

GEF-7 Africa Minigrids Program

Part I: Program Information

GEF ID
10804

Program Type
PFD

Type of Trust Fund
GET

CBIT/NGI
CBIT No
NGI No

Program Title
GEF-7 Africa Minigrids Program

Countries
Regional, Benin, Mali, Niger, Sao Tome and Principe, Zambia, Chad, Mauritania

Agency(ies)
UNDP

Other Executing Partner(s)
Rocky Mountain Institute, National Governments (Government Agencies)

Executing Partner Type
Private Sector

GEF Focal Area

Climate Change

Taxonomy

Focal Areas, Climate Change, United Nations Framework Convention on Climate Change, Enabling Activities, Paris Agreement, Climate Change Mitigation, Renewable Energy, Financing, Energy Efficiency, Technology Transfer, Influencing models, Deploy innovative financial instruments, Demonstrate innovative approaches, Convene multi-stakeholder alliances, Transform policy and regulatory environments, Strengthen institutional capacity and decision-making, Stakeholders, Beneficiaries, Civil Society, Community Based Organization, Type of Engagement, Participation, Information Dissemination, Partnership, Consultation, Private Sector, Financial intermediaries and market facilitators, Large corporations, Individuals/Entrepreneurs, SMEs, Capital providers, Communications, Public Campaigns, Education, Behavior change, Awareness Raising, Local Communities, Gender Equality, Gender results areas, Capacity Development, Knowledge Generation and Exchange, Access to benefits and services, Participation and leadership, Gender Mainstreaming, Sex-disaggregated indicators, Gender-sensitive indicators, Women groups, Capacity, Knowledge and Research, Innovation, Knowledge Exchange, Learning, Adaptive management, Theory of change, Indicators to measure change, Knowledge Generation

Rio Markers**Climate Change Mitigation**

Climate Change Mitigation 2

Climate Change Adaptation

Climate Change Adaptation 0

Duration

60 In Months

Agency Fee(\$)

729,986.00

Program Commitment DeadlineSubmission Date

12/15/2022

4/15/2021

Impact Program

IP-Food-Land-Restoration **No**

IP-Sustainable Cities **No**

IP-Sustainable Forest Management Amazon **No**

IP-Sustainable Forest Management Congo **No**

IP-Sustainable Forest Management Drylands **No**

Other Program **Yes**

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Expected Outcomes	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
CCM-1-1	Promote innovation and technology transfer for sustainable energy breakthroughs for decentralized renewable power with energy storage	GET	8,110,966.00	142,962,000.00
Total Program Cost (\$)			8,110,966.00	142,962,000.00

B. Indicative Project description summary

Program Objective

Support African countries to increase energy access by reducing the cost and increasing commercial viability of renewable energy minigrids ('minigrids').

Program Component	Financing Type	Program Outcomes	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
Component 1— Policy and Regulation (National child projects)	Technical Assistance	<p>Outcome 1. Stakeholder ownership in a national minigrid delivery model is advanced, and appropriate policies and regulations are adopted to facilitate investment in low-carbon minigrids.</p> <p><i>National child projects may include a selection of the following outputs:</i></p> <p>Output 1.1: An inclusive national dialogue to identify minigrid delivery models is facilitated</p> <p>Output 1.2: A minigrid regulatory framework, including tariff model, tax regime, and grid expansion risk, is developed in close coordination with the authorities concerned and other development partners</p> <p>Output 1.3: Geospatial, techno-economic modelling of least-cost off-grid renewable electricity technologies (minigrids, grid expansion, solar home systems)</p> <p>Output 1.4: Pre-feasibility studies conducted for selected minigrid sites to enhance sector planning and decision-making on a delivery model for minigrid development</p>	GET	1,644,608.00	14,962,627.00

Output 1.5: Formulation of rural electrification strategy/plan, incorporating transparent targets and supported by multi-tier data

Output 1.6: Assessment of negative impact of competing fossil-fuel and main-grid utility subsidies on competitiveness of minigrids, and recommendations for subsidy reform

Output 1.7: Minigrid DREI techno-economic analyses carried out to propose most cost-effective basket of policy and financial derisking instruments and contribute to AMP Flagship Report on Cost Reduction

Output 1.8: Institutional set-up for rural electrification assessed and supported, and institutional capacity building provided on technical, managerial, and regulatory issues

Output 1.9: Capacity building provided to public officials (regulator, ministries) specifically to design procurement/tender processes that incorporate cost-reduction levers and innovative business models

Output 1.10: Domestication of quality standards for solar minigrid components, and institutional capacity of national standards organizations/bureau strengthened

Output 1.11: Customs procedures and import requirements harmonized, and capacities of public officials to implement and enforce simplified import process strengthened

Output 1.12: Support provided to establish waste management policies and plans to ensure minigrid hardware and batteries are properly handled at end-of-life

Output 1.13: Support provided to improve policies around digital infrastructure for smart minigrids, including improving cellular coverage in rural areas and mobile money

Output 1.14: Public programmes (apprenticeships, certificates, university programs) to develop competitive, skilled labour market in minigrids

Component 2— Business Model Innovation with Private Sector (National child projects)	Investment	Outcome 2. Innovative business models based on cost reduction are operationalized, with strengthened private sector participation in low-carbon minigrid development.	GET	2,477,042.00	77,726,432.00
		<i>National child projects may include a selection of the following outputs:</i>			
		Output 2.1 Pilots developed, including on productive use/innovative appliances and modular hardware/system design, leading to cost-reduction in minigrids			

Component 2— Business Model Innovation with Private Sector (National child projects)	Technical Assistance	Output 2.2 National report on opportunities to boost economic activities through electricity access and productive use	GET	836,408.00	15,026,791.00
		Output 2.3 Capacity of potential tender bidders (private sector developers) strengthened to consider innovative business models and cost-reduction levers			
		Output 2.4 Capacity of winning tender bidders (private sector developers) strengthened to develop and implement innovative business models and cost-reduction levers			
		Output 2.5 Support to upstream suppliers on hardware standardization/modular approaches, including in tendering processes			
		Output 2.6 Support provided to establish and grow a national industry association for private sector developers			

Component 3— Scaled-up Financing (National child projects)	Technical Assistance	Outcome 3. Financial sector actors are ready to invest in a pipeline of low-carbon minigrids and concessional financial mechanisms are in place to incentivize scaled-up investment.	GET	709,152.00	19,629,564.00
		<i>National child projects may include a selection of the following outputs:</i>			
		Output 3.1 Design support, including development of operational guidance, provided for Minigrid Funding Facility (MFF, or equivalent financial mechanism) under rural electrification agencies/funds			
		Output 3.2 Innovative financing solutions for minigrid development are identified and implemented through the MFF (or equivalent) with supporting human and institutional strengthening			
		Output 3.3 General market intelligence study on minigrids prepared and disseminated amongst public officials and finance community			
		Output 3.4 Feasibility study support provided to minigrid developers, creating a pipeline of investible assets			
		Output 3.5 Domestic financial sector capacity-building on business and financing models for minigrids			
		Output 3.6 Capacity building provided to minigrid developers and investors on measuring and reporting on impact indicators, building credibility in impact investment as an asset class			

<p>Component 4— Convening, dissemination, and tracking progress (Regional child project and national child projects)</p>	<p>Technical Assistance</p>	<p><i>Regional child project outcome is the following:</i></p>	<p>GET</p>	<p>1,729,124.00</p>	<p>8,386,577.00</p>
		<p>Outcome 4. Robust data-driven market intelligence on minigrid systems and business models is aggregated and shared across the minigrid sector, increasing consumer and investor confidence and lowering the risk profile and costs of minigrids. Digital solutions are mainstreamed across national child projects to demonstrate cost-reduction opportunities.</p>			
		<p><i>Regional child project outputs are the following:</i></p>			
		<p>Output 4.1: A digital strategy on improving minigrids scalability through the use of specialized digital tools and solutions is developed, applicable to both the regional project and national projects, and including a global digital solutions data-base on use-cases (e.g. costs, value, social impact), in partnership with industry associations.</p>			
		<p>Output 4.2: A framework for data privacy and consumer protection is developed for collecting data from minigrid projects, applied to all AMP minigrid pilots, and disseminated across the minigrid sector</p>			
		<p>Output 4.3: Data from all AMP minigrid pilots and countries is aggregated at a regional level generating insights and regional learning, and a harmonized framework on digital standards and data KPIs for minigrid developers is developed, disseminated and distributed to AMP national projects</p>			

Output 4.4: Artificial Intelligence-based minigrid, geo-spatial site identification and planning tools are adapted to AMP use-cases in collaboration with technology partners, creating new data-informed opportunities for policy-makers and developers to drive efficient minigrid market-development

Output 4.5: Digital advocacy and communication tools, as well as digital content, are developed to enable and facilitate national policy dialogues for AMP national child projects.

