GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

Naoko Ishii
CEO and Chairperson

March 15, 2018

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:	9931
Agency(ies):	UNDP
Agency ID:	6182 (UNDP)
Focal Area:	Climate Change
Project Type:	Medium-Sized Project
Country(ies):	Regional
Name of Project:	Clean Rural Electrification for African Countries
Indicative GEF Project Grant:	$950,000
Indicative Agency Fee:	$90,250
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

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GEF-6 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL

PROJECT TYPE: Medium-sized Project
TYPE OF TRUST FUND:GEF Trust Fund

For more information about GEF, visit TheGEF.org

PART I: PROJECT INFORMATION

Project Title: Clean Rural Electrification for African Countries			
Country(ies):	Regional	GEF Project ID:[1]	9931
GEF Agency(ies):	UNDP (select) (select)	GEF Agency Project ID:	6182
Other Executing Partner(s):	Rocky Mountain Institute	Submission Date:	1-March-2018
GEF Focal Area (s):	Climate Change	Project Duration (Months)	12
Integrated Approach Pilot	IAP-Cities ☐ IAP-Commodities ☐ IAP-Food Security ☐		Corporate Program: SGP ☐
Name of Parent Program	[if applicable]	Agency Fee ($)	90,250

A. FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES[2]

Focal Area Objectives/Programs	Focal Area Outcomes	Trust Fund	(in $) GEF Project Financing	(in $) Co-financing
(select) CCM-1 Program 1 (select)		GEFTF	950,000	550,000
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
(select) (select) (select)		(select)		
	Total project costs		950,000	550,000

B. PROJECT DESCRIPTION SUMMARY

Project Objective: To develop a distinctive approach and accelerate the deployment of rural electrification utilizing renewable mini-grids

Project Components/ Programs	Financing Type[3]	Project Outcomes	Project Outputs	Trust Fund	(in $) GEF Project Financing	(in $) Confirmed Co-financing
Component 1: Design scaling mechanisms for minigrids funded by GEF 7 replenishment	TA	Launch scaling platforms for commercially-viable minigrids as part of GEF 7 replenishment, including a roadmap for cost reduction, policy, and financing for three-year initiative	Accelerated deployment, demonstration, and financing of low carbon technologies for electricity access in developing world, with a minimum of US$10 million for actual field installations by 2020.	GEFTF	$630,000	$307,000

[1] Project ID number remains the same as the assigned PIF number.
[2] When completing Table A, refer to the excerpts on GEF 6 Results Frameworks for GETF, LDCF and SCCF and CBIT programming directions.
[3] Financing type can be either investment or technical assistance.

Component 2: Minigrid summit	TA	Accelerate adoption of innovative technologies and management practices for GHG emission reduction through aligning stakeholders for action around shared roadmap, identifying specific regulatory, transaction, and financing needs and securing commitment from high-potential countries.	Prioritized pipeline of clean energy projects identified and financial commitments made by key stakeholders from government, private sector, and development partners at the microgrid summit	GEFTF	$233,637	$188,000
			Subtotal		863,637	495,000
			Project Management Cost (PMC)[4]	(select)	86,363	55,000
			Total project costs		950,000	550,000

C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

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

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Amount ($)
Donor Agency	The Rockerfeller Foundation	Grants	200,000
Donor Agency	Virgin Unite	Grants	200,000
Donor Agency	Rocky Mountain Institute	In-kind	150,000
(select)		(select)	
Total Co-financing			550,000

D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in $)		
					GEF Project Financing (a)	Agency Fee a) (b)[2]	Total (c)=a+b
UNDP	GEF TF	Regional	Climate Change	(select as applicable)	950,000	90,250	1,040,250
Total Grant Resources					950,000	90,250	1,040,250

a) Refer to the Fee Policy for GEF Partner Agencies

[4] For GEF Project Financing up to $2 million, PMC could be up to10% of the subtotal; above $2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS[5]

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO_{2e} mitigated (include both direct and indirect)	*4.69 million* metric tons

F. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? NO.

(If non-grant instruments are used, provide an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/CBIT Trust Fund) in Annex D.

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF[6]

A.1. *Project Description*. Elaborate on:

1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed

Despite decades of development assistance, there are 1.1 billion people across the world who do not have access to reliable electricity, of whom 600 million are living in Sub Saharan Africa, many of whom are in rural areas. Some countries such as Chad, Burundi and South Sudan, have electrification rates of less than 10%. Power consumption per capita in sub-Saharan Africa is just 180 kWh per year, compared to 6,500 kWh in Europe and 13,000 kWh in the United States. The development impact is no less stark. Unreliable electricity is estimated to cost Africa 2–4% of GDP annually. And because population is rising more rapidly than new electricity connections, sub-Saharan Africa is the only region in the world where the number of people lacking access to electricity is set to *rise*.

Electrification is so lacking in sub-Saharan Africa (SSA) because the traditional model of electrification, using large power plants and long distance transmission lines, is not cost effective; rural areas are often too far away, leading to high infrastructural costs. This, combined with low income in these areas, often leads to grid access for rural areas being economically unsustainable for utilities and consumers. For example, connecting such populations in Rwanda, Uganda or Sierra Leone can cost between $300 and $800 per household for 20-50 kWh per month.

Moreover, generation of grid electricity is closely linked to greenhouse gas (GHGs) emissions. Such emissions from the developing world are projected to rise rapidly; by 2040, sub-Saharan Africa is forecasted to consumer 1600 TWh of electricity and emit nearly 700 million metric tonnes of CO2. De-linking electricity supply and GHG emissions fits directly with several of the Sustainable Development Goals, including:

SDG 7: Secure access to affordable, reliable, sustainable and modern energy for all; and

[5] Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the *GEF-6 Programming Directions*, will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

[6] For questions A.1 –A.7 in Part II, if there are no changes since PIF , no need to respond, please enter "NA" after the respective question.

SDG 13: Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy

Notwithstanding the lack of grid electricity access, there is a latent demand for electricity in rural Africa that is slowly being met by small solar-based household lighting and mobile phone charging systems; these, however, do not provide sufficient power to support small to medium sized enterprises (SMEs) at costs that are economically viable. For example, the cost of electricity for household systems typically exceeds $1/kWh.

An alluring middle ground is minigrid systems. These can range from a few to several hundreds of kilowatts, and are able to generate low cost power that could sustain SMEs while also meeting broader electricity access goals. Minigrids can serve both commercial and domestic consumers, but their ability to serve the former, particularly in the context of activities such as grain milling and irrigation, is a distinguishing feature. These types of consumers are critical for the long-term viability of minigrids because they have higher demand per connection and can provide immediate new income for the community. Despite some minigrid deployment in Africa, widespread adoption is stymied by a number of factors:

Cost: Although they can have competitive LCOEs, minigrids are capital intensive: typical levelized costs of energy (LCOE) range from $0.50/kWh to as much as $3/kWh[7] for RE-based systems and from $0.28/kWh - $0.35/kWh and $0.35/kWh - $0.5/kWh for solar plus ESS and diesel-based hybrids respectively[8]; the capital cost can be up to $3500/kW of installed capacity, bu this is highly dependent on the structure of the the minigrid i.e. the presence and proportion of ESS, diesel and REs. Major minigrid cost drivers include system hardware (especially solar panels, batteries, distribution, and metering), generator fuel, and soft costs like project development and customer acquisition.[9]

Mismatch between supply and demand: Minigrids need demand stimulation programs to drive up use and generate income that will allow newly energized customers to afford this change in lifestyle. Minigrid companies often focus primarily on supply, and new customers are slow to connect and use a small amount of electricity—leading to lost revenue and insufficient volume to spread fixed cost.

Regulatory frameworks: Regulations do not support minigrid development or solve critical future integration issues with the grid. Slow, unclear and unpredictable licensing and tariff processes create added risk.

Local variation: Minigrid business models must be adjusted for local conditions, at the regional, national, or even village level. Minigrids companies also need to build local capacity for installing and maintaining the minigrids.

[7] IRENA. Innovation Outlook: Renewable Minigrids

[8] Solutions for The Missing Middle: The Case for Large-Scale Mini-Grid Development (2017)

[9] Kelly Carlin, Josh Agenbroad, et al. *Energy Within Reach: Growing the minigrid market in sub-Saharan Africa*. (Rocky Mountain Institute, 2017). www.rmi.org/energy_within_reach

Financing: Most minigrid projects today are grant funded, but the amount and type of funding required over the next 5–10 years for transitioning toward concessional financing and market capital is poorly understood. An unreliable pipeline of projects means upstream suppliers are hesitant to invest in improving and scaling up their offerings.

2) the baseline scenario or any associated baseline projects,

Hundreds of millions of dollars have already been invested in minigrids as a solution for rural electricity access, with over a hundred of pilot projects now in operation across Africa, India, and elsewhere. Existing initiatives and policies, along with additional funding, are already working to address some of these barriers.

a. The Rockefeller Foundation's Smart Power for Rural Development (SPRD) is a $75 million initiative aimed at accelerating development in India's least developed states. SPRD oversees Smart Power India, which has built over 100 minigrids in Uttar Pradesh, Bihar, and Jharkhand, with the aim of accelerating rural economic development and better understanding the impact and underlying economics of green minigrids.

b. The Sustainable Energy Fund for Africa (SEFA) is a $90 million multi-donor facility supported by Denmark, the United Kingdom and the United States, hosted by the Energy, Environment, and Climate Change department of the African Development Bank. As part of SEFA, the Green Mini-Grid Market Development Programme (GMG MDP) is implemented by the SEforALL Africa Hub, the GMG MDP's goal is to support the scale-up of investments in commercially-viable green mini-grid projects through a broad range of interventions to improve the enabling environment.

c. The World Bank's Global Facility on Minigrids supports the GMG MDP, along with minigrid initiatives within the Clean Technology Fund (CTF) and Scaling-Up Renewable Energy Programme (SREP) through two pillars: (1) Operational up-scaling via pre-investment activities based on operational and client demand, providing technical assistance and operational support, and support to supervision of projects under implementation with techical advice to project teams, and (2) providing global knowledge development and learning through knowledge development, case studies and technical notes.

d. The minigrid pilot project program in Kenya operated by Seattle-based impact investor Vulcan was expressly designed to test commercial viability of ten minigrids according to customer behavior, minigrid technology, and business model. The results, released during the summer of 2017, show that three strategies which, when combined, enable their portfolio to reach an IRR of 15% over a ten year period - a benchmark for projects to access scalable commercial financing. The strategies employed were:

    i. Reduce capital expenditures to $6.30-$7.63/W. Minigrid portfolios can reach this benchmark if:

        1. Cost reductions and technical advances, particularly for batteries, continue at current rates

        2. Operators scale the number of minigrids commissioned and access volume discounts, or partner to create new facilities for aggregated purchasing

        3. Operators diversify types of minigrids

4. Operators use methods such as time-of-use pricing to shift demand to the daytime, reducing the required size of the battery bank

5. African governments create industry-friendly policies and regulations

ii. Grow productive energy demand to 20-40% annu- ally in Year(Y) 2-Y5, and 6-10% annually in Y6-Y10. Mini-grid portfolios can reach this benchmark if:

1. Operators promote organic demand growth by o ering a range of responsive tari s and customer support services, which led consumers to realize the economic bene ts of electricity and to become accustomed to pay-as-you-go billing

2. Operators implement appliance programs or similar value-added services, which pilots show can increase Average Revenue Per User (ARPU) by 40% among participants, on top of organic demand growth

3. Operators share data to improve understanding of best practices around demand growth – e.g. through organizations like the African Minigrid Developers Association (AMDA)

iii. Make subsidy programs available at a rate of $500/customer in the short term to catalyze mini-grid scaling, and on a sliding scale thereafter to incentivize deployment in remote and/ or low-income areas.

1. This will require that African governments and multilateral organizations extend or create programs which allow minigrid portfolios to qualify for rural electrification subsidies

e. UNDP is extending its 'Derisking Renewable Energy Investment' (DREI) framework to off-grid renewable energy, including solar PV/battery mini-grids. DREI is a quantitative, risk-informed framework to assist policymakers to cost-effectively select and implemenent measures to promote reneweable energy investment. Initial DREI case studies for private sector mini-grids have been performed in Uttar Pradesh, India and Kenya. A report will be released in spring of 2018.

f. Private sector minigrid companies like Husk Power, Sparkmeter, and PowerGen have installed projects in Kenya, Tanzania, and Uganda while attracting funding from equity investors like Shell Foundation, Acumen Fund, and DOB Equity.

Notwithstanding the above, a proven, commercially viable and scalable business model has yet to emerge. While current projects have been able to prove that these small, isolated grids can deliver reliable power, and that electricity demand rises over time, even the best projects have not provided a sustainable return on invested capital. As a result, there are still critical questions about how to cut costs through standardized designs, how to create innovative upstream and downstream business models, how to stimulate demand, how to create a reliable pipeline of commercially viable and scalabe projects, and how to develop supportive policies.

3) the proposed alternative scenario, GEF focal area[10] strategies, with a brief description of expected outcomes and components of the project,

This project seeks to outline the aforementioned barriers, not least those regarding commercial viability and scalability. To this end, a minigrid summit is being proposed to serve as a platform for governments, the private sector and GEF agencies to refine the project's strategy aimed at developing a program for minigrids that will enable sub Saharan African countries to identify and develop projects to be implemented under the GEF-7 cycle.

By demonstrating to both public and private actors that (1) the cost of minigrids can be brought down, (2) the investment climate can be improved through regulatory reform, (3) sufficient demand exists for sizable minigrids, and (4) financial institutions are serious about committing funding, those key actors will mobilize the deployment of significant public and private-sector funding and accelerate the identification and development of these child projects.

The project will be broken down into two components:

Component 1: Design the Summit and Create Pilot Projects Proposal for GEF-7

Component 1 of the project has three objectives: develop analysis and engage participants prior to the summit, translate outcomes of the summit into country-specific programs and project pipelines, and develop clear strategic recommendations for a GEF-7 minigrid program. This pre- and post-summit work is critical to achieving a scalable minigrid model and to enabling GEF support to rapidly test the solutions proposed during the summit and expand the effort in subsequent years.

Pre-summit, RMI will prepare the key analyses that will help facilitate the discussion, such as:

- A review and synthesis of current minigrid efforts in the region with a focus on successes to be amplified and challenges to be addressed; and
- Estimating LCOE for typical renewable energy (RE) based minigrids taking into account technology advancement and policy considerations, such as the cost impact of having duty-free status for imported equipment.

The Summit itself (Component 2) will aim to develop a consortium of partners to develop a $10–$15 million GEF-supported program (under GEF-7) focused on deploying renewable microgrids/minigrids in select sub-Saharan African countries, which will mobilize an additional $100–$200 million in cofinancing from the private sector, financing institutions, and donor partners. However, Component 1 also includes post-summit activities that focus on developing pilot projects and programs to test ideas and lay the groundwork for rapid growth after the completion of this project. The ultimate goal after these pilots is to hand off a profitable and scalable business model to the private sector that will attract funding by major concessional and commercial financiers.

