



**GLOBAL ENVIRONMENT FACILITY**  
INVESTING IN OUR PLANET

**Naoko Ishii**  
CEO and Chairperson

November 20, 2015

Ms. Adriana Dinu  
GEF Executive Coordinator  
United Nations Development Programme  
One United Nations Plaza  
304 East 45th St.  
FF Bldg., 10th floor  
New York, NY 10017

Dear Ms. Dinu:

I am pleased to inform you that I have approved the medium-sized project detailed below:

Decision Sought:	Medium-sized Project (MSP) Approval
GEFSEC ID:	5769
Agency(ies):	UNDP
Agency ID:	5357 (UNDP)
Focal Area:	Climate Change
Project Type:	Medium Size Project
Country(ies):	Mauritania
Name of Project:	Promoting Sustainable Mini-grids in Mauritanian Provinces Through Hybrid Technologies
Indicative GEF Project Grant:	\$1,270,142
Indicative Agency Fee:	\$120,663
Funding Source:	GEF Trust Fund

This approval is subject to the comments made by the GEF Secretariat in the attached document. It is also based on the understanding that the project is in conformity with GEF focal areas strategies and in line with GEF policies and procedures.

Sincerely,

Naoko Ishii  
Chief Executive Officer and Chairperson

Attachment: GEFSEC Project Review Document  
Copy to: Country Operational Focal Point, GEF Agencies, STAP, Trustee



**REQUEST FOR CEO ENDORSEMENT**

**PROJECT TYPE: MEDIUM-SIZED PROJECT**

**TYPE OF TRUST FUND: THE GEF TRUST FUND**

**PART I: PROJECT INFORMATION**

<b>Project Title: Promoting Sustainable Mini-grids in Mauritanian provinces through hybrid technologies</b>			
<b>Country:</b>	Mauritania	<b>GEF Project ID:</b>	5769
<b>GEF Agency:</b>	UNDP	<b>GEF Agency Project ID:</b>	5357
<b>Other Executing Partner(s):</b>	APAUS	<b>Submission Date:</b>	11 November 2015
<b>GEF Focal Area(s)</b>	Climate Change	<b>Project Duration (Months)</b>	48
<b>Name of Parent Program (if applicable):</b>	n/a	<b>Project Agency Fee (\$):</b>	120,663

**A. FOCAL AREA STRATEGY FRAMEWORK**

<b>Focal Area Objectives</b>	<b>Expected FA Outcomes</b>	<b>Expected FA Outputs</b>	<b>Trust Fund</b>	<b>Grant Amount (\$)</b>	<b>Cofinancing (\$)</b>
CCM-3	Promote Investment in Renewable Energy Technologies.	Renewable energy capacity developed and installed.	GEF TF	1,270,142	7,650,000
<b>Total Project Cost</b>				1,270,142	7,650,000

**B. INDICATIVE PROJECT FRAMEWORK**

<b>Project Objective: To optimize existing mini grids in Mauritania by increasing the share of Renewable Energy (RE) and developing an appropriate business model for the sustainability of the hybrid system</b>						
<b>Project Component</b>	<b>Grant Type<sup>1</sup></b>	<b>Expected Outcomes</b>	<b>Expected Outputs</b>	<b>Trust Fund</b>	<b>Indicative Grant Amount (\$)</b>	<b>Indicative Cofinancing (\$)</b>
1. Policy, regulatory, legislative and financial instruments for hybrid based mini-grids development	TA	Enabling policy and institutional framework for hybrid-based mini-grids set up  OBA scheme, LT concessions, and other appropriate tariff for hybrid mini-grid designed and set-up for LT viability	1.1 Policy, institutional and legislative package for hybrid-based electrification adopted 1.2 Cornerstone policy instrument and institutional framework defined adopted and enforced 1.3 Financial viability of mini-grid ensured	GEFTF	335,000	600,000
2. Capacity Building for hybrid mini-	TA	Capacity for delivering turnkey	2.1 Published guidebook on hybrid diesel/RE based mini-grids development	GEFTF	185,142	800,000

<sup>1</sup> TA includes capacity building, and research and development.

grid system management		solutions and quality O&M&M	2.2 On-the-job capacity building program for hybrid plant operators delivered, including on materials, plant design, combination construction, O&M 2.3 Business and technical advisory services to the power utility and other hybrid mini-grid plant developers 2.4 Tailored capacity building program delivered to relevant national agencies			
3. Showcasing a viable hybrid mini-grid business model	INV	A functioning business model is demonstrated for the technical and financial viability of diesel/RE hybrid-based mini-grids	3.1 Pilot sites for mini-grids identified and assessed 3.2 Public-Private partnerships are established for the exploitation of hybrid mini-grids 3.3 0.6 MW of wind power generation capacity + storage + hybrid system management is installed and managed sustainably in a hybrid power plant covering 4 coastal communities 3.4 Public relation and investment promotion campaign conducted 3.5 The business model concept replicated	GEFTF	650,000	6,000,000
Subtotal					1,170,142	7,400,000
Project Management Cost (PMC) <sup>2</sup> including DPC				GEFTF	100,000	250,000
Total Project Cost					1,270,142	7,650,000

### C. SOURCES OF CONFIRMED CO-FINANCING FOR THE PROJECT BY NAME (\$)

Please include letters confirming co-financing for the project with this form.