National child projects outcome:

Outcome 4. Digitalization and data are mainstreamed, across stakeholders, into local minigrid market development. Increased knowledge, awareness and network opportunities in the minigrid market and among stakeholders, including benefitting from linkages to international good practice.

National child projects may include a selection of the following outputs:

Output 4.1 A Digital Strategy is developed and implemented, including linkages to and following guidance from the regional project

Output 4.2: A Quality Assurance and Monitoring Framework for measuring, reporting and verification of the sustainable development impacts of all minigrids pilots

supported, including GHG emission reductions, is adopted and operationalized based on standardized guidance from the regional project

Output 4.3: Engage with regional project, including, but not limited to, via (i) Communities of Practice and (ii) capturing and sharing lessons learnt

Output 4.4: M&E and Reporting, including (i) Conducting inception workshop and preparing report, (ii) Ongoing M&E, (iii) Mid Term Evaluation and (iv) Terminal Evaluation

	Sub Total (\$)	7,396,334.00	135,731,991.00
Program Management Cost (PMC)			
	GET	714,632.00	7,230,009.00
	Sub Total(\$)	714,632.00	7,230,009.00
	Total Program Cost(\$)	8,110,966.00	142,962,000.00

Please provide justification

Note on self-funded projects: The Chad and Mauritania 'self-financed' national child projects, with UNDP TRAC funding, are represented in the program's finances as 'co-financing'. Chad and Mauritania wished to participate in the program but were facing unavailability of CCM resources. New and additional resources from UNDP TRAC funding have been provided to fund these child project's national activities, to complement the regional child project's activities funded by the GEF CCM set-aside. These 'self-financed' child projects will have access to knowledge tools and technical assistance support provided by the regional child project, and benefit from learning and sharing as part of the regional child project country cohorts. They will also share their perspectives and experiences, which can help scale up minigrid development and increase the program's impact.

Note on Component 4: Component 4 in the Original PFD, approved in the December 2019 work program, was used to list all outputs included under the different components of the Regional Child Project: (a) Component 1- 'Knowledge Tools', (b) Component 2 - 'Tailored technical assistance to national child project implementation', and (c) Component 3 - 'Convening, dissemination, tracking'. Although national child project concepts for 1st Round countries also had Component 4 – 'Convening, dissemination, tracking (knowledge management)' and a set of outputs under Component 4, these outputs were not listed under Component 4 on Table B of the Original PFD. Notwithstanding the latter, the GEF Program Financing and co-financing amounts for Component 4 on Table B of the Original PFD reflected both: (i) the total budget for all regional child project outputs and components (US\$2,858,000) and (ii) the consolidated budget for Component 4 of all national child projects (US\$2,411,662). To follow a consistent approach in this PFD Addendum, the following are the details on how Component 4 is now presented in Table B, above:

- The component's name is left unchanged (Component 4– Convening, dissemination, and tracking progress).
- The component lists the outputs under the regional child project's new digital component (Digital Tools and Solutions for minigrid cost-reduction) and under the 2nd round national child projects' Component 4 (Digital, Knowledge Management and Monitoring and Evaluation).
- The GEF Program Financing amounts for Component 4 in this PFD Addendum reflect: (i) the budget of the incremental changes to all regional child project outputs and components with respect to the Original PFD (US\$500,000) and (ii) the consolidated budget for Component 4 of all new 2nd Round national child projects (US\$1,229,124).
- The co-financing amounts for Component 4 reflect: (i) the total co-financing aligned with the incremental changes to all regional child project outputs and components with respect to the Original PFD (US\$555,000) and (ii) the consolidated co-financing for Component 4 of all new 2nd Round national child projects (US\$7,831,577).
- A departure from the approach used in the Original PFD is that in addition to listing the outcome and outputs of the regional child project under Component 4 in Table B, we have also listed the outputs for national child projects' Component 4 (Digital, Knowledge Management and Monitoring and Evaluation). Hence the list of outputs presented is reflective of the GEF Program Financing and co-financing amounts.

C. Co-Financing for the Program by Source, by Name and by Type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
GEF Agency	UNDP	In-kind	Recurrent expenditures	155,000.00
GEF Agency	UNDP	Grant	Investment mobilized	275,000.00
Private Sector	Microsoft	Grant	Investment mobilized	150,000.00
GEF Agency	(Benin) UNDP	Grant	Investment mobilized	150,000.00
Donor Agency	(Benin) Millennium Challenge Account Benin II	Grant	Investment mobilized	32,000,000.00
Private Sector	(Benin) Private sector involved in MCA-Benin II financing scheme	Loans	Investment mobilized	23,000,000.00
Donor Agency	(Benin) Sustainable Energy for All (SEforAll)	Grant	Investment mobilized	3,000,000.00
GEF Agency	(Chad) UNDP	Grant	Investment mobilized	600,000.00
GEF Agency	(Mali) UNDP	Grant	Investment mobilized	150,000.00
Donor Agency	(Mali) SIDA	Grant	Investment mobilized	2,500,000.00
Donor Agency	European Union	Grant	Investment mobilized	2,000,000.00

Donor Agency	Green Climate Fund	Loans	Investment mobilized	10,000,000.00
GEF Agency	African Development Bank's Sustainable Energy Fund for Africa (SEFA)	Grant	Investment mobilized	995,000.00
Donor Agency	African Development Bank	Loans	Investment mobilized	5,000,000.00
Donor Agency	SIDA	Grant	Investment mobilized	2,500,000.00
Private Sector	Private sector related businesses (e.g hotels, hostels, small industry)	Equity	Investment mobilized	560,000.00
Donor Agency	African Development Bank _project PAT- investment for Micro Hydro Power Plant (MHPP) in Principe	Grant	Investment mobilized	3,452,000.00
Private Sector	Elétricas de Portugal Renováveis_ Project gathering financing_solar plant In Principe	Equity	Investment mobilized	1,785,000.00
Private Sector	Hotels in Principe Island_ Project gathering financing_solar plant In Principe	Equity	Investment mobilized	120,000.00
Donor Agency	(Zambia) European Union (IAEREP off-grid)	Grant	Investment mobilized	2,800,000.00
Recipient Country Government	(Zambia) Green Climate Fund	Loans	Investment mobilized	50,000,000.00
GEF Agency	(Zambia) UNDP	Grant	Investment mobilized	150,000.00
Donor Agency	(Benin) GIZ	Grant	Investment mobilized	120,000.00
GEF Agency	(Mauritania) UNDP	Grant	Investment mobilized	1,500,000.00
Total Program Cost(\$)				142,962,000.00

Describe how any "Investment Mobilized" was identified

Notes: The Chad and Mauritania 'self-financed' national child projects, with UNDP TRAC funding, are represented in the program's finances as 'co-financing'. Chad and Mauritania wished to participate in the program but were facing unavailability of CCM resources. New and additional resources from UNDP have been provided to fund these child project's national activities, to complement the regional child project's activities funded by the GEF CCM set-aside. Regional (investment mobilized) At the regional level, investments mobilized were identified through stakeholder engagement with donor partners and foundations active in the minigrad sector in Africa and through partnership outreach activities conducted by UNDP with potential partners with whom UNDP seeks to collaborate broadly on data and digital solutions as it implements its Digital Strategy, launched in 2019, and its IT Strategy 2020-24. National (investment mobilized) At the national child project level, the investments mobilized were primarily identified through ongoing discussions with national counterparts facilitated by UNDP Country Offices in child project countries. Specific details on how investment mobilized was identified for each national child project are provided in the Concepts. All of the investments will be confirmed during the PPG phase. At this stage, co-financing sources and amounts are indicative.

D. Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNDP	GET	Regional	Climate Change	CC Global/Regional Set-Aside	525,000	47,250	572,250.00
UNDP	GET	Benin	Climate Change	CC STAR Allocation	1,326,147	119,353	1,445,500.00
UNDP	GET	Mali	Climate Change	CC STAR Allocation	1,326,147	119,353	1,445,500.00
UNDP	GET	Niger	Climate Change	CC STAR Allocation	1,601,376	144,124	1,745,500.00
UNDP	GET	Sao Tome and Principe	Climate Change	CC STAR Allocation	1,968,349	177,151	2,145,500.00
UNDP	GET	Zambia	Climate Change	CC STAR Allocation	1,363,947	122,755	1,486,702.00
Total GEF Resources(\$)					8,110,966.00	729,986.00	8,840,952.00

Core Indicators

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	78758	0	0	0
Expected metric tons of CO ₂ e (indirect)	6114987	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)				
Expected metric tons of CO ₂ e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	78,758			
Expected metric tons of CO ₂ e (indirect)	6,114,987			
Anticipated start year of accounting	2023			
Duration of accounting	20			

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)
Solar Photovoltaic	1.59			



Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	40,157			
Male	39,273			
Total	79430	0	0	0

Part II. Programmatic Justification

1a. Program Description

1.a Program Description.

Addendum Context

This addendum updates the information provided in the Africa Minigrids Program Framework Document (PFD) approved by the GEF Council in December 2019 (Original PFD or Approved PFD). The first phase of the Africa Minigrids Program (AMP) included the submission of 11 national child projects and a regional child project.

This addendum or supplemental PFD (PFD Addendum) is requesting approval of the additional second round (2nd round) of 7 National Child Projects that have come forward and expressed their interest to join the Africa Minigrids Program after it was first approved in December 2019. Of these 2nd round countries, 5 will be joining the program with their available CCM STAR resources and 2 will be 'self-funded' projects joining the program with available UNDP funding.

Additional resources are also being requested for the AMP Regional Child Project to add a new component focused on mainstreaming the use of digital tools and solutions across national child projects and other national stakeholders – with the objective of knowledge-building on the potential for use of digital technologies to support minigrids planning, development and operation.

The PFD Addendum reflects the increase in GEF-7 resources to be programmed and, reports on incremental information (financial and core indicator targets) in the context of the new participating countries.

The design, national child projects' basic component structure and the objective in this addendum remains the same as that of the approved Africa Minigrids Program PFD. The objective is to "Support African countries to increase energy access by reducing the cost and increasing commercial viability of renewable energy minigrids ('minigrids')." However, in the development of the project preparation phase for the 1st round of AMP child projects, UNDP has made a few minor adjustments to the description of outcomes and the list of outputs under the national child project's components. These changes are presented, explained and justified below.

Summary of Changes between the Components, Outcomes and Outputs in the original PFD and the PFD Addendum

The following table summarizes the changes made to the overall set of components, outcomes, and outputs considered and listed in Table B above. These changes are the result of having developed during the PPG Phase for the 1st round of child projects, an updated 'AMP Harmonized Results Framework' for national child projects. Each national child project then selects outputs, outcomes, and relevant outcome indicators to include, with some adaptation, in their respective, tailored results frameworks. The 'AMP Harmonized Results Framework' for national child projects builds from the original PFD outcomes and outputs, but also reflects the latest thinking on the program and understanding of country contexts. As such, some changes have been made to the wording of some components, outcomes and outputs, and a few new outputs have been added, described below.

Component/Outputs Original PFD	Component/Outputs PFD Addendum	Change	Justification
Outcome 1. Appropriate policies and regulations are in place that address policy, institutional, regulatory and technical barriers to facilitate investment in renewable energy minigrids ("minigrids")	Outcome 1. Stakeholder ownership in a national minigrid delivery model is advanced, and appropriate policies and regulations are adopted to facilitate investment in low-carbon minigrids.	Outcome wording adjusted	Stakeholder ownership in a national minigrid delivery model is expected as a result of project activities. Namely, project activities that support an inclusive and sustained national dialogue aimed at deciding on the most appropriate delivery model for a country to develop its minigrid sector.
Not included	Output 1.1: An inclusive national dialogue to identify minigrid delivery models is facilitated	New output created	This is one of the key changes made to the menu of possible outputs and activities for national child projects. Support for sustained and inclusive national dialogues will be provided in order to build a national consensus on minigrid delivery models on the basis of which large-scale deployment of minigrids can be accelerated and have a sustainable impact. The decision-making process governments undertake to select the most suitable minigrid delivery model(s) and define the policy and regulatory frameworks is complex and should ideally be done in the form of a national debate involving all relevant stakeholders to varying degrees (different ministries such as energy, finance, health and environment, local authorities, the public, the media, the beneficiary communities, utilities, the private sector, and other key stakeholders).
	Output 1.4: Pre-feasibility studies conducted for selected minigrids		The need for minigrid site-specific studies and analyses, as opposed to sector-wide national or regional

Not included	Identified sites to enhance sector planning and decision-making on a delivery model for minigrid development	New output created	Regional studies which fall within the scope of Output 1.3 (as per Original PFD numbering) was identified during the PPG Phase of 1 st round AMP national child projects.
Output 1.5 Minigrid DREI techno-economic analyses carried out to propose most cost-effective basket of policy and financial derisking instruments	Output 1.7: Minigrid DREI techno-economic analyses carried out to propose most cost-effective basket of policy and financial derisking instruments and contribute to AMP Flagship Report on Cost Reduction	Output wording adjusted	This output has been adjusted to better reflect the linkages between this output and activities for a proposed flagship report under Component 1 (Knowledge Tools) of the AMP Regional Child Project. These activities have been identified in the PPG Phase of the Regional Child Project.
Component 2— Business Model Innovation and Private Sector	Component 2— Business Model Innovation with Private Sector	Slight wording adjustment	The change was made to better signal the importance of private sector engagement for business model innovation. Usually, the delivery model determined for a country will be a blend of government and private sector engagement. The exact mix will be locally dependent but some degree of private sector participation is expected to develop minigrid pilots under Component 2.
Outcome 2. Innovative business models based on cost reduction operationalized to support and strengthen private participation in minigrid development	Outcome 2. Innovative business models based on cost reduction are operationalized, with strengthened private sector participation in low-carbon minigrid development	Slight wording adjustment	The change was made to emphasize the importance of engaging private sector participation to operationalize innovative business models.
Component 3—Innovative Financing	Component 3—Scaled-up Financing	Wording adjustment	The change was made to emphasize one key aspect of this component which is for the financial sector and financing solutions to support <i>scale-up</i> investment in minigrid development.
Outcome 3. An innovative financing mechanism and accompanying financial instruments in place to incentivize investments in the development of minigrids	Outcome 3. Financial sector actors are ready to invest in a pipeline of low-carbon minigrids and concessional financial mechanisms are in place to incentivize scaled-up investment.	Wording adjustment	Similarly to the renaming of Component 3, this outcome has been adjusted to better reflect the importance of financial sector actors and financial mechanisms to support scale-up of minigrids.

The following table summarizes the changes made specifically to the set of components, outcomes, and outputs listed under Component 4 in Table B. Basically, these are changes made to component 4 (component name, outcomes and outputs) as included in the 2nd round national child project concepts, with respect to 1st round national child project concepts.