Key government, utility, and regulatory officials will be involved in the lead-up to the minigrid summit, the summit itself (Component 2), and follow-on work and multilateral/bilateral events to establish a pilot project pipeline and translate ideas to two specific countries. The engagement of key officials from leading African minigrid markets post

[10] For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which Aichi Target(s) the project will directly contribute to achieving..

summit will ensure that the political will is present to implement the pilot projects. Adequate political will is key to their success because a strong regulatory framework, government support, and an enabling environment are all prerequisites for involvement of other stakeholders. Ultimately, it is those countries and their citizens that will be most impacted by the pilot projects.

Component 2: Minigrid Summit

Component 2 consists of executing the Minigrid Summit that will bring together experts and institutions in a working session to design a roadmap for reducing cost and creating a sustainable minigrid market in sub-Saharan Africa. Potential stakeholders include governments, utilities, legislators, GEF agencies, vendors, technology integrators, solar companies, battery manufacturers, software providers, and financiers. RMI will identify the most appropriate companies to invite and the people within those organizations that have the most to contribute. This will be done through a series of interviews and research.

The four-day Minigrid Summit will enable these actors to outline the problems and develop actionable next steps. Companies with a track record in financing, supplying and operating minigrids in Africa will be invited to share their experiences by way of a "charrette" approach, an intense effort by all the stakeholders to overcome complex problems. The key topics will closely hew to the main barriers described earlier:

How to Bring Down the Cost/Motivating the Private Sector: While "best practice" minigrids can sell power for about 60 cents/kWh, solar minigrids must be competitive with conventional generators that can achieve a price of about 35 cents/kWh. The solutions will be based on technologies already at scale, capturing the benefits of global supply chains with local labor handling the assembly and maintenance. Moreover, the design of these systems will take into account the consumption patterns of consumers and leverage these to optimize the sizing of both renewable energy capacity and storage capacity for said minigrids.

Stimulating Demand: To create a viable business, minigrids must actually sell the power they are capable of producing; an underutilized system cannot generate enough revenue or spread fixed costs over a high enough volume of units sold. The Summit will develop tangible and immediate ideas for how to stimulate demand for electricity generated by minigrids; this not only includes current demand, but also takes into account future growth in demand. Initially, electricity access will likely enable basic needs such as lighting, telecommunication and refrigeration for a small number of people. It is anticipated that growth will come from additional consumers with similar consumption patterns. Further into the future, these patterns are likely to change with the onset of growth in the number and types of electrical appliances .e.g pumps and ventilation etc. The Summit participants will list out the various ideas for stimulating demand and evaluate both their relative effectiveness and the stakeholders that will need to be involved to execute these strategies on a large scale. These ideas could include but not be limited to:

- Offering loans for electricity-using equipment and devices;
- Sending trained electrification specialists to demonstrate those devices and appliances;
- Allowing customers to finance their connection fees in their monthly bills;
- Using cell phones and mobile banking to educate people about the many uses of electricity and to sell equipment that could be purchased with "pay as you go" plans over mobile phones; and

- Combining low residential demand in rural areas with new businesses that require more power (e.g., water purification facilities or cell phone towers).

Regulatory Reform: Another main topic of discussion will cover what governments can do to streamline minigrid development. Tanzania and Nigeria have recently established minigrid regulatory frameworks that create an easier path for private minigrid developers and investors. Minigrids under 100 kW in size (in peak power) do not need to seek tariff approval. The frameworks offer clear preparations for minigrid interconnections to the larger grid, if or when the grid is expanded. Both countries have streamlined their permitting processes. To what extent do these examples provide a model for other countries? How can these existing frameworks be improved? This will also inform the discussion about which countries have both a strong private sector and significant latent demand for productive use and can thus take on leadership roles for the minigrid pilots. The regulatory reform concepts that are developed during the workshop will be tested and refined with specific governments in the Component 1 work described above.

Financing: In the sub-Saharan African context, what are best avenues for public and private financing of minigrid systems? What is the size and type of funding required for accelerating progress and bridging the gap to concessional financing and an increasing share of impact or market investors? What is the roadmap and what is required to generate the interest of financial institutions in the region? Can a global procurement consortium and a global financing platform be created that can enable rapid cost reduction, ensure the focus of local entrepreneurs on customer needs and services, and create a sustained source of financing to ensure rapid scaling?

Selecting the best sites to test the business model: Minigrids need to be installed in locations that offer the best opportunities for positive returns on investment. Consistent and relatively substantial sources of demand are crucial. In the developing world, that means locations with productive uses of electricity, such as woodworking shops, stores with large coolers, or grain mills. The ideal location will have several customers with large amounts of demand occurring at different times of the day, which will raise the average capacity utilization and improve the overall economics. Summit participants will review and refine these criteria, offering guidance to the private sector as they scour countries for the best opportunities.

4) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, CBIT and co-financing; 5) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 6) innovativeness, sustainability and potential for scaling up.

The project's global environmental objective is to reduce GHG emissions through the reduction of policy and financial barriers that inhibit the adoption of renewable energy as part of the electrification process in rural Africa. The project is planned to receive $950,000 in grant funding from the GEF TF, as well as an additional $550,000 in co-financing, which will culminate in an estimated 4.6M tCO2eq of avoided GHG emissions.

Innovativeness
Rural Africa is lacking in electrification, which cannot currently be accelerated using the conventional approach of extending existing electricity grids because of high costs. The innovativeness of this project is that it reconciles latent

demand for electricity with low-carbon technologies which allows for a more rapid and sustainable approach to electrification.

Sustainability
The project seeks to reduce the cost of minigrids by kick-starting a minigrid market through the collective removal of policy and financial barriers currently inhibiting adoption. Once kick-started, minigrids, which will depend largely on the private sector as well as profitable business models growth, will continue to grow by default of their economic appeal to consumers.

Potential for scale-up
The introduction of affordable and low-carbon electricity to Rural Africa will not only increase the rate of electrification, but by virtue of the economies of scale that exist in Rural Africa, the capital cost of minigrids is expected to be significantly reduced once a critical mass of adoption is attained. This in turn will further increase the rate of penetration of minigrids in Rural Africa, and by doing so, dramatically reduce emissions that will have occurred through either grid extensions or urbanization.

A.2. Child Project? If this is a child project under a program, describe how the components contribute to the overall program impact.
N/A
A.3. *Stakeholders*. Identify key stakeholders and elaborate on how the key stakeholders engagement is incorporated in the preparation and implementation of the project. Do they include civil society organizations (yes ☒ /no☐)? and indigenous peoples (yes ☐ /no☒)? [11]

The project aims to involve stakeholders that to include representation from governments, regulators, utilities, project developers, suppliers, NGOs and civil society. A complete list of stakeholders and their roles, as well as the stakeholder engagement plan is summarized in the project document under Section IV – Results and Partnerships.

A.4. Gender Equality and Women's Empowerment. Elaborate on how gender equality and women's empowerment issues are mainstreamed into the project implementation and monitoring, taking into account the differences, needs, roles and priorities of women and men. In addition, 1) did the project conduct a gender analysis during project preparation (yes ☒ /no☐)?; 2) did the project incorporate a gender responsive project results framework, including sex-disaggregated indicators (yes ☐ /no☒)?; and 3) what is the share of women and men direct beneficiaries (women X%, men X%)? [12]

Women are disproportionately hurt by lack of electricity access through need for greater labor on basic necessities (e.g., water) and lack of economic opportunity. Women disproportionately take advantage of access to electricity. Therefore, minigrid solutions will reduce the burden on women and create economic benefits that will help reduce gender inequality. For example, until recently, the Nigerian hamlet of Wamu lacked electricity, though it is just an hour and a half from Nigeria's capital, Abuja. When many of the residents received enough power for a few lights and a cell phone charger via distributed energy resources, the changes were swift. Grades for girls rose because the girls could study at night after cooking and doing other chores during the day. With pumps, electricity frees women from hours of daily drudgery carrying water.

[11] *As per the GEF-6 Corporate Results Framework in the GEF Programming Directions and GEF-6 Gender Core Indicators in the Gender Equality Action Plan, provide information on these specific indicators on stakeholders (including civil society organization and indigenous peoples) and gender.*
[12] Same as footnote 8 above.

A.5 Risk. Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

The risks identified are as follows:

1. Participating countries unable or unwilling to contribute to road map and recommended pilots, perhaps due to lack of political will
2. Project unable to be completed within time frame, a smaller number of recommendations for scaling are developed
3. Summit participation is low
4. New concepts are not generated during the summit

Given the nature of this project, it can be seen that the risks are inherently tied to high level decision making. The most significant risk is likely to be related to time i.e. Risk 2. The time constraint of having to facilitate the summit, then identify potential projects through a relatively rapid process may lead to the onset of other risks such as Risks 3 and 4. A complete risk assessement can be found inside the Project Document under Section XI: Risk Management.

A.6. Institutional Arrangement and Coordination. Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

This project will coordinate with other ongoing relevant minigrids projects in the countries that will be covered by this initiative (and others in Africa), either GEF funded or otherwise relevant. There are a number of ongoing and planned UNDP GEF financed projects in Africa that will be taken into account, including but not limited to thos in the table below:

Project Name	GEF Agency
MFP hybrid minigrids in Mali	*UNDP*
Congo Micro-hydroelectricity	*UNDP*
Sustainable Energy Access (Angola)	*UNDP*
Ethiopia Sustainable Rural Renewable Energy	*UNDP*
Congo Micro-hydroelectricity	*UNDP*
SPWA-CC: Mini-grids based on Renewable Energy (small-hydro and biomass) Sources to Augment Rural Electrification (Nigeria)	*African Devleopment Bank*
Energy for Rural Transformation Project (Uganda)	*The World Bank*

Morever, other non-UNDP-GEF projects will also be taken into account, a list of which will be populated during the summit.

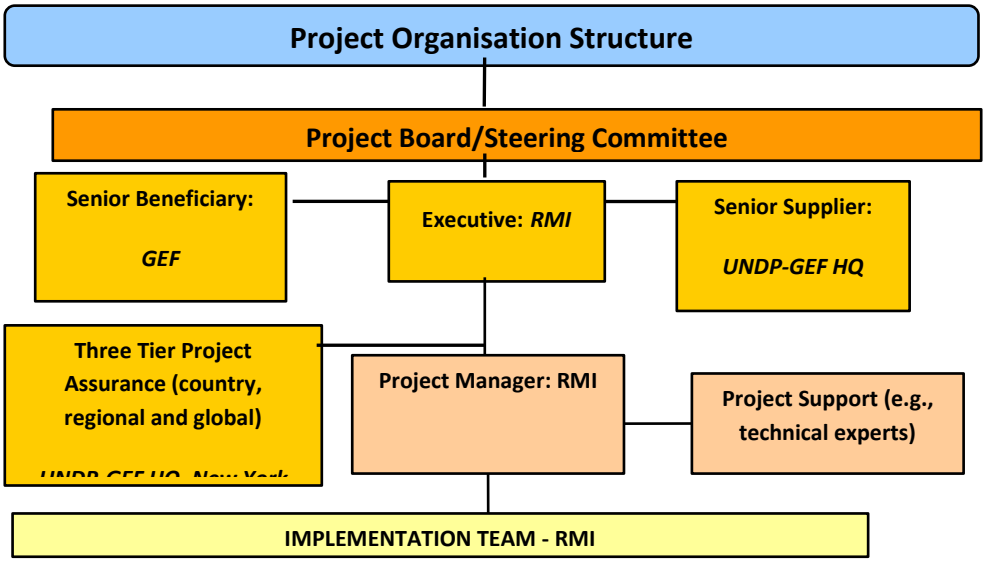
Additional Information not well elaborated at PIF Stage:

Roles and responsibilities of the project's governance mechanism: The project will be implemented following UNDP's NGO implementation modality according to the Standard Basic Assistance Agreement between UNDP and the Government of Nigeria, and the Country Programme.
The **Implementing Partner** for this project is *Rocky Mountain Institute.* The Implementing Partner is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources.

The Implementing Partner is responsible for:

- Approving and signing the multiyear workplan;
- Approving and signing the combined delivery report at the end of the year; and,
- Signing the financial report or the funding authorization and certificate of expenditures.

The project organisation structure is as follows:



Project Board: The Project Board (also called Project Steering Committee) is responsible for making by consensus, management decisions when guidance is required by the Project Manager, including recommendations for UNDP/Implementing Partner approval of project plans and revisions, and addressing any project level grievances. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case a consensus cannot be reached within the Board, final decision shall rest with the UNDP Programme Manager.

Specific responsibilities of the Project Board include:

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;

- Address project issues as raised by the project manager;
- Provide guidance on new project risks, and agree on possible countermeasures and management actions to address specific risks;
- Agree on project manager's tolerances as required;
- Review the project progress, and provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
- Appraise the annual project implementation report, including the quality assessment rating report; make recommendations for the workplan;
- Provide ad hoc direction and advice for exceptional situations when the project manager's tolerances are exceeded; and
- Assess and decide to proceed on project changes through appropriate revisions.

The composition of the Project Board must include the following roles:

Executive: RMI
Senior Supplier: UNDP HQ
Senior Beneficiary: GEF and SEforALL
Project Manager: RMI

Executive: The Executive is an individual who represents ownership of the project who will chair the Project Board. This role can be held by a representative from the Government Cooperating Agency or UNDP. The Executive is: *Stephen Doig*.

The Executive is ultimately responsible for the project, supported by the Senior Beneficiary and Senior Supplier. The Executive's role is to ensure that the project is focused throughout its life cycle on achieving its objectives and delivering outputs that will contribute to higher level outcomes. The executive has to ensure that the project gives value for money, ensuring cost-conscious approach to the project, balancing the demands of beneficiary and supplier.

Specific Responsibilities: (as part of the above responsibilities for the Project Board)
- Ensure that there is a coherent project organisation structure and logical set of plans;
- Set tolerances in the AWP and other plans as required for the Project Manager;
- Monitor and control the progress of the project at a strategic level;
- Ensure that risks are being tracked and mitigated as effectively as possible;
- Brief relevant stakeholders about project progress;
- Organise and chair Project Board meetings.

Senior Supplier: The Senior Supplier is an individual or group representing the interests of the parties concerned which provide funding and/or technical expertise to the project (designing, developing, facilitating, procuring, implementing). The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project. The Senior Supplier role must have the authority to commit or acquire supplier resources required. If necessary, more than one person may be required for this role. Typically, the implementing partner, UNDP and/or donor(s) would be represented under this role. The Senior Supplier is: UNDP

Specific Responsibilities (as part of the above responsibilities for the Project Board)
- Make sure that progress towards the outputs remains consistent from the supplier perspective;
- Promote and maintain focus on the expected project output(s) from the point of view of supplier management;

- Ensure that the supplier resources required for the project are made available;
- Contribute supplier opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Arbitrate on, and ensure resolution of, any supplier priority or resource conflicts.

