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INDEPENDENT TERMINAL EVALUATION REPORT (PROVISIONAL VERSION)

**PROMOTING SUSTAINABLE ELECTRICITY PRODUCTION IN RURAL
AREAS OF MALI THROUGH HYBRID TECHNOLOGIES
(No. 4903 SGIP).
ID GEF 00089433 / ID UNDP 00095678**

GEF Implementing Agency:

United Nations Development Programme (UNDP)

Execution Partner:

Malian Ministry of Energy and Water

Region and Country of the Project:

West Africa, 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
tCO ₂ e	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	<i>Promoting sustainable electricity production in rural areas of Mali through hybrid technologies</i>		
UNDP Project ID:	00095678	MEE Endorsement date	23 rd December 2016
GEF Project ID:	00089433	Project Document (ProDoc) Signature by UNDP (Date project began)	25 th January 2017
Country	Mali	Inception Workshop Date	24 th May 2017
Region	West Africa	Planned Closing Date	December 2020
Execution Partner	Ministry of Energy and Water of Mali (MEE) acting through AER-Mali and AMADER		
Project Financing	At Endorsement by Ministry	At Completion	
GEF Grant	USD 1,158,744	USD 1,158,774	
UNDP co-financing Cash (1a)	USD 500,000	USD 500,000	
UNDP co-financing In-Kind (1b)	USD 2,000,000	USD 2,000,000	
Country Co-Financing Cash (2a)	USD 500,000	USD 0	
Country Co-Financing In-Kind (2b)	USD 12,512,393	USD 10,079,427 ¹	
Total co-financing (1a+1b+2a+2b)	USD 15,512,167	USD 12,579,427	
Project Total Cost	USD 16,670,911	USD 13,738,201	

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

¹ Estimated at 80% based on ratio solar installed capacity/initially planned capacity

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 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. 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 projects 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 tCO₂.

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

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

Financial Sustainability	3
Institutional framework and governance sustainability	4
Environmental sustainability	4
Overall likelihood of Sustainability	4

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. 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 116 kWp and a total 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.

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 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 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. 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.
- **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 in the tend 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:** 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

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. 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 mini 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 a commercially viable business model that promotes productive use, building on an additional revenue model 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 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 scaling-up and replication potential is enormous 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 yet, 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. 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. None of these two options seems to have been clearly taken 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 be more stringent on the amount of in-kind contribution co-financing for future similar projects.

The evaluation of project efficiency has measured how economically resources were converted into results. While the contribution of the country partner (AER-Mali) was critical to the project success, the value determination of in-kind contributions can be sometimes challenging. Very high in-kind contributions at project appraisal would naturally lead to gains in terms of country ownership, but the risk at the end is diminished efficiency in terms of value for money. Lower in-kind contributions are also not recommended for such pilot projects, as they do not sufficiently reflect the resources needed to pave the way and establish untested models. The project has indeed successfully achieved the electrification of 8 sites with various socio-economic benefits and paved the way for demonstrating the viability of PMFs. However the amount of resources involved, mainly through in-kind contributions still provide a disproportionate signal to the market for the 8 sites, were private sector investors willing to invest in mini-grids in Mali.

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 a different model, which also has the merit of potentially providing a scaling-up 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.

2. Introduction

In Mali, the supply of primary energy in 2012 included 77% biomass, 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".

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.

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.

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.

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).

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.

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.

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.

3. 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 studies 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 a yearly 124 MWh electricity to 8 distant localities through solar PV hybrid systems.
- The project is achieving a yearly amount of 109 tCO₂eq in GHG emissions reduction, thus projected emissions reduction of 2,725 tCO₂ eq over assets lifetime.
- 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.
- 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), the National Environmental Protection Policy (PNPE) and the Energy Policy of Mali (PEM) 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 small machinery, etc. This has generated an estimate of 100 jobs during the project period.
- 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.
- 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.
- An MFP can free up time by mechanizing intensive tasks that disproportionately fall on women and girls. Hence, such access to energy services has been particularly important for empowering women and increasing girls' opportunities for education.