Component/Outputs Original National Project Concepts attached to PFD	Component/Outputs PFD Addendum	Change	Justification
Component 4—Convening, dissemination, tracking (knowledge management)	Component 4—Digital, Knowledge Management and Monitoring and Evaluation	Wording has been adjusted	The change in the name of Component 4 is related to having included specific Monitoring and Evaluation (M&E) outputs which were not originally considered under national child projects Component 4, and reflecting the relevance of digitalization as a cross-cutting theme for national child projects.
Outcome 4. Increased awareness and network opportunities in the minigrid market and among stakeholders, and lessons learned for scaling up rural electrification using solar PV-battery minigrids	Outcome 4. Digitalization and data are mainstreamed, across stakeholders, into local minigrid market development. Increased knowledge, awareness and network opportunities in the minigrid market and among stakeholders, including benefitting from linkages to international good practice.	Outcome description has been updated	The change has been made to better reflect the strategic importance of digitalization for minigrid cost-reduction and market development with cross-cutting relevance across policies and regulations, business model and scaled-up finance alike.
	Output 4.1 A Digital Strategy is developed and implemented, including linkages to and following guidance from the regional project	New output created	The change was made to establish a clear link via an output between the national child projects and the regional child project. At the same time, this output was created to reflect the importance of each national child project developing, with support from the regional project, a strategy to harness the opportunities around digitalization in the minigrids sector.
	Output 4.2: A Quality Assurance		The change was made to establish a clear link v

<p>4.4 A Quality Assurance and Monitoring Framework for measuring, reporting and verification of the sustainable development impacts of minigrids, including GHG emission reductions is developed and operationalized</p>	<p>and Monitoring Framework for measuring, reporting and verification of the sustainable development impacts of all minigrids pilots supported, including GHG emission reductions, is adopted and operationalized based on standardized guidance from the regional project</p>	<p>Wording has been adjusted</p>	<p>is an output between the national child projects and the regional child project. The latter will provide support for standardizing the Quality Assurance and Monitoring Framework (QAMF) that national 'child' project pilots will use to report back on relevant performance indicators – providing visibility for program-wide AMP results and case studies and contributing to close knowledge gaps in the sector.</p>
	<p>Output 4.3: Engage with regional project, including, but not limited to, via (i) Communities of Practice and (ii) capturing and sharing lessons learnt</p>	<p>New output created</p>	<p>The change was made to establish a clear link via an output between the national child projects and the regional child project.</p>
	<p>Output 4.4: M&E and Reporting, including (i) Conducting inception workshop and preparing report, (ii) Ongoing M&E, (iii) Mid Term Evaluation and (iv) Terminal Evaluation</p>	<p>New output created</p>	<p>This change was made following UNDP guidance to reflect M&E activities in the Results Framework</p>

1. New Countries and National Child Projects

7 new country concept notes were selected to join the Africa Minigrids Program based on the same set of criteria used in the earlier selection. The following countries have developed concept notes that are attached to this submission.

Table 1: 2nd Round countries and national child projects

Country/Title	Project Details
Benin national child project under the Africa Minigrids Program	GEF Grant: \$1,326,147 Co-finance: \$58,270,000
Chad national child project under the Africa Minigrids Program	GEF Grant: [self-funded] Co-finance: \$600,000
Mali national child project under the Africa Minigrids Program	GEF Grant: \$1,326,147 Co-finance: \$14,650,000
Mauritania national child project under the Africa Minigrids Program	GEF Grant: [self-funded] Co-finance: \$1,500,000
Niger national child project under the Africa Minigrids Program	GEF Grant: 1,601,376 Co-finance: \$8,495,000
São Tomé and Príncipe national child project under the Africa Minigrids Program	GEF Grant: \$1,968,349 Co-finance: \$5,917,000
Zambia national child project under the Africa Minigrids Program.	GEF Grant: \$1,363,947 Co-finance: \$52,950,000

Each national child project aims to support access to clean energy by increasing the financial viability, and to promote scaled-up commercial investment, in low-carbon minigrids with a focus on cost-reduction levers and innovative business models.

National Child Project Budget Allocations for Program Activities:

With the aim of contributing to collective ownership of the program, it is anticipated that each of the new 7 national child projects will set aside between USD 50,000 to USD 100,000 for specific national-level activities which can contribute to the program and link up with the regional child project's activities. To be clear this will not involve any transfer to the regional child project, but will simply cover national child project costs. For example, this national child project budget can cover costs related to: (i) M&E to feed into program framework indicators, (ii) travel to participate in the regional child project's workshops/events; (iii) sharing of research and lessons learned to the regional child project; and (iv), contributions towards the regional child projects knowledge products.

The regional child project will enable the provision of regional support to the 7 new national child projects mentioned above together with the 11 (eleven) national child projects already approved.

2. New Component for the Regional Child Project

As part of the regional child project, an additional component will be added that will focus on mainstreaming the use of digital tools and solutions across national child projects and other national stakeholders. This component will knowledge-build on the potential for use of digital technologies, including leveraging minigrid projects' data, to improve the commercial viability of renewable energy minigrids. This new component of the regional child project will enable the provision of regional support to the 7 (seven) new national child projects mentioned above together with the 11 (eleven) national child projects already approved, in addition to other national stakeholders that make up the minigrids sector more broadly.

3. Revised program targets

The proposed new national child projects are expected to increase the Program's core indicator targets for (i) Greenhouse Gas Emissions Mitigated by 78,758 tCO₂e (direct) and by 6,114,987 tCO₂e (indirect/ top-down) at the national child projects and regional child project levels, and (ii) positively impact an additional 79,430 direct beneficiaries of whom it's estimated that 40,157 are women and 39,273 are men.

Table 2 below provides an overview of the Direct and Indirect emission reductions expected to occur as a result of 2nd round national child projects. The methodology is the same used in the original approved PFD.

Table 2: Overview of GHG Emission Reductions Expected from 2nd Round national child projects

Countries	Emissions mitigation (ktons of CO ₂ e)		
	Direct	Indirect	Total
Regional	-	611.50	611.50
Benin	13.86	178.40	192.26
Chad	2.79	1,622.55	1,625.33
Mali	7.39	625.70	633.09
Mauritania	10.97	166.60	177.57
Niger	4.99	2,184.05	2,189.04
São Tomé and Príncipe	27.12	9.01	36.13
Zambia	11.65	717.18	728.82
Total	78.76	6,114.99	6,193.75

The GHG emissions reductions under GEF CORE indicator 6 have been calculated using the GEF methodology consistent with the methodology used and described in the Original PFD.

The emissions calculations are attributed to each national child project in the following categories: 1) direct emission mitigation from pilot investments (corresponding typically to output 2.1 in the PFD); and 2) indirect emission mitigation, from creating a general enabled investment environment, and subsequent investment flows. For ease of reference the methodology used is described below:

- **Direct emission mitigation** from country projects are the cumulative CO2 emissions saved from the baseline, which is assumed to be standalone diesel generators in all countries (i.e. an emission factor of 0.786 tCO2/MWh[1]). The size of the pilot investments are taken from national child project concept notes. The number of minigrids is calculated assuming the use of GEF investments as a portion of grant financing towards minigrid capital expenditures. The direct emissions reduction assumes a 20-year technology lifetime.
- **Indirect emission mitigation** is calculated using a top-down approach, on the basis that the projects contribute to an enabled environment which subsequently attracts minigrid investment to close the electricity access gap. The methodology further assumes that **minigrids will electrify either 33%, 20% or 15% (depending on country context) of the current unelectrified population** in the particular country, with a 20 year technology lifetime for minigrids. The selection of these three tiers is based on several criteria, including (1) current levels of grid coverage; (2) recent and ongoing initiatives for grid extension; (3) geographical size of countries; and (4) spread of off-grid communities in terms of population density. Thereafter the methodology applies a **causality factor varying between 20% and 80%**, chosen based on the state of the minigrid market development and ongoing baseline initiatives in each country.