Senior Beneficiary: The Senior Beneficiary is an individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries. The Senior Beneficiary role is held by a representative of the government or civil society. The Senior Beneficiary is SE4ALL (?)

The Senior Beneficiary is responsible for validating the needs and for monitoring that the solution will meet those needs within the constraints of the project. The Senior Beneficiary role monitors progress against targets and quality criteria. This role may require more than one person to cover all the beneficiary interests. For the sake of effectiveness, the role should not be split between too many people.

Specific Responsibilities (as part of the above responsibilities for the Project Board)

- Prioritize and contribute beneficiaries' opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Specification of the Beneficiary's needs is accurate, complete and unambiguous;
- Implementation of activities at all stages is monitored to ensure that they will meet the beneficiary's needs and are progressing towards that target;
- Impact of potential changes is evaluated from the beneficiary point of view;
- Risks to the beneficiaries are frequently monitored.

Project Manager: The Project Manager has the authority to run the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the Board. The Project Manager is responsible for day-to-day management and decision-making for the project. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost.
The Implementing Partner appoints the Project Manager, who should be different from the Implementing Partner's representative in the Project Board.
Specific responsibilities include:

- Provide direction and guidance to project team(s)/ responsible party (ies);
- Liaise with the Project Board to assure the overall direction and integrity of the project;
- Identify and obtain any support and advice required for the management, planning and control of the project;
- Responsible for project administration;
- Plan the activities of the project and monitor progress against the project results framework and the approved annual workplan;
- Mobilize personnel, goods and services, training and micro-capital grants to initiative activities, including drafting terms of reference and work specifications, and overseeing all contractors' work;
- Monitor events as determined in the project monitoring schedule plan/timetable, and update the plan as required;
- Manage requests for the provision of financial resources by UNDP, through advance of funds, direct payments or reimbursement using the fund authorization and certificate of expenditures;
- Monitor financial resources and accounting to ensure the accuracy and reliability of financial reports;
- Be responsible for preparing and submitting financial reports to UNDP on a quarterly basis;

- Manage and monitor the project risks initially identified and submit new risks to the project board for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log;
- Capture lessons learned during project implementation;
- Prepare the annual workplan for the following year; and update the Atlas Project Management module if external access is made available.
- Prepare the GEF PIR and submit the final report to the Project Board;
- Based on the GEF PIR and the Project Board review, prepare the AWP for the following year.
- Ensure the mid-term review process is undertaken as per the UNDP guidance, and submit the final MTR report to the Project Board.
- Identify follow-on actions and submit them for consideration to the Project Board;
- Ensure the terminal evaluation process is undertaken as per the UNDP guidance, and submit the final TE report to the Project Board;

Project Assurance: UNDP provides a three – tier supervision, oversight and quality assurance role – funded by the GEF agency fee – involving UNDP staff in Country Offices and at regional and headquarters levels. Project Assurance must be totally independent of the Project Management function. The quality assurance role supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. This project oversight and quality assurance role is covered by the GEF Agency.

Governance role for project target groups: The coordination between different stakeholders will be mostly carried out by RMI with support from UNDP, and will begin with the establishment of an LPAC and the invitation of stakeholders to an inception workshop (to take place at the summit meeting). Continuous engagement of stakeholders and regular updates on the progress of all activities under the project will be at the core of coordination efforts to ensure that target groups are afforded the opportunity to engage in decision making for the project. The PSC will meet bi-annually during project implementation, and it will have the responsibility of coordinating and harmonizing the actions of all the key stakeholders.

A.7 *Benefits.* Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

The development of future child projects focusing on minigrids will, by default of their nature, impact isolated communities so as to improve the productivity of these communities. In doing so the project will lend support through a number of global environmental benefits:

- By increasing the rate of electrification through the use of renewables, the project will contribute towards mitigated GHG emissions
- Consumers will likely be sensitive to the cost of electricity, and to this end the project will also incorporate the use of improved energy efficiency as well as the adoption of innovative technologies and management
- By reducing the reliance on biomass from natural forests, the project will also promote conservation and enhanced carbon stocks as well as reduction in forest loss and forest degradation

A.8 *Knowledge Management. Elaborate on the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user-friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.*

The project's success will rest largely on its capacity to gather, consolidate and disseminate information from and to its stakeholders. Knowledge Management, therefore, is a core component of this project. Through the summit, the project management team will initiate a knowledge and information sharing platorm such that key actors from governments, utilities and other stakeholders commit to provide information to facilitate:

- Engagement with ongoing projects of a similar nature so as use these as leverage and also avoid duplication of activities
- Mapping out the existing rural electrification landscape; this will include information on communities and their size, cost of rural electricity across different countries and regions, technologies used and the rate of growth of minigrids in respective countries
- Obtaining information on policies that support or hinder the adoption of rural electriciation and how these can be improved. This will also require political commitment from governments, and communicating progress in this area is essential
- Establishing the exisiting capacity within each of the countries for the design, installation and maintenance of minigrids; this will include gathering information on training facilities and the like.
- The appetite from utilities to engage in the minigrid space, and what barriers exsit to their participation in the project as potential suppliers and/or operators of minigrids.

This will eventually lead to the development of strategies that will be communicated prior to identifying a series of child projects for funding under GEF-7, ensuring that all stakeholders are given the opportunity to follow the project's progress. Finally, a series of lessons learned documents will be created and shared on the project's website.

B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

B.1 *Consistency with National Priorities.* Describe the consistency of the project with national strategies and plans or reports and assessements under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.:

The project is consistent with each of the participating countries' plans and strategies:

Nigeria:
Nigeria's INDCs are such that the country has an unconditional commitment to reduce its emissions by 20% by 2030. One of the key measures identified in its INDCs is to work towards off-grid solar PV, for which it targets 13GW of installed capacity by 2030. This is consistent with rural electrification.

Ethiopia:
Ethiopia seeks to attain middle income status by 2025, and aims to do so through carbon neutral growth. A major component to enable this strategy is through the widespread use of renewable energy generation, including solar and hydro. This is consistent with rural electrification.

Rwanda
In its most recent National Communication to the UNFCCC, the government of Rwanda has targeted to reduce the quantity of wood used as a source of energy from 90% to 40% by 2020. It also targets to ensure a rural electrification

rate of 30% and to enable the population from 6% to 35% to have access to electricity. This is consistent with rural electrification.

Uganda
In its most recent National Communication to the UNFCCC, the government of Uganda has identified the growth of hydropower and solar both as important enablers to achieving its emissions targets. This is consistent with rural electrification.

Sierra Leone
In its most recent National Communication to the UNFCCC, the government of Sierra Leone idenfied rural electrification using solar home systems to complement hydropower plants as an important mitigation measure. This is consistent with rural electrification.

C. DESCRIBE THE BUDGETED M &E PLAN:

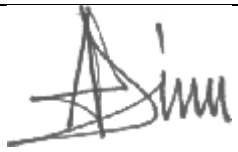
Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the UNDP POPP and UNDP Evaluation Policy. Additional mandatory GEF-specific M&E requirements will be undertaken in accordance with the GEF M&E policy and other relevant GEF policies. In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during summit and will be detailed in the Inception Report.

A detailed description of the M&E plan, its implementation, and the budget allocated for it is presented in Section VII of the Agency Project Document (pages 23-28).

PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)

A. GEF Agency(ies) certification

This request has been prepared in accordance with GEF policies[13] and procedures and meets the GEF criteria for CEO endorsement under GEF-6.

Agency Coordinator, Agency Name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Adriana Dinu Director, Sustainable Development (Environment) a.i. Executive Coordinator, UNDP/GEF		03/01/2018	Marcel Alers PTA, EITT	212-906-6199	marcel.alers@undp.org

[13] GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, SCCF and CBIT

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

This project will contribute to the following Sustainable Development Goal (s): *SDG 7 and 13*					
This project will contribute to the following country outcome included in the UNDAF/Country Programme Document: This is a regional-based project, which seeks to identify a group of projects so a specific country outcome is not applicable.					
This project will be linked to the following output of the UNDP Strategic Plan: *consult with the UNDP Country Office and the UNDP-GEF Regional Technical Advisor before selecting one of the following outputs. Delete the outputs copied below that are not selected. See opening section under further information for additional details.* *1.5.1 Solutions adopted to achieve universal access to clean, affordable and sustainable energy, specifically (b) In rural areas*					
	Objective and Outcome Indicators **(no more than a total of 15 -16 indicators)**	**Baseline[14]**	**Mid-term Target[15]**	**End of Project Target**	**Data Collection Methods and Risks/Assumptions[16]**
Project Objective: **To develop a distinctive approach and accelerate**	The indicators relating to "closing the energy gap" are *Number and proportion of households benefiting from clean, affordable*	*No information currently available*	*A baseline is established, with an accurate estimate of the number of households and communities benefiting form*	The estimate is increased in accuracy, with data obtained for rate of rural electrification in participating countries and a scaling strategy presented to GEF-7 in June 2018 with follow	*List the source of the data and explain how the data will be collected and which methodology will be used (e.g. GEF GHG measurement methodology).* *Data collection will be initiated at the summit*

[14] Baseline, mid-term and end of project target levels must be expressed in the same neutral unit of analysis as the corresponding indicator. Baseline is the current/original status or condition and need to be quantified. The baseline must be established before the project document is submitted to the GEF for final approval. The baseline values will be used to measure the success of the project through implementation monitoring and evaluation.

[15] Target is the change in the baseline value that will be achieved by the mid-term review and then again by the terminal evaluation.

[16] Data collection methods should outline specific tools used to collect data and additional information as necessary to support monitoring. The PIR cannot be used as a source of verification.

the deployment of rural electrification utilizing renewable minigrids	*and sustainable energy access*		*clean, affordable and sustainable energy access in rural areas*	on support for implementation through January 2019.	*through engagement with relevant government actors and utilities. A modus operandi for data collection will then be formally set up for continued data collection to achieve the end of project target.*
					Risks: Utilities or governments are unwilling to share information, or information is generally lacking Assumptions: Government will be aware of the number of communities without access to electricity. Utilities will be aware of the costs of extending the grid to these communities.
Component/Outcome[17] 1 **Design scaling mechanisms**	*Indicator 1:* Number of recommendations created for scaling minigrids through subsequent GEF programs	0	15 initial recommendations identified	10 final recommendations provided	The creation and delivery of scaling recommendations to GEF will be used to assess target completion.

[17] Outcomes are short to medium term results that the project makes a contribution towards, and that are designed to help achieve the longer term objective. Achievement of outcomes will be influenced both by project outputs and additional factors that may be outside the direct control of the project.

for minigrids funded by GEF-7 replenishment					Risks: Project unable to be completed within time frame, a smaller number of recommendations for scaling are developed Assumptions: Stakeholders engage in process and provide input into the process thereby creating multiple recommendations for scaling minigrids
	Indicator 2: Number of countries identified for pilots	0	4 potential countries identified	2 finalist countries identified with expressions of interest in a minigrid pilot program signed	The identification of countries and number of signed expressions of interest will be used to assess target completion
					Risks: Participating countries unable or unwilling to contribute to road map and recommended pilots

					Assumptions: Cost benefits attract governments to participate in pilot design.
Component/ Outcome 2 **Minigrid summit**	*Indicator 3:* Number of minigrid summit participants	0	40 participants invited to summit	40 participants attend summit	The invitation and final participant list will be used to assess target completion.
					Risks: Summit participation is low Assumptions: The value proposition of collectively developing a cost-reduction and minigrid-scaling roadmap will attract participants
	Indicator 4: Number of cost-reduction, regulatory reform, business model innovation concepts developed during the summit	0	20	20	The number of concepts in the post summit summary will be used to assess target completion
					Risks: new concepts are not generated during summit Assumptions: There are many concepts for

					scaling yet to be articulated in the minigrid market

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).

Not Applicable

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS[18]

A. Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF:			
Project Preparation Activities Implemented	***GETF/LDCF/SCCF/CBIT Amount ($)***		
	Budgeted Amount	***Amount Spent Todate***	***Amount Committed***
Development of Project Document	25,000	0	25,000
Organisation of Summit in Lagos, Nigeria	25,000	0	25,000
Total	50,000	0	50,000

[18] If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities. Agencies should also report closing of PPG to Trustee in its Quarterly Report.

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used**)**

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/CBIT Trust Funds or to your Agency (and/or revolving fund that will be set up)

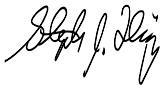
Not Applicable.

Empowered lives.
Resilient nations.

United Nations Development Programme

Project title: Clean Rural Electrification for African Countries		
Country: Regional (Sub-Saharan Africa)	**Implementing Partner:** *Rocky Mountain Institute*	**Management Arrangements:** NGO Implementation
UNDAF/Country Programme Outcome*: NA*		
UNDP Strategic Plan Output: *1.5.1 Solutions adopted to achieve universal access to clean, affordable and sustainable energy, specifically (b) In rural areas*		
UNDP Social and Environmental Screening Category: *Medium* *http://www.undp.org/content/undp/en/home/operations/social-and-environmental-sustainability-in-undp/SES.html*	**UNDP Gender Marker:** *2* *https://intranet.undp.org/unit/bpps/sdev/gef/default.aspx*	
Atlas Project ID (formerly Award ID): 00110084	**Atlas Output ID (formerly Project ID):** 00109179	
UNDP-GEF PIMS ID number: 6182	**GEF ID number: 9931**	
Planned start date: *this is defined as the expected project document signature date* *01 March 2018*	**Planned end date:** *01 March 2019 (12 months)*	
PAC meeting date: 15.03.2018		
Brief project description: *Briefly (no more than 200 words) describe the overall development challenge and the expected results of the project* The project will develop a distinctive approach to accelerate the deployment of rural electrification utilizing renewable mini-grids. It will do so by co-developing a cost-reduction road map with minigrid value chain stakeholders (equipment suppliers, developers, funders, governments) and then developing a proposal for a series of pilots to prove out and refine the cost-reduction road map in specific countries.		