The project addressed a variety of threats, such as the environmental degradation and health risks associated with the use of biomass resources for cooking and heating fuels 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). 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 regulatory transition
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 (AER please provide more details)
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.

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.
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.

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.

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.

4. Findings

4.1 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.

- **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 a Specific, Measurable, Achievable, Realistic and Time-bound (SMART) criteria. These indicators and targets could be used with ease to evaluate the performance of the project.

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. 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.

- **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.

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

This project complements another rural electrification project supported by the World Bank (AASRD ?), 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.

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 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 CSCR 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) 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).

4.2 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.

- **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 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.

- **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).

Table 3: Co-financing status

Sources of co-financing	Name of co-financer	Type of co-financing	Commitments (USD)	Actuals (USD)
National government	AER (Agency for Renewable Energy)	In-kind	500,000	
National government	AER (Agency for Renewable Energy)	Cash	12,512,393	
GEF Agency	UNDP	Cash	500,000	
GEF Agency	UNDP (through UNCDF)	Cash	8,500,000	
GEF Agency	UNDP	In-kind	2,000,000	
Total co-financing (USD)			24,012,393	

• 4.2.4 Monitoring and Evaluation (M&E)

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:

Type of M&E Activity	Responsible Parties	Budget US\$ Excluding project team staff time	Time frame
Inception Workshop and Report	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> UNDP GEF RTA/Project Manager will oversee the hiring of specific studies 	To be finalized in the Inception Phase and Workshop.	Start, mid and end of project (during

	and institutions, and delegate responsibilities to relevant team members.		evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on output and implementation	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Project Manager and team • UNDP CO • UNDP RTA • UNDP EEG 	None	Annually
Periodic status/progress reports	<ul style="list-style-type: none"> • Project Manager and team 	None	Quarterly
Terminal Evaluation	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • UNDP CO • Project manager and team 	Indicative cost per year: 7,500 (Total: 30,000)	Yearly
Visit to field sites	<ul style="list-style-type: none"> • UNDP CO • UNDP RSC (as appropriate) • Government representatives 	For GEF supported projects, paid from IA fees and operational budget.	Yearly
TOTAL INDICATIVE COST		US\$ 99,000	
Excluding project team staff time and UNDP staff and travel expenses.			

- A Launch 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. A Launch Workshop Report was prepared to summarize the inception phase of the project, including the discussions held at the launch 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 progress reports 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.

- **Contribution of UNDP and Implementing Partner**

Since the inception of the project UNDP has been actively involved in the implementation process. The project aimed to build on previous successes between UNDP and 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. At the December 2019 meeting of the Project Steering Committee the UNDP-Mali representative was invited to visit Badougou village, together with the Minister of Energy and Water, during the first quarter of 2020.

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.

- **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. 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 116 kWp and a total 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.

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.
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 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%.
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.

- **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. 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.

- **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 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 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. 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.

- **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 in the tend 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**

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.

5. Key findings, conclusions, recommendations and lessons learned

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.

Recommendations:

- ✓ **Recommendation 1:** It is recommended to AER-Mali that specific sector knowledge which has been produced as part of the project implementation be available to the public through AER-Mali website.
- ✓ **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.
- ✓ **Recommendation 3:** It is recommended to AER-Mali to implement additional project's closing measures that will benefit the project's long term sustainability
- ✓ **Recommendation 4:** It is recommended to UNDP to be more stringent on the amount of in-kind contribution co-financing for future similar projects.
- ✓ **Recommendation 5:** It is recommended to AER-Mali to pay more attention to logical framework indicators and timely document project scope variation.

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 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 ₂ technology.					
	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	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
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			A total of 3,728 households, comprising an average of 8 persons, benefit from electricity services (almost 30,000 people).		
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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.

