabling the provision of alternative services to beneficiaries that use electricity. The replication potential is significant and goes well beyond the 8 pilot sites of the project in Mali. We therefore recommend the issuance of a policy note by MEE, which will be the ground for simplifying regulatory requirements for PV hybrid mini grids with such additional services such as MFPs in Mali.

Recommendation 3: It is recommended to AER- Mali to implement additional project´s closing measures that will benefit the project´s long term sustainability

The data collection exercise highlighted a few unachieved activities that are critical to the long-term sustainability of this intervention. One is the clear definition of roles and responsibilities on the lifetime of procured assets. While contracts awarded to private sector solar installation companies included initial two years maintenance mainly as an installation guarantee, it was not clear what would happen to the installed PMF systems in case of major maintenance needs beyond the initial two years. The Evaluation team also noticed that one community was not yet applying any electricity tariff, thus electricity was free in the community while waiting for the completion of assets transfer. In the chosen CBO model, O&M rights are devolved to the beneficiary communities, however in case of major maintenance need, it is not certain that revenues generated from community-based approved tariffs would be sufficient to maintain the systems. The Evaluator therefore recommends to complete transfer of assets on all sites, making a distinction between asset´s ownership and transfer of O&M rights. AMADER could be involved as the ultimate owner of rural electrification assets on behalf of Government. At the moment of the evaluation, issues partaining to the ownership of the installed equipment are not clarified. If assets are fully owned and operated by the communities, they may start applying lower tarrifs and may lack over time the ability to adress major maintenance needs. Assets ownership by AMADER may also result in less project ownership by beneficiary communities. Consultations need however to be taken to conclude whether the ownership of assets on the 8 sites would go to AMADER and end in AMADER´s books while the communities are responsible for maintenance (meaning ownership by the central Government and O&M by the communities), or both the ownership of assets and O&M rights would be devolved to the beneficiary communities. There was no consultation on this issue and none of these two options seems to have been explored at project´s closing, yet the question might rise beyond the 2 years maintenance contract by private sector installers.

Recommendation 4: It is recommended to UNDP to have in place a system for reporting and monitoring in-kind contributions at implementationfor future similar projects.

Though the project was structured and formulated with an ambitious in-king contribution from Government of Mali, at terminal evaluation the value of assets in place was significantly much lower than the total project earned value. There was no evidence of tracking in-kind contributions during project implementation. During interview with AER-Mali it was clear that Government had contributed to the project with goods and services, however these were not tracked in detail. It was therefore difficult to determine the extend to which co-financing with in-kind contribution had actually occured. To enhance the efficiency of in-kind contributions for future similar projects it is recommended that UNDP incorporates a reporting and monitoring system that can report the extent

of in-kind contributions. Such a monitoring and reporting system could have included, for example, a log of the mandays of AER-Mali staff that have been covered by the in-kind contribution, availed meetings rooms, travel expenses covered by AER-Mali, and miscellaneous expenses such communications expenses, printing costs and other facilitation services. The implementation of a monitoring and reporting system for in-kind contributions on future similar projects will have the combined effects of enhancing project efficiency and the transparency of in-kind co-financing.

Recommendation 5: It is recommended to AER-Mali to pay more attention to logical framework indicators and timely document project scope variation.

The project output 3.2 expected PPAs to be signed or partnership contracts. This indicator was a clear signal that project design expected operators focus on power generation while the main utility EDM would be the power off taker. The project did not develop specific partnerships with EDM and also did not in the end had private sector operate the mini grids. While the piloting of communities-based approaches had presented an opportunity to test this model, which also has the merit of potentially providing a replication opportunity, the logical framework seemed to have expected a different approach. The Evaluation fully recognizes challenges on the ground working with national utilities for piloting such schemes and recommend that such variations from initial scope are documented timely, including potential revisions of the logical framework.

Recommendation 6: It is recommended to Beneficiaries (Producers, village management committees/CGV, Private prestation services, NGOs and other actors) to observe the defined rules and techniques in order to sustainably manage the installed solar PV systems

The Beneficiaries (Producers, village management committees/CGV, Private prestation services, NGOs and others actors) must better follow the rules and techniques of sustainable management of MFPs; and to properly manage the amounts received from the payment of electricity bills by consumers in order to ensure routine maintenance and servicing of the MFPs. Thus the village management committees (CGV) of MFPs must play a democratic and transparent role in the management of these funds.

Introduction

In Mali, the supply of primary energy in 2012 included 77% biomass [2], mainly in the form of wood and coal for domestic use, 20% petroleum products and 3% electricity, mainly hydroelectricity. Energy demand, which is strongly dominated by household consumption and 80% met by biomass, has resulted over the years in environmental degradation, including uncontrolled deforestation, land degradation and a marked increase in GHG emissions.

To reduce its carbon footprint, the State of Mali is committed to promoting the use of renewable energies. It received GEF funding for the implementation of the project "Promoting Sustainable Electricity Production in Rural Areas of Mali through Hybrid Technologies".

2.1 Purpose and objective of TE

The UNDP supported and GEF funded project on “Promoting Sustainable Electricity Production in Rural Areas of Mali through Hybrid Technologies” was implemented with the overall objective of promoting the establishment of small renewable energy networks/mini-grids using photovoltaic (PV) energy in a hybrid system with multi-functional platforms to ensure off-grid rural electrification.

The main purpose of the TE report is to provide an independent assessment of the achievement of project results against what was planned and draw lessons that can both improve the sustainability of the project's benefits and contribute to the overall improvement of UNDP programming. The independent assessment looks at the relevance, effectiveness, efficiency, sustainability, and overall performance of the project.

Project´s performance has been assessed against the expectations set out in the project’s logic/results framework. It assesses results against the criteria described in the Guidelines for Conducting Final Evaluations of UNDP-Supported and GEF-Funded Projects. The TE report promotes accountability and transparency and assesses the extent of the project's achievements.

2.2 Scope

The scope of this TE was to assess the extent to which the project has succeeded in “Promoting Sustainable Electricity Production in Rural Areas of Mali through Hybrid Technologies”, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of future UNDP programming.

To achieve this scope the Evaluator first assessed the project based on the following criteria:

A) Impact achieved,
B) Project Design and Adaptive Implementation,
C) Project final performance with the sub-criteria relevance, effectiveness, efficiency, and sustainability benefits.

[2] https://greenminigrid.afdb.org/sites/default/files/gmg_mali_final.pdf

The evaluator then drew on findings and lessons learned, to provide recommendations for future projects, in order to help UNDP improve upon identification, preparation and implementation of mini-grid projects in West Africa. The key evaluation questions were:

a) What have been the key barriers to achieve the execution of the project as planned, what adaptive management measures were taken?
b) How well had the execution of the project performed in relation with the indicators of its result management framework?
c) What have been the project´s key results and outcome which remain after project´s close?
d) What are key take-aways and lessons learnt from both successful and unsuccessful practices across the project implementation life-cycle ?

The Terms of Reference for the Evaluation are provided in Annex 4. The time period for the evaluation was June to July 2021. The evaluation included site visit and discussions with beneficiaries, document review, and stakeholder´s interviews.

2.3 Methodology

The evaluation was conducted in accordance with the guidance, rules and procedures established by UNDP and GEF and as reflected in the UNDP "Guidance for Conducting Terminal Evaluations of UNDP supported, GEF-financed Projects", and the UNEG Standards and Norms for Evaluation in the UN System. The evaluation was undertaken in-line with principles of independence, impartiality, transparency, disclosure, ethical, partnership, competencies/capacities, credibility and utility. The process promoted accountability for the achievement of project objectives and outcomes and promoted learning, feedback and knowledge sharing on results and lessons learned among the GEF and its partners.

The Evaluator developed evaluation questionnaires to ensure an effective project evaluation around the five major evaluation criteria (relevance, effectiveness, efficiency, sustainability, and overall performance of the project). The methodology used for this evaluation was discussed and agreed between UNDP, stakeholders and the TE team.

- **Literature Review**

Documents produced in the context of the design and implementation of the project (Project document, yearly review reports, activity reports, monitoring reports, minutes of steering committee meetings). The list of documents reviewed are presented in Annex 8.

- **System operation Data collection and analysis**

The national consultant carried out field missions in Bamako, and on a representative sample of the project sites. The National Consultant collected information on the implementation of the project to inform the achievement of the initial objectives, including the results sought within the logical framework of the project. Due to the COVID-19 pandemic, as well as travel risks related to the ongoing political instability in Mali, the choice of sites visited were made considering health and safety constraints, to ensure the well-being and safety of the National Consultant. Five out of eight sites were visited for data collection. The following sites were visited : Badougou Nafadji, Monzou, Semembougou, M´Pedougou and Tella.

- **Group interview guides**

Interviews and group discussions (Focus groups) took place with the beneficiary populations and members of community structures to gather their perceptions of the project (design, execution of the project, adequacy to the needs expressed, appropriation, sustainability of the achievements, impact, etc.). This was done through group interview guides.

- **Exchange meetings with stakeholders**

Interviews with stakeholders in the project, including the Renewable Energy Agency of Mali (AER-Mali), in particular the Project Management Unit, the Malian Agency for Domestic Energy Development and Rural Electrification (AMADER), the Ministry of Energy, senior officials and team/component leaders, key experts and consultants in the field concerned, the project steering committee, project beneficiaries, academia, the private sector, local authorities (in particular the town halls of the targeted municipalities) and CSOs. In light of the COVID-19 pandemic these consultations were mainly held remotely (as much as was possible). An interview with EDM was not sought at this particular juncture. Given the current constellation of the energy sector in Mali, and the policy direction where EDM is one of a number of regulated stakeholders it was not specifically relevant to seek an interview with EDM for the purpose of this report.

2.4 Ethics

This evaluation was conducted in accordance with the principles set out in the UNEG "Ethical Guidelines for Evaluation". The rights and confidentiality of informants, interviewees and stakeholders were protected by taking steps to ensure compliance with legal and other relevant codes governing data collection and reporting. The security of the information collected before and after the evaluation was ensured and followed protocols to ensure the anonymity and confidentiality of the sources of information that were provided. The information and data collected as part of the evaluation process was only used for evaluation purposes and not for any other purposes.

2.5 Limitations of the evaluation

The contractual period available for the TE was 10 weeks, which included 22 working days in the mission area and 15 days for the International Consultant on preparation, inception report compilation, interviews, and TE report. The timeframe for the evaluation did not allow for comprehensive consultations with the stakeholders to all project sites. The ongoing COVID-19 pandemic and overall security situation were challenges that hindered the data collection in the field by the national consultant. The 5 visited villages were considered a representative sample out of 8 sites which the project implemented. Data collected was used to estimate the GHG Emissions Reduction on these 5 sites and estimates were done for the 8 sites.

2.6 Structure of the TE report

This introductory section is followed by a project description. Then, the findings of the TE are presented, showing the main achievements and issues according to the evaluation criteria. The final section summarizes the key findings of the evaluations before drawing the main conclusions of the project. Recommendations for future projects of similar objectives are offered, as well as the key lessons learned from this project.

2. Project Description

The project was designed to practically contribute to rural electrification efforts in Mali through the promotion and establishment of small renewable energy networks/mini-grids using solar photovoltaic (PV) hybrid systems with multifunctional platforms (MFP). The project was structured around 4 components:

- **Component 1**: Policy, regulatory, legislative and financial instruments for hybrid mini-grids combined with MFP. The expectation on this component was to achieve 1 main outcome which was an enabling strategic and institutional framework for MFP/PV hybrid mini-grids for rural electrification. This enabling framework was to be verified on published documents and Decrees or laws in Mali that would have been passed during the project to facilitate hybrid mini grids combined with MFPs. This component also aimed at achieving performance based incentives or long term concessions and pricing models that would result in continuous investments by the private sector. At the time of Evaluation, there was no material finding about published decree, laws, policy or regulatory instruments that would argue for the creation of an improved environment for solar hybrid mini grids with MPFs in Mali.
- **Component 2**: Capacity building for the management of the hybrid mini-grid system combined with MFP. The main foreseen achievement at inception from activities in this component was an improved ability in the market to provide turnkey solutions and quality operation, maintenance and management services for solar hybrid MPF systems. The infrastructure on the ground and the operation of the infrastructure which has been seen during the Evaluation are a testimony that the objectives of this component have been met.
- **Component 3:** Present a viable business model for hybrid mini grids combined with MFP in 15 villages. To this end, it was envisaged to mobilize significant private sector investment during the four-year implementation period to implement the project in 15 pilot villages, for an initial total installed capacity of 147 kW of PV energy. During the project period, these 15 pilot villages were to produce a total of 416 MWh of electricity and then generate an annual production of 244 MWh, maintained during the expected 20-year lifetime of the PV systems, to avoid a cumulative emission of 4,216 t CO2. The logical framework at project inception expected several outputs for this component, it´s however arguable whether 15 sites were meant to be piloted with different business models to come with the most promising and viable business model in the end, or whether sites were first to be identified and assessments carried out in order to find the most promising and viable business model before implementing it across all the sites. The project Partner interpretation was the later, thus a CBO model was implemented across 8 villages. It is still too early to conclude on the long-term commercial viability of the approach taken. The independent Evaluation has however done some findings and provided recommendations on ways to enhance the sustainability of the approach taken.
- **Component 4**: Awareness-raising programme and dissemination of project activities/results. The expected outcome for this component was awareness raising and dissemination of experience, best practices and lessons learnt from the project in order to enable its reproducibility. To achieve this the project had to implement promotional awareness raising activities and publish lessons learnt and best practice material. It was very clear from the documents reviewed and from data collected on the ground that the project had raised awareness on the potential of solar hybrid mini grids with MFPs. The implementation of the project has also generated a body of knowledge which unfortunately is not public. The

Evaluation strongly recommends the publication of guidelines, awareness creation material and lessons learnt to enable knowledge sharing for the reproducibility of the project in Mali and beyond.

The project was launched on May 24, 2017, in Badalabougou-Bamako at a workshop that brought together more than twenty participants from public institutions, private sector, civil society, NGOs and the technical and financial partners of the project. The duration of the project was 4 years as planned.

In relation to the key objective of the project logic framework, a number of outcomes were achieved:

- The project did contribute to the rural electrification efforts in Mali and provided 124.5 MWh electricity from solar arrays to 8 distant localities through solar PV hybrid systems during the duration of the project.
- The project is achieving a yearly amount of 108.9 $tCO2eq$[3] in GHG emissions reduction, thus projected emissions reduction of 2,178 $tCO2$ eq over 20 years assets lifetime.
- The project has delivered employment co-benefits, with a total of 187 permanent jobs created during the 4-years implementation period reaching about 3,700 beneficiaries.
- The project has enabled additional non-electricity services being provided to rural communities such as access to Internet,
- The project has enabled the piloting of an operational business model of MFP/PV hybrid mini grids based on community's responsibility in O&M.
- Beneficiaries have testified that the project enabled reduction of their perception of security risks, mainly due to the deployment of public lighting.

In the past, the government of Mali, as well as technical and financial partners, and local development structures have developed many initiatives to help populations, especially rural populations, to better cope with the impacts of climate change and address energy needs. For example, the adoption of sustainable practices and technologies, the development of the National Policy on Climate Change (PNCC) [4], the National Environmental Protection Policy (PNPE)[5] and the Energy Policy of Mali (PEM)[6] by the Government of Mali.

This project is part of those efforts to contribute to the socio-economic promotion of grassroots communities through sustainable management in the energy and environment/ecology sectors. The project was to bring about benefits at both local and national/global levels through reducing emissions from fossil fuel burning and achieving environmental benefits.

The project had further provided socio-economic benefits with gender aspects in mind:

- A rural development dynamism has been created through support to villagers to embark on income-generating activities such as juice and ice making, refrigeration of cold drinks, operation of

[3] Emission Factor of 0.875$tCO2/kWh$ as basis provided by project document has been used

[4] shorturl.at/uACHM

[5] http://extwprlegs1.fao.org/docs/pdf/mli145846.pdf

[6] https://www.compete-bioafrica.net/events/events2/mali/Session1-1-Diawara-COMPETE-WS-Mali-2008.pdf

small machinery, etc. This has generated an estimated 187 permanent jobs during the project period (Source: AER-Mali).

- Opportunities for the private sector in the construction and maintenance of renewable energy-based off-grid electricity generating systems, this has supported an estimate of 40 temporary jobs during the project implementation.
- The project had sought to achieve gender equality through the empowerment of women to fully participate in all project activities and specifically had included women in management committees on all CBOs and stakeholders consultations.

The project addressed a variety of threats, such as the environmental degradation and health risks associated with the use of biomass resources in rural Mali. About 80% of household energy needs in Mali are met by biomass resources (wood and coal), which cause health problems among rural populations due to indoor air pollution. Biomass resources for energy needs is also a key factor in environmental degradation, including deforestation and land degradation. All this translates into high GHG emissions, deforestation and environmental degradation. Through the establishment of small renewable energy networks/mini-grids households can transition from biomass resources to clean renewable sources of energy, turning the tide against the detrimental health and environmental impacts of using biomass resources for energy needs in the country.

The national rate of access to electricity in Mali is on the increase, (25% in 2012, and 48% in 2019)[7]. However, the difference between urban and rural areas is still drastic. As of 2019, just 15% of the rural population in Mali had access to electricity, while the figure is 91% in urban areas. This project also sought to address the problem of low rates of access to electricity in rural areas by promoting the establishment of small renewable energy networks/mini-grids to ensure off-grid rural electrification.

Project efforts were directed towards removing the key barriers, as presented in Table 1, to alleviate these issues and to promote sustainable electricity production in rural areas of Mali:

Table 1: Summary of Barriers and Mitigation Strategies

Barrier	Pre-project	Proposed Remediation strategy	Achieved Remediation strategy
Legal, regulatory and institutional framework	Lack of an appropriate national institutional framework as a catalyst for the MFP/hybrid PV mini-grid market	Outcome 1: Create an enabling policy, regulatory and institutional framework for hybrid MFP/mini-grids	Study on the elaboration of a strategic and regulatory framework for MFP/PV hybrid mini-grids

[7] https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=ML

Financial and economic support	Lack of financial support to accelerate project implementation Lack of financial incentives to facilitate the adoption of hybrid PMF/PV technology	Outcome 1: A financial support system is put in place Outcome 1: Introduce financial incentives for project promoters	Project proceeds were use to finance the totality of solar PV Hybrid mini-grid systems
Technical skills	Lack of skills for the design, construction, operation and maintenance of hybrid PMF/PV systems	Outcome 2: Build the capacity of stakeholders	Various stakeholders were trained (99 people trained in total according to AER-Mali, including 16 technicians as stated below)
Investor interest and risk perception	Lack of investor interest and high perception of risk	Outcome 3: Implement a business model for the financial sustainability of hybrid PMF/PV systems	A business model has been established to enable CBOs venture into electricity generation and distribution[8].
Sustainable operation, maintenance and management	Lack of experience in the sustainable operation, maintenance and management of hybrid MFP/mini-GRIDS	Outcome 3: Improve the technical skills of local operators	Trainings were delivered to members of CBOs (2 technicians per system, so 16 technicians trained in total).
Promotion/awareness	Lack of promotion/awareness-raising activities and lack of experience/best practices at the project level	Outcome 4: Implement promotion/awareness activities and document project experience	Guidelines were developed.