FINANCING PLAN *(only cash transferred to UNDP bank account and budgeted under the same GEF project should be included under this section (1), all others should be included under section (2).*	
GEF Trust Fund *(specify fund)*	USD 950,000
UNDP TRAC resources	USD
Cash co-financing to be administered by UNDP	
…	*… add additional rows if necessary*
(1) Total Budget administered by UNDP	**USD 950,000**
PARALLEL CO-FINANCING (*all other co-financing that is not cash co-financing administered by UNDP)*	
UNDP	USD
Government	USD
RMI	USD 550,000
(2) Total co-financing	**USD**
(3) Grand-Total Project Financing (1)+(2)	**USD 1,500,000**

SIGNATURES		
Signature: print name below **NA**	**Agreed by Government**	**Date/Month/Year:** NA
Signature: print name below  Stephen Doig, Managing Director	**Agreed by Implementing Partner**	**Date/Month/Year:**
Signature: print name below	**Agreed by UNDP**	**Date/Month/Year:**

I. TABLE OF CONTENTS

***Guidance to project developer**: Include a list of tables and figures as appropriate. A list of acronyms and abbreviations may also be necessary. Some typical examples include:*

Acronyms

GEF	Global Environment Facility
GEFSEC	Global Environment Facility Secretariat
PIF	Project Identification Form
PIR	GEF Project Implementation Report
POPP	Programme and Operations Policies and Procedures
PPG	Project Preparation Grant
STAP	GEF Scientific Technical Advisory Panel
APR	Annual Progress Report
AWP	Annual Work Plan
BAU	Business-as-usual
CCM	Climate Change Mitigation
CoP	Community of Practice
COP	(UNFCCC) Conference of the Parties
CPAP	Country Programme Action Plan
DOE	(US) Department of Energy
DPC	Direct Project Cost
EE	Energy Efficiency
EIA	Environmental Impact Assessment
EOP	End of Project
ERBM	Enhanced Results-Based Management
ERC	UNDP Evaluation Resource Center
ESCO	Energy Service Company
EU	European Union
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gases
GMS	General Management Support
GWh	Gigawatt-hour
HACT	Harmonized Approach to Cash Transfer
IEA	International Energy Agency
IFIs	International Financial Institutions
IRENA	International Renewable Energy Agency
KM	Knowledge Management
kWh	Kilowatt-hour
LDCF	Least Developed Country Fund
M&E	Monitoring and Evaluation
MWh	Megawatt-hour
NAMA	Nationally Appropriate Mitigation Actions
NGOs	Non-Government Organizations
O&M	Operation and maintenance
OFP	Operational Focal Point
OPIC	Overseas Private Investment Corporation
PAC	Project Appraisal Committee
PB	Project Board
PIF	Project Identification Form
PIR	Project Implementation Report
PMC	Project management costs
PMU	Project Management Unit
PPA	Power purchase agreement
ProDoc	UNDP Project Document
PV	Photovoltaic

QPR	Quarterly Progress Report
RCMs	Resource Conservations Measures
RCU	Regional Coordinating Unit
RE	Renewable energy
REA	Rural Electrification Agency
RET	Renewable energy technology
RFP	Request for Proposals
RMI	Rocky Mountain Institute
SBAA	Standard Basic Assistance Agreement
SCCF	Special Climate Change Fund
SE4ALL	Sustainable Energy for All Initiative
SSA	Sub-Saharan Africa
TOR	Terms of Reference
UNCSD	United Nations Conference on Sustainable Development
UNDP	United Nations Development Programme
UNDAF	United Nations Development Assistance Framework
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank

II. DEVELOPMENT CHALLENGE

Of all the tools that helped create the modern industrial world, perhaps none is more important than electricity. When communities gain access to reliable power—whether rural areas of the United States in the 1930s or in rural India today—businesses grow, people innovate, health improves, and lives prosper. The absence of electricity threatens people's lives, limits their inherent abilities and prospects, and hinders opportunities out of poverty. Without electricity, vaccines cannot be refrigerated. Children have no light to study at night. Entrepreneurs cannot power tools and equipment, so small and micro-enterprises cannot produce and expand. Small farmers cannot pump water. Mobile phones—the key to so much economic activity in developing countries—cannot be charged.

Despite decades of development assistance, almost one in seven people across the world has no access to reliable electricity, including an astounding two-thirds of all Africans. Some countries, like Chad, Burundi and South Sudan, have electrification rates of less than 10%.[1] Power consumption per capita in sub-Saharan Africa is just 180 kWh per year, compared to 6,500 kWh in Europe and 13,000 kWh in the United States. The development impact is no less stark. Unreliable electricity is estimated to cost Africa 2–4% of GDP annually. And because population is rising more rapidly than new electricity connections, sub-Saharan Africa is the only region in the world where the number of people lacking access to electricity is set to *rise*.[2]

Electrification is so lacking in sub-Saharan Africa because the traditional model of large, centralized power plants and thousands of miles of wires simply will not work. The costs of building power lines are high—as much as $23,500 per kilometer or over $1 million to connect a town 50 km from a power plant or main transmission line. Incomes are low, so most people cannot afford to pay the market rate for electricity, which typically ranges from 10–20 cents/kWh in Africa.[6] With these costs, grid access for low density, low power demand and/or isolated communities is not economically affordable. Connecting dispersed rural residents in places like Rwanda, Uganda, and Sierra Leone can cost between US$300 and US$800 per household that only use 20–50 kWh/month. Even when it can occur, grid expansion is too slow to meet the needs of rapidly burgeoning populations.

[1] https://www.oxfamamerica.org/static/media/files/oxfam-RAEL-energySSA-pt2.pdf

[2] SEforAll Global Tracking Framework. AfDB New Deal on Energy for Africa.

In addition, conventional electricity has a high environmental cost. Greenhouse gas (GHG) emissions from the developing world are projected to rise rapidly. By 2040 sub-Saharan Africa is forecasted to consume 1,600 terawatt hours (TWh) of electricity and emit nearly 700 million metric tons of CO_2 ($MtCO_2$).[3] De-linking electricity supply and GHG emissions fits directly with several of the Sustainable Development Goals, including:

- SDG 7: Secure access to affordable, reliable, sustainable and modern energy for all; and
- SDG 13: Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy

This challenge also relates closely to SDGs related to Poverty (SDG 1), Good Health and Well Being (SDG 3), and Gender Equality (SDG 5) and the goals related to economic growth, small business development, and job creation. All of this is hindered by the persistence of severe energy poverty. Women are disproportionately impacted by lack of electricity access through need for greater labor on basic necessities (e.g., water) and lack of economic opportunity. If schoolgirls had access to light at night, they could study after doing basic household chores.

To deal with energy poverty on a continental scale, RMI understands the solutions as well as the barriers. Small-scale, distributed energy resources (DERs) at the household level can provide a minimal amount of energy but not necessarily at the scale to foster larger-scale economic development for manufacturing and industrial activities. Solar-based household lighting and mobile phone charging systems are crucial for providing rapid access to remedial electricity services, but household systems do not provide sufficient power to support small to medium sized enterprises (SMEs) at costs that are economically viable. For example, the real cost of power for household systems typically exceeds US$1/kWh.

An alluring middle ground is the minigrid/microgrid. Ranging in size from a few kilowatts to over 100 kilowatts, these systems can generate low-cost power that could underpin economic development of SMEs while meeting broader electricity access goals. Minigrids/microgrids can serve both domestic and commercial customers. The ability to serve commercial customers, and in particular productive uses like a grain milling or irrigation, is a distinguishing feature for minigrids. These customers are critical for long-term viability of minigrids because they have higher demand per connection and can provide immediate new income for the community. Despite some minigrid deployment in Africa, widespread adoption is stymied by a number of factors.

1. **Cost:** Minigrids are currently too expensive: typical levelized costs of energy (LCOE) range from $0.50/kWh to as much as $3/kWh.[4] Even for today's best minigrids, the cost of power delivered to customers is more than double the price of power from the grid. Major minigrid cost drivers include system hardware (especially solar panels, batteries, distribution, and metering), generator fuel, and soft costs like project development and customer acquisition.[5]
2. **Mismatch between supply and demand:** Minigrids need demand stimulation programs to drive up use and generate income that will allow newly energized customers to afford this change in lifestyle. Minigrid companies often focus primarily on supply, and new customers are slow to connect and use a small amount of electricity—leading to lost revenue and insufficient volume to spread fixed cost.
3. **Regulatory frameworks:** Regulations do not support minigrid development or solve critical future integration issues with the grid. Slow, unclear and unpredictable licensing and tariff processes create added risk.
4. **Local variation:** Minigrid business models must be adjusted for local conditions, at the regional, national, or even village level. Minigrids companies also need to build local capacity for installing and maintaining the minigrids.

[3] McKinsey. 2015. *Brighter Africa: The growth potential of the sub-Saharan electricity sector.*

[4] IRENA. Innovation Outlook: Renewable Minigrids

[5] Kelly Carlin, Josh Agenbroad, et al. *Energy Within Reach: Growing the minigrid market in sub-Saharan Africa*. (Rocky Mountain Institute, 2017). www.rmi.org/energy_within_reach

5. **Financing:** Most minigrid projects today are grant funded, but the amount and type of funding required over the next 5–10 years for transitioning toward concessional financing and market capital is poorly understood. An unreliable pipeline of projects means upstream suppliers are hesitant to invest in improving and scaling up their offerings.

III. STRATEGY

Theory of Change:

By demonstrating to both public and private actors that (1) the cost of minigrids can be brought down, (2) the investment climate can be improved through regulatory reform, (3) sufficient demand exists for sizable minigrids, and (4) financial institutions are serious about committing funding, those key actors will mobilize the deployment of significant public and private-sector funding and accelerate minigrid development.

The first step is to identify the barriers (outlined above) and propose potential solutions to those barriers (outlined below). By developing hypotheses to explain the root causes of inaction, various key sectors can be mobilized to come together and collectively develop a detailed plan of action (the minigrid summit). During the summit, the project will refine its strategy and demonstrate progress toward overcoming the barriers. This collective and collaborative process will increase interest in deploying minigrid pilots to prove out and scale solutions.

Following the summit, RMI will take proposed solutions, refine them with stakeholders, and adapt country-specific components, such as the regulatory environment, with high potential governments. This will also include country-specific and regional analysis to articulate the demand for minigrids and the minigrid market size in specific markets.

Finally, RMI will use insights from the summit and subsequent country-specific work to develop a program proposal for GEF-supported minigrid pilots to prove out the impact of cost reductions, clear and consistent regulations, and the benefit of a collective minigrid market vision in scaling minigrids. Derisking solutions and proving out hypotheses in this subsequent pilot will stimulate significant additional public and private sector investment in the minigrid market.

Component 1. Design the Summit and Create Pilot Projects Proposal for GEF-7: Component 1 of the project has three objectives: develop analysis and engage participants prior to the summit, translate outcomes of the summit into country-specific programs and project pipelines, and develop clear strategic recommendations for a GEF-7 minigrid program. This pre- and post-summit work is critical to achieving a scalable minigrid model and to enabling GEF support to rapidly test the solutions proposed during the summit and expand the effort in subsequent years.

Pre-summit, RMI will prepare the key analyses that will help facilitate the discussion, such as:

- A review and synthesis of current minigrid efforts in the region with a focus on successes to be amplified and challenges to be addressed; and
- Estimating LCOE for typical renewable energy (RE) based minigrids taking into account technology advancement and policy considerations, such as the cost impact of having duty-free status for imported equipment.

The Summit itself (Component 2) will aim to develop a consortium of partners to develop a $10–$15 million GEF-supported program (under GEF-7) focused on deploying renewable microgrids/minigrids in select sub-Saharan African countries, which will mobilize an additional $100–$200 million in co-financing from the private sector, financing institutions, and donor partners. However, Component 1 also includes post-summit activities that focus on developing pilot projects and programs to test ideas and lay the groundwork for rapid growth after the

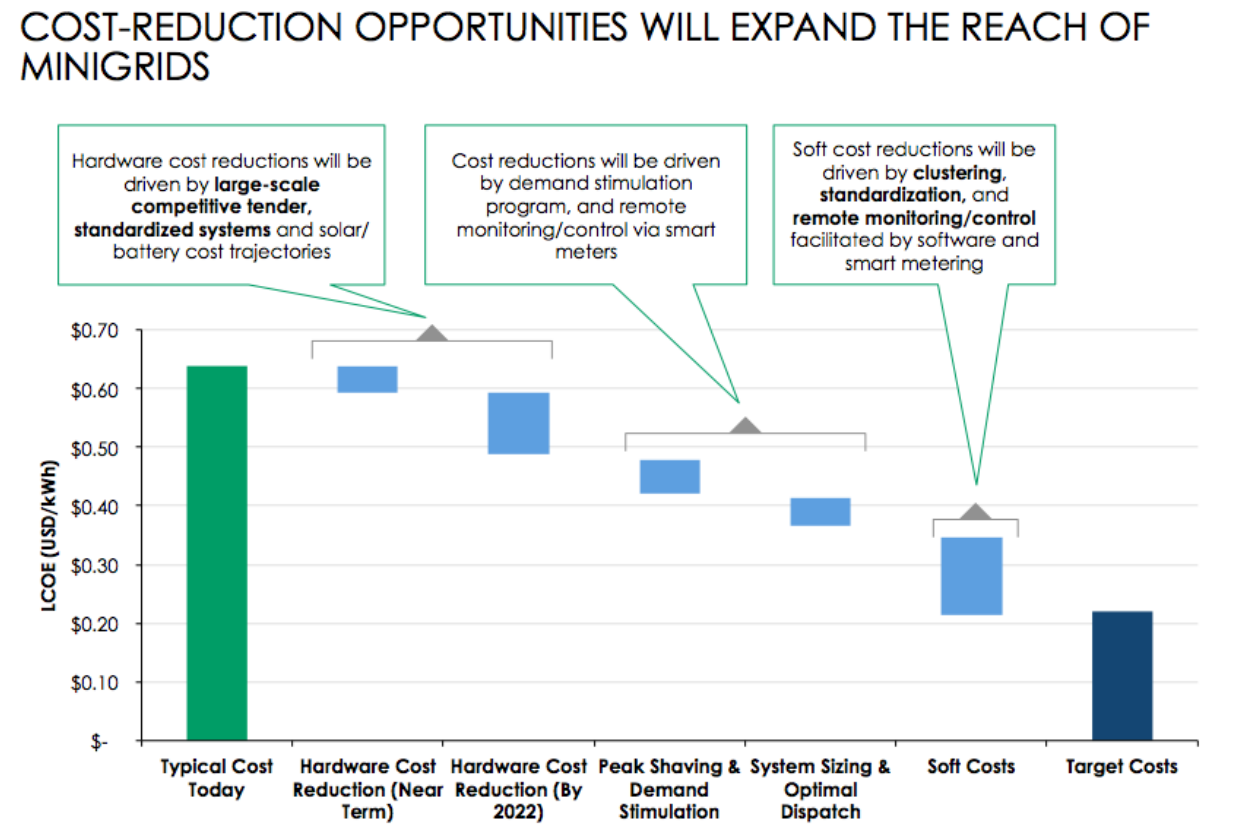
completion of this project. The ultimate goal after these pilots is to hand off a profitable and scalable business model to the private sector that will attract funding by major concessional and commercial financiers.

Key government, utility, and regulatory officials will be involved in the lead-up to the minigrid summit, the summit itself (Component 2), and follow-on work and multilateral/bilateral events to establish a pilot project pipeline and translate ideas to two specific countries. The engagement of key officials from leading African minigrid markets post summit will ensure that the political will is present to implement the pilot projects. Adequate political will is key to their success because a strong regulatory framework, government support, and an enabling environment are all prerequisites for involvement of other stakeholders. Ultimately, it is those countries and their citizens that will be most impacted by the pilot projects.

Component 2. Minigrid Summit: Component 2 consists of executing the Minigrid Summit that will bring together experts and institutions in a working session to design a roadmap for reducing cost and creating a sustainable minigrid market in sub-Saharan Africa. Potential stakeholders include vendors, technology integrators, solar companies, battery manufacturers, software providers, and financiers. RMI will identify the most appropriate companies to invite and the people within those organizations that have the most to contribute. This will be done through a series of interviews and research.