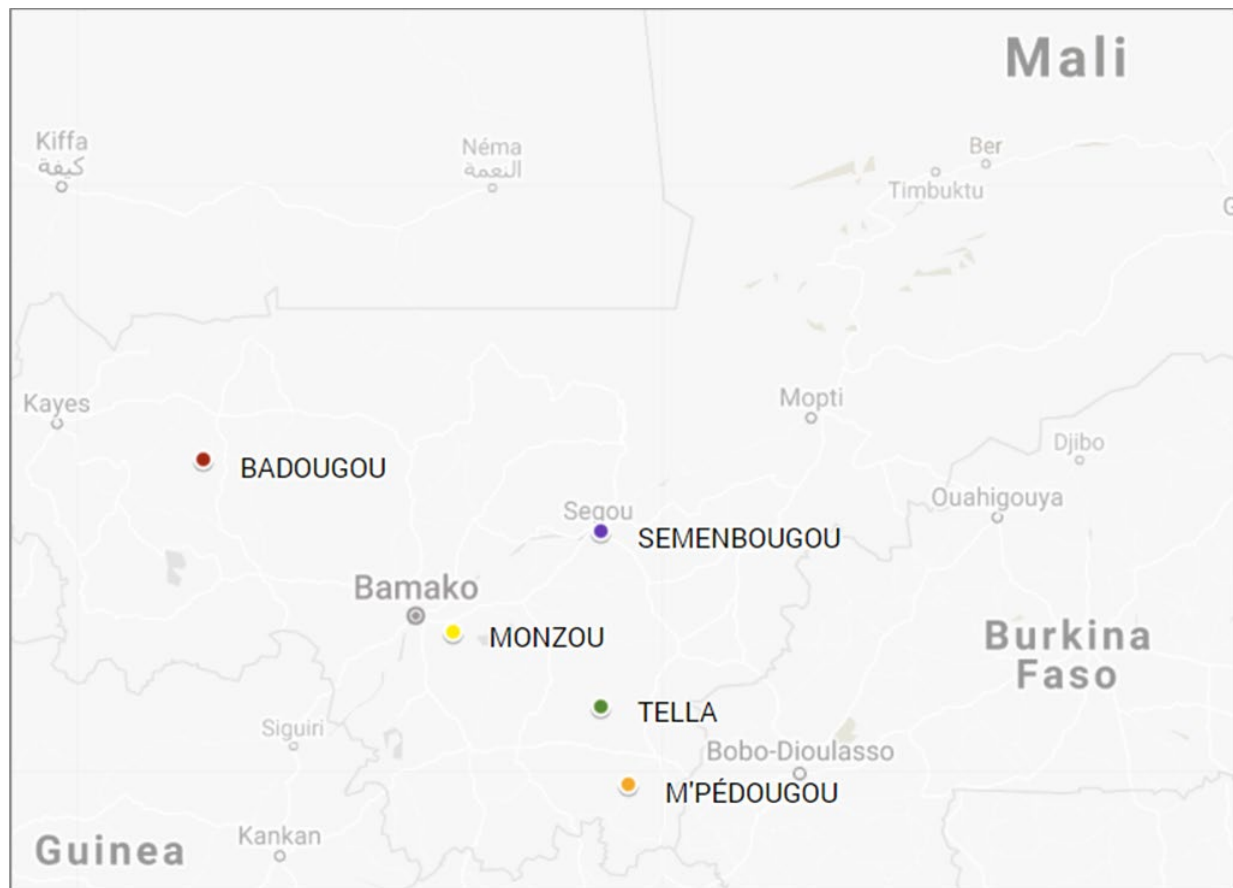
Output 3.1: Pilot sites for hybrid PMF/PV mini-grids are identified and evaluated and the institutional/investment model is defined.	Selected pilot sites	Unidentified, at present	Competitive tenders for concession areas completed within 18 months of project start-up	Documents granting concession areas 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 DURING A CRISIS: COVID-19

As COVID-19 spreads globally, it is a massive health, humanitarian, and development crisis. The IEO of UNDP remains operational and is adapting the way it works and conducts independent evaluations. Our priority is the safety of our staff, consultants and stakeholders. These are our tips on evaluating programmes during crises.