[8] Business model lesson learned: When there is an availability of a subsidy, access to electricity for the most impoverished can still be achieved even in the absence of private sector involvement. CBO models of energy ownership, whenever achievable, could be an alternative strategy to purely private sector driven investments.

In accordance with the Project Results Framework, the primary objective of the project is to optimize electricity produced from multifunctional platforms (MFP) for productive energy use by increasing the share of renewable energy (RE) and developing an appropriate business model for the sustainability of a hybrid PMF/PV system. The project targets small villages with a population of between 500 and 2,000. It aims to establish a favorable framework for the development of these hybrid systems and to develop an appropriate business model and financial instruments for their viability and replication. Similarly, the project had to introduce a new business model that combines trust with durability and reproduction.

It is clear at the time of Evaluation that renewable energy mini grids have generated a high level of interest in rural electrification during the project's implementation in Mali. The extent to which the adopted CBO model for the project has contributed to creating a favorable environment for investment is yet to be seen. It is expected that many more mini-grids will be built in Mali during the 10 years following the end of the project, far exceeding the number of mini-grids installed planned during the project's 4-year implementation period.

Mali has 11,489 villages with a population of less than 2,000, of which about 9,000 are not yet electrified. This represents a huge potential for replication and scaling. Community based business models combined with appropriate tariff setting that can cater for long term maintenance, if adopted together with MFPs to support productive use can play an important role towards increasing energy access rates in Mali. The participation of the private sector was key to the project´s objectives. Thus, this programme was meant to not only benefit rural households, smallholder farmers and commercial institutions, but also link the private sector, financial institutions, technical and community training organizations to promote the creation of distribution channels to develop the market for hybrid PMF/renewable energy systems for the provision of electricity services. The development of such market for private sector future contribution has only been partially achieved with the adoption of the CBO model. Indeed, project baseline was reduced capacity in Mali for deployment of solar hybrid mini-grid with PMF. Upon project completion, 8 sites have been electrified by local companies which also would carry system maintenance for the initial 2 years.

The following stakeholders have been consulted on this Terminal Evaluation report.

- Mali Renewable Energy Agency (AER-MALI)
- Project Management Unit, Malian Agency for Domestic Energy Development and Rural Electrification (AMADER)
- National Directorate of Energy (DNE)
- National Center for Solar Energy and Renewable Energies (CNESOLAR)
- National Biofuels Development Agency (ANADEB)
- Rural Electrification Fund (FER)
- Commission of Regulation of Electricity and Water (CREE)
- The Environment and Sustainable Development Agency (AEDD)
- UNDP Mali, UNDP Sub-Regional Office for West and Central Africa, UNDP Regional Office for Africa
- Members of the Steering Committees
- Town Hall of targeted Municipalities
- Private sector
- Associations and members of the communities targeted.

3. Findings

3.1 Project Design/Formulation

The project was designed with 4 components as explained above. The following points presents the findings related to the project design adhering to the basic structure proposed in the TORs and as reflected in the UNDP project evaluation guidance.**4.1.1 Analysis of Project Results Framework**

The Project Results Framework had a clear logic and the underlying theory of change was ambitious. The logic framework contained specific descriptions of the Project´s intended outputs, with operational targets and means of verification. Nearly all the output-level indicators and targets possess all Specific, Measurable, Achievable, Realistic and Time-bound (SMART) criteria. Some indicators were incomplete as they lacked indicative baseline figures and target values. Nonetheless, the indicators could be generally used with ease to evaluate the performance of the project.

The project was developed with the objective of reducing GHG emissions by using renewable energy instead of diesel for the purpose of electricity generation. It was also developed in the context of environmental degradation and health impacts as a result of the use of biomass resources for energy needs in Mali. The use of wood and charcoal for domestic purposes has put strong pressure on the country's forest resources. The forest cover of Mali has decreased by an average of 100,000 ha/year, according to the National Climate Change Adaptation Action Plan of the country. Though access to electricity has increased in Mali, it has been disproportionate between urban and rural populations. As of 2019, only 15% of the rural population had access to electricity. The project´s logic framework therefore was clear about achieving GHG reduction emissions while strengthening policy, regulatory, legislative and financial instruments for hybrid mini-grids combined with MFP, build capacity for the management of hybrid mini-grid systems combined with MFP, present a viable business model for hybrid mini-grids combined with MFP in 15 villages as a pilot, and develop an awareness-raising programme and dissemination of project activities/results. The Evaluation result of the project´s logframe is therefore satisfactory.

- **4.1.2 Assumptions and Risks**

The project´s logic framework included assumptions and risks. All assumptions and risks were related to the level of engagement by stakeholders and the interest which the private sector would have in the project. The assumptions and risks reflect an adequate level in the result chain. The Evaluation has sought to determine whether the outputs plus the assumptions presented lead to the outcomes and whether the outcomes plus the assumptions lead to the impact. The key assumptions that could have affected the project success or failure were indeed summarized. For instance, the lack of cash contribution by Government contributed to installing less solar capacity and achieving a less overarching impact. The initial list of risks identified during the formulation of the project is presented in table below,

Table 3: List of Risks and Mitigation Measures Identified at the Formulation Phase

Risk	Rating (Probability of occurrence)	Impact/Mitigation Approach
Political risk: Insecurity and political unrest resulting in considerable delays and postponement of project implementation. The country just came out from war and military coup. Any sudden or unexpected change might cause insecurity and cause delays in project implementation. In addition, Mali is located in the very unstable part of the unsecured Sahara.	Moderate	The current political situation in the country is stable. However, the risk of sporadic unrest exist in the North and this may delay implementation of project activities in this part of the country. To mitigate this risk, the project will privilege sites in the Centre and South of the country where the situation is quiet. The project will also build a wide coalition of partners and stakeholders, including civil society, the business community, NGOs and international development agencies, whose interest in MFPs and hybrid mini-grid promotion will likely sustain, even in the event of a regime change.
Policy risk: The success of this project will be determined to a large degree by adoption and effective enforcement of the proposed polices. Lack of policy support may jeopardize the achievement of immediate results and over-all impact.	Moderate	There exists the possibility that the Government may not act on a policy framework that will encourage the private sector to invest in MFP/PV mini-grids. If this risk were to materialise, project implementation will get seriously hampered. However, the donor community will work with the Government to have the right policy in place, in line with the Government's mandate and policy objectives on key national initiatives.
Technology risk: The crack of solar panels is quite common and could result in systems breaking down. Substandard quality of locally produced equipment leading to early breakdown of the systems and dwindling consumer confidence in the technology.	Moderate	The project intends to utilise proven, feasible and affordable technologies and replicate solutions that have been successfully introduced in several countries in the region. In this connection, the Government will put in place strict controls on the standards of equipment that can be imported and installed in the country. In addition, the Government will ensure that all installations and maintenance should be undertaken only by licensed and certified technicians as per established electricity codes, building along the way partnerships with equipment producers operating in the country.
Financial risk: Widespread poverty and lack of sustainable source of income resulting in low ability to pay once per month for energy supply services, if appropriate billing system is not in place. There is also a lack of ability to finance projects for SMEs.	Moderate	The project will be mainly implemented in those villages where MFPs are already operational, with some already having existing distribution lines for limited electricity supply from MFPs. In these villages, there is already the capacity and willingness to pay from end-users. On the other hand, the combination of the community business model and private sector business model through partnerships will reduce the financial risk from both sides (community side and private sector side).
Risk	**Rating (Probability of occurrence)**	**Impact/Mitigation Approach**

Market risk: In Mali, hybrid systems will have to compete with subsidized and locally available diesel alternatives. Without additional incentives, hybrid plants will likely remain uncompetitive.	High	Introduction of financial viable tariff for hybrid diesel/REbased mini-grids will be a cornerstone instrument of the proposed policy package and business model, aimed specifically at addressing this market risk by levelling the playing field for RE against other available alternatives. Financial commitments will be secured to sustain the policy package and business model operation beyond the GEF proposed project duration from the Government and other donors.
Climate risk: Climate change is predicted to cause changes and increase variability of Mali solar and wind patterns. Higher temperatures may cause overheat of solar panels and reduce the efficiency of these panels. And stronger winds may cause destruction and breaking of panels. In addition, MFPs may successfully switch their energy source from diesel to biofuel.	Moderate	In the case of extreme climate change, regular maintenance and inspection will help to cool the solar panels and prevent them from overheating or destruction. Some actions will be adopted in that case, such as attaching a substrate on the glass layer of the solar panels using thermal conductive cement/back sheets, or elevating the solar panels a few inches from the roof to allow cool air to circulate in between. Both of these actions are important to protect them from overheating. Both the number of MFPs and plantation coverage area of Jatropha are increasing, but the Jatropha oil production is not sufficient to feed even a small percentage of the existing MFPs.
Overall Risk Rating	Moderate	

- **4.1.3 Social and Environmental Standards**

A Social and Environmental Screening Procedure (SESP) was conducted in 2015 during the design of the project. The SESP identified one single (low) risk on climate change and the reduced efficiency / sustainability it may induce on the solar panels. The overall risk rating of the project was low. The SESP was not updated in the course of the project.

- **4.1.4 Linkages between project and other interventions within the sector**

This project complements another rural electrification project supported by the World Bank but whose activities did not cover strategic and regulatory aspects. Interventions within the energy sector have been taking place for a sustained period of time in Mali. GERES, the development NGO, created a Electrified Activities Zone (ZAE) in rural Mali in 2015. This type of project powers small economic centers in rural areas through a solar PV station. The encouraging results of the first project drove the establishment of a second ZAE in Koury in 2019 [9]. The AfDB supported project on the Promotion of Renewable Energies in Mali (PAPERM) has been working on improving the regulatory framework for renewable energy projects in the country[10]. However, upon reviewing the project documents linkages between the projects were not found.

In 2002, the Government of Mali decided to establish a Poverty Reduction Strategy Paper (PRSP) in order to bring together all sectoral policies aimed at reducing poverty under a single entity. The

[9] https://www.geres.eu/en/uncategorized/zae-action-programme-vector-sustainable-energy-jobs-mali/

[10]https://www.afdb.org/en/documents/mali-projet-dappui-la-promotion-des-energies-renouvelables-au-mali-paperm-eer-fevrier-2019

Government proposed innovative measures to address the root causes of poverty and build the capacity of the poor to take advantage of economic opportunities.

Since 2007, the PRSP has been replaced by the Strategic Framework for Growth and Poverty Reduction (PRSP), which highlights, inter alia, the important role of access to energy services in addressing both growth and poverty reduction issues, creating opportunities for income-generating activities, particularly for most people living in rural areas, where only about 15% of the population have access to electricity. In order to achieve this objective, the CSCRP 2012-2017, supported by the African Development Bank, proposed to promote the development of renewable energy sources (biofuel, hydropower, solar energy and wind energy) for the production of electricity at a lower cost.

Strategies for the preservation and protection of the environment provide a guiding framework for effective and sustainable environmental planning and management to address all concerns. To make a significant contribution to the fundamental issues concerning the fight against desertification, food security, preventing and combating pollution and the fight against poverty, which are all constraints to be removed in order to ensure the sustainable socio-economic development of Mali. In the past, the Government of Mali, as well as technical and financial partners, local development structures have developed many initiatives to help populations, especially rural populations, to better cope with the impacts of climatic variations and energy needs. For example, the adoption of sustainable practices and technologies, the development of the National Policy on Climate Change (PNCC), the National Environmental Protection Policy (PNPE) and the Energy Policy of Mali (PEM) by the Government of Mali. This project "Promoting sustainable electricity production in rural areas of Mali through Hybrid Technologies" is a part of a common desire by different partners to contribute to the socio-economic promotion of grassroots communities through sustainable management in the energy and environment/ecology sectors.

Planned stakeholder participation

The project was to be implemented through the NIM execution modality by the Ministry of Energy and Water (MEE, in French). The Ministry was to appoint a National Project Director who was to assume overall responsibility for project implementation, ensure the delivery of project outputs and the judicious use of project resources. The National Project Director was to be assisted by a Project Management Unit headed by a Project Manager (PM) to be recruited through a competitive process. The PM was to be responsible for overall project coordination and implementation, consolidation of work plans and project papers, preparation of quarterly progress reports, reporting to the project supervisory bodies, and supervising the work of the project experts and other project staff. The PM was to also closely coordinate project activities with relevant Government and other institutions and hold regular consultations with project stakeholders. An international part-time Chief Technical Adviser (15 weeks/year) was to be recruited to support the PM on technical issues, while a full-time Project Assistant (PA) was to support him/her on administrative and financial matters.

- **Gender responsiveness of project design**

Regarding gender mainstreaming, the project did not have a comprehensive, standardized gender analysis completed during the project development phase aligned with the UNDP GEF Equality Strategy for 2014-2017.

The project document stated that the project sought to ensure gender equality through the empowerment of women so that they can participate fully in all project activities and, specifically, in capacity-building activities under the various components. This was to be achieved by working, for example, with NGOs such as the Association of Women Engineers for the Promotion of Renewable Energies, the National Organization for Vocational Training, the National Confederation of Peasant Organizations, the Women's Association for Sustainable Development, etc.

Mali adopted its most recent National Action Plan (NAP) on Women, Peace and Security[11] in 2019 for the period 2019-2023. The NAP was developed by the Ministry of Promotion of Women, Children and Family, and partially involved civil society in the NAP development process. Mali's third NAP is preceded by two other NAPs, adopted in 2012 and 2015 and implemented for the period 2012-2014 and 2015-2017. Mali has promoted MFP as the main tool for promoting gender since the declaration made by the President in 2001, namely "One village, one platform to reduce the burden of women's work". The primary impact of the MFP has been on women's work (on reducing daily drudgery and opening up new opportunities in life).

3.2 Implementation of the project

- **4.2.1 Adaptive management**

The project has been well-managed. The Project Steering Committee followed UNDP and government of Mali procedures and protocols for the implementation of the project. The committee used adaptive management measures extensively to ensure that project deliverables were attained while maintaining synchronization with the overall project design. The review indicates that project achievements are aligned with the project document that was endorsed by stakeholders. The Project Results Framework included in the project document was the basis for the implementation of the project. The project was effectively implemented due to the realization of most of output level targets. Detailed annual reports and work plans also guided the implementation process. The annual reports included the expected results for each year of the project, the planned activities to achieve the results, summaries of activities carried out and a presentation of the work plan for the upcoming year. The annual reports and meetings of the Project Steering Committee disclosed the problems that were encountered during the implementation of the project, and then proposed solutions to overcome them.

Adaptive management has also been used throughout the project to respond to different challenges such as the ongoing political instability in Mali and the COVID-19 pandemic. In terms of adaptive management, the project implementation was satisfactory. In light of the challenges that they faced, AER-Mali must be praised for delivering operational MFPs in the rural villages.

- **4.2.2 Effective stakeholder participation and partnership agreements**

The support of the government of Mali to the project was below planned financial contributions. While the Government supported the project with in-kind contributions at implementation with coordination and salaries for AER-Mali staff involved, expected cash contributions did not materialize in the end. It is likely that the overall political context in the country during the project

[11] http://1325naps.peacewomen.org/wp-content/uploads/2020/12/Mali-3rd-NAP-2019-2023-French.pdf

impacted government's ability to materialize all these cash contributions. Government involvement was however already identified as a possible risk in the logical framework.

The private sector was involved in the project for the installation of solar hybrid systems and initial maintenance. Private sector participation on investing and operating mini-grid systems was not achieved. Two reasons explain this lack of private sector partnerships:

- Most of the initial 15 sites were under the mandate of AMADER which is another rural electrification agency in Mali with a focus on grid extensions. The project had to choose other sites, which ended up being far remote and of a size not sufficiently attractive to private sector investors.
- When not recipient of large portions of grants, the private sector requires a minimum transaction size to materialize investments on mini-grids in a way consistent with the cost of capital. In Mali the cost of commercial capital is particularly high. The number of sites, their size and the foreseen tariff were factors that did not concur to raise private sector appetite for investing in partnership with AER-Mali on this project.

Stakeholders participated in the inception workshop and in subsequent annual meetings of the Project Steering Committee. Representatives of public structures, the private sector, civil society and UNDP attended the meetings during the implementation of the project.

Activities for public awareness of the project were planned an carried out over the course of the project. Awareness-raising workshops were held for the target populations in the rural villages, while awareness-raising for site leaders also took place.

While there was some evidence of women's participation in trainings and workshops, as well as their inclusion in management committees on CBOs and stakeholders consultations, there was a lack of quantitative and qualitative data to determine if the project achieved gender equality through the empowerment of women (see Section on Gender Equality and Women's Empowerment).

- **4.2.3 Project financing and co-financing**

The co-financing commitments at the outset of the project totaled the amount of USD 24,012,393 and represents 95% of the total financing required for implementing the project. Furthermore, 90% of these co-financing commitments is in cash and 10% is in-kind. At the outset of the project the co-financing from the Government of Mali through AER represented 54% of the total co-financing (both in-kind and cash) and co-financing from GEF represented 46% of the total co-financing (in-kind and cash). The actual level of co-financing amounted to USD 10,813,096. 87% of the financing came in the form of grants (cash), while 13% of the project's co-financing was delivered through an in-kind contribution by AER.

At the annual meetings of the Project Steering Committee, the budget report for the previous year was discussed by the stakeholders. The workplan for the upcoming year was compiled and activities were decided upon. The budgeted cost for each activity was also included in the yearly workplans. Evidence was provided of audits that were conducted by UNDP. Issues with internal control points were identified, such as the unavailability of evidence of effective payments at project level. It was recommended to obtain proof of payment in the supporting documentation of certain expenditures at project level. Combined Delivery Reports (CDRs) were compiled by UNDP

for 2018, 2019 and 2020. The reports outline the expenses incurred by the Government of Mali, UNDP and GEF. The CDRs demonstrated due diligence and were descriptive in naming the source and cost incurred for each expense.

There were some variances between the expected co-financing commitments and the actual amounts that were delivered to the project, namely the in-kind contribution of the Government of Mali being less than expected and GEF's in-kind contribution being much higher than anticipated. The co-financing figures are outlined in Table 4 below.