The four-day Minigrid Summit will enable these actors to sit together, outline the problems, and develop actionable next steps. Companies such as PowerGen will be invited, which has already installed 40 minigrids in Africa, as well as CrossBoundary and other financial firms that have helped raise $235 million in concessional and commercial finance for more than 200 minigrids in Kenya. The Summit will rely on a “charrette” approach, an intense effort by all the stakeholders to overcome complex problems and get results. The process includes open conversation, followed by crosscutting, rapid idea generation and testing. The key topics will closely hew to the main barriers described earlier:

How to Bring Down the Cost/Motivating the Private Sector: In short, the market needs a 50% reduction in the cost of minigrid power. While “best practice” minigrids can sell power for about 60 cents/kWh, solar minigrids must be competitive with conventional generators that can achieve a price of about 35 cents/kWh. The participants will roll up their sleeves and discuss how to squeeze cost-savings out of every possible facet of minigrid design and execution—from hardware to labor—as shown in the figure below. The solutions will be based on technologies already at scale, capturing the benefits of global supply chains with local labor handling the assembly and maintenance. Minigrid companies can buy these systems from large upstream players, like GE and ABB, who have the design expertise and access to high volume, mature, global supply chains. Engineering to design custom systems for each site is eliminated. Many components can be more reliably and affordably preassembled in a controlled factory environment instead of one at a time in the field. Software modeling can help ascertain the optimal configuration of solar panels, batteries, and diesel generators to ensure the minigrid is sized appropriately.



Source: Cost reduction is based on current global hardware cost trajectory and cost-savings documented and modeled by RMI that depend on remote monitoring and payment, automated software, clustering, and other measures

These are the kind of ideas that will trigger more rapid cost reductions. Involving these large businesses in the Summit and showing them what can be potentially unlocked with a scalable business model will inspire them to put their investment resources to work in Africa.

Stimulating the Demand: To create a viable business, minigrids must actually sell the power they are capable of producing. An underutilized system cannot generate enough revenue or spread fixed costs over a high enough volume of units sold. The Summit will develop tangible and immediate ideas for how to stimulate demand for the power minigrids can provide. The trick, of course, is not only to think about current demand, but also to consider future demand. For example, when affordable power is available, more people will switch from manual labor to activities that involve power tools and electrical appliances. Farmers will use refrigeration to reduce spoilage or water pumps to expand their acreage. The Summit participants will list out the various ideas for stimulating demand and evaluate both their relative effectiveness and the stakeholders that will need to be involved to execute these strategies on a large scale. These ideas could include but not be limited to:

- Offering loans for electricity-using equipment and devices;
- Sending trained electrification specialists to demonstrate those devices and appliances;
- Allowing customers to finance their connection fees in their monthly bills;
- Using cell phones and mobile banking to educate people about the many uses of electricity and to sell equipment that could be purchased with “pay as you go” plans over mobile phones; and
- Combining low residential demand in rural areas with new businesses that require more power (e.g., water purification facilities or cell phone towers).

Regulatory Reform: Another main topic of discussion will cover what governments can do to streamline minigrid development. UNDP's Derisking Renewable Energy Investment (DREI) framework for mini-grids, which supports governments to identify and cost-effectively target private sector investment risks, thereby lowering financing costs, will be used. The DREI framework offers a theory of change and various tools to assist government decision-making on public interventions. Tanzania and Nigeria have recently established minigrid regulatory frameworks that create an easier path for private minigrid developers and investors. Minigrids under 100 kW in size (in peak power) do not need to seek tariff approval. The frameworks offer clear preparations for minigrid interconnections to the larger grid, if or when the grid is expanded. Both countries have streamlined their permitting processes. To what extent do these examples provide a model for other countries? How can these existing frameworks be improved? This will also inform the discussion about which countries have both a strong private sector and significant latent demand for productive use and can thus take on leadership roles for the minigrid pilots. The regulatory reform concepts that are developed during the workshop will be tested and refined with specific governments in the Component 1 work described above.

Financing: In the sub-Saharan African context, what are best avenues for public and private financing of minigrid systems? What is the size and type of funding required for accelerating progress and bridging the gap to concessional financing and an increasing share of impact or market investors? What is the roadmap and what is required to generate the interest of financial institutions in the region? Can a global procurement consortium and a global financing platform be created that can enable rapid cost reduction, ensure the focus of local entrepreneurs on customer needs and services, and create a sustained source of financing to ensure rapid scaling?

Selecting the best sites to test the business model: Minigrids need to be installed in locations that offer the best opportunities for positive returns on investment. Consistent and relatively substantial sources of demand are crucial. In the developing world, that means locations with productive uses of electricity, such as woodworking shops, stores with large coolers, or grain mills. The ideal location will have several customers with large amounts of demand occurring at different times of the day, which will raise the average capacity utilization and improve the overall economics. Summit participants will review and refine these criteria, offering guidance to the private sector as they scour countries for the best opportunities.

Component 1 Activities

Activities under Component 1 will commence upon GEF approval of the Clean Rural Electrification for African Countries proposal and will aim to complete key activities in advance of the GEF-7 call for proposals. Additional refinement and associated activities may take place following the GEF-7 call for proposals. The outputs of Component 1 will be summit preparation, recommendations for country-specific minigrid pilot programs, and a proposal focused on capacity building, policy recommendations, and minigrid pilots that will be submitted to the GEF (under GEF-7) that aims to create a rapid-scaling platform for commercially viable minigrids in sub-Saharan Africa—with direct applicability to SIDS—including a roadmap for cost-reduction and minigrid investment. Specific activities include:

1. Review and synthesis of current minigrid efforts with a focus on successes that could be amplified and drawbacks that must be addressed
2. Calculate LCOE for typical RE-based minigrids taking into account technology advancement, examining two scenarios, one with and one without national government duty-free policy for RE equipment import
3. Create a roadmap for scaling that begins with a robust set of pilots and competitive procurement to rapidly test, refine, and ultimately scale-up viable minigrid models
4. Outline financial evolution that makes clear the different types of funding, their magnitudes, and their timing to quickly evolve from grant-based experiments to commercially funded businesses
5. Identify regulatory constructs required to allow minigrids to flourish while ensuring cost-effective power and increasing customer service at lower costs
6. Clarify the ecosystem of players required for minigrids to succeed and the roles that each should play, including both electricity supply as well as regulation and demand-stimulation programs for productive-use and economic development

7. Undertake an on-site survey to identify willingness for new, low-income customers in sub-Saharan Africa to pay for power supply
8. Form private and public partnerships in sub-Sahara Africa for minigrid/microgrid investments
9. Estimate the market volume opportunity in sub-Saharan Africa for renewable microgrids/minigrids in communities that currently lack access to electricity
10. Prepare for a workshop in sub-Saharan Africa during the first quarter of 2018

Component 1: Outputs

1.1 Summit pre-read materials that summarize preparatory analysis
1.2 Proposal for GEF-7 call for proposals to resource pilot projects in participating countries (June 2018)
1.3 Stakeholder engagement on roadmaps, to include development, finance, and government partners

Component 2 Activities

Activities under Component 2 include a multiday summit with a goal to co-create a minigrid pathway that informs key post-workshop aspects of Component 1 and garners critical support across stakeholder groups including funders, interested countries (that will participate in the proposed GEF-supported integrated capacity building and minigrid pilot program for sub-Saharan Africa), private sector players, system designers, renewable energy service companies (RESCOs), and entrepreneurs. The Summit aims to provide a catalytic setting to enable stakeholder groups to develop solutions to allow minigrids meet important cost, revenue, and profit targets, and to underpin support for GEF to lead an effort by mid-2018 to rapidly test the solutions proposed during the summit and expand the effort in subsequent years. The Summit will also aim to develop a consortium of partners to develop a $10–$20 million GEF-supported program focused on deploying renewable microgrids/minigrids in sub-Saharan African and mobilize an additional $100–$200 million in co-financing from financing institutions and donor partners.

The Summit will engage ~40 stakeholders to test the hypotheses below and contribute to a roadmap for cost reduction:

- A very low-cost, robust, standardized power plant and associated enabling technologies (e.g., metering, pricing signals, billing) are the cornerstones of a commercially viable business model, and competitive production should take place in a global market. The solutions should be based on technologies already at scale, capture the benefits of global supply chains, and be readily assembled and maintained by relatively low-skill labor. Minigrid companies will buy these systems from large upstream players, like GE and ABB, who have the design expertise and access to high-volume, mature, global supply chains that can reduce cost. One important goal for the summit is inspiring additional research and development investment from these major upstream players by clarifying the large size of the potential market that can be unlocked with a profitable minigrid business model.
- Scaling the local minigrid business ecosystem and accelerating successful deployment in each country requires standardized “franchise-like” tools and business development mechanisms and access to the economies of scale of upstream equipment/system providers.
- Key labor productivity and other demand stimulating technologies need to be identified, optimized for efficiency, and brought to economic scale. Improving energy efficiency of appliances affects customer ability and willingness to pay because more efficient appliances often reduce energy consumption and operation cost by more than half without compromising the service being provided to users. Incorporating soft-start motors can dramatically reduce instantaneous start-up loads, which are expensive to accommodate by focusing on supply-side equipment alone.
- It is important to explore the most appropriate funding mechanisms or models needed in specific countries in SSA, but over time, funding can shift towards concessional financing and blended commercial debt.
- A global procurement consortium and a global financing platform can enable rapid cost reduction, ensure a focus of local entrepreneurs on customer needs and services, and create a sustained and evolving source of financing to ensure rapid scaling.
- Domestic governments must test best practice clear and consistent regulatory models to promote private sector investment in minigrids and should systematically identify risks to target and mitigate.

- Demand stimulation programs, including outreach, financing, and increasing availability of quality and efficient appliances, are critical to successful rural electrification and economic growth.
- High potential countries with a strong private sector, significant latent demand for productive use, and large portions of the country without grid infrastructure can take on leadership roles for the minigrid pilots that will provide the data needed to de-risk minigrid businesses so they can scale rapidly. This is also true for isolated SIDS—particularly in the Pacific.[6]

Component 2 Output Deliverables

2.1 Workshop (Summit) of key stakeholders

2.1 Report summary including a roadmap for cost reductions and clear next steps to create a prioritized pipeline of clean energy minigrid projects

Reduction and Mitigation of GHG Emissions

As a component of the CEO ER for this project, an approximation for the GHG emissions reductions has been made to give an indication of the overall target that may be adopted or, at the very least, elaborated upon during the summit workshops.

From an economic standpoint, one of the compelling aspects of microgrids is that they can leverage the benefits of renewable energy technologies to avoid costs. For example, avoided costs associated with the procurement and transportation (often over long distances) of diesel oil is frequently a significant contributor to the economic advantage of the use of renewables to power minigrids. In reality, however, it is often the case that hybrid systems are employed to reduce the high cost of battery storage that is needed to counter the seasonal variability of energy sources such as solar and wind.

Given the above, a conservative approach to establishing the potential for GHG emissions has been adopted, whereby the use of hybrid systems, made up of a combination of solar/wind, battery storage and diesel generators, are used to power the typical minigrid. It is estimated that these minigrids consume 80% less fossil fuels per kWh when compared to conventional grid electricity.

Given that an estimated 600 million people are without electricity in SSA, and that of these the majority (~70%) are living in rural areas, and of those, 20% are within the countries that will attend the summit, a final figure of 84 million people represents the maximum potential of electricity consumers that stand to benefit from this project. In reality, only a small proportion of these will benefit directly from the project. Therefore, a conservative estimate of 10,000 beneficiaries of minigrids/microgrids is assumed as the minimum number for people who will benefit directly from the child projects developed as a result of this project.

Assuming the average consumption of grid electricity users to be ~50kWh/month, and that the GHG emissions factor for grid electricity is, on average, equal to 0.56 tCO2/MWh, an estimate for the baseline emissions can be calculated. This is approximately equal to 6.7M tCO2 over 20 years and 0.34M tCO2 over the 5 years of project implementation. On face value, the reduction of GHG emissions is, therefore, 70% of these values i.e. 4.69M tCO2 over 20 years and 0.238M tCO2 over 5 years of project implementation.

***GEF CEO endorsement template**: Align (and avoid unnecessary duplication) with the following sections of the GEF CEO Endorsement template: Part II PROJECT JUSTIFICATION A.1 Project Description sub questions 3) and 4) and 6).*

IV. RESULTS AND PARTNERSHIPS

[6] RMI is also working with island nations in the Caribbean and Pacific, where the same technologies and business models apply for isolated grids on smaller islands to provide affordable electricity access.

The main change expected from this project is to accelerate the adoption of innovative technologies and management practices for GHG emission reductions by aligning stakeholders for action around a shared roadmap, which identifies specific regulatory, transaction, and financing needs and which helps secure specific commitments from high-potential countries.

***Component 1—Designing the Summit and Creating Pilot Projects Proposal for GEF-7*:** This will result in the development of relevant insights to inform the summit and to enable launching scaling platforms for commercially viable minigrids as part of the GEF-7 replenishment, including a roadmap for cost reduction, policy innovation, and financing for a three-year program. The resulting specific outputs will be:

1. A summit pre-read to support Component 2 of this proposal

2. A proposal focused on capacity building, policy recommendations, and mini grid pilots that will be submitted to the GEF (GEF-7)

3. Identification and full economic and technical feasibility of several pilot projects in two countries, with US$10 million worth of minigrid projects/equipment installed by 2020

Component 2—Summit Results: The Summit will result in an action plan to create a rapid-scaling platform for commercially viable mini grids in sub-Saharan Africa with direct applicability to SIDS. The outputs will be:

4. A much greater understanding of the challenges and opportunities for minigrid development in Africa, providing key stakeholders with specific, actionable steps based on their role and ability to influence the market (e.g., policy makers focusing on regulatory reforms, international suppliers adjusting their equipment offerings, etc.)

5. A set of action items to be incorporated into a larger roadmap for cost reduction and minigrid investment, as well as the data set needed to develop a replicable microgrid model by the end of 2019

6. A clear sense as to which governments should be engaged to further refine the points above in post-Summit Component 1 work.

Partnerships:

Partner	Role and Link to Theory of Change	Expected Results and why they are critical
GEF Agencies: UNDP, UNEP, AfDB, UNIDO, BOAD	GEF Agencies with experience in the region are essential partners for the identification, development and implementation of rural electrification projects	To liaise with governments with the purpose of shaping child projects, identifying co-financers as well as parallel funding for these projects. Essential for the implementation of projects.