2. EVALUATE THE IMPACT OF COVID-19

Delayed or cancelled evaluations during this crisis will provide an opportunity to re-prioritize evaluation strategies and mobilize evaluative knowledge and lessons from which our organizations can gain insights. Initiatives such as evaluation synthesis or real-time evaluations assessing COVID-19 preparedness, response, and recovery will be critical in gathering data, evidence and identifying solutions for informed policy making.

4. ENGAGE STAKEHOLDERS VIRTUALLY

Stakeholder engagement ensures the effective communication of an evaluation and its uptake. We have successfully led several virtual (Zoom, Skype) stakeholder meetings to disseminate evaluation findings and recommendations. Do a test run and factor in emergency settings and time zone differences.

6. CONNECT WITH EVALUATION NETWORKS

Stay connected with other evaluation offices, networks and associations. Collectively, we can help each other adapt to evolving evaluation approaches, methods, technologies and tools that are needed to continue our work during crises.

1. RETHINK EVALUATION PLANS & TEAMS

The COVID-19 pandemic will have a profound impact on the methods and key indicators used for evaluation. Evaluators will need to rethink their evaluation plans, designs, methods and users. In cases of technical, and other barriers associated with working remotely, consider delaying the evaluation. To ensure the safety of our teams, hiring national consultants should be avoided unless remote. Terms of reference for contracted consultants should be revised to reflect remote arrangements, desk reviews and changes in deliverables.

3. COLLECT DATA REMOTELY

In the absence of field visits and lack of local evaluation team members data could be collected remotely. Skype interviews, mobile questionnaires, online surveys, collaboration platforms (slack or yammer) and satellite imagery could be used to gather data. Stakeholders that are dealing with existing emergencies should be given advance notice and an adjustment of evaluation timelines can be expected.

5. SHARE EVALUATIONS GLOBALLY

At a time of social distancing, social media can help bridge the gap. Social platforms enable connecting, networking and engaging with target audiences such as stakeholders, governments, donors, partners, and decision makers. Global outreach on these platforms along with the use of a website is valuable to drive discussions, promote evaluations, increase accessibility and amplify reach.

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IEO INDEPENDENT
Evaluation Office
United Nations Development Programme



EVALUATION GUIDELINES

Evaluation during COVID-19



IEO | 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 this 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 5^e 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 tCO₂.

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 1 16 462 tCO₂, soit un coût de réduction de 10 USD des fonds du FEM par tCO₂ évitée. Le projet visait à atteindre cet objectif en mettant en place un cadre réglementaire favorable et un système d'appui financier 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 PNUD².

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

² 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 été 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?	<p>Identified political risks impacting project performance</p> <p>Existing or potential policy risks to replication of project lessons learned</p>	<p>Key informant interviews</p> <p>Focus groups with beneficiaries</p>
	Has the legal and regulatory framework had an impact on the performance of Financial Service Providers?	<p>Analysis of the legal and regulatory context</p> <p>Risks related to the legal and regulatory framework identified that have impacted the performance of financial service providers</p>	<p>Documentary review,</p> <p>Key informant interviews (financial service providers)</p> <p>Focus groups with beneficiaries (clients of financial service providers)</p>
	Has the socio-cultural environment had any positive or negative consequences on the performance of the project and the municipalities?	<p>Analysis of the socio-cultural context</p> <p>Risks related to the socio-cultural environment identified that have impacted the performance of the project and the municipalities</p>	<p>Documentary review,</p> <p>Key informant interviews (project stakeholders, municipalities)</p>
	Is there any factor external to the project that has affected implementation, achievement of results, replication or political impact?	<p>Explanatory factors identified</p> <p>Solutions implemented or envisaged</p>	<p>Documentary review,</p> <p>Key informant interviews</p> <p>Focus groups with beneficiaries</p>
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?	<ul style="list-style-type: none"> - Importance of financial resources - Team size <p>Rate of distribution of resources by component</p>	<p>Literature review</p> <p>Key informant interviews</p>
	To what extent have resources been used effectively?	<ul style="list-style-type: none"> - Resource utilization rate 	Literature review