Table 4: Co-financing status

Sources of co-financing	Name of co-financer	Type of co-financing	Investment Mobilized	Commitments (USD)	Actuals (USD)
Recipient Country Government	AER (Agency for Renewable Energy)	Grant (Cash)	Investment mobilized	500,000	0
Recipient Country Government	AER (Agency for Renewable Energy)	Grant	Investment mobilized	12,512,393	8,958,896
Recipient Country Government	AER (Agency for Renewable Energy)	In-Kind	Recurrent expenditure	0	1,354,200
GEF Agency	UNDP	Grant (Cash)	Investment mobilized	500,000	500,000
GEF Agency	UNDP	In-Kind	Recurrent expenditure	10,500,000	0
Total co-financing (USD)				24,012,393	10,813,096

- **4.2.4 Monitoring and Evaluation (M&E)**

Table 6: M&E Ratings

Monitoring & Evaluation (M&E)	Rating
M&E design at entry	4
M&E Plan Implementation	4
Overall Quality of M&E	4

A Monitoring and Evaluation (M&E) Plan was developed during the formulation of the project in accordance with UNDP and GEF procedures. A total indicative cost of USD 99,000 was budgeted for this plan, representing about 8.5% of the total GEF grant. This plan listed monitoring and evaluation activities to measure the performance of the project, including periodic status/progress reports and a terminal evaluation (this report). The plan was based on the Project Logical Framework that included a set of performance monitoring indicators and related targets along with their corresponding sources of verification. The Monitoring and Evaluation (M&E) Work Plan and Estimated Associated Budget are presented in the Table below:

Table 7: M&E Work Plan and Estimated Associated Budget

Type of M&E Activity	Responsible Parties	Budget US$ Excluding project team staff time	Time frame
Inception Workshop and Report	● Project Manager ● UNDP CO, UNDP GEF	Indicative cost: 14,000	Within first two months of project start up.
Measurement of Means of Verification of project results	● UNDP GEF RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members.	To be finalized in the Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on output and implementation	● Oversight by Project Manager ● Project team	To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	● Project Manager and team ● UNDP CO ● UNDP RTA ● UNDP EEG	None	Annually
Periodic status/progress reports	● Project Manager and team	None	Quarterly
Terminal Evaluation	● Project Manager and team ● UNDP CO ● UNDP RSC ● External Consultants (i.e. Evaluation team)	Indicative cost: 55,000	At least three months before the end of project implementation.

Audit	• UNDP CO • Project manager and team	Indicative cost per year: 7,500 (Total: 30,000)	Yearly
Visit to field sites	• UNDP CO • UNDP RSC (as appropriate) • Government representatives	For GEF supported projects, paid from IA fees and operational budget.	Yearly
TOTAL INDICATIVE COST Excluding project team staff time and UNDP staff and travel expenses.		US$ 99,000	

- An Inception Workshop was planned to assist all partners to fully understand and take ownership of the project and review the entire project strategy including its monitoring and evaluation, as well as to finalize the first Annual Work Plan (AWP). This workshop was held on May 24, 2017 in Badalabougou-Bamako. No changes were made to the project implementation strategy at this workshop, though it was agreed that the AWP for 2017 was too ambitious for the remaining time period of that year. An Inception Workshop Report was prepared to summarize the inception phase of the project, including the discussions held at the Inception workshop.
- Annual meetings of the Project Steering Committee were held to review the Annual Project Progress Report and to present the AWP for the following year.
- These annual Project Implementation Reviews (PIRs) are both UNDP and GEF reporting requirements, following specific guidelines. They are annual progress reports measuring the progress made by the project during the past year and overall since its inception. They include a review of the development objective, measuring the progress made - using the performance indicators - to achieve the overall expected objective and outcomes; and a review of the implementation measuring the progress made during the past year.
- Mid-term Review and Terminal Evaluation: The project was not subjected to a mid-term review due to its small-size. Regarding the terminal evaluation (this report), it is focusing on the delivery of the project's results as initially planned, on impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals and provides recommendations for followup activities.
- Learning and Knowledge Sharing: Results from the project were to be disseminated within and beyond the project intervention zone through existing information sharing networks and forums; including a two-way flow of information between this project and other similar projects.
- Branding and Visibility: Full compliance was required with UNDP's Branding Guidelines and the GEF's Visibility Guidelines, including the use of the UNDP and GEF logos. For other agencies and project partners that provide support through co-financing, their branding policies and requirements should be similarly applied.

4.2.5 Contribution of UNDP and Implementing Partner

Table 8: Contribution of UNDP and Implementing Partner Ratings

UNDP Implementation/Oversight & Implementing Partner Execution	Rating
Quality of UNDP Implementation/Oversight	4
Quality of Implementing Partner Execution	4
Overall quality of Implementation/Oversight and Execution	4

Since the inception of the project UNDP has been actively involved in the implementation process. The project aimed to build on previous successes of UNDP in Mali in the energy sector. At the launch workshop in May 2017 a speech was given by UNDP-Mali representative, Mr. Oumar Tamboura, in which he ensured the commitment of UNDP to achieving the objectives of the project. During the implementation process UNDP consulted with the Project Steering Committee on the establishment of the Project Communication Strategy. In 2019, the members of the Steering Committee and the members of the AER-Mali Board visited Badougou village.

4.3 Project results and impacts

This section discusses the assessment of project results, what are the remaining barriers limiting the effectiveness of the project, how efficient was the project to deliver its expected results, and how sustainable and replicable these achievements will be over the long-term

4.3.1 Progress towards the objective and expected results

Initially 15 sites were targeted with the intervention for a solar capacity of 147 kW, however during implementation it was found that most of the targeted sites were under the electrification mandate of AMADER, thus soon to be targeted by national grid extension programs. Consultations between national stakeholders took place and resulted in proposing new sites. In the end, solar hybrid mini grids were constructed on 8 sites for a solar capacity of 126 kWp and a total hybrid capacity of 187 kW. Though the adaptive management approach yielded several benefits in terms of gender equality, security in the villages and employment creation, the project also resulted in less CO2 emissions reduction as initially planned. The following table provides an overview of project´s progress towards the objectives and expected results for each component.

Table 9: Progress Towards Expected Results

Project Component	Progress towards results
Component 1: Policy, regulatory, legislative and financial instruments for hybrid mini-grids combined with MFP.	The expected result was an enabling strategic and institutional framework for MFP/PV hybrid mini-grids for rural electrification in Mali which could be verified on published documents such as Decrees or laws. The project

	has delivered a study that prepares the ground for such policy instruments. The Evaluation Team did not find evidence of dissemination of the study within the national stakeholders of the project at the time of writing this report.
Component 2: Capacity building for the management of the hybrid mini-grid system combined with MFP.	The expected result for this component was an improved ability in the market to provide turnkey solutions and quality operation, maintenance and management services for solar hybrid MPF systems. The objectives for this component as provided in the result framework have been met.
Component 3: Present a viable business model for hybrid mini grids combined with MFP in 15 villages.	The expected result for this component was to mobilize significant private sector investment during the four-year implementation period to implement the project in 15 pilot villages, for an initial total installed capacity of 147 kW of PV energy. The results for this component have been met at 80% of the installed capacity ratio.
Component 4: Awareness-raising programme and dissemination of project activities/results.	The expected result for this component was awareness raised and knowledge, experience and best practices disseminated in order to enable project´s reproducibility. The results of this components have been partially met, and could be easily finally achieved when the body of knowledge is made public as recommended.

4.3.2 Relevance : Rating = 5 (Satisfactory)

The project was well aligned with Government of Mali priorities and targets. The project was a relevant step towards universal access and rural electrification targets. The project has paved the way in addressing the needs of Government of Mali to improve the overall electricity access rate in the country. In line with the national energy policy 2007 which supports private sector participation in off-grid electricity generation, the project as designed was relevant to countries targets towards universal access.

The project sought alignment with the UNDP Strategic Plan Focus Area on mainstreaming environment and energy. Alignment was achieved as the project has strengthened Mali's capacity to integrate energy and environmental dimensions into poverty reduction strategies and national development frameworks. The community-based model for the management of the MFPs has enhanced the role of rural Malian communities in promoting sustainable development.

Regarding the relevance of the project against GEF strategic objectives and programs, the project promotes investment in renewable energy technologies. The implementation of the MFPs has contributed to the mitigation of GHG emissions and has also enhanced the ability of the rural communities in Mali to adapt to the impacts of climate change.

There was strong engagement with relevant stakeholders throughout the project. As mentioned in 4.2.2, annual review meetings were held for the parties to the project, and training workshops were conducted for the project's main beneficiaries. The project was formulated with the needs and interests of the targeted communities at the forefront. The intervention was informed by the need to provide the communities with a cleaner and more reliable source of energy, as well as by implementing the MFP technology to help mitigate against GHG emissions.

As stated in 4.1.4, there have some previous and ongoing initiatives which this project compliments, namely the GERES ZAE projects that power small economic centers in rural areas through a solar PV station, and the AfDB supported project on the Promotion of Renewable Energies in Mali (PAPERM) which has the objective of improving the regulatory framework for renewable energy projects in the country.

4.3.3 Effectiveness : Rating = 4 (Moderately Satisfactory)

The project achieved many of the output level targets and moderately met expectations on its cumulated outcome level targets.

- *Strategic and institutional framework for MFP/PV hybrid mini grids:* The project completed a study for enabling the institutional framework. Some of the output level objectives such as the adoption of a policy instrument or performance-based incentives were not relevant anymore given the community-based approach that was taken. The final evaluation for the achievement of all outputs on this outcome is satisfactory. The Evaluation recommends making the completed study publicly available.
- *Capacity building on turnkey solutions:* The project has built the capacity of several stakeholders and developed training material. The project also developed a guide for PMF based mini grids, the guide was however not published on a platform where it can be permanently accessed. Advisory services to business proponents became also irrelevant given the community-based approach. The final rating for this outcome is therefore moderately satisfactory. The Evaluation recommends making all training material that were developed publicly available.
- *An operational business model:* The project has promoted a community-based business model for mini-grids which tends to be working at the time of the Evaluation. The project also identified pilot sites but did not define the potential for institutional investment models. While the project successfully procured companies for the installation of systems, the reviewed documents did not mention specific partnerships that were developed for the operation of mini grids beyond the project implementation. This can however be attributed to the community-based approach taken where CBOs are meant to be in charge. Additional measures for sustainability beyond 2 years are however due. The Evaluation of this outcome is overall moderately satisfactory. The Evaluation recommends finalizing asset ownership and O&M responsibility transfer activities to improve the long-term sustainability of the approach taken.

- *Awareness raising and lessons learned dissemination:* The project has raised awareness nationally for the reproducibility of PMF based mini grids. Lessons learnt manuals however are yet to be published on platforms where they can be assessed also internationally. The evaluation on this outcome is therefore as well moderately satisfactory.

4.3.4 Efficiency : Rating = 3 (Moderately Unsatisfactory)

Co-financing by the country initially was estimated at USD 13 million with USD 0.5 million in cash and the remaining in-kind. Through the support given by the national partner AER-Mali to the project implementation, it is estimated that most of the in-kind contribution was honored to an amount which has been assessed at 80% of initial pledges. Cash contributions however by the government never materialized. The high in-kind contribution by the government did not get directly reflected on the size of final assets, which tends to lower the economic value achieved and therefore the overall project efficiency. The Evaluation provides a specific recommendation on this point. The project overall efficiency is therefore moderately unsatisfactory.

4.3.5 Overall Project Outcome: Rating = 4 (Moderately Satisfactory)

Table 10: Overall Project Outcome Rating

Assessment of Outcomes	Rating
Relevance	5
Effectiveness	4
Efficiency	3
Overall Project Outcome Rating	4

4.3.6 Sustainability: Rating = 3 (Moderately Unsatisfactory)

Table 11: Sustainability Ratings

Sustainability	Rating
Financial resources	3
Socio-political	3
Institutional framework and governance	4
Environmental	4
Overall Likelihood of Sustainability	3

The lack of a plan for long term maintenance of the installed assets is the main threat to the project sustainability. Approved tariffs, and the setting of CBOs are likely to result in the resilience of the project´s outcomes and a pathway towards broader adoption with socio-economic, environmental and gender sensitive benefits, provided recommendation 3 is implemented. The overall sustainability rating is therefore moderately satisfactory.

4.3.7 Gender Equality and Women's Empowerment

The project sought to achieve gender equality through the empowerment of women to fully participate in all project activities and specifically those related to capacity development under the various components. This was to be achieved through working with various NGOs. While there was some evidence of women's participation in trainings and workshops, as well as their inclusion in management committees on CBOs and stakeholders consultations, there was a lack of quantitative and qualitative data to determine if the project achieved gender equality through the empowerment of women. The annual reviews and work plans discussed at the meetings of the Project Steering Committee failed to make provisions for gender equality and women's empowerment.

4.3.8 Country Ownership

The project has addressed issues related to GHG emissions in the energy sector. Electricity generation through non-hydro renewable energy has become an important mitigation option for the government of Mali as it seeks to reduce GHG emissions in the country. The project has enabled the replacement of fossil fuels with renewable energy for energy generation purposes. Also, the 2007 "National Energy Policy"[12] seeks to ensure environmental protection by focusing on the management of the national energy system through improved development of natural resources and a reduction in the negative impacts of energy on the environment, and energy use in the rural areas for income-generating activities and to reduce the rural exodus towards urban areas. Therefore, the project is in line with national priorities and will contribute to meeting the objectives of the Government on global warming and energy development. The project has been implemented through a participative approach engaging stakeholders from the initial design of activities to their implementation.

4.3.9 GEF Additionality

The rationale for GEF involvement in this projec is that it is consistent with GEF-5, Climate Change Objective 3: "Promote Investment in Renewable Energy Technologies". Furthermore, one of UNDP-GEF's three signature climate mitigation programs – Clean Energy – specifically promotes access to clean and affordable energy supply. The project documents provide evidence of the causality between the rationale for GEF involvement and the incremental environmental and other cross-cutting benefits directly associated with the project. Data demonstrating the climate mitigation impact of the project has been monitored, reported and verified. Emissions reductions were calculated through the application of small-scale CDM methodologies on data collected by the national consultant on electricity consumption in four of the villages where the MFPs were installed.

4.3.10 Catalytic Role

The cataytic role of projects, as defined by GEF, is that they are funded in a way that additional resources are attracted, strategies that have a more signifcant outcome than the project itself are pursued, and the process of development can be accelerated. The review of GEF's catalytic role consists of a four point scale, a) the production of a public good, b) demonstration, c) replication and d) scaling up of project achievements.

[12] http://www.creemali.ml/documents/Politique%20energetique%20nationale%20mali.pdf

This project has shown a catalytic role in both a) the production of a public good and b) demonstration. The implementation of the hybrid mini-grids in the rural villages provides a clean and reliable source of energy to the public, while steps have been taken to catalyze the public good, for instance through the development of the project sites and successful trainings of the project's main beneficiaries.

4.3.11 Cross-Cutting Issues

This project achieved cross-cutting results in areas of climate mitigation, capacity development, improved governance and poverty reduction. As mentioned earlier the project is expected to achieve GHG emissions reductions of 4,216 tCO_2e over its 20-year lifetime. Capacity development of the project beneficiaries was achieved through the numerous trainings and workshops that were held during the implementation of the project. Measures taken to enable a strategic and institutional framework for MFP/PV hybrid mini-grids for rural electrification will lead to improved governance in Mali, while the implementation of the mini-grids will allow the people of the 15 villages to benefit from productive capacities in a healthy environment conducive to poverty reduction.

5. Key findings, conclusions, recommendations and lessons learned

Key Findings:

Overall, the project was well designed and encountered some challenges during execution which it dealt with through an adaptive management approach.

The project´s activities and outputs were relevant and realistic to Mali´s energy sector needs.

The logframe contained SMART indicators and targets at the output level and at the outcome and impact levels for the direct implementation of the project.

Government support was demonstrated through in-kind contribution with the participation of AER-Mali, however felt short in terms of cash contribution, which resulted to reduced impacts.

The project met almost all its outcome targets given the reduced budget.

The annual reports adequately tracked the progress and provided room for consultations to enable project´s execution find a way forward with the challenges the project faced.

Conclusions:

This is a highly relevant project promoting sustainable electricity production in rural areas of Mali through hybrid technologies.

This project was designed to establish small renewable energy networks/mini-grids using photovoltaic (PV) energy in a hybrid system with multifunctional platforms (MFP) in order to ensure off-grid rural electrification. MFPs have been established in 15 villages, supplying a clean and reliable source of electricity to approximately 30,000 people. The targeted cumulative installed capacity of 147KW of PV in the 15 villages has been met at 80%. The project is also expected to avoid cumulative emissions of 4,216 tCO_2e over its 20-year lifespan. To this end, the project has achieved its objective and has the potential to be replicated in other areas of Mali.

Partnerships with key stakeholders enabled effective implementation of activities.

The annual meetings of the Project Steering Committee which were attended by stakeholders to the project, including UNDP and the government of Mali, were conducive to the implementation of activities. At these meetings the annual report was examined and discussed, then the work plan for the upcoming year was devised and agreed upon by the project stakeholders. The training of the project's main beneficiaries and the site leaders enabled the effective establishment of the MFPs in the 15 villages.

The M&E Work Plan and Logical Framework to measure the performance of the project were good, including a good set of indicators but weak in quantitative baseline and target values to measure progress against.

The M&E Work Plan was comprehensive in its allocation of activities, responsibilities and budgetary resources. The set of 20 indicators included in the Logical Framework were wide-ranging and relevant for the four project components. This enabled the progression towards the achievement of the project's goals. However, some indicators were lacking in quantitative baseline and target values to measure progress against.

Recommendations:

Rec #	TE Recommendation	Entity Responsible	Time frame
A	Category 1: Awareness-Raising		
A.1	*Key recommendation:* Specific sector knowledge which has been produced as part of the project implementation be availed to the public through AER-Mali website	AER-Mali	12/2021
B	Category 2: Strategic and Institutional Framework		
B.1	*Key recommendation:* Provide a policy note for a simplified administrative procedure on the implementation of solar PV hybrid mini grids that additionally sell non-electricity-based services in Mali, including through MFPs.	MEE	03/2022
C	Category 3: Sustainability		
C.1	*Key recommendation:* Implement additional project´s closing measures that will benefit the project´s long term sustainability	AER-Mali	12/2021
D	Category 4: Co-financing		
D.1	*Key recommendation:* Recommended to UNDP to have in place a solid tracking system for the	UNDP	Indefinite

	monitoring of how in-kind contributions are spent for future similar projects.		
E	Category 5: Logical Framework		
E.1	*Key recommendation:* Pay more attention to logical framework indicators and timely document project scope variation.	AER-Mali	Indefinite
F	Category 6: Sustainability		
F.1	Key recommendation: It is recommended to Beneficiaries (Producers, village management committees/CGV, Private prestation services, NGOs and other actors) to observe the rules and techniques of sustainable management of mini-central hybrid photovoltaic energy.	Project Beneficiaries	Indefinite

Lessons Learned:

Presented below are some important lessons that have been learned from the project. They have been drawn from the review of project documents, consultations with key stakeholders and by analysis of the information and data collected for the purpose of the TE.

- Good stakeholder engagement and participation is of paramount importance to the effectiveness of a project.
- A project that responds to national needs and priorities stands a much greater chance of being implemented effectively.
- Clear targets need to be set to engage the private sector and mobilize investments in sustainable electricity projects.
- Adaptive management is key to achieving a good overall project outcome. As has been proven by the COVID-19 pandemic, shocks are always likely to come during the implementation of a project. The response to such shocks is a key determinant in the overall project outcome.
- This project is a good example of a demonstration project that could lead to replication as per the types of catalytic role that GEF plays. The project demonstrated climate mitigation through the reduction of GHG emissions (a demonstration project). It has the potential to be replicated across rural areas of Mali.
- Considerations for gender equality and women's empowerment should be made during every stage of the project. Targets for the role of women were not defined in the logical framework. Furthermore, many of the project documents and annual reports did not include comments on progress towards gender equality and women's empowerment making it difficult to determine if tangible progress was made in these areas.