As in the approved PFD, 10% of the indirect GHG impacts calculated at the national child project level are allocated to the regional child project, in line with the apportioning of the overall program budget. This reflects the benefits of national child projects accessing the regional child project's support, including the addition of a new component to the regional child project, focused on mainstreaming the use of digital tools and data across AMP national projects and the minigrid sector, which is expected to contribute and enhance the enabling conditions required for minigrids development across AMP countries. To avoid double counting, this 10% is removed from the indirect totals for each of the national child projects.

[1] UNDP (2019) Project Document for UNDP-GEF project entitled "Promoting a better access to modern energy services through sustainable mini-grids and hybrid technologies in Djibouti" (PIMS 6202)

Table 3 below provides an overview of the number of direct beneficiaries expected from adding 2nd round national projects to the AMP.

Table 3: Overview of direct beneficiaries from 2nd Round national child projects[1] [2]

Countries	Direct beneficiaries (Number of people)		
	Women	Men	Total
Benin	7,095	6,882	13,977
Chad	1,419	1,391	2,810.00
Mali	3,823	3,631	7,454.00
Mauritania	5,734	5,333	11,067.00
Niger	2,540	2,489	5,029.00
São Tomé and Príncipe	13,674	13,674	27,348.00
Zambia	5,873	5,873	11,745.00
Total	40,157	39,273	79,430

[1] The African continent exhibits a close to 1:1 male to female ratio. For each country in the list, the most current male to female ratio is used.

[2] Rounding beneficiaries to the unit may account for small total differences.

As shown in Table 4, with the additional GHG ER from 2nd round national child projects, the program's Direct GHG ER are expected to increase from 321,495 tCO₂eq to 400,253 tCO₂eq; the program's indirect (top-down) GHG ER are expected to increase from 21,796,122 tCO₂eq to 27,911,109 tCO₂eq.

Table 4: Cumulative AMP GHG ER from 1st and 2nd round countries

Round	Emissions mitigation (metric tons of CO ₂ e)		
	Direct	Indirect	Total
1 st Round (December 2019)	321,495	21,796,122	22,117,617
2 nd Round (June 2021)	78,758	6,114,987	6,193,745
Total AMP	400,253	27,911,109	28,311,362

As shown in Table 5 below, with the additional direct beneficiaries from 2nd round national child projects, the program's total direct beneficiaries are expected to increase from 736,050 people to 815,479 people, of whom 407,297 are estimated to be men and 408,182 women.

Table 5: Cumulative AMP Direct Beneficiaries from 1st and 2nd round countries

Round	Direct beneficiaries (number of people)		
	Men	Women	Total
1 st Round (December 2019)	368,025	368,025	736,050
2 nd Round (June 2021)	39,272	40,157	79,429
Total AMP	407,297	408,182	815,479

In addition to GHG emission reductions, it is estimated that a total of 1.59 MW in direct installed renewable energy capacity will be established as a result of the new national child projects. Table 6 shows the additional RE capacity installed by country. This will bring the program's cumulative increase in RE capacity from 6.49 MW to 8.07 MW as shown in Table 7.

Table 6: Overview of increase in RE Capacity from 2nd Round national child projects

Countries	Increase in RE Capacity Installed (MW)
Benin	0.28
Chad	0.06
Mali	0.15
Mauritania	0.22
Niger	0.10
São Tomé and Príncipe	0.55
Zambia	0.23
Total	1.59

When taking into account indirect impacts as a result of the enabled environment that the program will contribute to, it is estimated that a total of nearly 298 MW of installed renewable energy capacity will be established in 7 new AMP countries during a 20-year influence period following program completion.

Table 7: Cumulative AMP Increase in RE Capacity Installed (MW) from 1st and 2nd round countries

Round	Increased RE Capacity Installed (MW)		
	Direct	Indirect	Total
1 st Round (December 2019)	6.49	1,175.50	1,181.98
2 nd Round (June 2021)	1.59	298.00	299.59
Total AMP	8.07	1,473.50	1,481.57

Further, the program will contribute to significant energy cost-reductions as a result of the displacement of diesel and petrol generators by the child project countries through the increased utilization of renewables and storage. Therefore, the program is also expected to improve energy security within the child project countries, since the share of local energy resources used in the energy sector will grow and dependency on imported fuels will decrease.

4. Revised GEF-7 financing and co-financing

This supplemental PFD is requesting additional and incremental GEF-7 resources estimated at US\$ 8,840,953 (GEF grant amount: US\$ 8,110,966 and Agency fee: US\$ 729,987). This brings the total GEF financing for the overall Africa Minigrids Program, including the 1st Round of national child projects, the approved regional child project, the new 2nd Round national child projects and the new Component for the regional child project financing, to an estimated: US\$ 35,257,439 (GEF grant amount: US\$ 32,346,274 and Agency fee: US\$ 2,911,165).

Table 8: Cumulative GEF Financing from 1st and 2nd round of child projects

Round	(in \$)		
	Program Amount (a)	Agency Fee	Total
		(b)	c=a+b
1 st Round (December 2019)	24,235,308	2,181,178	26,416,486
2 nd Round (June 2021)	8,110,966	729,987	8,840,953
Total AMP	32,346,274	2,911,165	35,257,439

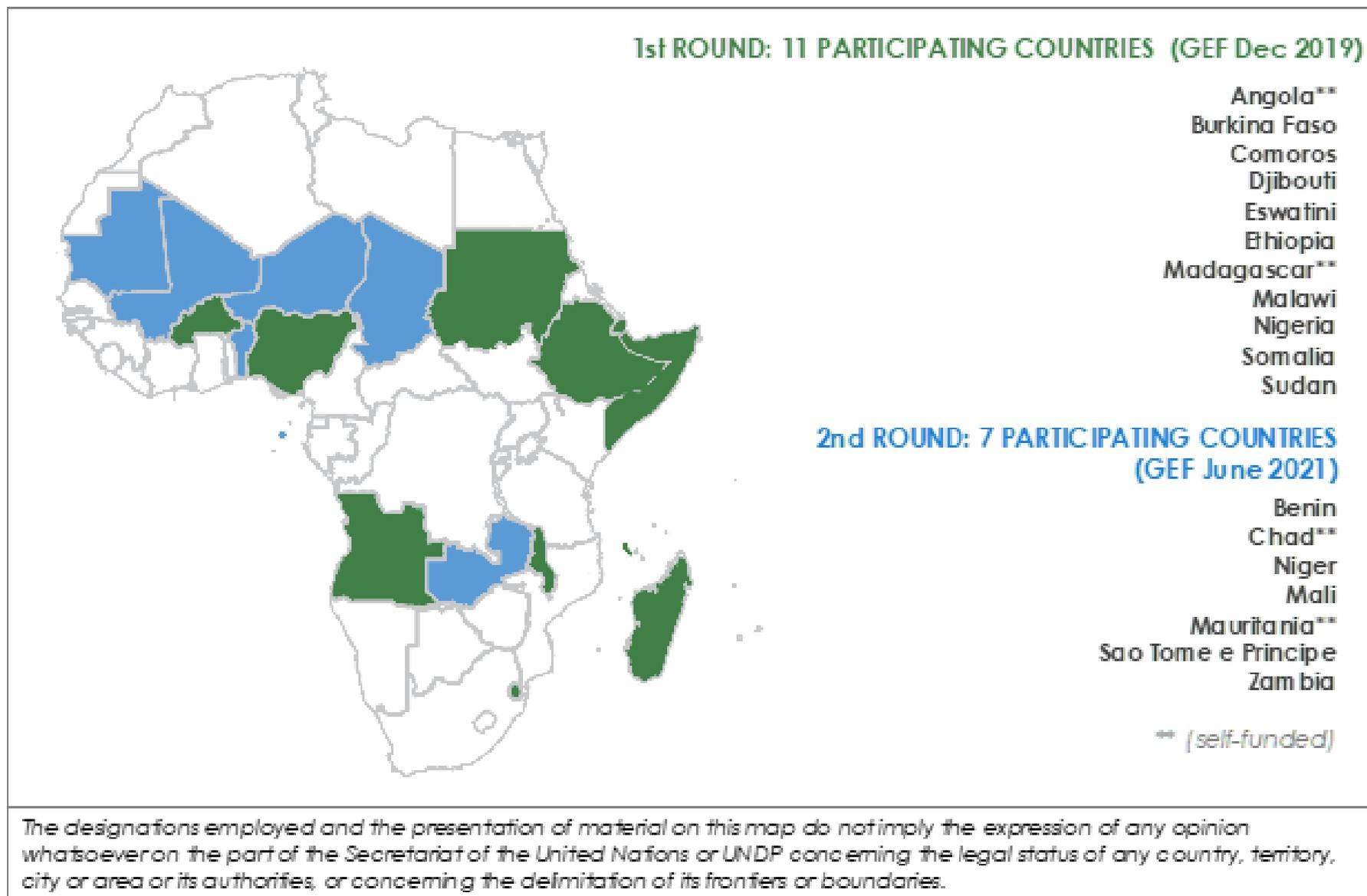
Additional co-financing resources in support of the AMP objectives proposed to be mobilized are estimated at US\$ 142,962,000. Cumulatively, the total co-financing leveraged for the Africa Minigrids Program, including the potential new resources, is estimated at: US\$ 487,272,000.