Suppliers: ABB, GE, Schneider, Energie, Outback, Sparkmeter, Steam.co, Odyssey	Upstream Supply Chain. Industry leaders to bring standardized solutions to market and access volume.	Need standardized equipment/service solutions to bring down cost; ability to integrate energy supply and storage to optimize minigrid performance—this is critical to provide confidence in the technology and to create a simplified solution that can be installed and maintained locally. Metric of success: willingness to invest in Africa, help finance pilots, provide other human capital and investment resources.
Developers: PowerGen, Powerhive, MeshPower, Acra	Downstream implementers who deliver the standard solution to markets they know and understand.	Need for local companies who understand market and can implement projects on the ground. Metric of success: number of projects developed, staff hired and trained, partnerships formed with other players in the minigrid supply chain.
Funders: The GEF, AfDB, AFD, EIB, DFID, Acumen, Rockefeller Foundation, World Bank Group, All On, California Clean Energy Fund	Concessionary financing, impact investors, grants, philanthropy.	Need for concessionary finance to start scaling the market, leading eventually to a completely private-sector-driven market. Metric of success: minigrid projects considered, support grants given, and ultimately, projects financed.
Government: Governments, Regulators, Utilities	Leaders willing to experiment, clear the way for pilots, and actively help find high potential sites.	Need to make the regulatory framework more minigrid friendly. Metric of success: policy reforms and regulations drafted and implemented.

Risks and Assumptions*:*

No:	Risk	Rating	Mitigation Measure
1	Lack of political will to move forward with proposed sub-Saharan Africa capacity-building and minigrid pilot program	Medium	Providing access to the more than 600 million people in sub-Saharan Africa is a top priority of African governments and donor partners. However, the project will aim to catalyze political will during the Minigrid Summit and galvanize donor grant and concessionary financing to ensure commitment to financing minigrids for rural communities without access.
2	Minigrid Summit is not well attended or does not lead to actionable outcomes	Low	The Minigrid Summit will be prepared and executed with a high degree of oversight and invitations will be disseminated widely. RMI has already been working with many of the leading minigrid companies and several of the leading government agencies. These partners will be engaged early and often when designing activities and outcomes.
3	Minigrid Summit does not mobilize donor funding	Medium	Direct outreach before, during, and after the Minigrid Summit will help galvanize support from bilateral agencies, donor groups, and

	required to finance minigrids to be identified and prepared under the proposed sub-Saharan African capacity building and minigrid pilot program		impact investors to agree to provide grant and concessional financing for minigrids identified and prepared under the proposed sub-Saharan African capacity building and minigrid pilot program. This risk will be further mitigated with support from The Rockefeller Foundation and Virgin Unite who have both committed to mobilizing donor partners to contribute both debt and investor grant and concessional financing for identified minigrid pilot projects.
4	Demand too low to support minigrid business models	Medium-high	Ensure that minigrid pilots be sited in locations where productive demand already exists or can be created through setting up other businesses that require power. Include strong demand-stimulation programs, such as loans for appliances. Bring to bear RMI's years of analysis of minigrid business models, along with the market experience, data, and intuition of leading development partners such as DFID, GIZ, the World Bank, and the African Development Bank. Incorporate the approach and business models of the leading private minigrid developers on the continent, such as PowerGen, to improve site selection and demand stimulation. Build on the learning of past initiatives—such as Vulcan's Kenya minigrids—and current initiatives—such as the Microgrid Investment Accelerator—by including them in the Minigrid Summit.
5	Demand outstrips minigrid capacity	Low	Design and build each minigrid pilot so that it can be inexpensively expanded if demand grows to exceed capacity. Rely on the technical expertise of major upstream hardware developers like GE and ABB, the experience of minigrid developers on the ground handling modular capacity challenges, and the demand forecasting ability of the leading minigrid software companies such as HOMER and Odyssey Energy.
6	Unfavorable government regulations and policies	Medium	Carefully identify and detail the components of a supportive minigrid regulatory framework, typified by those in Tanzania and Nigeria. Work closely with leading rural electrification agencies, such as the agencies of Nigeria and Uganda, to ensure the necessary regulatory environment and ultimately attract both companies and investment. After sighting initial minigrid pilots in countries with favorable regulations and policies, work with other supportive countries to improve theirs by demonstrating success, closely communicating, and bringing them along as learning occurs. RMI's partnership with SE4ALL, the UN organization focused on the energy transition, should further help us to overcome government barriers.

Stakeholder engagement plan:

Stakeholder engagement is an essential element of this project: major aspects of Component 1 and Component 2 are explicitly focused on engaging stakeholders. RMI is already actively engaged with key stakeholders in the government, business, technical, academic, and community sectors.

Six key stakeholder groups are described in the table below. RMI has existing collaborations with those listed and will collaborate with partners to identify others. These stakeholders will participate in the Summit and/or pilot project pipeline design. Stakeholders will own elements of the pilot project pipeline, for example in investment or implementation. Many are already heavily involved in the African minigrid market. Participation in the Summit and design of projects will ensure critical elements of cost, revenue, and energy access are included and accurate to the region. See Annex F: Stakeholder Engagement Plan for additional detail.

Key Stakeholders

Category	Role	Stakeholders
The GEF and GEF Agencies	To identify, develop and implement rural electrification projects under GEF-7	The GEF, UNDP, UNEP, AfDB, UNIDO, BOAD
Upstream Equipment and Software	Supply Chain. Industry leaders to bring standardized solutions to market and access volume.	ABB, GE, Schneider, Energie, Outback, Sparkmeter, Steam.co, Odyssey
Downstream project developers and operators	Implementation. Entrepreneurs who deliver the standard solution to markets they know and understand.	PowerGen, Powerhive, MeshPower, Acra, others. Organizations like the Africa Minigrid Developers Association (AMDA)
Investors	Concessionary financing, impact investors, grants, philanthropy.	AfDB, DFID, Acumen, Rockefeller Foundation, World Bank Group, All On, California Clean Energy Fund
Governments, Regulators, Utilities	Leaders willing to experiment, clear the way for pilots, and actively help find high potential sites	REA leaders and utilities in countries including: Nigeria, Ethiopia, Uganda, Rwanda, and Sierra Leone
NGOs, Development Partners	Information and networking for local engagement and global scaling.	SE4ALL, One Acre Fund, Tony Blair Initiative, CrossBoundary
Civil Society Community	Beneficiaries of increased supply and demand stimulation for local markets	SACCOs, Agriculture Coops

Stakeholders have been selected on the basis of the RMI team's stakeholder analysis and two prior years of work in sub-Saharan Africa on minigrid market development. Extensive on-the-ground conversations with every stakeholder group, in combination with field visits to operating and potential minigrid sites across Africa, have informed the selection of stakeholders. An effort has been made to balance experts and industry leaders from leading African markets and from the international community. Each stakeholder group represents a key part of the nascent minigrid market in sub-Saharan Africa and the participation of each is necessary for the growth of the market.

Stakeholders will be engaged in the lead-up to the design summit to inform its design. At the design summit itself, stakeholders will be intensely active participants in the 4-day event, contributing their knowledge and perspective to the development of a cost-reduction roadmap and the realization of a minigrid project pipeline in the region. Following the design summit, stakeholders, including specific governments, will be engaged through a multilateral meeting to communicate the findings of the event. Thereafter, ongoing bilateral discussions with stakeholders will facilitate the implementation of the minigrid pilot project pipeline, and the development of projects themselves.

Gender equality and empowering women:

Women are disproportionately hurt by lack of electricity access through need for greater labor on basic necessities (e.g., water) and lack of economic opportunity. Women disproportionately take advantage of access to electricity. Therefore, minigrid solutions will reduce the burden on women and create economic benefits that will help reduce gender inequality. For example, until recently, the Nigerian hamlet of Wamu lacked electricity, though it is just an hour and a half from Nigeria's capital, Abuja. When many of the residents received enough power for a few lights and a cell phone charger via distributed energy resources, the changes were swift. Grades for girls rose because the girls could study at night after cooking and doing other chores during the day. With pumps, electricity frees women from hours of daily drudgery carrying water.

South-South and Triangular Cooperation (SSTrC):
All insights and knowledge gained from the Minigrid Summit will be captured and disseminated to Summit participants, interested governments, and pre-identified bi-lateral agencies, donor groups, and impact investors. In addition, applicable insights will be shared through sub-Saharan African regional organizations such as African Minigrid Developers Association and/or the ECOWAS Center for Renewable Energy and Energy Efficiency. RMI will further share insights with the SIDS Renewable Community of Practice established by the GEF-supported Ten Island Challenge: Derisking the Transition of the Caribbean from Fossil Fuels to Renewables (Project ID: 8006), which currently has over 400 active users from over 40 island countries across the Caribbean, Pacific, Indian, and Atlantic oceans.

Sustainability and Scaling Up:
The project focus on commercial viability will ensure the impact is scalable and sustainable. The minigrid design summit will create a credible roadmap for cost reduction and align stakeholders to work toward a multibillion-dollar market opportunity. The minigrid summit will arrange a pipeline of projects that can be used to test ideas and prove out those cost reductions and other business model improvements that can attract further investment. The summit will clarify funding needs for the longer-term, including a transition to concessional and market financing.

The full impact from rapid scaling of the minigrid model will become clearer over time, but current estimates suggest that at scale minigrids can:

- Provide enough power to meaningfully support economic development at CAGRs approaching 6–10%.
- Underpin a quadrupling of GDP for rural poor in 15 years
- Bring electricity access to hundreds of millions of people in developing nations in a 10–15 year time horizon
- Can couple supply-side solutions with demand-side stimulation to create commercially-viable businesses
- Can avoid much of the 3,700 $MtCO_2$ Africa and India are expected to collectively emit by 2040
- Beat grid solutions for rural customers and support economic activity in ways that small-scale solar systems most often cannot
- Scale the most promising approaches to reach millions by the end of the decade with a consortium of participants building off of lessons learned from those initial pilots

The impact of the project will scale globally through universally applicable components, regardless of whether the eventual minigrid customer lives in rural Nigeria or northern India. The availability of demand, customers, and finance will be reinforced throughout the project. As outcomes from the minigrid design summit, an industry roadmap to achieve hardware cost-reduction opportunities, the identification of opportunities to further reduce assembly and manufacturing costs, and improvements in the concessional and commercial financing of minigrids will all have global applications.

In addition to the global-scaling potential of the project, the impact will also scale regionally, adapting to the variable conditions of countries and markets as part of the post-summit Component 1 work. Some mechanics that emerge from the design summit will be adaptable to regional markets. This will be explored during the workshop and refined in subsequent stakeholder engagement. The impact of improved techniques for customer acquisition and ongoing support will scale regionally according to markets. The physical and social structure of different communities will also call for different approaches and result in adaptable regional scaling. And finally, the varying approaches of government engagement and the resulting regulatory framework for minigrids will lead to regional scaling.

The confidence of impact, both globally and regionally, will be supported throughout the course of the project by pressure-testing. The co-created roadmap will engage all minigrid interests, leading stakeholders to express buy-in. Actionable business plans with benchmark stakeholder interests will ensure impact. After the project timeline,

minigrid demonstration pilots will provide key data to test the outcomes of the design summit. Thereafter, pilot project testing will indicate the feasibility of business plans. At each step, stakeholders will weigh in, further ensuring the project's success.

V. PROJECT MANAGEMENT

Cost efficiency and effectiveness*:*

The ultimate goal of the work supported by this project is to create scalable minigrid business models that will stimulate concessional and ultimately private capital investment in minigrids globally. The initial GEF investment of $900,000 will result in $550,000 in co-financing to develop the cost reduction pathway, recommendations for a GEF-7 minigrid program, and a pilot proposal for $10 to $15 million in minigrid pilot projects that will further unlock $200M in concessional financing by leveraging grant funding to de-risk and prove out minigrid risk models.

A 60 kW solar-hybrid minigrid can supply enough power to support 10–15% growth rates in a rural community or village for up to 20 years, saving the community $70,000–$200,0000 per year in fuel and other costs required to run inefficient, dirty, and often dangerous small generators. As an example, if half of Nigeria's 10 GW of off-grid power generation could be replaced with efficient solar-hybrid minigrids, customers would save up to $5 billion dollars per year on fuel and other generator costs.

The pilot projects resulting from the completion of this work will bring affordable and reliable power to an estimated 50,000 people and more than 1,000 businesses and shops in 50 communities. As the pilot phase transitions to full concessional and commercial finance the impact will scale to an additional 1,000 sites. A full commercial transition will stimulate more than $1 billion in investment in more than 10,000 sites.

Project management*:*

Implementing partner Rocky Mountain Institute (RMI) is an independent nonprofit founded in 1982 that transforms global energy use to create a clean, prosperous, and secure low-carbon future. It engages businesses, communities, institutions, and entrepreneurs to accelerate the adoption of market-based solutions that cost-effectively shift from fossil fuels to efficiency and renewables. RMI has offices in Basalt and Boulder, Colorado; New York City; Washington, D.C.; and Beijing. RMI is a registered 501(c)(3) and engages businesses, communities, institutions, and entrepreneurs to accelerate the adoption of market-based solutions that cost-effectively shift from fossil fuels to efficiency and renewables. RMI manages hundreds of projects and provides technical expertise to government and business worldwide. From 2012–2016, RMI experienced 19–70% annual revenue growth from $9 million to $29 million. As of year-end 2017, RMI has 174 staff to support 12 research and collaboration programs and institutional core units: finance, human resource, development, and project management.

RMI will operationalize the project with activities in sub-Saharan Africa.

Agreement on intellectual property rights and use of logo on the project's deliverables and disclosure of information**:** To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy[7] and the GEF policy on public involvement.[8]

[7] See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/

[8] See https://www.thegef.org/gef/policies_guidelines

VI. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s): *SDG 7 and 13*					
This project will contribute to the following country outcome included in the UNDAF/Country Programme Document: *Regional, so does not apply*					
This project will be linked to the following output of the UNDP Strategic Plan: *consult with the UNDP Country Office and the UNDP-GEF Regional Technical Advisor before selecting one of the following outputs. Delete the outputs copied below that are not selected. See opening section under further information for additional details.* 1.5.1 Solutions adopted to achieve universal access to clean, affordable and sustainable energy, with focus on (b) In rural areas.					
	Objective and Outcome Indicators **(no more than a total of 15 -16 indicators)**	**Baseline[9]**	**Mid-term Target[10]**	**End of Project Target**	**Data Collection Methods and Risks/Assumptions[11]**
Project Objective: **To develop a distinctive approach and accelerate the deployment of rural electrification utilizing renewable minigrids**	The indicators relating to "closing the energy gap" are Number and proportion of households benefiting from clean, affordable and sustainable energy access: **b) In rural areas**	Currently a small minority of rural communities benefiting from clean and affordable energy access. Also, there are no GEF-7 projects identified to tackle rural electrification in SSA	A minimum of 2 rural electrification projects identified for funding under the GEF-7 cycle	A minimum of 5 rural electrification projects identified for funding under the GEF-7 cycle Scaling strategy presented to GEF-7 in June 2018 with follow on support for implementation through January 2019.	Data sourced during workshops taking place at both summits
					Risks: Lack of political will and engagement from Governments and Stakeholders Assumptions: Governments and stakeholders invited to attend summit to so and feasible projects eligible for GEF funding identified.
Component/Outcome[12] 1	*Indicator 1:* Number of recommendations	0	15 initial recommendations identified	10 final recommendations provided	The creation and delivery of scaling recommendations to GEF

[9] Baseline, mid-term and end of project target levels must be expressed in the same neutral unit of analysis as the corresponding indicator. Baseline is the current/original status or condition and need to be quantified. The baseline must be established before the project document is submitted to the GEF for final approval. The baseline values will be used to measure the success of the project through implementation monitoring and evaluation.