6. Annexes

- Annex 1: Project Expected Results (Logical Framework)
- Annex 2: Maps of projects location
- Annex 3: Remarks on Assessment under COVID-19
- Annex 4 : Terms of Reference
- Annex 5: Evaluation Matrix
- Annex 6 : Interview guiding questions
- Annex 7 : List of people Interviewed
- Annex 8 : List of Documents Reviewed
- Annex 9: Evaluation Rating Scales
- Annex 10: UNEG Code of Conduct for Evaluators
- Annex 11: TE Report Clearance Form
- Annex 12: TE Audit Trail

Annex 1: PROJECT EXPECTED RESULTS (LOGICAL FRAMEWORK)

Project results framework

Project title: Promotion of sustainable rural electricity generation in Mali through hybrid technologies.					
UNDAF outcome(s): Vulnerable populations, particularly women and youth, benefit from productive capacities in a healthy (natural) environment conducive to poverty reduction					
Key outcome of the UNDP Strategic Plan for Environment and Sustainable Development for the country: Integrate environment and energy.					
Gef strategic objective and programme: Promote investment in renewable energy technologies.					
Applicable GEF expected accomplishments: Total GHG emissions "avoided" from electricity generation using hybrid MFP/renewable energy technology.					
Applicable GEF outcome indicators: GHG emissions avoided through electricity generation using hybrid PMF/renewable energy (tonnes of CO_2)and \$/t CO_2technology.					
	indicator	reference	Goals at the end of the project	Sources of verification	Risks and Assumptions
objective					

Optimize electricity produced from multifunctional platforms (MFP) for productive energy use by increasing the share of renewable energy (RE) and developing an appropriate business model for the sustainability of a hybrid PMF/PV system	Reduction of emissions. MWh products. Number of jobs created Number of beneficiaries	GHG emissions in the country's electricity generation sector are increasing from 10 million tonnes in 1995 to 13.4 million tonnes in 2010. The current contribution of renewable energies, particularly PV, to the country's electricity production mix is negligible. No investment is made in hybrid PMF/PV mini-grids for electricity generation.	Electricity generation based on the 244 MWh/year hybrid PV system at the end of the project. Direct reduction of 4,216 tonnes of CO_2 over the 20-year lifetime of PV systems. Cumulative indirect GHG emission reduction estimated at 116,462 tonnes of CO_2 by 2025 based on a business-as-usual scenario and a GEF causality factor of 80 per cent. A total of 575 jobs were created during the 4-year period of the project.	Annual project reports, GHG monitoring and verification reports Mid-term review and final evaluation reports of the project	Ongoing engagement of project partners, including government agencies and investors/proponents

			A total of 3,728 households, comprising an average of 8 persons, benefit from electricity services (almost 30,000 people).		
Component 1: Policy, regulatory, legislative and financial instruments for hybrid mini-grids combined with MFP					
Outcome 1: Enabling strategic and institutional framework for MFP/PV hybrid mini-grids for rural electrification	Existence of a favourable policy and regulatory framework	None are available at this time.	To be completed within 18 months of the start of the project	Published documents. Government Decrees/Laws	Engagement of different government institutions
Output 1.1: Strategic and legislative package of MFP/PV hybrid mini-grids for rural electrification adopted	Existence of a favourable policy and regulatory framework	None are currently available	To be completed within 18 months of the start of the project	Published documents	Engagement of different government institutions

Output 1.2: The basic policy instrument is defined, adopted and implemented, including the reduction of initial investment costs and subsidies, the rural electrification code is harmonized, licensing regulations are developed, PPAs and PPPs are developed for PMF/PV hybrid mini-grids.	Installed PV capacity	None are available at this time.	To be completed within 18 months of the start of the project	Published documents	Commitment of the various government institutions and promoters of the project
Output 1.3: Performance-based incentive system, long-term concessions and pricing for hybrid mini-grids designed and implemented for long-term viability	Existence of favourable regulation	None are available at this time.	To be completed within 18 months of the start of the project	Published documents.	Continued investor interest
Component 2: Capacity building for the management of the hybrid mini-grid system combined with MFP.					
Achievement 2: Ability to provide turnkey solutions and quality operation, maintenance and management (EEG) services for hybrid PMF/PV systems	Existence of capacity for installation and maintenance services	None are available at this time.	To be completed within 18 months of the start of the project and to be implemented by the government thereafter	Project document	Cooperation of government entities

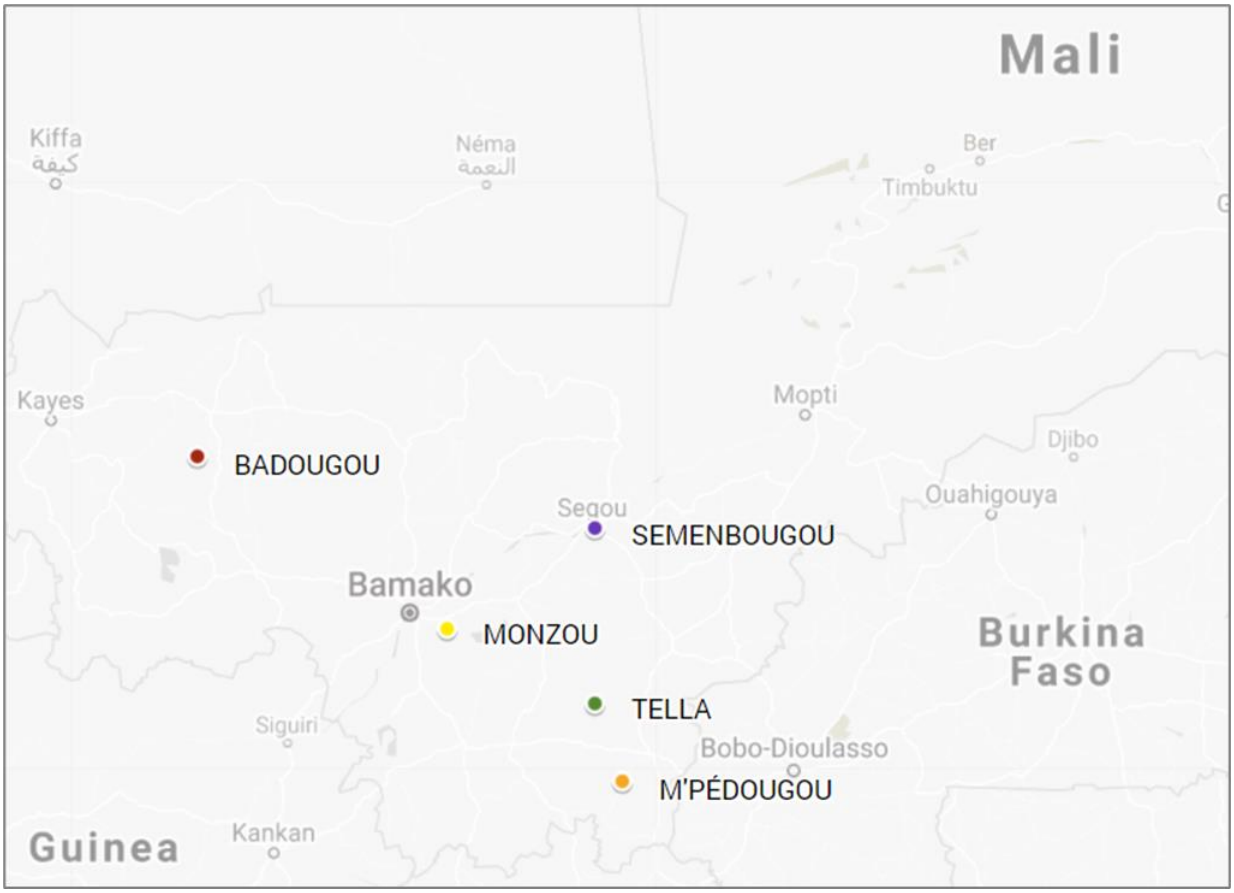
Output 2.1: Guide to the development of hybrid MFP/PV mini-grids published.	Existence of a guide	None are available at this time.	To be completed within 18 months of the start of the project	Project document	Sustained stakeholder interest
Output 2.2: Business and technical advisory services to potential proponents of hybrid MFP/PV mini-grids.	Existence of a business unit	None are available at this time.	To be implemented within 18 months of the start of the project	Project document	Cooperation between government entities and the private sector
Output 2.3: Adapted capacity-building programme for relevant stakeholders and hybrid system manufacturers, including system design, equipment selection, construction and system EEG.	Existence of a training programme	None are available at this time.	Effective capacity building makes it possible to evaluate projects with a capacity of 0.5 MW by the end of the first year.	Project Reports	Sustained stakeholder interest
Component 3: Present a viable business model for hybrid mini-grids combined with MFP in 15 villages					
Output 3: An operational business model is presented to demonstrate the technical and financial viability of pmf/pv hybrid mini-grids.	Existence of a business model	Such a model does not exist, at present	Completed within 24 months of project start-up	Project Reports	Government entities and the private sector cooperate.

Output 3.1: Pilot sites for hybrid PMF/PV mini-grids are identified and evaluated and the institutional/investment model is defined.	Selected pilot sites	Unidentified, at present	Competitive tenders for concession areas completed within 18 months of project start-up	Documents granting concession areas to available private developers	Sustained interest of private investors
Output 3.2: Partnerships are established for the construction and operation of hybrid MFP/PV mini-grids.	Partnership agreements signed	None, at the moment.	PPP for the 15 villages for the installation of 147 kW of PV signed by the end of the 2nd year of the project	PPPs/signed partnership agreements available	Sustained interest of private investors
Output 3.3: Sustainable PMF/PV hybrid mini-grids installed by 15 villages, resulting in a cumulative installed capacity of 147 kW of PV	Hybrid PMF/PV mini-grids in 15 villages	None, at present	All 15 MFP/PV hybrid mini-grids are built and operational by the end of the project.	Reports confirming the operation of all 25 mini-networks available	Sustained interest of private investors
Component 4: Awareness-raising programme and dissemination of project activities/results					

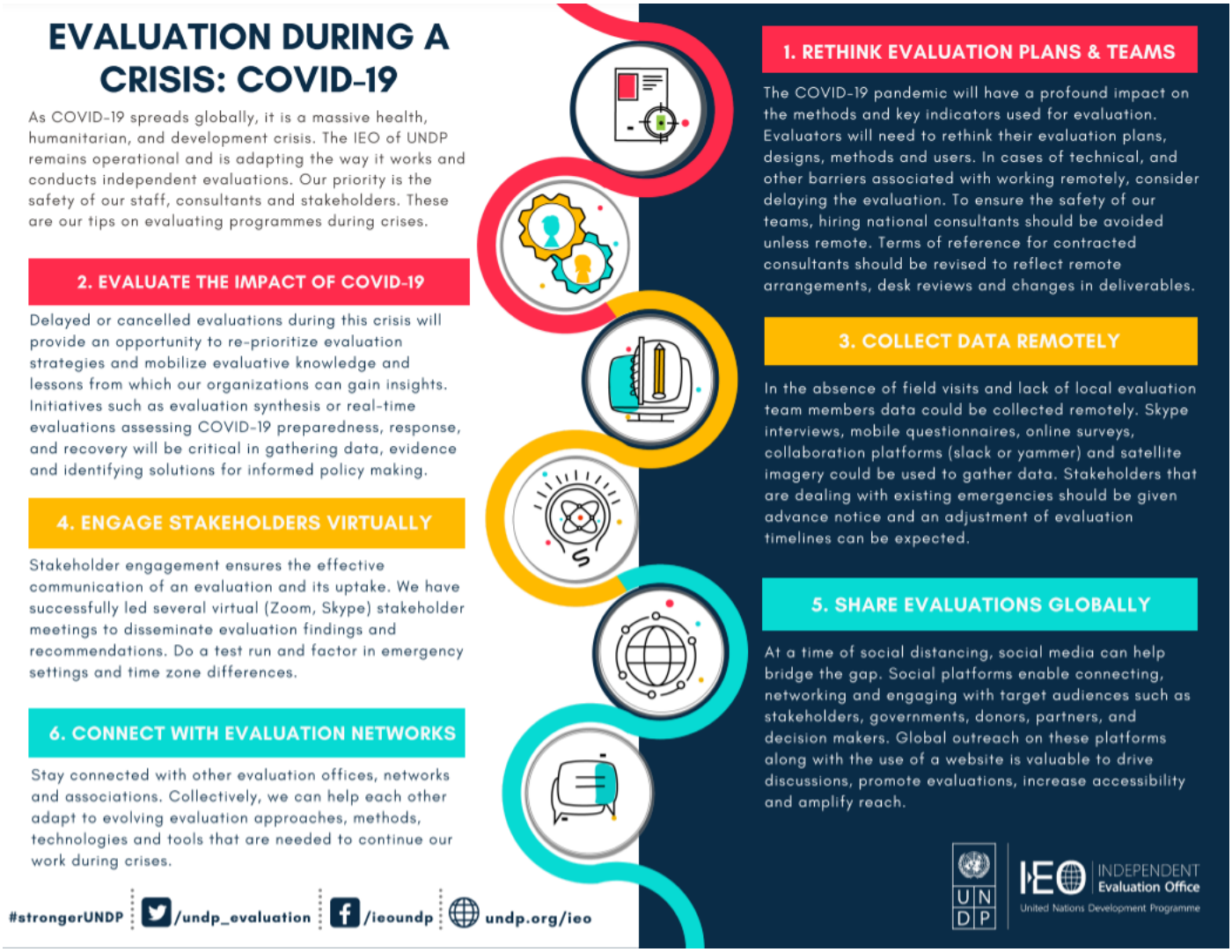
Outcome 4: Awareness-raising programme and dissemination of experience/best practices and lessons learned from the project for reproducibility across the country/region implemented	Existence of an awareness-raising programme	Lack of sufficient information to continue the programme	Increased awareness among existing stakeholders to promote and develop the market for electricity generation by PMF/PV hybrid mini-grids	Final report and project website.	Continued program growth
Output 4.1: National plan to implement outreach/promotional activities targeting both domestic and international investors	National plan available	No such plan is available.	Completed within 24 months of project start-up Investors are interested in developing additional hybrid PV/MFP systems with a capacity of 5 MW over the next 5 years following the completion of the project.	Project documents	Planned program development

Output 4.2: Strengthened capacity of relevant ministries/institutions to monitor and document project experience	Compiled data on experience gained during the implementation of the project	No capacity-building programmes None, at present	Strengthened capacity to monitor project experience Completed within 6 months of the end of the project	Project reports	Appointment of staff by relevant government departments/institutions
Output 4.3: Published materials (including video) and briefings with stakeholders on experience/best practices and lessons learned from project implementation	Information available on the website	Lack of information on best practices and lessons learned	Completed within 6 months of the end of the project	Project documents and website	Sustained stakeholder interest

Annex 2: Maps of project´s location



Annex 3: Remarks on assessment under COVID-19



EVALUATION GUIDELINES

Evaluation during COVID-19

INDEPENDENT Evaluation Office
United Nations Development Programme

Evaluation planning and implementation (UPDATE: June 2021)

This is an update to the June 2020 guidance on decentralised evaluation implementation. All UNDP guidance for undertaking evaluations during COVID-19 can be found here.

Underlying this guidance is a principle of "do no harm", and a consideration that the safety of staff, consultants, stakeholders and communities is paramount and the primary concern of all when planning and implementing evaluations during the COVID-19 crisis.

The global COVID-19 situation remains varied with some countries showing signs of having emerged from the pandemic with the loosening of restrictions, while others are planning transitions from "lockdown" to some level of opening, while others remain in lockdown with uncertainty when opening will start.

Programme units should review evaluation plans for the year to understand how a continuation of the pandemic and restrictions will impact evaluations planned, and may consider delaying, rescheduling, or combining evaluations. This is subject to individual country situations and government strategies to address the pandemic.

In addition, consideration should be given to current project implementation delays or reprogramming and their likely impact on evaluation plans. Rescheduling evaluations to later in the year may result in a backlog of evaluations and this should also be considered when reviewing the evaluation plan and rescheduling evaluations. Programme units should be realistic in implementation expectations not only for the short-term but also for the remaining year and should strongly consider the use of remote and virtual methodologies for the implementation of ongoing, contracted, and future evaluations.

Going forward programme units should:

- ***Review evaluation plans (July 2021 through to December 2022)*** to assess the possibility of implementation considering the current country situation, the **criticality of evaluations** and possibility of rescheduling if necessary. Programme units should:
    - Carryout ***evaluability assessments*** of all forthcoming evaluations to support reprioritization, rescheduling and preparing for forthcoming evaluations.
    - ***Identify and plan for the implementation of evaluations remotely*** (virtually) if necessary and possible, depending on the situation in-country, through **remote data collection and the remote interviewing of stakeholders**. Guidance is available here.
    - ***Combine evaluations, where possible***, into outcome, thematic or portfolio evaluations to more efficiently implement evaluations. ***(This is not possible for GEF TE or MTR evaluations. Guidance for GEF TE and MTR below).***
    - Implement evaluations using highly ***qualified national evaluators*** if possible.

- Do not place any consultant, stakeholders or beneficiary in harm's way and evaluation methodologies proposed should limit the exposure of stakeholders to the pandemic.

- Changes to evaluation plans and evaluations should follow normal procedures with programme/steering committee/ project boards being informed of evaluation plan changes.
- Changes should be approved by country office management and continue to be verified and approved by M&E regional focal point and posted on ERC.

Mid-term Reviews/Evaluations (MTRs/MTEs) and Terminal Evaluations (TEs) for projects financed by environmental Vertical Funds (GEF, GCF, AF)[1]

- Ongoing MTRs/MTEs/TEs of Vertical Fund financed projects should be completed virtually where possible.
- Planned MTRs/MTEs/TEs of Vertical Fund financed projects should proceed as scheduled using virtual means where possible. If not possible or desirable, these evaluations can be delayed with the agreement of the Regional Technical Advisor (RTA).
- Please note that Vertical Fund project evaluation budgets cannot be reprogrammed for other activities without the approval of the Governing Board of the Vertical Fund.

Looking ahead: evaluating UNDP's response to the COVID19 crisis

- Monitoring and evaluation should be planned for from the outset of all COVID-19 programmes and projects.
- Country Offices and Regional Bureaus should be systematically recording the initiatives undertaken in support of the response to and recovery from the crisis. Clear theories of change need to be developed for all COVID-19 response projects and re-programming activities, linking UNDP support with that of Government responses as well as other UN agencies and donors.
- Documentation needs to be complete and available. Existing integrated results and resource frameworks will need to take into account COVID-19 support and/ or reprogramming and monitoring systems and frameworks established for his new area of UNDP support to ensure monitoring of COVID-19 interventions as well as supporting future evaluations of our response to COVID-19.