Table 9: Cumulative Co-Financing from 1st and 2nd round of child projects

Round	Co-financing Amount		
	Regional child project	National child projects	Total
1 st Round (December 2019)	54,730,000	289,580,000	344,310,000
2 nd Round (June 2021)	580,000	142,382,000	142,962,000
Total AMP	55,310,000	431,962,000	487,272,000

1b. Program Map and Coordinates

Please provide geo-referenced information and map where the program interventions will take place.



2. Stakeholders

Select the stakeholders that have participated in consultations during the program identification phase:

Civil Society Organizations Yes

Indigenous Peoples and Local Communities

Private Sector Entities Yes

If none, please explain why:

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the program preparation, and their respective roles and means of engagement

The stakeholders groups are consistent with the original PFD. For this second phase, we are adding the following relevant Stakeholders to the Africa Minigrids Program with the following roles:

Name of Stakeholder	Stakeholder category and role in the project
Microsoft	A potential partnership is being explored between UN DP and Microsoft to develop Artificial Intelligence tools for off-grid energy access including work on machine learning algorithms and tools for minigrid development. This is relevant for the new component being added to the regional child project as one of the outputs under this component would be developed in partnership with and with co-financing from Microsoft .

Table 10 below, provides a summary of the key stakeholders with whom UNDP has consulted for each of the new 2nd round countries. The way in which stakeholders, including civil society and indigenous peoples, will be engaged in the program preparation phase, and their respective roles and means of engagement, is consistent with that described in the approved PFD for the 1st round national child projects.

Table 10: Stakeholder Engagement

Stakeholder		Contributions
Chad	Ministry of Energy	UNDP CO engaged with the Ministry of Energy
Benin	Ministry of Energy, General Directorate for Energy Resources (<i>Direction Générale des Ressources Én</i>	The DGRE took part in discussions with UNDP CO for concept note development.

	<i>ergétiques)</i>	
Mali	Renewable Energy Agency - <i>Agence des Énergies Renouvelables du Mali</i> (AER-Mali)	Several rounds of meetings were organised with the AER-Mali to define the approach of the Concept note. The AER is responsible for the development of pilots for promising technologies, including off-grid, PV-based systems. It is a close partner to Mali's Agency for the Development of Domestic Energy and Rural Electrification (AMADER) (Mali), which is also to be involved in the project given its rural electrification mandate and capacities.
Mauritania	Ministry of Petroleum, Energy and Mines	UNDP CO engaged with the Minister of Petroleum, Energy and Mines
Niger	Ministry of Energy and Petroleum	UNDP CO engaged with the Ministry of Energy and Petroleum
São Tomé and Príncipe	MOPIRNA – Ministry of Public Works, Natural Resources and Environment	UNDP CO engaged with the Ministry of Public Works, Natural Resources and Environment
Zambia	The Rural Electrification Authority (REA)	Zambia's Rural Electrification Authority prepared detailed consultation documents which were discussed during a half-day workshop with UNDP to inform the concept note.
Development Partners	European Union	UNDP consulted with the European Union on Zambia-specific opportunities
	GIZ	UNDP consulted with GIZ in Mali and in Benin to explore synergies
	Millennium Challenge Corporation/Account (Benin II)	UNDP consulted with MCC/MCA Benin II
	UNDP Country Offices in	The UNDP Country Office (CO) has been the liaison for the core technical team to engage with government counterparts in respective countries, facilitating securing Letters of Endorsement from GEF OFP and providing technical input upon requests.

UNDP Country Offices	Benin, Chad, Mali, Mauritania, Niger, São Tomé and Príncipe, Zambia.	COs will be the implementation agency for each national child project, with support from the regional child project, and will work in close cooperation and consultation with government to develop detailed project documents for national child projects, and then to monitor project delivery.
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3. Gender Equality and Women's Empowerment

Are gender dimensions relevant to the success of program? Yes

If yes, please provide indicative information on these dimensions and how these will be addressed in the program. If no, please explain why

Consistent with the narrative description of the approved PFD.

In addition, please also indicate whether the program the program will include gender sensitive indicators in its result framework

Yes

4. Private sector engagement

Will there be private sector engagement in the program?

Yes

Please briefly explain the rationale behind your answer.

Consistent with the narrative description of the approved PFD.

5. Risks to Achieving Project Objectives

Indicate risks, including climate change, potential social and environmental risks that might prevent the Program objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Program design (table format acceptable)

Consistent with the narrative description of the approved PFD.

6. Coordination

Outline the institutional structure of the program including monitoring and evaluation coordination at the program level. Describe possible coordination with other relevant GEF-financed programs and other initiatives.

Consistent with the narrative description of the approved PFD.

7. Consistency with National Priorities

Yes

Is the Program consistent with the National strategies and plans or reports and assessments under relevant conventions?

The Program is supportive of the objectives of the UNFCCC, and with the commitments that all participating countries have made for national GHG reductions. Most participating countries have submitted at least their Second National Communication (SNC) to the UNFCCC, and have made significant pledges to reduce GHG emissions in their Nationally Determined Contributions (NDC). Specific information on consistency with national priorities are presented in the individual National Child Projects concepts.

Most participating countries have identified the energy sector, including off-grid electrification, as one of their key priorities for achieving their emissions reduction targets set in their NDCs. Energy-related commitments in NDCs are presented in Table 11 below. Selected mitigation actions are those that are most relevant to the Program.

Table 11: Country commitments to energy sector emission reductions in NDCs

Country	Mitigation Commitments in NDC
Benin	In the Business as Usual (BAU) scenario, Benin looks forward to reducing the overall cumulative greenhouse gas emissions (without forestry sector) by approximately 49.49 Mt CO ₂ eq, that is a reduction of 16.17% over 2021 to 2030 period. The share of the national efforts is up to 3.63% and that of conditional contribution is 12.55%. In the BAU scenario the implementation of these measures would contribute to reduce the cumulative greenhouse gas emissions in the energy sector by 23.35 Mt CO ₂ eq over 2021 to 2030 period, that is 11.51% including 9.53% of conditional contribution and 1.98% of unconditional contribution.
Chad	Chad has energy mitigation ambitions in its NDC and lists specific measures such as "Production of solar energy increased to 200 GWh/year", with a conditional reduction in the Energy sector of 1,840 ktCO ₂ e against the 2030 reference scenario.
Mali	Mali commits to an average reduction in GHG emissions by 27% by 2030, compared to a Business-as-Usual (BAU) scenario. There is a 31% target for the energy sector. The conditional costs of mitigation measures are estimated at USD 34.68 billion.
Mauritania	Mauritania's first NDC includes ambitious targets in the Energy sector, with specific attention to electricity generation.
Niger	Niger lists in its first NDC an unconditional reduction of 2.5% (BaU 2020) and 3.5% (2030) and a conditional reduction of 25% (BaU 2020) and 34.6% (2030, or a reduction of 33,400 GgCO ₂ e), with a strong energy sector component, revolving around access to cleaner energy ("improvement of the rate of access to electricity" to "exceed 10% in 2010. 60% in 2030. of which 47%