Sources of Cofinancing	Name of Cofinancier	Type of Cofinancing	Amount (\$)
National Government	Ministry of Energy	In-kind	2,000,000
National Government	SOMELEC (Power Utility)	In-kind	150,000
National Government	National Office of Meteorology	In-kind	100,000
GEF Agency	UNDP	Grant	400,000
Bilateral agencies	IRENA/ADFD (through Ministry of Energy)	Loan	5,000,000
<b>Total Co-financing</b>			<b>7,650,000</b>

<sup>2</sup> To be calculated as percent of subtotal.

#### D. Trust Fund Resources Requested by Agency, Focal Area and Country

GEF Agency	Type of Trust Fund	Focal Area	Country Name/Global	Grant Amount (a)	Agency Fee (b) <sup>2</sup>	Total c=a+b
UNDP	GEFTF	Climate Change	Mauritania	1,270,142	120,663	1,390,805
<b>Total Grant Resources</b>				1,270,142	120,663	1,390,805

E. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? No.

#### PART II: PROJECT JUSTIFICATION:

##### **A: DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF**

1. Several changes were made to the final PRODOC in relation to the original PIF in order to reflect recommendations made by participants during the project preparation inception workshop and later follow-up discussions with project proponents during the PPG.
2. Component 1 was modified to include several elements mentioned during the inception workshop that had been identified as priorities during previous exercises related to the Renewable Readiness Assessment jointly carried out by IRENA and the UNDP.
3. Within the “Cornerstone policy instrument and institutional framework” output, the creation of a Renewable Energy Observatory was included. The observatory will be based within existing institutions (in this case the Ministry of Petroleum, Energy and Mines –MPEM-) and will be managed in a collegial way, including representatives from all major institutions in the area. It is designed to centralize, collect and disseminate information and data pertaining to renewable energy potential and management. In this way, data that was previously exclusively at the disposal of the actor in charge of its collection will be available for all renewable energy sector actors.
4. The PIF did not cover the collection of site-specific wind data or additional data pertaining to other potential hybrid wind-diesel mini-grid projects. This was deemed necessary of specific importance for the replication of hybrid wind-diesel mini-grids based on the project’s demonstrated success. The observatory will be indispensable in conserving and distributing this data. As data previously collected has in some instances become unavailable, a first step will be to collect all existing data in order measure additional needs. An on-line wind atlas will be built and made available on-line in order to encourage better use of national wind resources.
5. Finally, the section pertaining to the Output Based Aid (OBA) mechanism was modified to exclusively focus on design and planning of improved instruments. As Mauritania already has a functioning universal access fund, the priority has been put on better design and planning rather than actual investment. Investment-related funds were transferred to the subsidization of the equipment in component 3. Budget of Component 1 was reduced while the one for component 3 has increased.
6. The capacity building element within component 2 has been reinforced in reflection of suggestions made by participants during the PPG process and as a result of analysis of lessons learned from previous projects and programs. Despite an increasing number of renewable projects being implemented in the country, Mauritania still lacks capacity in hybrid-renewable project management and maintenance. In order to address this issue, specific attention has been given to training trainers from vocational schools and university at the same time as the technicians in charge of the actual project. The training modules will also be made available to vocational schools and the university to allow them to be integrated in existing curriculum and more importantly to allow additional technicians to be trained to maintain the project should the need arise.
7. The main investment element of the project has been shifted to component 3 in order to bring the infrastructure cost down and reduce the needed electricity tariff. In addition, preliminary technical evaluation shows that the wind turbine capacity will be closer to 0.6 MW rather than the 1 MW as announced in the PIF. Detailed technical

studies will still need to be carried out during project implementation to ensure a proper sizing of all elements. Finally, an option to cover the four villages with a single production infrastructure and distribution network is being considered.

### A.1 NATIONAL STRATEGIES AND PLANS:

Mauritania is a large, 1,030,000 km<sup>2</sup> semi-arid country with a population of 3,357 million people (2013 census), 60% of which is under the age of 25. A little over 41% of the population lives in urban areas with an increase in urbanization of 2,91% per year. In 2012, the Gross Domestic Product (GDP) per person was 1,247 USD and estimated at 1,191 USD in 2013. It is estimated that approximately 20% of the population live on less than \$1.25 per day.