		<ul style="list-style-type: none"> - Cost-effectiveness ratios - Efficiency Index 	Key informant interviews
	To what extent were project funds and activities provided in a timely manner?	<p>Delays (or not) in releasing funds</p> <p>Main causes of delays</p>	<p>Literature review</p> <p>Key informant interviews</p>
	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?	<p>Evidence of results-based business planning and implementation of the project results framework/logical framework</p> <p>Number and types of management tools used</p> <p>Obstacles/difficulties identified in management and solutions implemented</p>	<p>Literature review</p> <p>Key informant interviews</p>
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.)?	<p>Number and types of direct and indirect stakeholders benefiting</p> <p>Perception of beneficiaries (GTC, households and communities) of the impact of rural electrification actions</p>	<p>Literature review</p> <p>Key informant interviews</p> <p>Focus groups with beneficiaries</p>
	What are the effects/impacts of rural electrification measures?	<p>Number of persons (farmers, stockbreeders and fish farmers) benefiting</p> <p>Evidence of increased output and productivity</p> <p>Perception of the beneficiaries (farmers, stockbreeders, and fish farmers) of the impact of intensification actions</p>	<p>Literature review</p> <p>Key informant interviews</p> <p>Focus groups with beneficiaries</p>
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?	<p>in which the question of sustainability remains</p> <p>Level of awareness of the various stakeholders (initiatives or lack of initiatives aimed at sustaining the achievements of the project)</p> <p>Level of awareness among different stakeholders to support the long-term objectives of the project</p> <p>Availability and commitment of the various stakeholders to provide the necessary means for the continuation of activities after the closure of the project</p>	<p>Key informant interviews</p> <p>Focus groups with beneficiaries</p>
	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?	<p>- Existence of an exit strategy</p> <p>Adequacy level of the existing exit strategy</p> <p>Availability and commitment of stakeholders to provide the necessary means for the continuation of activities after the closure of the project</p>	<p>Literature review</p> <p>Key informant interviews</p> <p>Focus groups with beneficiaries</p>
	Did the project ensure effective communication and visibility?	<p>Existence of an internal and external communication strategy</p> <p>Quality and inclusiveness of communication</p> <p>Existence of feedback mechanisms</p> <p>Quality/effectiveness of feedback mechanisms</p>	<p>Literature review</p> <p>Key informant interviews</p> <p>Focus groups with beneficiaries</p>
	Were the populations directly involved in the implementation of the project?	<p>Existence of a strategy for involving the population in the implementation of the project</p> <p>Level of stakeholder ownership</p>	<p>Literature review</p> <p>Key informant interviews</p>

		<ul style="list-style-type: none"> - 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?	<p>Number of actions/activities targeting women and other disadvantaged and marginalized groups</p> <p>Number of beneficiaries: women and other disadvantaged groups.</p>	<p>Literature review</p> <p>Key informant interviews</p> <p>Focus groups with beneficiaries</p>
	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	<p>Literature review</p> <p>Key informant interviews</p> <p>Focus groups with beneficiaries</p>
	To what extent has the project promoted positive changes in gender equality and women's empowerment?	<p>Immediate impacts on the situation of women beneficiaries</p> <p>Longer-term predictable impacts on the situation of women beneficiaries</p>	<p>Literature review</p> <p>Key informant interviews</p> <p>Focus groups with beneficiaries</p>
1.7. Lessons learned, good practices and recommendations	What lessons can be drawn from the implementation of the project to ensure effective capitalization?		<p>Literature review</p> <p>Key informant interviews</p> <p>Focus groups with beneficiaries</p>
	What are the good/bad practices identified in the execution of the project that can be capitalized?		Literature review