	to 100% is in the urban zone and 0.4% to 30% in 2030 is in the rural zone”).
São Tomé and Príncipe	<p>While STP’s NDC does not comprise energy sector-specific targets, it posits that the implementation of four (4) measures [I. Isolated Mini Power plant (1 MW); II. Hydro Power plant connected to the main network (9 MW); III. Photovoltaic solar panels (12 MW); and III- Mini-hydro Power plant connected to the main grid (4 MW)], would mean an introduction of about 47% renewable energy in the national electricity system compared to the projected BAU electricity production, of which 34% is hydro and 13% solar (PV).</p> <p>This would contribute to the overall goal of the country to contribute to the reduction of Greenhouse Gases by about 57 ktCO₂eq, which approximately corresponds to a 24% national emission reduction by 2030 related to 2005 (conditional)</p>
Zambia	<p>Major mitigation themes in Energy include greater energy efficiency of both generation and consumption; 4) increased generation of and increased use of renewable energy. The investments Zambia are making in lowcarbon and carbon-neutral energy technologies are expected to reduce the energy intensity of our economic development, the carbon intensity of energy production, GHG emissions, and the long-term costs of mitigation.</p> <p>Zambia’s NDC was submitted with a conditional pledge of reducing Greenhouse Gas (GHG) emissions by 25% (20,000 Gg CO₂ eq.) by 2030 against a base year of 2010 under the Business As Usual (BAU) scenario with limited international support or by 47% (38,000 Gg CO₂ eq.) with substantial international support.</p>

Source: NDC Registry; <https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx>

Table 12 - Additional information on alignment of project with national energy priorities

Country	Additional Information on Alignment with National Priorities <i>Excerpts from national child project concept notes</i>
Benin	Benin has set a very ambitious target to achieve urban and rural electrification rates of 95% and 65% and a 24.6% renewable energy share in the energy mix by 2025. The off-grid portion of this target is covered by Benin’s Off-Grid Electrification Master Plan, or PDEHR (2018), which identified the most appropriate sites for minigrids.
Chad	In September 2020, the president of Chad announced an “emergency plan for electricity access” in 2021-2023 with the objective to tap into all sources of private and public funds available to address the critical lack of access to electricity in the country, including by promoting renewable energies. While initial orientations indicate a strong focus on national grid extension a

	<p>nd prioritization of the main urban centers, it is expected that the AMP child project will contribute to support the government to assess the opportunity for including minigrids as an integral part of this plan for the electrification of rural areas.</p>
Mali	<p>The country has developed a Strategic Framework for Economic Recovery and Sustainable Development 2019-2023 and a National Renewable Energy Action Plan (NREAP) to increase the share of renewable energy in energy production and promote rural electrification through renewable energy, among others. The objective by 2030 is to have 66.64% of the rural population served by off-grid systems (minigrids and autonomous systems) of renewable energy-based electricity services.</p>
Mauritania	<p>The power sector's policies and regulatory framework are out of date but currently being revised. Notably, a new electricity code integrating renewable energy, revising the tariff system and aligning the code with the new 2017 Public-Private Partnership Law has been developed with support from the ongoing UNDP/GEF project on hybrid minigrids, and is in the process of being approved by the government.</p>
Niger	<p>In 2018, the government adopted a National Electrification Access Strategy (SNAE) and a Master Plan for Access to Electricity. It serves as a roadmap for least-cost technologies to be used for electrifying each locality. The strategy has outlined the potential for grid expansion to give access to 56% of the population, while 16% (a population of 6.4 million) would have access through minigrids and the remaining 8% through standalone or pico-PV solar systems.</p>
São Tomé and Príncipe	<p>In line with the recently approved Least-Cost Power Development Plan and given its abundant renewable energy (RE) resources, Sao Tome and Principe is engaging in the transition towards green energy, via solar PV and mini and micro-hydro.</p>
Zambia	<p>The country's Rural Electrification Authority (REA) employs an even more conservative estimate of rural electricity access (8.4%, as per ZAMSTATS 2018) and has set an ambitious target to "increase the access to electricity in rural areas to 51% by the year 2030".</p> <p>Thus far, the Government of Zambia has made initial progress towards this objective through both grid extension and off-grid electrification, deploying wind energy-based generation for small applications; mini hydro power; and solar power.</p>

8. Knowledge Management

Outline the knowledge management approach for the Program, including, if any, plans for the Program to learn from other relevant Programs and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

The knowledge management approach is consistent with the narrative description of the approved PFD, and will be strengthened through the addition of a new component for the regional child project focused on data and digital solutions for minigrids planning, development and operations. This component fits into and benefits from the program's multi-pronged approach to knowledge management, which seeks to collate lessons across the program and from working with external partners, produce and disseminate knowledge management products through formal (e.g. Program website) and informal (e.g. at international events) channels, promote collaboration among national child project teams, and uptake and replication of best practices across the AMP portfolio.

9. Child Program Selection Criteria

Outline the criteria used or to be used for child program selection and the contribution of each child program to program impact.

Consistent with the narrative description of the approved PFD.

10. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF

CEO Endorsement/Approval MTR

TE

Medium/Moderate

Measures to address identified risks and impacts

Provide preliminary information on the types and risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the program (considering the GEF ESS Minimum Standards) and describe measures to address these risks.

Overall, the project is categorized as Substantial risk, given the potential social and environmental risks associated with Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management, Standard 5: Displacement and Resettlement, and Standard 6: Indigenous Peoples. The significance of these risks has been preliminarily assessed as substantial for all 2nd round national child projects. However, significance for each specific national child project will depend on the site selected for developing minigrid pilots and activities. While the specific technology, solar PV battery minigrids, has already been defined, full site selection and assessment will likely only occur during the first year of national child projects implementation. Therefore, during the PPG stage, a detailed SESP will be carried out and an ESMF will be prepared. The SESP will analyze risks in more detail, while the project's ESMF will outline the procedures required for fully screening, assessing and managing risks during implementation.

The individual pre-SESP for each national child project contain the assessment and management measures for all risks identified and rated as Moderate or Substantial. No risks have been assessed as High at this stage. The following are the assessment and management measures proposed for the risks rated substantial.

Standard	Risk	Description of assessment and management measures for risks rated as Substantial
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management.	Minigrids' footprint (generator, solar panels, etc.) or right-of-way may involve the temporary or permanent clearing of vegetation.	This risk is more relevant for areas with productive bush cover (savanna), where it may be necessary to clear some portion of vegetation to maximize exposure to sun, with a continuous need for vegetation management. This risk will be included in the ESMF to be prepared during the PPG. The need for a Biodiversity Action Plan will be considered during the PPG and confirmed during implementation. The site selection process will be designed to meet the requirements under Standard 1 as related to siting preference.
Standard 5: Displacement and Resettlement, and	Minigrids' footprint (generator, solar panels, etc.) and right-of-way may involve temporary or permanent land-use change with a potential impact on agriculture.	It is expected that the site selection criteria will be developed during the PPG stage, in close consultation with key stakeholders. The site selection criteria will consider safeguards by having exclusionary criteria, such as limited or no risk of economic displacement and/or a SESP screening step. The ESMF, which will be prepared during the PPG, will have procedures for sites that have a risk of economic displacement.
Standard 6: Indigenous Peoples.	Available locations for minigrids development as specified or preferred by authorities may be incompatible with UNDP's SES.	The risk of the project involving areas where indigenous peoples are present or having activities located on lands and territories claimed by indigenous peoples will be carefully examined during the PPG stage by an IPP expert. If, following the more detailed assessment during the PPG, Standard 6 is triggered and it is deemed that the project will involve groups considered indigenous peoples under SES Standard 6, an Indigenous Peoples Planning Framework (IPPF) will be prepared.

Supporting Documents

Upload available ESS supporting documents.