**Figure 1: Map of Mauritania**



The main economic activities include extractive industries<sup>3</sup>, fishing and agriculture. In terms of percentage of GDP, industrial activities represent 48%, services represent 37% and agriculture -including fishing- represent 10% of GDP. While in terms of employment the balance is inverted with 50% of the active population in the agriculture and fisheries sector, 40% in the services sector and 10% in the industrial sector.

Exported resources boost the country's economy but also expose it to external commodity price variations. In 2011, extractive industries provided approximately 38% of total country revenues (excluding foreign development aid) up from 24% of revenues in 2010 (with a balance of 83% provided by mining activities and 17% by oil and gas). On the

<sup>3</sup> Extractive industries include all activities related to mining and oil and gas extraction.

other hand, fossil fuel imports cost 545,5 million USD in 2008 in comparison to total revenues of 1 627 million USD, of which 326 million USD came from crude oil exports.

These numbers help to better understand to what extent the country is exposed to commodity price variations. This was highlighted in a recent IMF analysis of the country's economy: *"a number of risks that can potentially negatively affect the countries growth perspectives remain, exposing it to a negative evolution of exchange terms. One of the absolute priorities is to reduce the economy's exposure to external price variations"*<sup>4</sup>. The Mauritanian economy will remain exposed to commodity price variations for its export revenues, but it can help to reduce price risks by increasing its use of domestic resources for energy needs. The country has already acknowledged this situation in its national policies by encouraging the use of domestic resources for its energy needs, starting with the use of domestic gas for electricity production as well as the promotion of renewable energy resources.

For 2012 Net entropic emissions of GHG were evaluated at 7070,544 Gg Eq-CO<sub>2</sub> equivalent to 2.1 tons eq-CO<sub>2</sub>/person<sup>5</sup>. Of these, CH<sub>4</sub> represents 68% of direct emissions (almost exclusively from cattle) and CO<sub>2</sub> represents 31% of emissions (transport 30%, energy 20%, industry 14%, residential 12%, land use 6%). Between 1990 and 2012 CO<sub>2</sub> emissions increased by 517%, mainly due to the energy industry.

For detailed description of the National Strategies and Plans, please refer to the UNDP PRODOC, section 1 "Situation Analysis" page 6 to 24.

## **A.2 GEF FOCAL AREA AND/OR FUND(S) STRATEGIES, ELIGIBILITY CRITERIA AND PRIORITIES:**

This project is consistent with the GEF-5 strategy to address climate change, especially the Objective 3 (Renewable Energy: Promote investment in renewable energy technologies) because its main objective is to facilitate investment in hybrid wind power and solar PV-based mini-grid systems in Mauritania.

For detailed description of the GEF focal area strategies, please refer to the UNDP PRODOC, section 2.1 "Project Rationale and GEF Policy Conformity" page 26.

## **A.3 THE GEF AGENCY'S COMPARATIVE ADVANTAGE:**

The proposed project is clearly within the comparative advantages of UNDP as stated in the GEF Council Paper C.31.5 "Comparative Advantages of GEF Agencies". UNDP is one of the few GEF agencies present in the country. It has the ability to mobilize and make available quality technical expertise to develop policies and strategies, particularly in climate mitigation and adaptation, social sectors, governance and environmental management and risk disasters. UNDP has also developed and implemented several projects in Mauritania related to Energy and Environment, among them few GEF projects dealing with climate change and biodiversity.

UNDP has implemented over 230 GEF clean energy projects in close to 100 developing countries, and has acquired a unique base of institutional knowledge on transforming renewable energy markets in developing countries. This project feeds under the UNDP-GEF EITT Signature program number 1 "SP1 – Clean Energy" Promoting access to clean and affordable energy systems.

The current proposal is also in line with the strategic priorities developed under the United Nations Development Assistance Framework of Mauritania (UNDAF 2012 – 2016).

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<sup>4</sup> : Sixth Review of the Three-Year Arrangement Under the Extended Credit Facility and Request for Waiver for breach of a performance criterion; IMF; 31 May 2013.

<sup>5</sup> : Third National Communication on Climate Change, MEDD, July 2014

#### A.4 THE BASELINE PROJECT AND THE PROBLEM THAT IT SEEKS TO ADDRESS:

For detailed description of the baseline project and the problem that it seeks to address, please refer to the UNDP PRODOC, sections 1.5; 1.6 and 1.7 “Baseline scenario, Institutional and Stakeholder Analysis; and Problem Analysis” page 21 to 25.

For detailed description of the alternative scenario and project activities, please refer to the UNDP PRODOC, section 2.3 “Project Objective, Outcomes and Outputs” page 31 to 40.