[10] Target is the change in the baseline value that will be achieved by the mid-term review and then again by the terminal evaluation.

[11] Data collection methods should outline specific tools used to collect data and additional information as necessary to support monitoring. The PIR cannot be used as a source of verification.

[12] Outcomes are short to medium term results that the project makes a contribution towards, and that are designed to help achieve the longer term objective. Achievement of outcomes will be influenced both by project outputs and additional factors that may be outside the direct control of the project.

Design scaling mechanisms for minigrids funded by GEF-7 replenishment	created for scaling minigrids through subsequent GEF programs				will be used to assess target completion.
					Risks: Project unable to be completed within time frame, a smaller number of recommendations for scaling are developed Assumptions: Stakeholders engage in process and provide input into the process thereby creating multiple recommendations for scaling minigrids
	Indicator 2: Number of countries identified for pilots	0	4 potential countries identified	2 finalist countries identified with expressions of interest in a minigrid pilot program signed	The identification of countries and number of signed expressions of interest will be used to assess target completion
					Risks: Participating countries unable or unwilling to contribute to road map and recommended pilots Assumptions: Cost benefits attract governments to participate in pilot design.
Component/ Outcome 2 **Minigrid summit**	*Indicator 3:* Number of minigrid summit participants	0	40 participants invited to summit	40 participants attend summit	The invitation and final participant list will be used to assess target completion.
					Risks: Summit participation is low Assumptions: The value proposition of collectively developing a cost-reduction and minigrid-scaling roadmap will attract participants
	Indicator 4: Number of cost-reduction, regulatory	0	20	20	The number of concepts in the post summit summary will be used to assess target completion

	reform, business model innovation concepts developed during the summit				Risks: new concepts are not generated during summit Assumptions: There are many concepts for scaling yet to be articulated in the minigrid market

VII. MONITORING AND EVALUATION (M&E) PLAN

The project results as outlined in the project results framework will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results. *Supported by Component/Outcome Four: Knowledge Management and M&E, the project monitoring and evaluation plan will also facilitate learning and ensure knowledge is shared and widely disseminated to support the scaling up and replication of project results.*

Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the UNDP POPP and UNDP Evaluation Policy. The UNDP HQ will work with the relevant project stakeholders to ensure UNDP M&E requirements are met in a timely fashion and to high quality standards. Additional mandatory GEF-specific M&E requirements (as outlined below) will be undertaken in accordance with the GEF M&E policy and other relevant GEF policies[13].

In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report. This will include the exact role of project target groups and other stakeholders in project M&E activities including the GEF Operational Focal Point and national/regional institutes assigned to undertake project monitoring. The GEF Operational Focal Point will strive to ensure consistency in the approach taken to the GEF-specific M&E requirements (notably the GEF Tracking Tools) across all GEF-financed projects in the country. This could be achieved for example by using one national institute to complete the GEF Tracking Tools for all GEF-financed projects in the country, including projects supported by other GEF Agencies.[14]

M&E Oversight and monitoring responsibilities:

Project Manager: The Project Manager is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Manager will ensure that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Manager will inform the Project Board, and the UNDP-GEF RTA of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted.

The Project Manager will develop annual work plans based on the multi-year work plan included in Annex, including annual output targets to support the efficient implementation of the project. The Project Manager will ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for evidence-based reporting in the GEF PIR, and that the monitoring of risks and the various plans/strategies developed to support project implementation (e.g. ESMP, gender action plan, stakeholder engagement plan etc..) occur on a regular basis.

[13] See https://www.thegef.org/gef/policies_guidelines

[14] See https://www.thegef.org/gef/gef_agencies

Project Board: The Project Board will take corrective action as needed to ensure the project achieves the desired results. The Project Board will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the project's final year, the Project Board will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.

Project Implementing Partner: The Implementing Partner is responsible for providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes, and is aligned with national systems so that the data used and generated by the project supports national systems.

UNDP-GEF HQ: The UNDP-GEF HQ will support the Project Manager as needed, including through supervision missions. The supervision missions will take place according to the schedule outlined in the annual work plan. Supervision mission reports will be circulated to the project team and Project Board within one month of the mission. The UNDP-GEF HQ will initiate and organize key GEF M&E activities including the annual GEF PIR, and the independent terminal evaluation. The UNDP-GEF HQ will also ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality.

The UNDP-GEF HQ is responsible for complying with all UNDP project-level M&E requirements as outlined in the UNDP POPP. This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; that annual targets at the output level are developed and monitored and reported using UNDP corporate systems; the regular updating of the ATLAS risk log; and, the updating of the UNDP gender marker on an annual basis based on gender mainstreaming progress reported in the GEF PIR and the UNDP ROAR. Any quality concerns flagged during these M&E activities (e.g. annual GEF PIR quality assessment ratings) must be addressed by the UNDP-GEF HQ and the Project Manager.

The UNDP-GEF HQ will retain all M&E records for this project for up to seven years after project financial closure to support ex-post evaluations undertaken by the UNDP Independent Evaluation Office (IEO) and/or the GEF Independent Evaluation Office (IEO). Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP-GEF Regional Technical Advisor as needed.

Audit: The project will be audited as per UNDP Financial Regulations and Rules and applicable audit policies on NIM implemented projects.[15]

Additional GEF monitoring and reporting requirements:

Inception Workshop and Report: A project inception workshop will be held within two months after the project document has been signed by all relevant parties to, amongst others:
a) Re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project strategy and implementation;
b) Discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms;
c) Review the results framework and finalize the indicators, means of verification and monitoring plan;
d) Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP in M&E;

[15] See guidance here: https://info.undp.org/global/popp/frm/pages/financial-management-and-execution-modalities.aspx

e) Update and review responsibilities for monitoring the various project plans and strategies, including the risk log; SESP, Environmental and Social Management Plan and other safeguard requirements; project grievance mechanisms; the gender strategy; the knowledge management strategy, and other relevant strategies;
f) Review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; and
g) Plan and schedule Project Board meetings and finalize the first year annual work plan.

The Project Manager will prepare the inception report no later than one month after the inception workshop. The inception report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Board.

GEF Project Implementation Report (PIR): The Project Manager, the UNDP Country Office, and the UNDP-GEF Regional Technical Advisor will provide objective input to the annual GEF PIR covering the reporting period July (previous year) to June (current year) for each year of project implementation. The Project Manager will ensure that the indicators included in the project results framework are monitored annually in advance of the PIR submission deadline so that progress can be reported in the PIR. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR.

The PIR submitted to the GEF will be shared with the Project Board. The UNDP Country Office will coordinate the input of the GEF Operational Focal Point and other stakeholders to the PIR as appropriate. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

Lessons learned and knowledge generation: Results from the project will be disseminated within and beyond the project intervention area through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to the project. The project will identify, analyse and share lessons learned that might be beneficial to the design and implementation of similar projects and disseminate these lessons widely. There will be continuous information exchange between this project and other projects of similar focus in the same country, region and globally.

GEF Focal Area Tracking Tools: The following GEF Tracking Tool(s) will be used to monitor global environmental benefits: *list the required GEF Tracking Tool(s), as agreed with the UNDP-GEF Regional Technical Advisor.* The baseline/CEO Endorsement GEF Focal Area Tracking Tool(s) – submitted as Annex to this project document – will be updated by the Project Manager/Team (not the evaluation consultants hired to undertake the *MTR* or the TE) *(indicate other project partner, if agreed)* and shared with *the mid-term review consultants* and terminal evaluation consultants before the required *review/*evaluation missions take place. The updated GEF Tracking Tool(s) will be submitted to the GEF along with the completed *Mid-term Review report* and Terminal Evaluation report.

Terminal Evaluation (TE): An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terminal evaluation process will begin three months before operational closure of the project allowing the evaluation mission to proceed while the project team is still in place, yet ensuring the project is close enough to completion for the evaluation team to reach conclusions on key aspects such as project sustainability. The Project Manager will remain on contract until the TE report and management response have been finalized. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the UNDP Evaluation Resource Center. As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final TE report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Board. The TE report will be publicly available in English on the UNDP ERC.

The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan, and will upload the final terminal evaluation report in English and the corresponding management response to the UNDP Evaluation Resource Centre (ERC). Once uploaded to the ERC, the UNDP IEO will undertake a quality assessment and validate the findings and ratings in the TE report, and rate the quality of the TE report. The UNDP IEO assessment report will be sent to the GEF IEO along with the project terminal evaluation report.

Final Report: The project's terminal PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Mandatory GEF M&E Requirements and M&E Budget:

Note to project developers: *Delete rows with italic text as appropriate (e.g. if the project is medium-sized).*

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget[16] (US$)		Time frame
		GEF grant	Co-financing	
Inception Workshop	UNDP Country Office	add	*add*	Within two months of project document signature
Inception Report	Project Manager	None	None	Within two weeks of inception workshop
Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP	UNDP Country Office	None	None	Quarterly, annually
Risk management	Project Manager Country Office	None	None	Quarterly, annually
Monitoring of indicators in project results framework *(add name of national/regional institute if relevant)*	Project Manager	Per year: USD 4,000	*add*	Annually before PIR
GEF Project Implementation Report (PIR)	Project Manager and UNDP Country Office and UNDP-GEF team	None	None	Annually
NIM Audit as per UNDP audit policies	UNDP Country Office	Per year: USD 3,000	*add*	Annually or other frequency as per UNDP Audit policies
Lessons learned and knowledge generation	Project Manager	*add*	*add*	Annually
Monitoring of environmental and social risks, and corresponding management plans as relevant	Project Manager UNDP Country Office	*add*	*add*	On-going
Stakeholder Engagement Plan	Project Manager UNDP Country Office	*add*	*add*	On-going
Gender Action Plan	Project Manager UNDP Country Office	*add*	*add*	On-going

[16] Excluding project team staff time and UNDP staff time and travel expenses.

	UNDP GEF team			
Addressing environmental and social grievances	Project Manager UNDP Country Office	*add*	*add*	On-going
Project Board meetings	Project Board UNDP Country Office Project Manager	*add*	*add*	At minimum annually
Supervision missions	UNDP Country Office	None[17]	*add*	Annually
Oversight missions	UNDP-GEF team	None[17]	*add*	Troubleshooting as needed
GEF Secretariat learning missions/site visits	UNDP Country Office and Project Manager and UNDP-GEF team	None	*add*	To be determined.
Terminal GEF Tracking Tool to be updated by (*add name of national/regional institute if relevant)*	Project Manager	USD 10,000	*add*	Before terminal evaluation mission takes place
Independent Terminal Evaluation (TE) included in UNDP evaluation plan, and management response	UNDP Country Office and Project team and UNDP-GEF team	USD 30,000	*add*	At least three months before operational closure
Translation of MTR and TE reports into English	*UNDP Country Office*	*USD 5000*	*add*	*As required. GEF will only accept reports in English.*
TOTAL indicative COST Excluding project team staff time, and UNDP staff and travel expenses		*USD 52,000*	*add*	

VIII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

Roles and responsibilities of the project's governance mechanism: The project will be implemented following UNDP's NGO implementation modality according to the Standard Basic Assistance Agreement between UNDP and the Government of Nigeria, and the Country Programme.

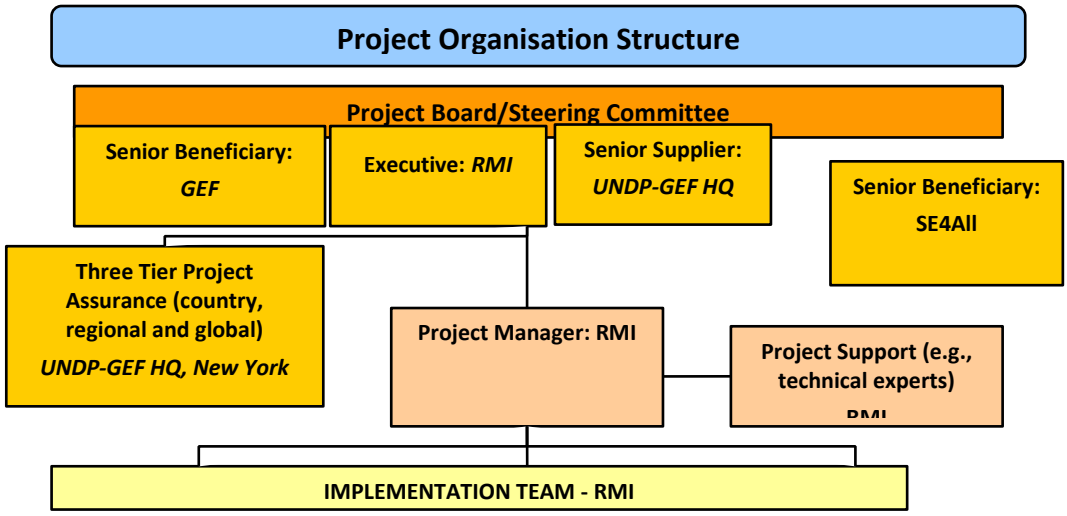
The **Implementing Partner** for this project is *Rocky Mountain Institute.* The Implementing Partner is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources.

The Implementing Partner is responsible for:

- Approving and signing the multiyear workplan;
- Approving and signing the combined delivery report at the end of the year; and,
- Signing the financial report or the funding authorization and certificate of expenditures.

The project organisation structure is as follows:

[17] The costs of UNDP Country Office and UNDP-GEF Unit's participation and time are charged to the GEF Agency Fee.



Project Board: The Project Board (also called Project Steering Committee) is responsible for making by consensus, management decisions when guidance is required by the Project Manager, including recommendations for UNDP/Implementing Partner approval of project plans and revisions, and addressing any project level grievances. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case a consensus cannot be reached within the Board, final decision shall rest with the UNDP Programme Manager.

Specific responsibilities of the Project Board include:

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
- Address project issues as raised by the project manager;
- Provide guidance on new project risks, and agree on possible countermeasures and management actions to address specific risks;
- Agree on project manager's tolerances as required;
- Review the project progress, and provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
- Appraise the annual project implementation report, including the quality assessment rating report; make recommendations for the workplan;
- Provide ad hoc direction and advice for exceptional situations when the project manager's tolerances are exceeded; and
- Assess and decide to proceed on project changes through appropriate revisions.

The composition of the Project Board must include the following roles:

Executive: RMI
Senior Supplier: UNDP HQ
Senior Beneficiary: GEF and SEforALL
Project Manager: RMI

Executive: The Executive is an individual who represents ownership of the project who will chair the Project Board. This role can be held by a representative from the Government Cooperating Agency or UNDP. The Executive is: *Stephen Doig.*

The Executive is ultimately responsible for the project, supported by the Senior Beneficiary and Senior Supplier. The Executive's role is to ensure that the project is focused throughout its life cycle on achieving its objectives and delivering outputs that will contribute to higher level outcomes. The executive has to ensure that the project gives value for money, ensuring cost-conscious approach to the project, balancing the demands of beneficiary and supplier.