Title

Submitted

SESP bundle AMP 2nd Round 7 projects

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And GEF Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Delphin Aïdji	Director of Planning and Foresight	Ministry of the Living Environment and Sustainable Development	3/19/2021
Amidou Goïta	Chief, Environmental Data Section	Environment and Sustainable Development Agency (AEDD)	9/24/2020
Lourenco Monteiro de Jesus	General Director of Environment	Ministry of Infrastructure, Natural Resources and Environment (MOPIRNA)	8/4/2020
Godwin Fishani Gondwe	Director, Environment Management Department	Ministry of Water Development, Sanitation and Environmental Protection	9/4/2020
Soumaila Oumar Gadjì	Monitoring And Evaluation Director	Ministry of Environment and Fisheries	3/16/2021
Mohamed – Yahya Lafdal Chah	Charge de Mission	Ministry of the Environment and Sustainable Development	5/6/2021

ANNEX A: LIST OF CHILD PROJECTS UNDER THE PROGRAM

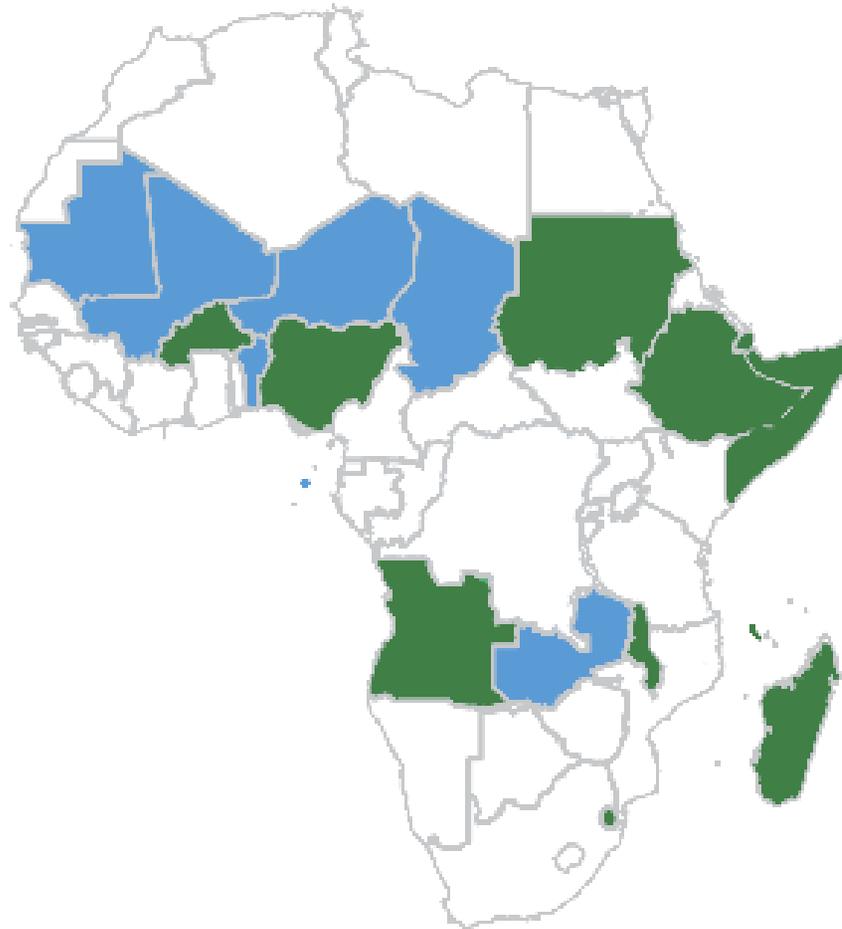
Country	Project Title	GEF Agency	Type of Trust Fund	GEF project financing (\$)	Agency self-financing (\$)	Agency fee (\$)	Total (\$)
Full-sized projects							
Regional	GEF-7 Africa Minigrids Program	UNDP	GEF TF	525,000	430,000	47,250	1,002,250
	Subtotal			525,000	430,000	47,250	1,002,250
Medium-sized projects							
Benin	Benin national child project under the Africa Minigrids Program	UNDP	GEF TF	1,326,147	150,000	119,353	1,595,500
Chad	Chad national child project under the Africa Minigrids Program	UNDP	GEF TF	0	600,000	0	600,000
Mali	Mali national child project under the Africa Minigrids Program	UNDP	GEF TF	1,326,147	150,000	119,353	1,595,500
Mauritania	Mauritania national child project under the Africa Minigrids Program	UNDP	GEF TF	0	1,500,000	0	1,500,000
	Niger national child project under						

Niger	the project under the Africa Minigrids Program	UNDP	GEF TF	1,601,376	995,000	144,124	2,740,500
São Tomé and Príncipe	São Tomé and Príncipe national child project under the Africa Minigrids Program	UNDP	GEF TF	1,968,349	0	177,151	2,145,500
Zambia	Zambia national child project under the Africa Minigrids Program	UNDP	GEF TF	1,363,947	150,000	122,755	1,636,702
	Subtotal			7,585,966	3,545,000	682,737	11,813,703
	Total			8,110,966	3,975,000	729,987	12,815,953

ANNEX A1: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

1st ROUND: 11 PARTICIPATING COUNTRIES (GEF Dec 2019)



- Angola**
- Burkina Faso
- Comoros
- Djibouti
- Eswatini
- Ethiopia
- Madagascar**
- Malawi
- Nigeria
- Somalia
- Sudan

2nd ROUND: 7 PARTICIPATING COUNTRIES (GEF June 2021)

- Benin
- Chad**
- Niger
- Mali
- Mauritania**
- Sao Tome e Principe
- Zambia

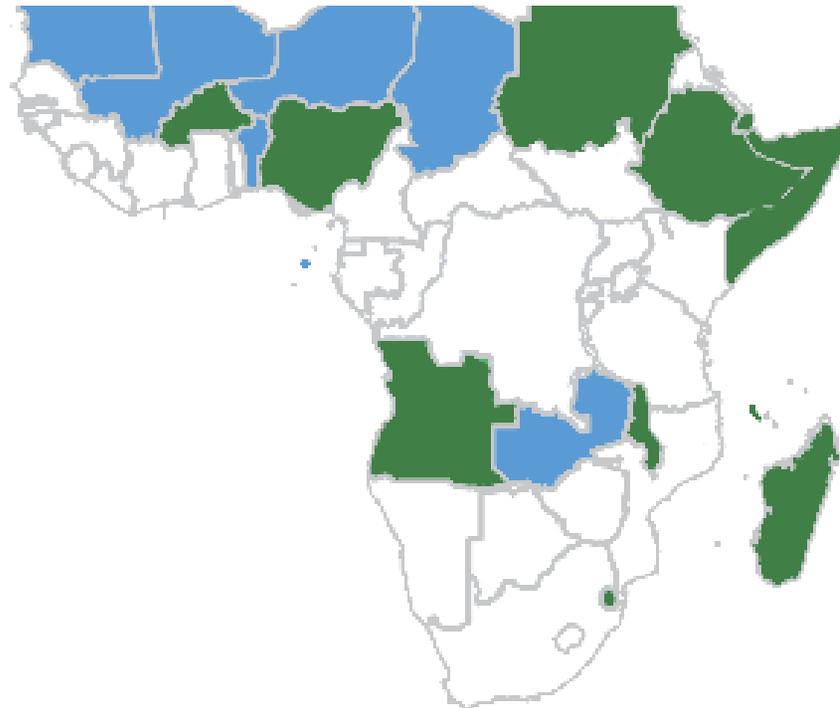
** (self-funded)

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1st ROUND: 11 PARTICIPATING COUNTRIES (GEF Dec 2019)



- Angola**
- Burkina Faso
- Comoros
- Djibouti
- Eswatini



Ethiopia
 Madagascar**
 Malawi
 Nigeria
 Somalia
 Sudan

2nd ROUND: 7 PARTICIPATING COUNTRIES
(GEF June 2021)

Benin
 Chad**
 Niger
 Mali
 Mauritania**
 Sao Tome e Principe
 Zambia

** (self-funded)

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