This project is designed to help demonstrate the viability of hybrid renewable-diesel mini-networks for remote access needs. It aims to demonstrate the technologies involved and how combining service provision (electricity, water, cooling/ice) to help create added value within the rural communities can ensure the maximum development impact while encouraging the necessary economic growth to allow populations to pay for the related services and necessary maintenance. This project will adopt a two-fold approach:

- Assisting to create and implement the necessary institutional and legislative package while encouraging an integrated approach to capacity building aimed at not only ensuring project maintenance, but also that future vocational training and technical education include the necessary elements;
- Demonstrating the technology and an innovative combined utility-private sector business model for the management of hybrid mini-grids.

In addition, the project has been strongly anchored within existing country priorities, on-going programmes and plans. Elements of previously identified priorities (within the UNDP/IRENA RRA process) have been integrated within the original project design to maximise synergies. These elements, such as:

- the creation of a renewable energy observatory;
- centralized compilation of renewable energy data collected within implemented projects;
- collaboration with the university and vocational training schools to offer concrete training and ensure the sustainability of training afforded within renewable projects;
- the use of existing in-country capacity to help build local expertise;

Have been central to the development of the project.

#### A.5 INCREMENTAL/ADDITIONAL COST REASONING

For detailed description of the Incremental/Additional cost reasoning, please refer to the UNDP PRODOC, sections 2.5 to 2.8 “Financial modality and cost effectiveness, Sustainability, Replicability and Innovation” page 44 to 46.

The direct global benefits of the project have been assessed at least 47,000 tons of CO<sub>2</sub>eq. With a GEF funding request of US\$ 1,270,142 US\$, this corresponds to an abatement cost of less than 27 US\$ per ton of CO<sub>2</sub> reduced. The table below summarizes the GHG emission reductions.

*Table. GHG emission reductions*

Time-frame	Direct project	Indirect post-project (bottom-up)	Indirect post-project (top-down)
Total CO <sub>2</sub> emissions reduced (tons)	47,000	141,000	688,520
Unit abatement cost of GEF funds	\$27.0	\$9.0	\$1.8



**A.6 RISKS** (including climate change, potential social and environmental risks that might prevent the project objectives from being achieved and measures that address these risks).

For detailed description of the Risks, please refer to the UNDP PRODOC, section 2.4 “Project indicators, Risks and Assumptions” page 43 to 44.

**Table 7: Project risks and mitigation actions**

Risk	Level of Risk	Mitigation Action
<p><b>Political risk:</b> Project implementation is a risk, as the country faced project cancellations in the past due to political instability. In addition, Mauritania is located in the very unstable part of the unsecured Sahara.</p>	<p>Moderate</p>	<p>The current political situation in the country is stable. However, this risk exists due to recent legislative election contests. To mitigate this risk, the project will build a wide coalition of partners and stakeholders whose interest in hybrid mini-grids promotion will likely to sustain, even in case of regime change. They include local businesses and communities, NGOs and international development agencies.</p>
<p><b>Policy risk</b> The success of this project will be determined to a large degree by adoption and effective enforcement of the proposed polices. Lack of political support may jeopardize the achievement of immediate results and over-all impact.</p>	<p>Low</p>	<p>Initial consultations with the Government of Mauritania have indicated an interest and a willingness to establish a Renewable Energy Support Unit and an Investment Grant Mechanism for Renewable Energy projects. The political will to support this project is strong.</p>
<p><b>Technology risk</b> The crack of Solar panels or wind turbines is quite common and could result to systems breaking down. Insufficient quality of locally produced equipment leading to early breakdown of the systems and dwindling consumer confidence in the technology.</p>	<p>Moderate</p>	<p>The project intends to utilize proven feasible and affordable technologies and replicate solutions that have been successfully introduced in several countries in the region. In this respect, the project will build partnership with material producers established in the country.</p>
<p><b>Financial risk</b> Widespread poverty and lack of sustainable source of income resulting in low ability to pay for energy supply services. There is also a lack of ability to finance projects for SMEs.</p>	<p>Moderate</p>	<p>The project voluntarily decided to work with already existing mini-grids. In these areas, there is already a capacity and willingness to pay from end-users. On the other hand, the combination of the power utility business model and private sector business model through PPP (public private partnerships) will reduce the financial risk from both side (utility side and private sector side).</p>



Risk	Level of Risk	Mitigation Action
<p><b>Market risk</b> In Mauritania, hybrid systems will have to compete with subsidized and locally available diesel alternatives, such as Multifunctional platforms (MFP) running on diesel. Without additional incentives, hybrid plants will likely to remain uncompetitive.</p>	High	Introduction of financial viable tariff for hybrid diesel/RE-based mini-grids will be a cornerstone instrument of the proposed policy package and business model, aimed specifically at addressing this market risk by levelling the playing field for RE against other available alternatives. Financial commitments will be secured to sustain the policy package and business model operation beyond the GEF proposed project duration from the Government and other donors.
<p><b>Climate risk</b> Climate change is predicted to cause changes and increase variability of Mauritanian solar and wind patterns. Higher temperatures may cause solar panels to overheat and reduce their productivity. Stronger winds may cause panels to break, while increasing the amount of dust settling on the surface.</p>	Moderate	In the case of extreme climate change, regular maintenance and inspection will help to ensure the performance of solar and wind solutions, overheat or destruction. The choice of resistant and well-adapted materials will also be of importance. Both of these actions are important to protect from climate risks.
<b>Overall Risk Rating</b>	Moderate	