June 2021

Annex 4: ToR

Modèle de termes de référence (TdR) pour l'évaluation finale des projets appuyés par le PNUD et financés par le FEM

Modèle standard 2 formaté pour le site du PNUD dédié aux emplois : UNDP Jobs website

INFORMATIONS GÉNÉRALES SUR LE CONTRAT

Lieu : - Consultant International : Télétravail
- Consultant National : Bamako, Mali

Date limite de candidature : 16 avril 2021
Type de contrat : Contrat de Services
Type de mission :
Langues requises : - Consultant International : Français et Anglais
- Consultant National : Français

Date de commencement : 24 avril 2021
Durée du contrat initial : 10 semaines
Durée prévue de la mission : 22 jours

CONTEXTE

1. Introduction

Conformément aux politiques et procédures de suivi et d'évaluation du PNUD et du FEM, tous les projets de moyenne ou grande envergure appuyés par le PNUD et financés par le FEM doivent faire l'objet d'une évaluation finale (EF) à la fin du projet. Les présents termes de référence (TdR) énoncent les attentes associées à l'EF du projet de moyenne envergure intitulé ***Promotion de la Production d'Electricité Durable dans les Zones Rurales du Mali grâce aux Technologies Hybrides*** (n° 4903 SIGP) et mis en œuvre par le PNUD (agence d'exécution FEM) et l'Agence des Énergies Renouvelables du Mali (AER-Mali) (partenaire de mise en œuvre). Le projet a démarré le 12 janvier 2017 et se trouve actuellement dans sa 5e année de mise en œuvre. Le processus d'EF doit suivre les directives décrites dans le document « Directives pour réaliser les évaluations finales des projets appuyés par le PNUD et financés par le FEM » (*http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf*).

Le monde est actuellement confronté à la pandémie de COVID-19 qui a touché des personnes partout dans le monde et a entraîné un arrêt de l'activité économique et des systèmes de transport mondiaux et locaux, ainsi que des perturbations sans précédent de la vie quotidienne qui ont réduit les possibilités d'interaction humaine. Afin de garantir le bien-être et la sécurité du personnel et des contractants du PNUD, ainsi que pour s'assurer qu'aucun préjudice n'est causé aux partenaires, aux communautés et aux interlocuteurs, la mise en œuvre de cette EF sera entreprise autant que possible de manière virtuelle, conformément à la section "Approche et méthodologie de l'EF" ci-dessous.

2. Description du projet

L'objectif du projet consiste à promouvoir la mise en place de petits réseaux d'énergies renouvelables/mini-réseaux utilisant l'énergie photovoltaïque (PV) dans un système hybride avec les plateformes multifonctionnelles (PMF) en vue d'assurer l'électrification rurale hors réseau. Le projet visait à mettre en place un environnement favorable pour le développement de ces systèmes hybrides et de mettre au point un modèle d'affaires et des instruments financiers adaptés pour leurs viabilité et reproduction. Pour ce faire, il était envisagé de mobiliser un important investissement du secteur privé au cours de la période d'exécution de quatre années en vue de mettre en œuvre le projet dans 15 villages pilotes, pour une capacité installée totale initiale de 147 kW d'énergie PV. Pendant la période du projet, ces 15 villages pilotes devaient produire au total 416 MWh d'électricité, puis générer une production annuelle de 244 MWh, maintenue pendant la durée de vie prévue de 20 années des systèmes PV, afin d'éviter une émission cumulée de 4 216 tCO_2.

Dans l'hypothèse que les mini-réseaux à base d'énergies renouvelables ont suscité le vif intérêt escompté pour appuyer l'électrification rurale pendant l'exécution du projet et, que le projet a contribué à créer un environnement favorable à l'investissement, il est attendu que de nombreux autres mini-réseaux de ce genre soient construits pendant les 10 années suivant la fin du projet, dépassant largement le nombre de mini-réseaux installés prévu pendant la période d'exécution de 4 années du projet. Ainsi, l'on estimait que la réduction indirecte des émissions après le projet pour la capacité supplémentaire uniquement s'élèverait à 116 462 tCO_2, soit un coût de réduction de 10 USD des fonds du FEM par tCO_2 évitée. Le projet visait à atteindre cet objectif en mettant en place un cadre réglementaire favorable et un système d'appui financer qui, ensemble, visaient à faciliter l'électrification rurale hybride PV/PMF grâce à la participation du secteur privé dans le pays.

3. Objectif de l'EF

Le rapport d'EF doit évaluer la réalisation des résultats du projet par rapport à ce qui était prévu et tirer des leçons qui peuvent à la fois améliorer la durabilité des bénéfices de ce projet et contribuer à l'amélioration générale de la programmation du PNUD. Le rapport d'EF encourage la responsabilité et la transparence, et évalue l'étendue des réalisations du projet.

Il vise également à tirer les leçons des expériences du projet liées au développant des politiques et des réglementations favorables à l'investissement du secteur privé et à explorer les avantages des plateformes multifonctionnelles hybrides pour améliorer l'accès à l'énergie dans le pays en exploitant les ressources en énergie solaire du pays.

OBLIGATIONS ET RESPONSABILITÉS

4. Approche et méthodologie de l'EF

L'EF doit fournir des informations crédibles, fiables et utiles fondées sur des preuves.

L'équipe de l'EF doit examiner toutes les sources d'information pertinentes, y compris les documents élaborés pendant la phase de préparation (tels que le FIP, le plan de lancement du PNUD, la Procédure de détection des risques environnementaux et sociaux du PNUD/PDRES), le document de projet, les rapports de projet, dont les RMP annuels, les révisions du budget du projet, les rapports sur les enseignements tirés, les documents stratégiques et juridiques nationaux et tout autre matériel que l'équipe juge utile pour étayer cette évaluation. L'équipe de l'EF doit examiner les indicateurs de base/outils de suivi de référence et à mi-parcours du domaine focal du FEM, soumis au FEM au moment de l'approbation du directeur et aux étapes de mi-parcours, ainsi que les indicateurs de base/outils de suivi qui doivent être complétés avant le début de la mission d'EF sur le terrain.

L'équipe de l'EF doit suivre une approche participative et consultative garantissant une collaboration étroite avec l'équipe projet, les homologues gouvernementaux (le point focal opérationnel du FEM), les partenaires de mise en œuvre, le bureau de pays PNUD, les conseillers techniques régionaux, les bénéficiaires directs et d'autres parties prenantes.

La participation des parties prenantes est indispensable à la réussite de l'EF. La mobilisation des parties prenantes doit inclure des entretiens avec les parties prenantes qui ont des responsabilités dans le projet, notamment l'Agence des Énergies Renouvelables du Mali (AER-Mali), en particulier l'Unité de Gestion du Projet, l'Agence Malienne pour le Développement de l'Energie Domestique et l'Électrification Rurale (AMADER), le Ministère de l'Énergie, les hauts fonctionnaires et les chefs d'équipes/de composantes, les experts et les consultants clés dans le domaine concerné, le comité de pilotage du projet, les bénéficiaires du projet, le monde universitaire, le secteur privé, les autorités locales (en particulier les mairies des communes ciblées) et les OSC, etc.

En raison de la pandémie de COVID-19, ces consultations devront se tenir autant que possible à distance. Le consultant international de l'équipe de l'EF effectuera sa mission intégralement en télétravail. Le consultant national de l'équipe de l'EF pourra être mené à effectuer des consultations en présentiel, auquel cas le respect des gestes barrières et de la distanciation sociale sera impératif. Le consultant national est également censé effectuer des missions sur le terrain à Bamako, et sur un échantillon représentatif des sites du projet dans les communes de Badougou Nafadji, Dialaya, Semembougou, Mounzou, Tongo, M'Pèdougou, Diou, Tella. Le choix de sites visités sera effectué en tenant compte des contraintes sanitaires et sécuritaires, afin d'assurer le bien-être et la sécurité du consultant.

La conception et la méthodologie spécifiques de l'EF devraient émerger des consultations entre l'équipe de l'EF et les parties susmentionnées concernant ce qui est approprié et faisable pour atteindre le but et les objectifs de l'EF et répondre aux questions d'évaluation,

compte tenu des contraintes de budget, de temps et de données. Toutefois, l'équipe de l'EF doit utiliser des méthodologies et outils tenant compte du genre et veiller à ce que l'égalité des sexes et l'autonomisation des femmes, ainsi que d'autres questions transversales et les ODD, soient intégrées dans le rapport d'EF.

L'approche méthodologique finale, y compris le calendrier des entretiens, les visites sur le terrain et les données à utiliser dans l'évaluation, doit être clairement exposée dans le rapport initial et faire l'objet d'une discussion approfondie et d'un accord entre le PNUD, les parties prenantes et l'équipe de l'EF.

Le rapport final d'EF doit décrire l'ensemble de l'approche adoptée pour l'EF et la justification de cette approche en rendant explicites les hypothèses sous-jacentes, les défis, les forces et les faiblesses concernant les méthodes et l'approche de l'évaluation.

5. Portée détaillée de l'EF

L'EF doit évaluer la performance du projet par rapport aux attentes énoncées dans le cadre logique/de résultats du projet (voir l'Annexe A des TdR). Elle doit évaluer les résultats par rapport aux critères décrits dans les Directives pour la réalisation des évaluations finales des projets appuyés par le PNUD et financés par le FEM *(http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf)*.

La section du rapport d'EF sur les constatations doit couvrir les sujets énumérés ci-dessous.

Une présentation complète du contenu du rapport d'EF est fournie en Annexe C des TdR.

Les critères nécessitant une notation sont marqués d'un astérisque (*).

Constatations

i. Conception/élaboration du projet

- Priorités nationales et appropriation par le pays
- Théorie du changement
- Égalité des sexes et autonomisation des femmes
- Mesures de protection sociale et environnementale
- Analyse du cadre de résultats : logique et stratégie du projet, indicateurs
- Hypothèses et risques
- Enseignements tirés des autres projets pertinents (par exemple, dans le même domaine focal) incorporés dans la conception du projet
- Participation prévue des parties prenantes
- Les liens entre le projet et d'autres interventions au sein du secteur
- Modalités de gestion

ii. Mise en œuvre du projet

- Gestion adaptative (modification de la conception du projet et des produits du projet au cours de la mise en œuvre)

- Participation réelle des parties prenantes et accords réels de partenariat
- Financement et cofinancement du projet
- Suivi et évaluation : conception à l'entrée (*), mise en œuvre (*) et évaluation globale du S&E (*)
- Partenaire de mise en œuvre (PNUD) (*) et agence d'exécution (*), contrôle/mise en œuvre globale du projet et exécution (*)
- Gestion des risques, y compris les Normes environnementales et sociales

iii. Résultats du projet

- Évaluer la réalisation des résultats par rapport aux indicateurs en rendant compte du niveau de progrès pour chaque objectif et indicateur de résultat au moment de l'EF et en notant les réalisations finales
- Pertinence (*), Efficacité (*), Efficience (*) et réalisation globale du projet (*)
- Durabilité : financière (*), sociopolitique (*), du cadre institutionnel et de la gouvernance (*), environnementale (*), probabilité globale de durabilité (*)
- Appropriation par les pays
- Égalité des sexes et autonomisation des femmes
- Questions transversales (réduction de la pauvreté, amélioration de la gouvernance, atténuation des changements climatiques et adaptation à ceux-ci, prévention des catastrophes et relèvement, droits fondamentaux, renforcement des capacités, coopération Sud-Sud, gestion des connaissances, volontariat, etc., selon les cas)
- Additionnalité du FEM
- Rôle de catalyseur / Effet de réplication
- Progrès vers l'impact

iv. Principales constatations, conclusions, recommandations et enseignements tirés

- L'équipe de l'EF doit inclure un résumé des principales constatations dans le rapport d'EF. Les constatations doivent être présentées sous forme d'énoncés de faits fondés sur l'analyse des données.
- La section sur les conclusions est rédigée à la lumière des constatations. Les conclusions doivent être exhaustives et équilibrées, largement étayées par les preuves et s'inscrire dans la logique des constatations de l'EF. Elles doivent mettre en avant les forces, les faiblesses et les résultats du projet, répondre aux principales questions de l'évaluation et donner des pistes de réflexion pour l'identification et/ou la résolution des problèmes importants ou des questions pertinentes pour les bénéficiaires du projet, le PNUD et le FEM, y compris les questions relatives à l'égalité des sexes et à l'autonomisation des femmes.
- Le rapport doit présenter des recommandations concrètes, pratiques, réalisables et à l'attention des utilisateurs cibles de l'évaluation concernant les mesures à adopter ou les décisions à prendre. Les recommandations doivent être spécifiquement étayées par des preuves et liées aux constatations et aux conclusions relatives aux questions clés traitées par l'évaluation.

- Le rapport d'EF doit également comprendre les enseignements qui peuvent être tirés de l'évaluation, y compris les meilleures – et les pires – pratiques concernant la pertinence, la performance et le succès, qui peuvent fournir des connaissances acquises à partir de circonstances particulières (les méthodes de programmation et d'évaluation utilisées, les partenariats, les leviers financiers, etc.) applicables à d'autres interventions du FEM et du PNUD. Lorsque c'est possible, l'équipe de l'EF doit inclure des exemples de bonnes pratiques concernant la conception et la mise en œuvre du projet.
- Il est important que les conclusions, les recommandations et les enseignements tirés du rapport d'EF intègrent l'égalité des sexes et l'autonomisation des femmes.

Le rapport d'EF comprendra un tableau de notations d'évaluation, comme présenté en annexe des TdR.

6. Produits escomptés et éléments livrables

L'équipe de l'EF doit préparer et soumettre les éléments suivants :

- **Rapport initial d'EF** : l'équipe de l'EF précise les objectifs et les méthodes de l'EF au plus tard **2 semaines** avant la mission d'EF. L'équipe de l'EF soumet le rapport initial d'EF à l'unité mandatrice et à la direction du projet. Date approximative de présentation du rapport : *05 mai 2021*
- **Présentation** : l'équipe de l'EF présente ses premières constatations à la direction du projet et à l'unité mandatrice à la fin de la mission d'EF. Date approximative de présentation : *31 mai 2021*
- **Projet de rapport d'EF** : l'équipe de l'EF soumet un projet de rapport complet, avec les annexes **dans un délai de trois semaines** après la fin de la mission d'EF. Date approximative de présentation du projet de rapport : *09 juin 2021*
- **Rapport final d'EF* et piste d'audit** : l'équipe de l'EF envoie le rapport révisé, avec la piste d'audit détaillant la façon dont les commentaires reçus ont (ou n'ont pas) été pris en compte dans le rapport final d'EF, à l'unité mandatrice **dans la semaine suivant** la réception des commentaires du PNUD sur le projet de rapport. Date approximative de présentation du rapport : *21 juin 2021*

*Le rapport final d'EF doit être rédigé en anglais. Le cas échéant, l'unité mandatrice peut décider de faire traduire le rapport dans une langue plus couramment parlée par les parties prenantes nationales.

Tous les rapports finaux d'EF seront soumis à une analyse de la qualité effectuée par le Bureau indépendant d'évaluation (BIE) du PNUD. Pour plus de détails sur l'analyse qualité des évaluations décentralisées réalisée par le BIE, veuillez consulter la section 6 du Guide d'évaluation du PNUD[13].

7. Dispositions relatives à l'EF

La responsabilité principale de conduire l'EF incombe à l'unité mandatrice. L'unité mandatrice de ce projet d'EF est le **Bureau Pays du PNUD Mali**.

L'unité mandatrice passera un contrat avec les consultants et s'assurera que l'équipe de l'EF dispose en temps utile des indemnités journalières et des facilités de voyage dans le pays. L'équipe projet sera

[13] Disponible sur : http://web.undp.org/evaluation/guideline/French/section-6.shtml

chargée de prendre contact avec l'équipe de l'EF afin de lui fournir tous les documents nécessaires, préparer les entretiens avec les parties prenantes et organiser les visites sur le terrain.

8. Durée des activités

La durée totale de l'EF sera de 22 jours [15 jours travaillés pour le CI et 17 jours travaillés pour le CN] sur une période de *9 semaines* à compter du *29 avril 2021* et n'excédera pas cinq mois à partir du recrutement de l'équipe de l'EF. Le calendrier provisoire de l'EF est le suivant :

- *16 avril 2021 :* Clôture des candidatures
- *23 avril 2021 :* Sélection de l'équipe de l'EF
- *28 avril 2021 :* Préparation de l'équipe de l'EF (communication des documents de projet)
- *29 avril 2021 : 3* jours [2 jours CI / 3 jours CN] (2-4 jours recommandés) : Examen des documents et préparation du rapport initial d'EF
- *03 mai 2021 : 2* jours [1 jour CI / 1 jour CN] : Finalisation et validation du rapport initial d'EF – au plus tard 2 semaines avant la mission d'EF
- *19 mai 2021 : 8* jours [5 jours CI / 8 jours CN] (7-15 jours rec.) : Mission d'EF : réunions avec les parties prenantes, entretiens, visites sur le terrain
- *31 mai 2021* : Réunion de clôture de la mission et présentation des premières constatations – au plus tôt à la fin de la mission d'EF
- *01 juin 2021 : 6* jours [4 jours CI / 3 jours CN] (5-10 jours rec.) : Préparation du projet de rapport d'EF
- *09 juin 2021* : Diffusion du projet de rapport d'EF pour commentaires
- *16 juin 2021 : 3* jours [3 jours CI / 2 jours CN] (1-2 jours rec.) : Intégration des commentaires sur le projet de rapport d'EF dans la piste d'audit et finalisation du rapport d'EF
- *21 juin 2021* : Préparation et publication de la réponse de la direction
- *30 juin 2021*: Date prévue de l'achèvement de l'ensemble du processus d'EF

La date prévue pour le début du contrat est le *24 avril 2021*.

9. Lieu d'affectation

Etant données les contraintes et restrictions de voyage liées au COVID-19, une approche flexible d'équipe d'EF sera mise en œuvre. Ainsi, le consultant international travaillera uniquement en télétravail. Le consultant national sera affecté à Bamako, Mali et sera amené à effectuer des missions dans un échantillon représentatif des sites du projet dans les communes de Badougou Nafadji, Dialaya, Semembougou, Mounzou, Tongo, M'Pèdougou, Diou, Tella. Le choix de sites visités sera effectué en tenant compte des questions sanitaires et sécuritaires, afin d'assurer le bien-être et la sécurité du consultant.

Voyage/missions de terrain :

- Le cours BSAFE doit avoir être suivi avec succès avant le voyage/mission de terrain.
- Les consultants doivent se conformer aux Directives des Nations Unies relatives à la sécurité énoncées sur : https://dss.un.org/dssweb/

- Tous les frais de déplacement associés seront couverts et remboursés, conformément au règlement du PNUD, sur présentation du formulaire F-10 et des documents justificatifs.

COMPÉTENCES ET EXPÉRIENCE EXIGÉES

10. Composition de l'équipe de l'EF et qualifications requises

Une équipe composée de deux évaluateurs indépendants conduira l'EF – un chef d'équipe, évaluateur international (ayant l'expérience des projets et des évaluations dans d'autres régions) et un expert, évaluateur national du Mali. Le chef d'équipe sera responsable de la conception générale et de la rédaction du rapport d'EF, et de l'appui technique à distance des missions de terrain de l'évaluateur national. L'expert national sera chargé d'évaluer les tendances naissantes concernant les cadres réglementaires, les allocations budgétaires, le renforcement des capacités, de travailler avec l'équipe projet pour définir l'itinéraire de la mission d'EF, d'effectuer les consultations nationales et les missions de terrain, et d'apporter les données nécessaires à l'évaluateur international.

Le ou les évaluateurs ne doivent pas avoir participé à la préparation, la formulation, et/ou la mise en œuvre du projet (y compris la rédaction du Document de projet), ne doivent pas avoir effectué l'évaluation à mi-parcours de ce projet et ne doivent pas avoir de conflit d'intérêts en relation avec les activités liées au projet.