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

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. In view of the objectives and results of the project, 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. Have there 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 the project'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 have been sufficient for the monitoring and evaluation 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 (activity reports, 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
27/05	14:30	BADOUGO U NAFADJI	Focus Group e	<ul style="list-style-type: none"> - Seydou Keita - Fode Keita - Zoumana Keita - Madou Keita - Sina Keita - Lanseni Coulibaly - Balla Keita - Sogona Keita - 	<ul style="list-style-type: none"> - 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		MOUNZO U	Focus Group e Mairie	<ul style="list-style-type: none"> - 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 - Oumar Coulibaly 	<ul style="list-style-type: none"> 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

30/05	18:00	SEMEMBO UGOU	Focus Group e	<ul style="list-style-type: none"> - Modibo Gamby - Mamadou Bah - Madou Gamby - Baba Gamby - Mansirou Gamby - Kadiatou Dao - Fatoumata Diallo - Aichata Gamby - Aichata Niangado - Fatoumata Karagnara - N'Deyi Yara 	<p>Chef village comité, membre C gestion villageois/ Bénéficiaire/Président</p> <p>Membre comité de gestion villageois/ Bénéficiaire/Relevées compteur</p> <p>Membre du comité de gestion villageois/ Bénéficiaire/Entretien-Securité</p> <p>Membre du comité de gestion villageois/ Bénéficiaire/Technicien</p> <p>Membre du comité de gestion villageois/ Bénéficiaire/Compteur</p> <p>Membre du comité de gestion villageois/ Bénéficiaire/Vice-Présidente</p> <p>Membre du comité de gestion villageois/ Bénéficiaire-Factures Electric</p> <p>Membre du comité de gestion villageois/ Bénéficiaire</p> <p>Membre du comité de gestion villageois/ Bénéficiaire</p> <p>Membre du comité de gestion villageois/ Bénéficiaire/Trésorière</p> <p>Membre du comité de gestion villageois/ Bénéficiaire/Contrôle</p>
31/05		M'PENDO UGOU	Focus Group e	<ul style="list-style-type: none"> - Madou Sanogo - Issa Sanogo - Zoumana Sanogo - Kassim Sanogo - Amadou Traoré - Aminata Sanogo - Siaka Traoré 	<p>Membre du comité de gestion villageois/ Bénéficiaire</p> <p>Membre du comité de gestion villageois/ Bénéficiaire/Technicien</p> <p>Membre du comité de gestion villageois/ Bénéficiaire/Gardien</p> <p>Membre du comité de gestion villageois/ Bénéficiaire</p> <p>Membre du comité de gestion villageois/ Bénéficiaire</p> <p>Membre du comité de gestion villageois/ Bénéficiaire/Secrétaire</p> <p>Membre du comité de gestion villageois</p> <p>Membre du comité de gestion villageois/ Bénéficiaire</p> <p>Membre du comité de gestion villageois/ Bénéficiaire</p>
		TELLA	Focus Group e	<ul style="list-style-type: none"> - Kassim Bagayoko - Sekou Bagayoko - Satou Bagayoko - Abou Diarra - Soumaila Dembéle - Awa Bagayoko - Biba Togola - Safiatou Bagayoko - Amadou Traoré dit - Adama Bagayoko 	<p>Membre du comité de gestion villageois/ Bénéficiaire/Président</p> <p>Membre du comité de gestion villageois/ Bénéficiaire/Secrétaire</p> <p>Membre du comité de gestion villageois/ Bénéficiaire</p> <p>Membre du comité de gestion villageois/ Bénéficiaire</p> <p>Membre du comité de gestion villageois/ Bénéficiaire</p> <p>Membre du comité de gestion villageois/ Bénéficiaire</p> <p>Membre du comité de gestion villageois/ Bénéficiaire</p> <p>Membre du comité de gestion villageois/ Bénéficiaire/Technicien</p> <p>Membre du comité de gestion villageois/ Bénéficiaire/Trésorier</p> <p>NB : liste des présents à la rencontre ci-jointe en annexes</p>

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.