## A.7 COORDINATION WITH OTHER RELEVANT GEF-FINANCED INITIATIVES

Apart from ensuring coordination and collaboration with relevant baseline projects, the proposed project will also forge partnership with the GEF funded climate change project on “Enabling Activity” (BUR and NC). In addition, cooperation with the Small Grants Programme is already envisaged to accompany the adoption of new techniques and added value activities. This will include assisting the target villages to:

- Adopt energy efficient solutions (equipment such as lighting, refrigeration, etc...);
- Make the best use of available energy in launching efficient productive, added value activities (fish transformation);
- Potentially combine a waste collection and reuse action to encourage the development of local agricultural produce (much of the waste being linked to fish remains).

The proposed project is one of a series of similar UNDP-GEF initiatives aimed at promoting renewable energy based mini-grids in Africa (such as hybrid Solar PV mini-grids in Mali and Small hydro based mini-grids in Congo-Brazzaville and DR Congo). These projects share the same market transformation approach and model for mini-grid-based rural electrification. The portfolio will be coordinated by UNDP-GEF Regional Coordination in Africa, including analysis and presentation of lessons learnt, organization of regular face-to-face and virtual networking, knowledge sharing and outreach activities and events.

During implementation of the proposed project, UNDP will ensure that the various project partners periodically meet to share information on progress in project activities and to avoid any duplication. These meetings may be organised in conjunction with meetings of the Project Board.

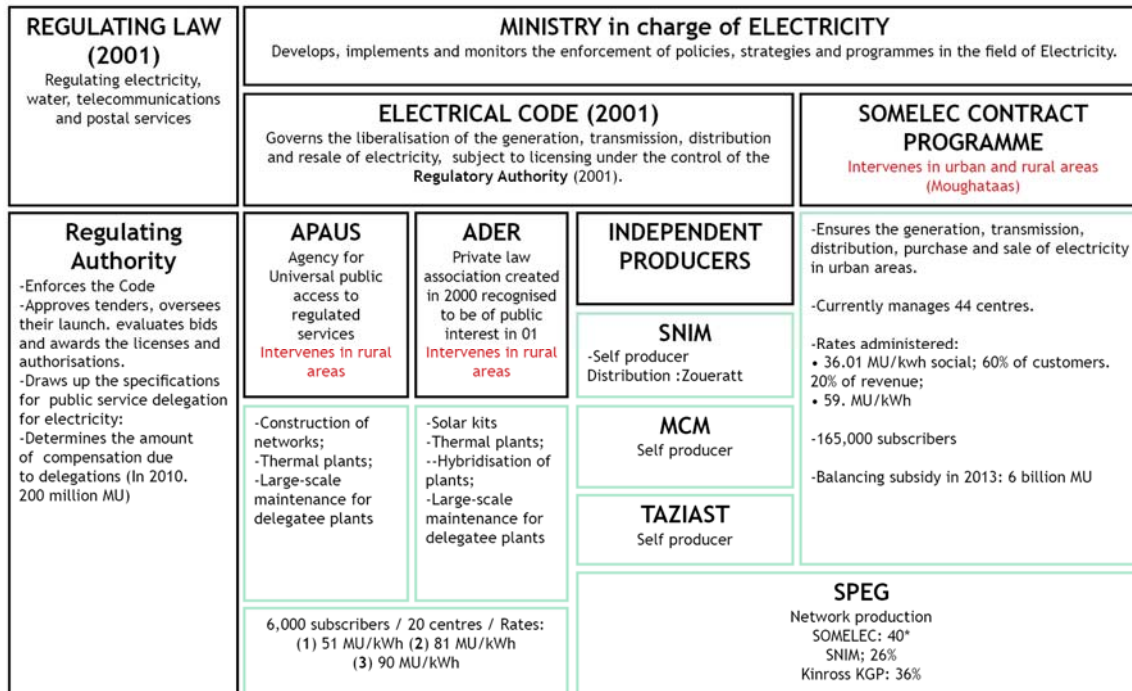
**B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:**

**B.1 Describe how the stakeholders will be engaged in project implementation.**

For detailed description of the Stakeholders, please refer to the UNDP PRODOC, section 1.6 “Institutional and Stakeholder Analysis” page 21 to 23.