Les évaluateurs seront sélectionnés de manière à ce que l'équipe dispose des compétences maximales dans les domaines suivants : *(Adapter les qualifications selon les besoins et donner une pondération à chaque qualification. Dans la plupart des cas, les qualifications requises pour le chef d'équipe et pour l'expert seront différentes. Il convient donc d'avoir deux listes de qualifications différentes ou des TdR distincts.)*

Consultant international (Chef d'équipe et évaluateur international) :

Éducation

- Diplôme de master dans le domaine de l'énergie, des sciences environnementales, de l'ingénierie ou tout autre domaine étroitement lié ;

Expérience

- Expérience récente dans les méthodologies d'évaluation de la gestion axée sur les résultats ;
- Expérience dans l'application d'indicateurs SMART et dans le remaniement ou la validation des scénarios de départ ;
- Compétences en gestion adaptative, telle qu'appliquée à l'atténuation au changement climatique ;
- Expérience dans les projets d'évaluation ;

- Expérience professionnelle en Afrique de l'Ouest ;
- Expérience professionnelle d'au moins 10 ans dans des secteurs techniques pertinents ;
- Compréhension avérée des questions liées au genre et à l'atténuation au changement climatique ; expérience dans l'évaluation et l'analyse tenant compte du genre ;
- Excellente aptitude à la communication ;
- Compétences avérées en matière d'analyse ;
- Une expérience dans l'évaluation/la révision de projet dans le système des Nations Unies sera considérée comme un atout.

Langue

- Maîtrise de l'anglais à l'écrit et à l'oral.
- Maîtrise du français à l'écrit et à l'oral.

Consultant national (Expert et évaluateur national) :

Éducation

- Diplôme de licence dans le domaine de l'énergie, des sciences environnementales, de l'ingénierie ou tout autre domaine étroitement lié ;

Expérience

- Expérience récente dans les méthodologies d'évaluation de la gestion axée sur les résultats ;
- Expérience dans l'application d'indicateurs SMART et dans le remaniement ou la validation des scénarios de départ ;
- Compétences en gestion adaptative, telle qu'appliquée à l'atténuation au changement climatique ;
- Expérience professionnelle d'au moins 5 ans dans des secteurs techniques pertinents ;
- Compréhension avérée des questions liées au genre et à l'atténuation au changement climatique ; expérience dans l'évaluation et l'analyse tenant compte du genre ;
- Excellente aptitude à la communication ;
- Compétences avérées en matière d'analyse ;
- Une expérience dans l'évaluation/la révision de projet dans le système des Nations Unies sera considérée comme un atout.

Langue

- Maîtrise du français à l'écrit et à l'oral.
- La maîtrise de l'anglais serait considérée comme un atout

COMPOSITION DE L'EQUIPE

L'équipe d'évaluation sera composée de *(1-2 évaluateurs internationaux / nationaux).* Les consultants doivent disposer d'une expérience antérieure dans l'évaluation de projets similaires. Les consultants doivent avoir les qualifications suivantes :

Education

Avoir au moins le niveau (BAC+ 5) en, science de l'environnement, Energie, Changements Climatiques ou tout autre domaine pertinent.

Expérience professionnelle

- Au moins 5 ans d'expérience pertinente dans le domaine des projets et programmes de l'environnement, l'Energie renouvelable, les mesures d'adaptation aux effets néfastes des changements climatiques
- au moins 5 ans d'expérience dans la formulation ou l'évaluation des projets et programmes de l'environnement, l'Energie renouvelable, les mesures d'adaptation aux effets néfastes des changements climatiques (évaluation de projets similaires)
- une expérience des projets financés par le FEM est un avantage

Compétences

Le consultant doit être un professionnel confirmé du suivi évaluation des projets et compétent en matière de :

- Evaluation des projets et programmes
- Energie renouvelable
- Environnement, mesures d'adaptation aux changements climatiques

Langues

Français.

11. Code de déontologie de l'évaluateur

L'équipe de l'EF est tenue de respecter les normes éthiques les plus élevées et de signer un code de conduite à l'acceptation de la mission. Cette évaluation sera menée conformément aux principes énoncés dans les « Directives éthiques pour l'évaluation » du GNUE. L'évaluateur doit protéger les droits et la confidentialité des informateurs, des personnes interrogées et des parties prenantes en prenant des mesures pour assurer le respect des codes juridiques et autres codes pertinents régissant la collecte et la communication des données. L'évaluateur doit également assurer la sécurité des informations collectées avant et après l'évaluation et respecter des protocoles visant à garantir l'anonymat et la confidentialité des sources d'information lorsque cela est prévu. Par ailleurs, les informations et les données recueillies dans le cadre du processus d'évaluation doivent être utilisées uniquement pour l'évaluation et non à d'autres fins sans l'autorisation expresse du PNUD et de ses partenaires.

12. Modalités de paiement

- Versement de 10 % du paiement à la signature du contrat
- Versement de 40 % du paiement après la présentation satisfaisante du projet de rapport d'EF à l'unité mandatrice
- Versement de 50 % du paiement après la présentation satisfaisante du rapport final d'EF et après approbation de l'unité mandatrice et du CTR (via les signatures sur le formulaire d'approbation du rapport d'EF), et une fois soumise la piste d'audit de l'EF.

  Critères à remplir pour émettre le paiement final de 50 % :

- Le rapport final d'EF comprend toutes les exigences énoncées dans les TdR de l'EF et suit les directives relatives à l'EF.
- Le rapport final d'EF est rédigé clairement, organisé de façon logique et il est spécifique au projet concerné (le texte n'a pas été copié et collé à partir d'autres rapports d'évaluation à mi-parcours).
- La piste d'audit inclut les réponses et les justifications de tous les commentaires recensés.

- **MODALITES DE PAIEMENT ET SPECIFICATIONS**

%	Étape
30 %	Rapport de démarrage
40 %	Rapport provisoire
30 %	Rapport final

PROCESSUS DE PRÉSENTATION DES CANDIDATURES

(Ajuster cette section si une liste approuvée est utilisée)

13. Proposition financière et modalités de paiement

Proposition financière :

- Les propositions financières doivent être « tout compris » et indiquer une somme forfaitaire pour la durée totale du contrat. L'expression « tout compris » signifie l'inclusion de tous les frais (honoraires, frais de déplacement, indemnité de subsistance, etc.) ;
- Pour les frais de déplacement, le taux des indemnités journalières de subsistance des Nations Unies est (à remplir pour toutes les destinations de déplacement), ce qui donne une indication du coût de la vie dans les lieux d'affectation/de destination. *(Remarque : les personnes bénéficiant de ce contrat ne sont pas considérées comme des fonctionnaires des Nations Unies et à ce titre, ils n'ont pas droit aux indemnités journalières de subsistance. Toutes les indemnités de subsistance nécessaires à l'exécution des obligations découlant des TdR doivent être incorporées dans la proposition financière, sous forme d'indemnités journalières ou de somme forfaitaire.)*
- La somme forfaitaire est fixée indépendamment des changements pouvant intervenir dans les frais encourus.

14. Présentation recommandée de la proposition :

a) **Lettre de confirmation d'intérêt et de disponibilité** à l'aide du modèle fourni par le PNUD ;
b) **CV** et **Notice personnelle** (Formulaire P11) ;
c) **Brève description de l'approche de travail/proposition technique** indiquant les raisons pour lesquelles la personne estime être la mieux placée pour réaliser la mission attribuée, et méthodologie proposée indiquant de quelle manière elle abordera et réalisera la mission attribuée (1 page au maximum) ;
d) **Proposition financière** indiquant le montant total tout compris du contrat et de tous les autres frais de déplacement associés (billet d'avion, per diem, etc.), en répartissant les coûts à l'aide du modèle joint au modèle de la lettre de confirmation d'intérêt. Dans le cas où un candidat travaillerait pour une organisation/entreprise/institution et prévoirait la facturation par son

employeur des frais de gestion relativement à la procédure pour qu'il soit mis à la disposition du PNUD en vertu d'un accord de prêt remboursable (RLA), le candidat devra le signaler ici et s'assurer que tous les frais associés sont compris dans la proposition financière soumise au PNUD.

Tous les documents associés à la candidature devront être envoyés à l'adresse (indiquer l'adresse postale) dans une enveloppe cachetée portant la référence suivante « Consultant pour l'évaluation finale de *(titre du projet)* » ou par courrier électronique à l'adresse suivante UNIQUEMENT : *(indiquer l'adresse électronique)* d'ici au *(date et heure)*. Les candidatures incomplètes ne seront pas examinées.

15. Critères de sélection de la meilleure proposition

Seules les propositions conformes aux critères seront évaluées. Les propositions seront évaluées selon une méthode combinant plusieurs notations – où la formation et l'expérience dans des fonctions similaires compteront pour 70 % et le tarif proposé comptera pour 30 % la note totale. Le contrat sera attribué au candidat qui obtiendra la meilleure note combinée et aura accepté les conditions générales du PNUD.

16.Annexes des TdR de l'EF

- Annexe A des TdR : Cadre logique du projet/de résultats
- Annexe B des TdR : Dossier d'informations sur le projet, soumis à l'examen de l'équipe de l'EF
- Annexe C des TdR : Contenu du rapport d'EF
- Annexe D des TdR : Modèle de matrice de critères d'évaluation
- Annexe E des TdR : Code de conduite du GNUE applicable aux évaluateurs
- Annexe F des TdR : Échelles et tableaux de notation de l'EF
- Annexe G des TdR : Formulaire d'approbation du rapport d'EF
- Annexe H des TdR : Modèle de piste d'audit pour l'EF

Annex 5: Evaluation Matrix

Main question	Sub-questions	indicators	Methods and sources of information
1.1. relevance	Was the approach taken to design and implement the project and to target beneficiaries adequate?	Degree of consistency of the project's approach with the various problems identified, the needs expressed and the objective of promoting the establishment of small renewable energy networks/mini-grids using photovoltaic (PV) energy in a hybrid system with Multi-functional Platforms (MFP) in order to ensure off-grid rural electrification (RE).	Literature review Key informant interviews Focus groups with beneficiaries
	Are the quality of the concept and the logical framework relevant to the achievement of the objectives?	Level of clarity of objectives, results, and outputs Adequacy of indicator definition Realism/lack of realism in setting the value of indicators	Literature review Key informant interviews
	Was the gender approach well considered during the design of the project?	Indicators and targets of the results framework targeting exclusively or mainly women Gender-disaggregated results framework indicators and targets Number of planned activities targeting exclusively or primarily women	Literature review Key informant interviews Focus groups with beneficiaries
	Did the objectives of the project remain valid and relevant throughout the project?	Main changes in the context Major effects of changes in the context Changes to objectives made or not done	Literature review Key informant interviews Focus groups with beneficiaries

	Is the institutional set-up of the project relevant, effective and efficient for the achievement of the objectives? Were there any institutional constraints that hindered the implementation of project activities?	Quality and coherence of the institutional set-up SWOT analysis of the institutional context	Literature review Key informant interviews Focus groups with beneficiaries
	Did the project's interventions really meet the needs expressed by the beneficiaries?	Level of adequacy of the project's objectives/expected results/outputs to the needs and expectations of local communities	Literature review Key informant interviews Focus groups with beneficiaries
1.2. efficiency	What is the performance of the project in terms of achieving the expected results with reference to the indicators and targets of the results framework and the achievement of the planned activities?	Comparative analysis of objectives/planned results/activities and objectives/results/activities achieved Number of outcomes with the highest or lowest completion rates Activities not initially planned and carried out	Literature review Key informant interviews Focus groups with beneficiaries
	What is the level of satisfaction of the various key players in the project with regard to the project itself and the results achieved?	Perceptions of the different actors of the project and the results achieved	Literature review Key informant interviews Focus groups with beneficiaries
	Has the project been implemented and the results achieved according to the planning or have there been constraints/bottlenecks?	Comparative analysis of the planned project implementation strategy and the strategy actually used Comparative analysis of planned and achieved results Identified constraints/bottlenecks	Literature review Key informant interviews Focus groups with beneficiaries
	To what extent has the political environment had a positive or negative impact on the project's performance?	Analysis of the political context	Documentary review,

	Does the political environment remain conducive to replicating the lessons learned from the Project?	Identified political risks impacting project performance Existing or potential policy risks to replication of project lessons learned	Key informant interviews Focus groups with beneficiaries
	Has the legal and regulatory framework had an impact on the performance of Financial Service Providers?	Analysis of the legal and regulatory context Risks related to the legal and regulatory framework identified that have impacted the performance of financial service providers	Documentary review, Key informant interviews (financial service providers) Focus groups with beneficiaries (clients of financial service providers)
	Has the socio-cultural environment had any positive or negative consequences on the performance of the project and the municipalities?	Analysis of the socio-cultural context Risks related to the socio-cultural environment identified that have impacted the performance of the project and the municipalities	Documentary review, Key informant interviews (project stakeholders, municipalities)
	Is there any factor external to the project that has affected implementation, achievement of results, replication or political impact?	Explanatory factors identified Solutions implemented or envisaged	Documentary review, Key informant interviews Focus groups with beneficiaries
1.3. efficiency	To what extent have financial and human resources been used economically? Have resources (funds, human resources, time, expertise, etc.) been strategically allocated to achieve results?	- Importance of financial resources - Team size Rate of distribution of resources by component	Literature review Key informant interviews
	To what extent have resources been used effectively?	- Resource utilization rate	Literature review

		- Cost-effectiveness ratios - Efficiency Index	Key informant interviews
	To what extent were project funds and activities provided in a timely manner?	Delays (or not) in releasing funds Main causes of delays	Literature review Key informant interviews
	Was the management of the project, at all levels, adequate and appropriate? Was the management of the project focused on the achievement of results, and considered innovative?	Evidence of results-based business planning and implementation of the project results framework/logical framework Number and types of management tools used Obstacles/difficulties identified in management and solutions implemented	Literature review Key informant interviews
1.4. Impact	To what extent has the intervention of the project had any impact on the stakeholders and in particular the direct beneficiaries (local populations and their community structures: village committees, seed distribution networks, agro-sylvo-pastoral associations/cooperatives, women's groups, etc.) and indirect beneficiaries (deconcentrated technical services, local authorities, etc.)?	Number and types of direct and indirect stakeholders benefiting Perception of beneficiaries (GTC, households and communities)of the impact ofruralelectrification actions	Literature review Key informant interviews Focus groups with beneficiaries
	What are the effects/impacts of rural electrification measures?	Number of persons (farmers, stockbreeders and fish farmers) benefiting Evidence of increased output and productivity Perception of the beneficiaries (farmers, stockbreeders, and fish farmers) of the impact of intensification actions	Literature review Key informant interviews Focus groups with beneficiaries
1.5. durability	What is the probability that the project's results will be sustainable in the long term, independently of external aid, in terms of (i) policy impact, (ii) replication, (iii) local	Achievements/achievements for which the question of sustainability does not arise versus achievements/achievements	Literature review

	governance, (iv) services rendered, (v) benefits for households, women, and territorial choices?	in which the question of sustainability remains Level of awareness of the various stakeholders (initiatives or lack of initiatives aimed at sustaining the achievements of the project) Level of awareness among different stakeholders to support the long-term objectives of the project Availability and commitment of the various stakeholders to provide the necessary means for the continuation of activities after the closure of the project	Key informant interviews Focus groups with beneficiaries
	Is the exit strategy of the DE L'AGENCE DES ENERGIES RENOUVELABLES DU MALI (AER-MALI) and its partners appropriate to promote sustainability and gender issues?	- Existence of an exit strategy Adequacy level of the existing exit strategy Availability and commitment of stakeholders to provide the necessary means for the continuation of activities after the closure of the project	Literature review Key informant interviews Focus groups with beneficiaries
	Did the project ensure effective communication and visibility?	Existence of an internal and external communication strategy Quality and inclusiveness of communication Existence of feedback mechanisms Quality/effectiveness of feedback mechanisms	Literature review Key informant interviews Focus groups with beneficiaries
	Were the populations directly involved in the implementation of the project?	Existence of a strategy for involving the population in the implementation of the project Level of stakeholder ownership	Literature review Key informant interviews

		- Contribution (in cash or in kind) of the populations to the implementation of the project - Participation of the population in important decisions concerning the project	Focus groups with beneficiaries
1.6. Cross-cutting issues and gender equality	To what extent have UNDP activities in the country benefited women and other disadvantaged and marginalized groups?	Number of actions/activities targeting women and other disadvantaged and marginalized groups Number of beneficiaries: women and other disadvantaged groups.	Literature review Key informant interviews Focus groups with beneficiaries
	To what extent were gender equality, women's empowerment and the realization of human rights considered in the design, implementation, and monitoring of the project?	Number of objectives/results of the logical framework targeting women	Literature review Key informant interviews Focus groups with beneficiaries
	To what extent has the project promoted positive changes in gender equality and women's empowerment?	Immediate impacts on the situation of women beneficiaries Longer-term predictable impacts on the situation of women beneficiaries	Literature review Key informant interviews Focus groups with beneficiaries
1.7. Lessons learned, good practices and recommendations	What lessons can be drawn from the implementation of the project to ensure effective capitalization?		Literature review Key informant interviews Focus groups with beneficiaries
	What are the good/bad practices identified in the execution of the project that can be capitalized?		Literature review

			Key informant interviews Focus groups with beneficiaries
	What recommendations can be made for the design and implementation of similar projects?		Literature review Key informant interviews Focus groups with beneficiaries

Annex 6: Interview protocols

1. General Interview Guide

Name of the person met:....

Function of the person met: .....

telephone:..... email:.....

1. How is the project strategy relevant?
   ……
   ……

2. Do the project's interventions really meet the needs and expectations of the target populations?
   (A) Yes B. No

   If yes, explain
   ……
   ……

3. Did you encounter any difficulties in the execution of the project?
   (A) Yes B. No

   If so, which ones
   ……
   ……

   If so, what solutions are implemented?
   ……
   ……

4. Do you know whether the views of key stakeholders and actors were taken into account in the design of the project?
   (A) Yes B. No

   If yes, explain
   ……
   ……

5. Do you think that the cross-cutting aspects and in particular the gender aspect have been sufficiently taken into account in the formulation and implementation of the project?
   (A) Yes B. No

   If yes, explain
   ……
   ……

6. Among the indicators and targets in the logical framework of the project, are there any indicators and targets that are not relevant?
   (A) Yes B. No

   If so, which ones and why?

……...……..……...…
…….....

1. Among the targets of the logical framework, are there targets that are not "SMART" (specific, measurable, achievable, relevant and time-limited)?
   (A) Yes B. No

   If so, which ones and why?
   ……...……..……...…
   …….....
2. Inview of theobjectives and results of theproject, are there any objectives and results which are not clear, applicable in practice and achievable within the set deadlines?
   (A) Yes B. No

   If so, which ones and why?
   ……...……..……...…
   …….....
3. What were the effects of the project in terms of agricultural, animal and fish productivity?