Mauritania’s electricity sector is governed by the Electricity code, adopted in 2001<sup>6</sup>. Although aimed at creating a liberalised electricity sector, SOMELEC, the electricity utility remains predominant within the sector.

**Organisation of the energy sector**



**B.2 Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global benefits.**

For detailed description of the socioeconomic benefits and other benefits, please refer to the UNDP PRODOC, section 2.10 “Cross cutting issues: gender, poverty and socio-economic benefits” page 47 to 49.

The project will enable rural areas benefiting from access to better energy services. By end of the project, at least 1,000 people in selected sites will benefit from access to better energy services.

**B.3 Explain how cost-effectiveness is reflected in the project design.**

Current baseline solutions for mini-grid remote-access energy services in Mauritania are exclusively based on diesel generation. Electricity produced on mini-grids is estimated at an average of 0.54 USD/kWh for diesel based electricity generation. While an average world-level price for hybrid diesel-renewable (PV or Wind) mini-grids is estimated to be 0.4 USD/kWh without subsidies<sup>7</sup>. In the case of the project, potentially competitive renewable sources such as biomass or hydro-power are not available in the area due to the arid nature of the region, while hydro-power resources are limited to the extreme south of the country.

<sup>6</sup> Act 2001-19 Establishing the electricity code.

<sup>7</sup> Hybrid Mini-grids for Rural Electrification: Lessons Learned; Alliance for Rural Electrification (ARE); 2011. And Hybrid Power Systems; IRENA; 2013

### C. DESCRIBE THE BUDGETED M & E PLAN:

For detailed description of the M&E Plan, please refer to the UNDP PRODOC, section 6 “Monitoring and Evaluation” page 60 to 63.

The Project Organization will be comprised of a Project Board, a Project Management Unit, led by the Project Manager, and specific teams for carrying out the activities for the project and an International Consultancy and Backstopping unit as Project Support.

MPEM and APAUS will be the government institutions responsible for the implementation of the project and will act as the Implementing Entity/Responsible Partner. UNDP is the Executing Entity/Implementing Partner for the project and accountable to the GEF for the use of funds. The project is a National implementation modality (NIM) project. The overall responsibility for the project implementation by MPEM and APAUS implies the timely and verifiable attainment of project objectives and outcomes. MPEM and APAUS will provide support to, and inputs for, the implementation of all project activities.

Annual Tripartite Review meetings (TPRs), with the participation of the project team and stakeholders, will be held to review progress, identify problems, and agree on solutions to maintain timely provision of inputs/achievement of results. The Project Board will review annual work plans as well as provide strategic advice on the most effective ways and means of implementation. Reporting to GEF will be accomplished through Annual Project Reviews (APRs) and Project Implementation Reviews (PIRs).

Additionally, the project will be the subject of an independent terminal evaluation at project completion. The independent evaluations will review the relevance, timeliness and impact of project inputs and discuss lessons learned for use in improving the quality of future development interventions with similar activities that could be undertaken in collaboration with other development partners to the project. The results of the terminal evaluation, incorporating the lessons learned, will be disseminated both within and outside the region. All reports will be posted on the project website.

The costs for Monitoring and Evaluation are estimated at \$ 75,000 (Table below). This budget allocation includes activities related to preparing quarterly progress reports, undertaking Project Implementation Reviews, Annual Project Reviews, an independent mid-term review, an independent terminal evaluation and organizing/participating in Project Board Meetings, as required.

**Table: Monitoring and Evaluation (M&E) Work Plan and Estimated Associated Budget.**

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Inception Workshop and Report	<ul style="list-style-type: none"> <li>▪ Project Manager</li> <li>▪ UNDP CO, UNDP GEF</li> </ul>	Indicative cost: 10,000	Within first two months of project start up
Measurement of Means of Verification of project results.	<ul style="list-style-type: none"> <li>▪ UNDP GEF RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members.</li> </ul>	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on <i>output and implementation</i>	<ul style="list-style-type: none"> <li>▪ Oversight by Project Manager</li> <li>▪ Project team</li> </ul>	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"> <li>▪ Project manager and team</li> <li>▪ UNDP CO</li> <li>▪ UNDP RTA</li> <li>▪ UNDP EEG</li> </ul>	None	Annually

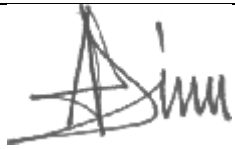
Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Periodic status/ progress reports	<ul style="list-style-type: none"> <li>▪ Project manager and team</li> </ul>	None	Quarterly
Mid-term Evaluation	<ul style="list-style-type: none"> <li>▪ Project manager and team</li> <li>▪ UNDP CO</li> <li>▪ UNDP RCU</li> <li>▪ External Consultants (i.e. evaluation team)</li> </ul>	Not required as this project is a MSP	At the mid-point of project implementation.
Final Evaluation	<ul style="list-style-type: none"> <li>▪ Project manager and team,</li> <li>▪ UNDP CO</li> <li>▪ UNDP RCU</li> <li>▪ External Consultants (i.e. evaluation team)</li> </ul>	Indicative cost : 40,000	At least three months before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> <li>▪ Project manager and team</li> <li>▪ UNDP CO</li> <li>▪ local consultant</li> </ul>	5,000	At least three months before the end of the project
Audit	<ul style="list-style-type: none"> <li>▪ UNDP CO</li> <li>▪ Project manager and team</li> </ul>	Indicative cost per year: 5,000	Yearly
Visits to field sites	<ul style="list-style-type: none"> <li>▪ UNDP CO</li> <li>▪ UNDP RCU (as appropriate)</li> <li>▪ Government representatives</li> </ul>	For GEF supported projects, paid from IA fees and operational budget	Yearly
<b>TOTAL indicative COST</b> Excluding project team staff time and UNDP staff and travel expenses		US\$ 75,000 (+/- 5% of total budget)	

### **PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT AND GEF AGENCY**

#### **A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT ON BEHALF OF THE GOVERNMENT**

NAME	POSITION	MINISTRY	DATE (mm/dd/yyyy)
Mr. Mohamed-Yahya O. LAFDAL	Director of DPCIE / GEF Operational Focal Point	Ministry of environment and sustainable development	<b>12/12/2013</b>

#### **B. GEF AGENCY (IES) CERTIFICATION**

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for CEO Endorsement.					
Agency Coordinator, Agency name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Adriana Dinu Executive Coordinator, UNDP GEF		November 11, 2015	<b>Saliou Touré</b> Regional Technical Advisor, EITT	+251 912 503 320	<a href="mailto:saliou.toure@undp.org">saliou.toure@undp.org</a>

## ANNEX A: PROJECT RESULTS FRAMEWORK

<b>This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD:</b> From CPAP component 3: Improving environmental governance and rational use of natural resources					
<b>Country Programme Outcome Indicators:</b> Level of Greenhouse gas emissions					
<b>Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one):</b>					
<b>4. Expanding access to environmental and energy services for the poor.</b>					
	<b>Indicator</b>	<b>Baseline</b>	<b>Targets End of Project</b>	<b>Source of verification</b>	<b>Risks and Assumptions</b>
<b>Project Objective</b> To optimize existing mini grids in Mauritania by increasing the share of Renewable Energy (RE) and developing an appropriate business model for the sustainability of the hybrid system	Investment in hybrid RE-diesel mini-grid projects mobilized in comparison to baseline year 2014  Amount of reduced CO <sub>2</sub> emissions by the investments facilitated by the project (in rural electricity generation compared with the baseline)  Number of MWH produced under the project  Number of people in rural areas benefiting from access to better services	0 USD/year (2014)  2014: the baseline assumes that all new demand for electricity will be met by diesel generators	By the end of the project –year 4 (EOP): a total of 7 million USD of investment from the government, multilateral aid organisations and private sector will be mobilized.  EOP: 47 104 tCO <sub>2</sub>  64.2 MWh (2.5 MWh/y over 20 year lifetime with a 2.5% growth/year)  EOP: 4 sites, 430 households benefiting from access to better energy services, water and cooling for fishing produce	Monitoring and reporting on total RE-diesel mini-grid investments triggered by the project.  M & E framework  Monitoring and reporting of yearly generation of installed pilot RE-diesel mini-grid pilot project	Investors' risk is lower than estimated  Co-financing from government and multilateral institutions does not materialize  The installed capacities are lower than anticipated;  Downtime of RE-diesel mini-grid projects, identification and construction is lengthier than expected.
<b>Outcome 1.a Enabling policy and institutional framework for hybrid-based mini-grids set up</b>	Legislative package is designed and enacted  Revised institutional framework  Creation of a renewable observatory	0  0  0	Revised legislative package encouraging the development of renewable energy  Revised institutional framework put in place  A RE observatory is in place and functioning	MPEM publication of the relevant legislation Development and submission to the government of the legislation Implementation of the revised institutional framework Online national wind atlas available	Country priorities for policy and regulation on rural electrification are shifted to other issues  New regulation is not adopted by government
<b>Outcome 1.b Financial viability of mini-grid ensured</b>	Revised framework for hybrid-based DSP is implemented	Existing framework for remuneration not taking hybrid grid	New framework implemented	MRA publication of tariffs	New, sustainable pricing is deemed politically unviable