   ……...……..……...…
   …….....
4. Do some of the project's interventions specifically or mainly target women?
   (A) Yes B. No

   If so, which ones?
   …….....……..……
   ……
5. Do you find that the project's interventions have had an impact on women?
   (A) Yes B. No

   If yes, explain
   …….....……..……
   ……
6. Have the project's interventions contributed to strengthening the capacities of implementing partners and beneficiary populations?
   (A) Yes B. No

   If yes, explain
   …….....……..……
   ……...……
7. Havethere been any changes to project management?
   (A) Yes B. No

   If so, what changes?
   …….....……...……..……
   ……
8. In your opinion, is the quality of execution of implementing partners and UNDP support good?
   (A) Yes B. No

If yes, explain
…….....……...……..……
……

If not, what improvements need to be made?
…….....……...……..……
……

1. Have there been delays in the start-up and implementation of the project?
   (A) Yes B. No

   If so, what are the main causes of its delays?
   …….....……...……..……
   ……...……

2. Are there any activities you were unable to carry out?

   (A) Yes B. No

   If yes, explain
   …….....……...……..……
   …..……..

3. Are there any activities that were not originally planned that you carried out?
   (A) Yes B. No

   If yes, explain
   …….....……...……..……
   ……..

4. Were the resources allocated sufficient for both the management and monitoring and evaluation of the project activities?
   (A) Yes B. No

   If not, explain
   …….....……...……..……
   ……..

5. Has the project not experienced delays in releasing funds?
   (A) Yes B. No

   If yes, explain
   …….....……...……..……
   ……..

   If so, what solutions have been implemented?
   …….....……...……..……
   ……..

6. How many project staff are there?
   Total name.....
   -of which women.....
   -of which frames.....
   -of which field staff.....

7. Project Staff

No	Last name & first names	duties	Full-time/part-time

8. Were the human resources made available to the project sufficient?
   (A) Yes B. No

   If not, explain
   ……
   ……

1. What logistical means did the project have at its disposal?
   ……
   ……

2. Were the logistical resources made available to the project sufficient?
   (A) Yes B. No

   If not, explain
   ……
   ……

3. Did government stakeholders at the national, provincial and local levels support the objectives of the project?
   (A) Yes B. No

   If yes, explain
   ……
   ……

4. Do you think that the various stakeholders are aware that it is in their interest to maintain the benefits of the project?
   (A) Yes B. No

   If yes, explain
   ……
   ……

5. Was the project's business planning process results-oriented?
   (A) Yes B. No

   If yes, explain
   ……
   ……

6. Has theproject's results framework/logical framework as a management tool been applied as intended?
   (A) Yes B. No

   If yes, explain
   ……
   ……

   If so, have any changes been made since the beginning of the project?
   ……
   ……

7. Has the financial management of the project been subject to regular checks/audits?

(A) Yes B. No

If yes, explain (types of controls/audits, number of controls/audits since the beginning of the project...)
……
……

8. Do you consider that the resources allocated havebeen sufficient for the monitoringandevaluation of the project's activities?
(A) Yes B. No

If not, explain
……
……

9. Has the project established the necessary and appropriate partnerships with direct and indirect stakeholders?
(A) Yes B. No

Si oui, expliquer et donner des exemples concrets (nombre et types de partenariats développés grâce au projet, partenaires impliqués…)
……
……

1. Did the project have an external communication strategy?
(A) Yes B. No

If so, what means of external communication have been used?
……
……

2. Was there a mechanism for collecting complaints and/or feedback from implementing partners and beneficiaries of the project?
(A) Yes B. No

If so, please provide examples of complaints and/or feedback from implementing partners and beneficiaries taken into account or rejected by the project?
……
……

3. Have the project reports(activityreports,financial reports, etc.) been drawn up and submitted to the stakeholders within the time limits set?
(A) Yes B. No

If not, explain?
……
……

4. What planning tools were used by the project?
……
……

5. Were the planning tools used participatory and inclusive?
(A) Yes B. No

If so, explain?

……
……

6. What management tools were used by the project?
……
……

7. Were the management tools used participatory and inclusive?
(A) Yes B. No

If so, explain?
……
……

8. What monitoring and evaluation tools were used by the project?
……
……

9. Were the monitoring and evaluation tools used participatory and inclusive?
(A) Yes B. No

If so, explain?
……
……

1. Did the Project Steering Committee function normally?
(A) Yes B. No

If yes, explain (e.g. statutory meetings held, participation of members...)
……
……

If not, why not
……
……

2. Are there socio-economic risks that could threaten the sustainability of the project's achievements?
(A) Yes B. No

If yes, explain
……
……

3. Are there any legal, political or governance risks that could threaten the sustainability of the project's benefits?
(A) Yes B. No

If yes, explain
……
……

4. Are there any environmental risks that could threaten the sustainability of the project's profits?
(A) Yes B. No

If yes, explain
……
……

5. What improvements and adjustments/adaptations do you think should be made for the rest of the project?
   ……...……
   ……

6. What are your recommendations for interventions of the same nature?
   ……...……
   ……

Thank you for your cooperation

Annex 7: List of people interviewed

Date	Heure	Lieu	Institution	Nom et Prénoms	Qualité/Titre
03/05	09:30	PNUD	PNUD	Mr. Oumar Tamboura	Conseiller au programme/Chef Cluster Environnement et Développement Durable
	11:00	PNUD	PNUD	Mme Adame Coulibaly	Conseillère Environnement et Résilience
04/05	10:25	AER	AER	Mr. Beidari Traoré	Coordinateur du projet
19/05	15 :30	Telco	PNUD	Christelle Odongo Braun	Regional Technical Adviser
27/05	14:30	BADOUGOU NAFADJI	Focus Groupe	- Seydou Keita - Fode Keita - Zoumana Keita - Madou Keita - Sina Keita - Lanseni Coulibaly - Balla Keita - Sogona Keita -	- Membre du comité de gestion villageois/ Non Bénéficiaire/Président Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire Bénéficiaire/ Conseiller du chef du village Membre du comité de gestion villageois/ Bénéficiaire/Chef de village Membre du comité de gestion villageois/ Bénéficiaire/Présidente plateforme multifonctionnelle
29/05		MOUNZOU	Focus Groupe	- Koumasseri Coulibaly - Yerentie Coulibaly - Kole Coulibaly - Oumar Diarra - Kadiatou Doucoure - Hawa Kane - Bakary Coulibaly - Tieba Diarra (dit Tienba) - Zoumana Doumbia (dit Vieux) - Yaya Coulibaly - Kadia Doucoure - Issoufou Coulibaly	Bénéficiaire/Chef de village Membre comité de gestion villageois/ Bénéficiaire/Président jeunesse Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire/Président Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire/Trésorière Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire/Président Membre du comité de gestion villageois/ Bénéficiaire/Président Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois Membre du comité de gestion villageois/ non Bénéficiaire/Mairie NB : liste des présents à la rencontre ci-jointe en annexes

			Mairie	- Oumar Coulibaly	
30/05	18:00	SEMEMBO UGOU	Focus Groupe Mairie	- Modibo Gamby - - Mamadou Bah - Madou Gamby - Baba Gamby - Mansirou Gamby - Kadiatou Dao - Fatoumata Diallo - Aichata Gamby - Aichata Niangado - Fatoumata Karagnara - N'Deyi Yara	Chef village comité, membre C gestion villageois/ Bénéficiaire/Président Membre comité de gestion villageois/ Bénéficiaire/Relevées compteur Membre du comité de gestion villageois/ Bénéficiaire/Entretien-Securit Membre du comité de gestion villageois/ Bénéficiaire/Technicien Membre du comité de gestion villageois/ Bénéficiaire/Compteur Membre du comité de gestion villageois/ Bénéficiaire/Vice-Présidente Membre du comité de gestion villageois/ Bénéficiaire-Factures Electric Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire/Trésorière Membre du comité de gestion villageois/ Bénéficiaire/Contrôle
31/05		M'PENDO UGOU	Focus Groupe	- Madou Sanogo - Issa Sanogo - Zoumana Sanogo - Kassim Sanogo - Amadou Traoré - Aminata Sanogo - Siaka Traoré	Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire/Technicien Membre du comité de gestion villageois/ Bénéficiaire/Gardien Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire/Secrétaire Membre du comité de gestion villageois Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire
		TELLA	Focus Groupe Mairie	- Kassim Bagayoko - Sekou Bagayoko - Satou Bagayoko - Abou Diarra - Soumaila Dembélé - Awa Bagayoko - Biba Togola - Safiatou Bagayoko - Amadou Traoré dit N'Golo	Membre du comité de gestion villageois/ Bénéficiaire/Président Membre du comité de gestion villageois/ Bénéficiaire/Secrétaire Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire Membre du comité de gestion villageois/ Bénéficiaire/Technicien Membre du comité de gestion villageois/ Bénéficiaire/Trésorier NB : liste des présents à la rencontre ci-jointe en annexes

				- Adama Bagayoko	

Annex 8: List of documents reviewed

- Project Identification Form (PIF)
- UNDP induction plan
- UNDP-GEF project outcome document with all annexes.
- Application for approval from the CEO of the GEF
- UNDP Social and Environmental Review Procedure (ESFS) and associated management plans
- Report of the launch workshop
- All Project Implementation Reports (PIPs)
- Progress reports (with associated work plans and financial reports)
- Monitoring mission reports
- Minutes of project board meetings and other meetings (e.g., project evaluation committee meetings).
- GEF monitoring tools (from GEF CEO approval to intermediate and final steps)
- Basic indicators of GEF, LCFCF, and SCCF (PIF,DG Papproval, intermediate and final stages); for GEF-6 and GEF-7 projects only.
- Financial data, including actual expenditures by project outcome, including management costs, and including documentation of any significant budget revisions.
- Data on co-financing with expected and actual contributions, broken down by type of co-financing, source, and whether the contribution is considered as a mobilized investment or recurrent expenditure.
- Electronic copies of project results (brochures, manuals, technical reports, articles, etc.).
- Project communication material
- Consolidated list of official meetings, workshops, etc. organized, including date, location, topic, and number of participants.
- Relevant socio-economic monitoring data, such as the average incomes/employment levels of stakeholders in the target area, the variation in revenues related to project activities.
- List of related projects/initiatives contributing to the project objectives approved/started after the project had been approved by the GEF (i.e. results achieved through leverage or "catalytic").
- Data on project website activity
- UNDP Country Programme Document (CPD)
- List/map of project sites
- List and contact details of project staff, key project stakeholders, including project board members, the Regional Technical Commissioner, project team members and other partners that were consulted.
- Project deliverables that provide documentary evidence of the achievement of project outcomes.

Annex 9: Evaluation Rating Scales Table

Ratings for Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight, Execution, Relevance	**Sustainability ratings:**
6 = Highly Satisfactory (HS): exceeds expectations and/or no shortcomings 5 = Satisfactory (S): meets expectations and/or no or minor shortcomings 4 = Moderately Satisfactory (MS): more or less meets expectations and/or some shortcomings 3 = Moderately Unsatisfactory (MU): somewhat below expectations and/or significant shortcomings 2 = Unsatisfactory (U): substantially below expectations and/or major shortcomings 1 = Highly Unsatisfactory (HU): severe shortcomings Unable to Assess (U/A): available information does not allow an assessment	4 = Likely (L): negligible risks to sustainability 3 = Moderately Likely (ML): moderate risks to sustainability 2 = Moderately Unlikely (MU): significant risks to sustainability 1 = Unlikely (U): severe risks to sustainability Unable to Assess (U/A): Unable to assess the expected incidence and magnitude of risks to sustainability

Annex 10: UNEG Code of Conduct for Evaluators**Evaluators/Consultants:**

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

Evaluation Consultant Agreement Form

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

Name of Evaluator: _____Pierre Telep_____

Name of Consultancy Organization (where relevant): _____Climate Platform_____

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

Signed at _____ (Place) on _____ (Date)

Signature: _____  _____

Annex 11: TE Report Clearance Form

Terminal Evaluation Report for *(PROMOTING SUSTAINABLE ELECTRICITY PRODUCTION IN RURAL AREAS OF MALI THROUGH HYBRID TECHNOLOGIES - PIMS 4903*) **Reviewed and Cleared By:**

Commissioning Unit (M&E Focal Point)

Name: _____

Signature: _____ Date: _____

Regional Technical Advisor (Nature, Climate and Energy)

Name: _____

Signature: _____ Date: _____

Annex 12: TE Audit Trail

The following comments were provided to the draft TE report; they are referenced by institution/organization and track change comment number ("#" column):

Independent Terminal Evaluation for Sustainable Electricity Production in Rural Areas of Mali through Hybrid Technologies: Audit Trail							
				1st Round		2nd Round	
#	Section	Subsection	Paper Statement	UNDP Feedback	Climate Platform	UNDP/Resolved	Climate Platform
1	**Executive Summary**	**Evaluation Score Table**	*Evaluation Score Table*	**Ernesto comment:** Add evaluation scales rating table for reference or change the numbers for HS, MS, S, U, MU, HU.	These are same ratings as the UNDP guidelines. Annex 9 has been added for further clarity.	Resolved	
	Executive Summary	**Evaluation Score Table**	*Evaluation Score Table*			**Christelle comment:** Evaluation on the M&E is missing: Monitoring and evaluation: design at entry, Monitoring and evaluation: implementation, Overall quality of monitoring and evaluation	Resolved
2	**Every section**	**Sources**		**Ernesto comment:** Add references and evidence as much as possible throughout the document	This has been addressed.	Resolved	
3	**Executive Summary**	**Project Information**	*Table 1: Project Information Table*	**Christelle comment:** Why is some information highlighted in yellow? Not confirmed?	Yes. This has been highlighted to draw attention from AER-Mali and UNDP for confirmation.	**Christelle comment:** @Adame: Please confirm and finalize the table.	Dr Kane has submitted figures after additional consultations with AER-Mali, awaiting verification from UNDP.
4	**Executive Summary**	**Summary of findings, conclusions and lessons learned**	*However during implementation, it was found that most of the targeted sites were*	**Christelle comment:** Clarify how this makes them ineligible as pilot for this project.	Clarification text has been added	Resolved	

			under the electrification mandate of AMADER				
5	**Executive Summary**	**Summary of findings, conclusions and lessons learned**	*In the end, solar hybrid mini grids were constructed on 8 sites for a solar capacity of 126 kWp and a total capacity of 187 kW*	**Ernesto comment:** Please add references and evidence as much as possible throughout the document.	Thank you. Footnotes have been added. Facts and Information collected during interviews may not have further upstream literature to quote.	Resolved	
6	**Executive Summary**	**Summary of findings, conclusions and lessons learned**	*The project completed a study for enabling the institutional framework*	**Christelle comment:** It is not clear what this study is about, and what it brought to the sector. For instance, was any recommendations of the study adopted?	We have not seen the study either, thus have recommended it is made public.	**Christelle comment:** @Adame: Please send us the report to this study so we can add more details here.	Note: Dr Kane is trying to retrieve the study.
7	**Executive Summary**	**Summary of findings, conclusions and lessons learned**	*This can however be attributed to the community-based approach taken where CBOs are meant to be in charge. Additional measures for sustainability beyond 2 years are however due.*	**Christelle comment:** It will need to be very well explained in this report why this change of approach was taken given that involving the private sector was one of the key objectives of the project.	There was no "change of approach" since the result framework did not prescribe a specific approach. Thus the language of the report is the approach was "taken".	**Christelle comment:** I don't quite agree with this. The results framework has to be considered along with the explanations in the prodoc and the involvement of the private sector/development of a new model was clearly a key target of the project (see further comments below and quotes from the prodoc). What is important here to assess (and will be really useful for the next projects) is why the CBO model was chosen. What we need to understand (and still doesn't come clearly out of this report) is what comparative analysis was conducted by the project, which private sector actors were consulted, etc. and what, in the end, were the barriers that prevented the change	Thank you for sharing your disagreement. In the December 2018 Annual Meeting of the Project Steering Committee it was acknowledged that there were difficulties associated with the project model. At the same meeting it was decided to set up a community management system for power plants by the villages. From reviewing all other project documents available to the evaluation them there was no further elaborations on this issue. In the absence of an explanation the evaluation team cannot create a reason. However, in

						of model. From explanations coming later in the report, it says that the villages chosen in the end were smaller and more remote, thus not attractive to the private sector. This makes sense, but then why choosing these villages in the first place and what lessons can we learn? Is it a lack of coordination/communication between AMADER and AER-Mali for instance? Is it a design flaw from the prodoc, if the bigger villages fall automatically in the mandate of AMADER? My point is that this report should clearly explain how we got from what was planned in the prodoc to what was effectively implemented on the ground. At the moment, it is a bit scattered and seems to say that there was no big difference to what was planned initially, which I don't quite agree with. A more solid deep-dive on this, maybe in this section, would be very useful.	our experience reasons for adopting CBO models are related to the extremely low ability of the communities to pay, which translates to a lower appetite from the private sector to invest in such projects. In the total absence of the private sector appetite communities are sometimes willing to take destiny into their own hands. A detailed comparative analysis of the models with pros/cons is beyond the scope of the TE, therefore we have not deemed it necessary to dive further into the pros/cons of the business model. However, we will be happy to provide a comparative analysis of the specific models related to this approach if requested on a separate assignment.
8	**Executive Summary**	**Summary of Recommendations**	*However the amount of resources involved, mainly through in-kind contributions still provide a disproportionate signal to the market for the 8*	**Christelle comment**: It would be good to have some quantitative indicators supporting this statement.	Thank you, clarification added.	**Christelle comment:** @Adame: Why is the in-kind contribution from UNDP so high, for a NIM project? Please clarify.	

			sites, were private sector investors willing to invest in mini-grids in Mali.				
9	**Executive Summary**	**Summary of Recommendations**	*While the piloting of communities-based approaches had presented an opportunity to test a different model, which also has the merit of potentially providing a scaling-up opportunity.*	**Christelle comment:** Isn't the model eventually adopted by the project the "traditional", baseline model the project was supposed to shift away from? Please provide further clarification on this. It is important to understand what innovations/improvements the project brought compared to the baseline, even more so since the initial designed model was not followed in the end. If the issue with the designed model was that it relied on EDM as off-taker, there may still have been various alternative options to redesign the pilot model to involve more the private sector in the off-grid space. Was this explored?	This is addressed now. For the avoidance of doubt, the Result management framework was not prescriptive in this sense.	**Christelle comment:** I don't quite agree with this, see my previous comment on this. The results framework cannot be considered in silo without the explanations in the prodoc. For instance, this is an extract from the prodoc: "This has enormous potential for replication and scaling up using a good business model that will be defined and adopted as part of the present project of hybrid mini-grid systems articulated around PMF. The objectives of the project will be achieved through the participation of the private sector which will work closely with the PMFs. Thus, this program will not only benefit rural households, smallholder farmers and commercial institutions, but it will also link the private sector, financial institutions, technical and community training organizations to promote the creation of distribution channels. to develop the market for hybrid PMF / renewable energy systems for the provision of electricity services"	Please refer to our clarification in section 1.2 regarding the business model.