	The level of investment and tariff reforms ensure the financial viability of mini-grids	management into account 0	New sources of financing for tariff subsidisation researched	Signature of new partnerships, proposal of new legislation for collection of funding	Political support for DSP extension not sufficient  Legislative and institutional framework deemed too risky by IFIs
<b>Outcome 2 Outcome 2: Capacity for delivering turnkey solutions and quality O&amp;M&amp;M</b>	Ministry and related agency representatives have the capacity to understand and design measures to ensure quality O&M&M.  Education and professional training necessary for quality O&M&M are implemented and viable.	Technicians trained on a project to project basis  Limited RE training in vocational schools and limited practical training in university modules Non-existent	Training module available and implemented Advisory services used for training, project preparation and management  Participation of schools and universities in project training	Publication available  M&E report	Training and education institutions do not cooperate/prefer keeping their prerogatives  Training and education institutions do not deem RE training to be important enough to modify curriculum
<b>Outcome 3 A functioning business model is demonstrated for the technical and financial viability of diesel/RE hybrid-based mini-grids</b>	Coastal community project is demonstrated to be financially and technically viable.  Lessons learned from the project are applied to future off-grid projects.	Non-existent  Non-existent	Local populations have adopted project and devised additional activities to use existing infrastructure  Measurement instruments are operational and managed in a collegial manner Additional measurements undertaken for potential additional hybrid-RE sites	M&E report  Equipment management contract/agreement signed  M&E report	Infrastructure inappropriate for projected uses, improper installation  Political support insufficient  Measurement instruments are damaged

**ANNEX B: RESPONSES TO PROJECT REVIEWS** (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF)

MY 4/28/2014

The agency promised to address the following items in the CEO Approval Stage.

1. Issues on gender and indigenous people will be addressed in detail.

Gender issues have been addressed in section 2.10.1. of the PRODOC. Beyond alleviating daily tasks befalling on women, the project will help provide additional revenue to women's cooperatives that are mainly responsible for the transformation and sale of fish produce within the communities. Careful consideration has been given to women's issues and evaluated. In addition, accompanying measures outside of the project have been planned within the scope of UNDP SGP's workplan in Mauritania, these include environmental actions to collect and transform waste, the encouragement of local high-value agricultural production.

The coastal communities covered by the project are mainly composed of Imraguens – a native and indigenous ethnic group. These communities will be targeted to provide them with increased opportunities for development, added value production and increased value chain conservation. These issues are specifically dealt with and estimated within section 2.10.3 of the PRODOC.

2. The cost for the incentive in the output-based aid (OBA) scheme will be clearly quantified.

The Output Based Aid (OBA) mechanism was modified to exclusively focus on design and planning of improved instruments, the measure of available funding and suggestions for broadening the scope of financing sources to increase the available volume of OBA. As Mauritania already has a functioning universal access fund, the priority has been put on better design and planning rather than actual investment. Investment-related funds were transferred to the subsidization of the equipment in component 3.

3. The amount of indirect GHG emission reduction will be calculated.

The amount of indirect GHG emission reduction has been calculated and is covered in section 2.9.1 of the PRODOC.

**ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS**

**A. EXPLAIN IF THE PPG OBJECTIVE HAS BEEN ACHIEVED THROUGH THE PPG ACTIVITIES UNDERTAKEN.**

The PPG objective of formulating detailed Project Document has been achieved. The project formulation was done through consultations involving a range of stakeholders. Consultative activities were taken up through individual interviews with stakeholders and workshop (Problem/solution analysis and Log frame Workshop).

**B. DESCRIBE FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION, IF ANY:**

N/A



**C. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES AND THEIR IMPLEMENTATION STATUS IN THE TABLE BELOW:**

The activities achieved during PPG are shown in the table below:

<i>Project Preparation Activities</i>	<i>Implementation Status</i>	<i>GEF Amount (\$)</i>				<i>Co-financing (\$)</i>
		<i>Amount Approved</i>	<i>Amount Spent to date</i>	<i>Amount Committed</i>	<i>Uncommitted Amount*</i>	
Collection and analysis of baseline data including comparative review of other countries under similar conditions and circumstances	Completed	28,000	28,000			20,000
Review of experiences in Mauritania and other countries of the following: - Application of hybrid mini-grids in rural areas - Business model for operating these mini-grids - Area/community-based energy needs assessment and planning	Completed	15,000	15,000			20,000
Conduct a Logical Framework Analysis (LFA) to define project goal, objectives, outcomes, outputs and activities, including success indicators as well as delineation of responsibilities and coordination mechanisms	Completed	5,000	5,000			10,000
Stakeholder engagement, capacity needs assessment of key local implementing partners and co-financing	Completed	10,000	10,000			10,000
Detailed design of project implementation plan	Completed	10,000	10,000			5,000
Preparation and finalization of the full-sized Project Document	Completed	0	0			5,000
<b>Total</b>		<b>68,000</b>	<b>68,000</b>			<b>70,000</b>

\*Any uncommitted amounts should be returned to the GEF Trust Fund. This is not a physical transfer of money, but achieved through reporting and netting out from disbursement request to Trustee. Please indicate expected date of refund transaction to Trustee. N/A