10	**Executive Summary**	**Project effectiveness**	*Some of the output level objectives such as the adoption of a policy instrument or performance-based incentives were not relevant anymore given the community-based approach that was taken.*	**Christelle comment:** It will need to be very well explained in this report why this change of approach was taken given that involving the private sector was one of the key objectives of the project.	At the annual meeting held in December 2018, the Project Steering Committee announced that there were difficulties experienced with the project model in 2017 and 2018. It was decided to set up a system of community management of power plants by the villages. This system was chosen after consultation by all parties.	Resolved	
11	**Executive Summary**	**Summary of recommendations**		**Christelle comment:** Are these recommendations ordered in priority order? To me Recommendation 5 is one of the most important.	No, they are not in order, but they are all relevant.	Resolved	
12	**Executive Summary**	**Summary of recommendations**	*Some international studies based on Levelized Cost for Electricity have been published of lately and provide an optimistic ground for benchmarks predictions.*	**Christelle comment:** It would be good to provide an example as footnote here.	Study on Levelized Cost for Electricity by U.S. Energy Information Administration provided in footnote as requested.	Resolved	
13	**Executive Summary**	**Summary of recommendations**	*The project has paved the way to other rural electrification efforts by introducing a commercially viable business model.*	**Christelle comment:** Is it? Do we have evidence from the project that the model Is commercially viable? If I recall from a presentation that was made by the Project Team last year, the communities are able to recover their operational costs, but provided the capex is fully subsidized. This is not precisely the definition of commercially viable, or at least some provisions need to be put	Indeed. Additional clarifications added.	**Christelle comment:** I don't think we can say commercially viable if we need 100% subsidy. I think we need to be more nuanced here. Maybe operationally viable?	Resolved. We don't see an issue with why 100% CAPEX can't be replicated in Mali/Africa when conditions are the same. The replication potential is based on areas that have socio-economic similarities with areas served by this project. There are many areas of Mali

				to explain exactly what we mean.			with similar conditions, therefore in our view the subsidy can be replicated.
14	**Executive Summary**	**Summary of recommendations**	*Consultations need however to be taken to conclude whether the ownership of assets on the 8 sites would go to AMADER and end in AMADER´s books while the communities are responsible for maintenance (meaning ownership by the central Government and O&M by the communities), or both the ownership of assets and O&M rights would be devolved to the beneficiary communities.*	**Christelle comment:** Please confirm what is the status in terms of ownership of assets at the moment. It is unlikely that this has not been defined/agreed somehow in the course of the project, or has it? And what would be the pros and cons of having the ownership with AMADER or with the communities?	From the reviewed documents there has been no update to the status of the terms of ownership of assets.	Resolved	
15	**Introduction**	**Exchange meetings with stakeholders**		**Christelle comment:** As follow-up to my previous comment on EDM, it may have been useful to have an interview with EDM as well, if this was raised as the main challenge explaining the shift of strategy.	Thank you. There was no shift of strategy, there was choice of strategy. In our opinion, given the current constellation of energy sector in Mali and policy direction where EDM is just another regulated player among others, it is not specifically relevant to seek an interview with EDM at this stage.	**Christelle comment:** Please mention this justification somewhere in the report.	Resolved. Justification has been added.
16	**Project Description**	**Component 1**	*At the time of Evaluation, there was no material finding*	**Christelle comment:** Was an effort done by the Project Team to have it published? We	There was no material finding of any policy or regulatory instrument	Resolved	

			about published decree, laws, policy or regulatory instruments that would argue for the creation of an improved environment for solar hybrid mini grids with MPFs in Mali.	know this can take time to be adopted, but was the process initiated?	published in Mali on solar mini-grids as a result of the implementation of this project.		
17	**Project Description**	**Component 3**	*Studies carried out in order to find the most promising and viable business model before implementing it across all the sites*	**Christelle comment:** If this was the option chosen, do we have indeed evidence of studies that were conducted to find the best business model? Otherwise how was the CBO model selected?	We have amended the word "studies". This was an obvious assessment by the project. We did not find that any studies were paid to conduct this obvious assessment	**Christelle comment:** See previous comments on this. I think the TE needs to dive a bit deeper on this.	Please refer to earlier clarification.
18	**Project Description**	**Component 4**	*It was very clear from the documents reviewed and from data collected on the ground that the project had raised awareness on the potential of solar hybrid mini grids with MFPs*	**Christelle comment:** Please provide more details on how this was done and assessed.	Through documents reviewed and data collected from the ground, the evaluation team has come to the determination that awareness was raised.	Resolved	
19	**Project Description**		*Opportunities for the private sector in the construction, operation and maintenance of renewable energy-based off-grid electricity generating systems, this has supported an estimate of 40 jobs during the project implementation.*	**Christelle comment:** This seems contradictory to previous sections that say that the project adopted a community-based model for O&M. Please clarify.	This has been highlighted in yellow for review by UNDP/AER-Mali.	Resolved	
20	**Project Description**		*An MFP can free up time by mechanizing intensive tasks that disproportionately fall on women and girls.*	**Christelle comment:** Any quantitative indicator on this? How much time in average saved for women? What did they use their saved time for?	We are removing this sentence since it raises additional questions that fall outside the scope of the TE.	Resolved	

21	**Project Description**		*Through the establishment of small renewable energy networks/mini-grids households can transition from biomass resources to clean renewable sources of energy, turning the tide against the detrimental health and environmental impacts of using biomass resources for energy needs in the country.*	**Christelle comment:** It is very unlikely that rural communities given access to electricity will start using it for cooking, as seems to be stated here. Do we have evidence on this transition through the project?	Thank you. This is a very relevant comment. The baseline which the project has addressed is the use of biomass for lighting, not for cooking. This has been corrected.	**Christelle comment:** This is very odd, please check. To my knowledge there is no significant use of biomass for lighting in the region. In fact, in the prodoc it is mentioned "Reduce the health risks associated with the use of candles and kerosene for lighting." No biomass mentioned here.	Thank you, the ProDoc is saying that 80% of household energy needs are met with biomass resources. However, we have removed reference for exactly what biomass is being used for. Thank you for providing us with this information.
22	**Project Description**	**Summary of Barriers and Mitigation Strategies**	*Various stakeholders were trained (AER please provide more details)*	**Christelle comment:** Yes, important to have quantitative data on this. Preferably not only on the number of people trained, but also on the actual skills gained, i.e. what were the trainee able to do after the trainings (according to them) as compared to the baseline?	Indeed. This is left to AER to provide more details.	**Christelle comment:** @Adame: Please coordinate reply to this.	
23	**Project Description**	**Summary of Barriers and Mitigation Strategies**	*Trainings were delivered to members of CBOs.*	**Christelle comment:** This row seems redundant with the row on technical skills.	Not really. Outcome 2 targets all stakeholders and this includes AER staff, ministry etc. Outcome 3 specifically targets operators.	**Christelle comment:** @Adame: Please get quantitative data on this.	
24	**Project Description**	**Outcomes**	*The project has delivered employment co-benefits, with a total of 575 jobs created during the 4-years implementation period reaching about 3,700 beneficiaries.*	**Christelle comment:** Meaning 575/8=71 jobs in average per pilot. This sounds high. Please clarify what jobs are taken into account. Maybe it would be good to distinguish between direct and indirect jobs.	The source of verification for this figure was the annual project reports. There was no further elaboration on the composition of the jobs.	**Christelle comment:** @Adame: Please provide more clarity on this. Were these jobs temporary, permanent, etc.?	Resolved: Additional clarity provided by Dr Kane after consultations with AER Mali.

25	**Project Description**		*The market for hybrid PMF/renewable energy systems for the provision of electricity services. The development of such market for private sector future contribution has only been partially achieved with the adoption of the CBO model.*	**Christelle comment:** Please elaborate. What has been achieved? What has not been achieved? This evaluation should give a very clear picture on the extent to which the abovementioned objectives have been reached or not.	Additional text added.	Resolved	
26	**Project Description**		*This project complements another rural electrification project supported by the World Bank*	**Christelle comment:** There are many more rural electrification projects going on in Mali that have been running in parallel to this project. One example that comes to mind is the GERES project on ZAE which powers small economic centers in rural areas through solar PV plants. Also, AfDB has been working for years on improving the regulatory framework for RE through the PAPERM project. Were there any linkage made with these during project design?	Have mentioned GERES and PAPERM project in the Project Description section. Unable to find linkages made with project design from analysis of project documents.	Resolved	
27	**Findings**	**Project Design/Formulation**		**Ernesto comment:** It could be useful to add the rating to the titles of each section evaluated.	Thank you. This has been done.	Resolved	
28	**Findings**	**Analysis of Project Results Framework**	*Nearly all the output-level indicators and targets possess all Specific, Measurable, Achievable, Realistic and Time-bound (SMART) criteria*	**Christelle comment:** From what I can see, many indicators lacked baseline and target values, and the results framework states that this will be completed within 18/24 months of the project. Was this done? If not, how could these incomplete indicators be used	It is common for such pilot projects to keep some indicators qualitative, therefore we have not stressed any recommendation to UNDP on the project design.	**Christelle comment**: I don't quite agree. All the other projects I have seen so far (all pilots) had quantitative baseline and target values in their results framework, otherwise they are not truly SMART. This has to be explained in the report why the RF has remained	Resolved: Clarification added which mentions that some indicators were incomplete as they lacked indicative baseline figures and target values.

				to evaluate the performance of the project?		incomplete despite provision in the prodoc for it to be completed at the beginning of the implementation period.	
29	**Findings**	**Analysis of Project Results Framework**	*The project was developed in the context of environmental degradation and health impacts as a result of the use of biomass resources for energy needs in Mali. The use of wood and charcoal as cooking and heating fuels has put strong pressure on the country's forest resources. The forest cover of Mali has decreased by an average of 100,000 ha/year, according to the National Climate Change Adaptation Action Plan of the country. Though access to electricity has increased in Mali, it has been disproportionate between urban and rural populations. As of 2019, only 15% of the rural population had access to electricity*	**Christelle comment:** As stated above, I don't think this project was to address the lack of access to clean cooking. The GHG emissions reduced should rather be linked to the use of RE for electricity generation instead of diesel use in the baseline. If this is not the case, It should be further clarified.	Indeed, text amended.	**Christelle comment:** Please check, as mentioned before.	Resolved: Text amended to say that the project was developed with the objective of reducing GHG emissions by using renewable energy instead of diesel for the purpose of electricity generation.

30	**Findings**	**Effective stakeholder participation and partnership agreements**	*When not recipient of large portions of grants, the private sector requires a minimum transaction size to materialize investments on mini-grids in a way consistent with the cost of capital. In Mali the cost of commercial capital is particularly high. The number of sites, their size and the foreseen tariff were factors that did not concur to raise private sector appetite for investing in partnership with AER-Mali on this project.*	**Christelle comment:** Do we have evidence that solutions to attract the private sector were sought and did not succeed (in particular, was the private sector involved in mini-grids – quite dynamic in Mali – consulted at some point on this specific issue), or was it just assumed by the project team that this would not be attractive?	The reviewed documents did not mention specific partnerships that were developed for the operation of mini grids.	**Christelle comment:** Please see previous comments and kindly provide a solid justification on the difference between what was planned in the prodoc and what was implemented on the ground.	Thank you, again please refer to earlier clarifications on the business model.
31	**Findings**	**Project financing and co-financing**	*Table 3: Co-financing status*	**Ernesto comment:** Please include the actual figures.	Please double check the included figures.	**Christelle comment:** @Adame: Please complete these figures.	Figures provided by Dr Kane, awaiting confirmation from UNDP.
32	**Findings**	**Project results and impacts**	*The project has delivered a study that prepares the ground for such policy instruments.*	**Christelle comment:** Complete this by saying whether any progress was made towards drafting and adopting the necessary decrees and laws. When was the study completed and what was the follow-up done to implement its recommendations and achieve the Component's objectives?	We are recommending that the study is made public.	**Christelle comment:** Is it correct to say that the Evaluation Team did not find evidence of dissemination of this report within the national stakeholders? If yes, please add it to this paragraph.	Resolved: Added to paragraph. Awaiting retrieval of the study from National Consultant.
33	**Findings**	**Project results and impacts**	*Component 2: The objectives for this component have been met.*	**Christelle comment:** What were the targets for this component? How was this assessed?	Thank you. Addressed.	Resolved	

34	**Findings**	**Project results and impacts**	*Component 3: The results for this component have been met at 80%.*	**Christelle comment:** Develop. What was achieved? What was not achieved? How do we get to this figure?	This is the installed capacity ratio	**Christelle comment:** Please specify in this paragraph.	Resolved
35	**Findings**	**Project results and impacts**	*The final evaluation for the achievement of all outputs on this outcome is satisfactory. The Evaluation recommends making the completed study publicly available.*	**Christelle comment:** I am not sure we can say this if no progress towards implementing the study's recommendations were made. The objective was not to conduct a study but to improve the strategic and institutional framework.	The project was a whole. A neutral assessment requires also looking the main purpose for piloting sites, which was to use the experience from the same pilots for improving the institutional framework. Therefore, from the moment the approach taken did not require any institutional framework change, objectively we can´t say that institutional framework must just have been changed even in the absence of a need for it. We are also aware that in Mali, there are no barriers for CBOs. That the project stopped pursuing an objective which was not useful anymore is in our view good adaptive management, good resource management and a satisfactory outcome.	Resolved	

36	**Findings**	**Project results and impacts**	*The project has promoted a community-based business model for mini-grids which tends to be working at the time of the Evaluation.*	**Christelle comment:** This needs to be further elaborated. Is it a viable business model in the end? What are the limitations? Also, I couldn't find anything on the report on 100% PV system compared to hybrid ones, but I understand one of the 8 systems installed is 100% PV and the project team wanted to do some comparative analysis. This should be added to the report.	Thank you indeed. We will be happy to assist with conducting a specific study on this. It can be a regional study that compares the viability of these approaches given regulatory constraints. The requested analysis however goes far beyond the scope of the TE.	Resolved	
37	**Findings**	**Contribution of UNDP and Implementing Partner**	*UNDP-Mali representative was invited to visit Badougou village, together with the Minister of Energy and Water, during the first quarter of 2020.*	**Christelle comment:** Did this visit actually happen?	We refer this question to AER	**Christelle comment:** @Adame: Please confirm	
38	**Annexes**			**Ernesto comment:** Please also include the Tracking Tool/Core Indicators at the end of the project and the audit trail.	Thank you. Annex 9 has been added	Resolved	

New Comments from 2nd Round of Feedback

#	Section	Subsection	UNDP Feedback	Climate Platform
39	**Executive Summary**	**Summary of Recommendations**	**Christelle comment:** Please in support of these recommendations, prepare a recommendations table following the model in the guidance attached (p. 36) with entity responsible and timeframe. The table can be placed in Section 5 to this report	Thank you. Recommendations table has been added to section 5, as per the guidance.
40	**Findings**	**Effective Stakeholder Participation and Partnership Agreements**	**Christelle comment:** There should be some consideration on gender here, as well as on participation and public awareness.	Clarifications added on participation and public awareness. There was a lack of substantial evidence on gender equality and women's empowerment.
41	**Findings**	**Project Financing & Co-financing**	**Christelle comment:** Please strengthen this section as per the guidance: Variances between planned and actual expenditures, and the reasons for those variances.	Thank you, clarifications have been added where possible based on the evidence available to the TE team.

			•Identification of potential sources of co-financing as well as leveraged and associated financing; •Whether strong financial controls were established to allow the project management to make informed decisions regarding the budget at any time, and allow for the timely flow of funds and for the payment of satisfactory project deliverables; •Whether the project demonstrated due diligence in the management of funds, including periodic audits •Observations from financial audits, if any, and a presentation of major findings from audits •Any changes made to fund allocations as a result of budget revisions and the appropriateness and relevance of such revisions. With regards to co-finance, the TE report should include two tables (Tables 11 and 12 p.44-45 in guidance attached) that reflect planned co-financing and actual co-financing commitments, the type and source of the co-financing contributions and indicate whether each type of contribution is considered to be 'investment mobilized' or 'recurrent expenditures'.	
42	**Findings**	**Monitoring & Evaluation**	**Christelle comment:** The section needs to be strengthened as per the guidance, with assessments at design at entry (*), implementation (*), overall assessment of M&E (*) . The TE report must include M&E assessment and associated ratings. Monitoring & Evaluation Ratings Scale should be assessed separately on a six point scale, see Table 13 in attached guidance. Suggested areas to assess: M&E design at entry M&E implementation Overall Quality of M&E	Indeed. Ratings table has been added.
43	**Findings**	**Contribution of UNDP & Implementing Partner**	**Christelle comment:** An overall rating for both will each be rated separately and assessed on a six-point scale, as described in Table 14 in guidance attached. UNDP implementation/oversight and Implementing Partner execution and an overall rating for Extent to which the Implementing Partner effectively managed and administered the project's day-to-day activities under the overall oversight and supervision of UNDP. This includes but not limited to the following: o Whether there was an appropriate focus on results and timeliness o Appropriate use of funds, procurement and contracting of goods and services o Quality of risk management o Candour and realism in annual reporting o Adequate management of environmental and social risks as identified through the UNDP SESP and implementation of associated safeguards requirements.	Thank you. Ratings table has been added.
44	**Findings**	**Project Results & Impacts**	**Christelle comment:** Before Projects Results and Impacts the followings should be addressed: - Risk Management - Social and Environmental Standards	Risk management has been addressed. There was an absence of information on Social and Environmental Standards/ UNDP Social and Environmental Screening Procedure in project documents.

45	**Findings**	**Relevance**	**Christelle comment:** The following are not well articulated, • Alignment with UNDP and GEF strategic priorities • Stakeholder engagement • Relevance to and complementarity with other initiatives	Clarifications have been added.
46	**Findings**	**Overall Project Outcome**	**Christelle comment:** Overall project outcome is not assessed here.	Overall project outcome rating table has been included.
47	**Findings**	**Sustainability**	**Christelle comment:** Sustainability: financial (*), socio-political(*), institutional framework and governance(*), environmental(*), overall likelihood of sustainability(*) are not well articulated. Sustainability should be assessed on a four-point, as described in Table 16 in the guidance attached.	Sustainability Ratings Table has been added.
48	**Findings**		**Christelle comment:** There are missing sections that have not been covered before Section 5: - Country ownership – missed/not covered - Gender equality and women's empowerment – missed/not covered - Cross-cutting Issues – missed/not covered - GEF Additionality – missed/not covered - Catalytic/Replication Effect – missed/not covered - Progress to Impact – missed/not covered	The missing sections have been added before Section 5. Thank you.
49	**Conclusions**	**Whole section**	**Christelle comment:** The conclusion is missing. The section on conclusions will be written in light of the findings. Conclusions should be comprehensive and balanced statements that are well substantiated by evidence and logically connected to the TE findings. They should highlight the strengths, weaknesses and results of the project, respond to key evaluation questions and provide insights into the identification of and/or solutions to important problems or issues pertinent to project beneficiaries, UNDP and the GEF, including issues in relation to gender equality and women's empowerment.	Thank you, this has been resolved.
50	**Lessons Learned**	**Whole section**	**Christelle comment:** This section should include a synthesis of the key lessons learned (bullet points, one page maximum)	Indeed. Lessons learned have been added in bullet point format.
51	**Key Findings**	**Whole section**	**Christelle comment:** The main findings should be structured around the evaluation questions so that report users can readily make the connection between what was asked and what was found. Variances between planned and actual results should be explained, as well as factors affecting the achievement of intended results. Assumptions or risks in the project design that subsequently affected implementation should be discussed. Findings should reflect a gender analysis and cross-cutting issue questions.	Noted, thank you. We have structured this section and provided inputs around the evidence available to the TE team at this time.

52	**Annexes**		**Christelle comment:** Missing annexes: • ToR Annex E: UNEG Code of Conduct for Evaluators • ToR Annex G: TE Report Clearance Form • ToR Annex H: TE Audit Trail	Thank you, annexes have been added.