Specific Responsibilities: (as part of the above responsibilities for the Project Board)

- Ensure that there is a coherent project organisation structure and logical set of plans;
- Set tolerances in the AWP and other plans as required for the Project Manager;
- Monitor and control the progress of the project at a strategic level;
- Ensure that risks are being tracked and mitigated as effectively as possible;
- Brief relevant stakeholders about project progress;
- Organise and chair Project Board meetings.

Senior Supplier: The Senior Supplier is an individual or group representing the interests of the parties concerned which provide funding and/or technical expertise to the project (designing, developing, facilitating, procuring, implementing). The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project. The Senior Supplier role must have the authority to commit or acquire supplier resources required. If necessary, more than one person may be required for this role. Typically, the implementing partner, UNDP and/or donor(s) would be represented under this role. The Senior Supplier is: UNDP

Specific Responsibilities (as part of the above responsibilities for the Project Board)

- Make sure that progress towards the outputs remains consistent from the supplier perspective;
- Promote and maintain focus on the expected project output(s) from the point of view of supplier management;
- Ensure that the supplier resources required for the project are made available;
- Contribute supplier opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Arbitrate on, and ensure resolution of, any supplier priority or resource conflicts.

Senior Beneficiary: The Senior Beneficiary is an individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries. The Senior Beneficiary role is held by a representative of the government or civil society. The Senior Beneficiary is SE4ALL (?)

The Senior Beneficiary is responsible for validating the needs and for monitoring that the solution will meet those needs within the constraints of the project. The Senior Beneficiary role monitors progress against targets and quality criteria. This role may require more than one person to cover all the beneficiary interests. For the sake of effectiveness, the role should not be split between too many people.

Specific Responsibilities (as part of the above responsibilities for the Project Board)

- Prioritize and contribute beneficiaries' opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Specification of the Beneficiary's needs is accurate, complete and unambiguous;
- Implementation of activities at all stages is monitored to ensure that they will meet the beneficiary's needs and are progressing towards that target;
- Impact of potential changes is evaluated from the beneficiary point of view;
- Risks to the beneficiaries are frequently monitored.

Project Manager: The Project Manager has the authority to run the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the Board. The Project Manager is responsible for day-to-day

management and decision-making for the project. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost.

The Implementing Partner appoints the Project Manager, who should be different from the Implementing Partner's representative in the Project Board.

Specific responsibilities include:

- Provide direction and guidance to project team(s)/ responsible party (ies);
- Liaise with the Project Board to assure the overall direction and integrity of the project;
- Identify and obtain any support and advice required for the management, planning and control of the project;
- Responsible for project administration;
- Plan the activities of the project and monitor progress against the project results framework and the approved annual workplan;
- Mobilize personnel, goods and services, training and micro-capital grants to initiative activities, including drafting terms of reference and work specifications, and overseeing all contractors' work;
- Monitor events as determined in the project monitoring schedule plan/timetable, and update the plan as required;
- Manage requests for the provision of financial resources by UNDP, through advance of funds, direct payments or reimbursement using the fund authorization and certificate of expenditures;
- Monitor financial resources and accounting to ensure the accuracy and reliability of financial reports;
- Be responsible for preparing and submitting financial reports to UNDP on a quarterly basis;
- Manage and monitor the project risks initially identified and submit new risks to the project board for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log;
- Capture lessons learned during project implementation;
- Prepare the annual workplan for the following year; and update the Atlas Project Management module if external access is made available.
- Prepare the GEF PIR and submit the final report to the Project Board;
- Based on the GEF PIR and the Project Board review, prepare the AWP for the following year.
- Ensure the mid-term review process is undertaken as per the UNDP guidance, and submit the final MTR report to the Project Board.
- Identify follow-on actions and submit them for consideration to the Project Board;
- Ensure the terminal evaluation process is undertaken as per the UNDP guidance, and submit the final TE report to the Project Board;

Project Assurance: UNDP provides a three – tier supervision, oversight and quality assurance role – funded by the GEF agency fee – involving UNDP staff in Country Offices and at regional and headquarters levels. Project Assurance must be totally independent of the Project Management function. The quality assurance role supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. This project oversight and quality assurance role is covered by the GEF Agency.

Governance role for project target groups: The coordination between different stakeholders will be mostly carried out by RMI with support from UNDP, and will begin with the establishment of an LPAC and the invitation of stakeholders to an inception workshop (to take place at the summit meeting). Continuous engagement of stakeholders and regular updates on the progress of all activities under the project will be at the core of coordination efforts to ensure that target groups are afforded the opportunity to engage in decision making for the project. The PSC will meet bi-annually during project implementation, and it will have the responsibility of coordinating and harmonizing the actions of all the key stakeholders.

FINANCIAL PLANNING AND MANAGEMENT

The total cost of the project is *USD $1,500,000.* This is financed through a GEF grant of *USD* $950,000, *USD $450,000* in cash co-financing to be administered by UNDP and *USD 100,000* in parallel co-financing. UNDP, as the GEF Implementing Agency, is responsible for the execution of the GEF resources and the cash co-financing transferred to UNDP bank account only.

Parallel co-financing: The actual realization of project co-financing will be monitored during the *mid-term review* and terminal evaluation process and will be reported to the GEF. The planned parallel co-financing will be used as follows:

Co-financing source	Co-financing type	Co-financing amount	Planned Activities/Outputs	Risks	Risk Mitigation Measures
(e.g. government)	*In kind*		*(e.g. office space, infrastructure development etc…)*	*To co-financing being realized*	
Foundation	Grant	$225,000	All Program Support	None- paid	N/A
Foundation	Grant	$225,000	All Program Support	None- paid	N/A
Implementing	In-Kind	$100,000	Indirect costs	None- paid	N/A

Budget Revision and Tolerance: As per UNDP requirements outlined in the UNDP POPP, the project board will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project manager to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the Project Board. Should the following deviations occur, the Project Manager and UNDP Country Office will seek the approval of the UNDP-GEF team to ensure accurate reporting to the GEF: a) Budget re-allocations among components in the project with amounts involving 10% of the total project grant or more; b) Introduction of new budget items/or components that exceed 5% of original GEF allocation.

Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

Refund to GEF: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the UNDP-GEF Unit in New York.

Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP.[18] On an exceptional basis only, a no-cost extension beyond the initial duration of the project will be sought from in-country UNDP colleagues and then the UNDP-GEF Executive Coordinator.

Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have

[18] see https://info.undp.org/global/popp/ppm/Pages/Closing-a-Project.aspx

already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.

Transfer or disposal of assets: In consultation with the NIM Implementing Partner and other parties of the project, UNDP programme manager (UNDP Resident Representative) is responsible for deciding on the transfer or other disposal of assets. Transfer or disposal of assets is recommended to be reviewed and endorsed by the project board following UNDP rules and regulations. Assets may be transferred to the government for project activities managed by a national institution at any time during the life of a project. In all cases of transfer, a transfer document must be prepared and kept on file[19].

Financial completion: The project will be financially closed when the following conditions have been met: a) The project is operationally completed or has been cancelled; b) The Implementing Partner has reported all financial transactions to UNDP; c) UNDP has closed the accounts for the project; d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

The project will be financially completed within 12 months of operational closure or after the date of cancellation. Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the UNDP-GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

IX. TOTAL BUDGET AND WORK PLAN

GEF Component/Atlas Activity		Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Total (USD)	See Budget Note:
COMPONENT 1	**Party 1**	**62000**	**GEF**	71200	International Consultants	$0	$0	
					Labor (RMI Staff)	$450,000	$450,000	1
				71300	Local Consultants	$0	$0	
				71600	Travel	$180,000	$180,000	2
				72100	Contractual services	$0	$0	
					sub-total GEF	**$630,000**	**$630,000**	
		xxxxx	**Grants (Rockefeller Foundation, Virgin Unite, RMI in kind)**	72100	Contractual services	$60,000	$60,000	3
					Labor (RMI Staff)	$100,000	$100,000	4
				71300	Local Consultants	$0	$0	
				71600	Travel	$83,000	$83,000	5
				72500	Office Supplies	$0	$0	
				74500	Miscellaneous (communications)	$27,000	$27,000	6
					sub-total Donor 2	**$270,000**	**$270,000**	

[19] See https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PPM_Project%20Management_Closing.docx&action=default.

					Total Outcome 1	**$900,000**	**$900,000**	
COMPONENT 2	**Party 1**	**62000**	**GEF**	71200	International Consultants	$0	$0	
				71300	Local Consultants	$0	$0	
					Labor (RMI Staff)	$100,000	$100,000	7
				75700	Training, workshop, meetings	$63636	$100,000	8
				71600	Travel	$20,000	$20,000	9
				72100	Contractual services	$50,000	$50,000	10
					sub-total GEF	**$233,636**	**$270,000**	
		xxxxx	**Grants (Rockefeller Foundation, Virgin Unite, RMI in kind)**	72500	Office Supplies	$0	$0	
					Labor (RMI Staff)	$30,000	$30,000	11
				75700	Training, workshop, meetings	$90,000	$90,000	12
				71600	Travel	$140,000	$140,000	13
				72100	Contractual services	$20,000	$20,000	14
				74500	Miscellaneous	$0	$0	
					sub-total donor 2	**$280,000**	**$280,000**	
					Total Outcome 2	**$550,000**	**$550,000**	
KM and M&E PROJECT MANAGEMENT UNIT[2] (This is not to appear as an Outcome in the Results Framework)	**Party 1**	**62000**	**GEF**	71200	International Consultants	$46,000	$46,000	*15*
				71300	Local Consultants	$0	$0	
				72100	Contractual services	$	$	
				72100	Professional services	$4,000	$4,000	*16*
					sub-total GEF	**$50,000**	**$50,000**	
					Total Management	$50,000	$50,000	
				PROJECT TOTAL		**$1,500,000**	**$1,500,000**	

Summary of Funds: [20]

	Amount Year 1	Total
GEF	$950,000	$950,000

[20] Summary table should include all financing of all kinds: GEF financing, cofinancing, cash, in-kind, etc...

Donor 2 (Rockefeller Foundation, Virgin Unite, RMI in kind)	$550,000	$550,000
TOTAL	$1,500,000	$1,500,000

Budget note number	Comments
1.	Human Resources Support - RMI staff time used to implement Component 1
1.	Travel for Component 1 to/from and within sub-Saharan Africa for RMI staff and consultants over 18 months
2.	Consultants for technical inputs to Component 1
3.	Human Resources Support – RMI staff time used to implement Component 1
4.	Travel for Component 1 to/from and within sub-Saharan Africa for RMI staff and consultants over 18 months
5.	Communications support, printing and distribution for reports and other project materials
6.	Human Resources Support – RMI staff time used to implement Component 2
7.	Convening on clean rural electrification in Africa – Component 2 Summit
8.	Travel for Component 2 to/from and within sub-Saharan Africa for Summit participation in Nigeria and subsequent engagement visits
9.	Event Coordination and Facilities – Component 2 Summit
10.	Human Resources Support
11.	Convening on clean rural electrification in Africa
12.	Travel for Component 2 to/from and within sub-Saharan Africa for Summit participation in Nigeria and subsequent engagement visits
13.	Event Coordination and Facilities
14.	Mandatory Monitoring and Evaluation
15.	Audit

X. LEGAL CONTEXT

Option c. For Global and Regional Projects

This project forms part of an overall programmatic framework under which several separate associated country level activities will be implemented. When assistance and support services are provided from this Project to the associated country level activities, this document shall be the "Project Document" instrument referred to in: (i) the respective signed SBAAs for the specific countries; or (ii) in the Supplemental Provisions to the Project Document attached to the Project Document in cases where the recipient country has not signed an SBAA with UNDP, attached hereto and forming an integral part hereof. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

This project will be implemented by [name of entity] ("Implementing Partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

Any designations on maps or other references employed in this project document do not imply the expression of any opinion whatsoever on the part of UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

XI. RISK MANAGEMENT

Option c. CSO/NGO/Non-UN or other IGO with no signed SBEAA with UNDP

Consistent with the Article III of the SBAA *[or the Supplemental Provisions to the Project Document]*, the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:

a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;

b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner's obligations under this Project Document and the Project Cooperation Agreement between UNDP and the Implementing Partner[21].

The Implementing Partner agrees to undertake all reasonable efforts to ensure that no UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml.

Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (http://www.undp.org/ses) and related Accountability Mechanism (http://www.undp.org/secu-srm).

The Implementing Partner shall: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.

All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

The Implementing Partner will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, responsible parties, subcontractors and sub-recipients in implementing the project or using the UNDP funds. The Implementing Partner will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.

The requirements of the following documents, then in force at the time of signature of the Project Document, apply to the Implementing Partner: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and

[21] Use bracketed text only when IP is an NGO/IGO

Investigations Investigation Guidelines. The Implementing Partner agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.

In the event that an investigation is required, UNDP has the obligation to conduct investigations relating to any aspect of UNDP programmes and projects. The Implementing Partner shall provide its full cooperation, including making available personnel, relevant documentation, and granting access to the Implementing Partner's (and its consultants', responsible parties', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with the Implementing Partner to find a solution.

The Implementing Partner will promptly inform UNDP in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

Where the Implementing Partner becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, the Implementing Partner will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). The Implementing Partner shall provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

UNDP shall be entitled to a refund from the Implementing Partner of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document. Such amount may be deducted by UNDP from any payment due to the Implementing Partner under this or any other agreement.

Where such funds have not been refunded to UNDP, the Implementing Partner agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to the Implementing Partner for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with the Implementing Partner, responsible parties, subcontractors and sub-recipients.

Each contract issued by the Implementing Partner in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from the Implementing Partner shall cooperate with any and all investigations and post-payment audits.

Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.

The Implementing Partner shall ensure that all of its obligations set forth under this section entitled "Risk Management Standard Clauses" are passed on to each responsible party, subcontractor and sub-recipient and that all the clauses under this section entitled "Risk Management" are included, *mutatis mutandis*, in all sub-contracts or sub-agreements entered into further to this Project Document.

Annex A: Work Plan

January–December 2018

Output	Indicator	Responsible Party	Year 1			
			Q1	Q2	Q3	Q4
Component 1						
Pre-work diagnostic and research	Robust pre-read to participants	RMI	X			
Government stakeholder engagement	At least two country government stakeholders participate in meetings	RMI	X	X	X	X
Design scaling strategy and platform for commercially-viable minigrid as part of GEF-7	Final recommended minigrid scaling strategy presented to GEF-7	UNDP-RMI	X	X	X	X
Pipeline of minigrid projects in at least two countries to prove out cost reduction roadmap, including policy and finance requirements.	Pilot design proposal submitted to GEF-7	UNDP-RMI	X	X	X	X
Knowledge Management and M&E		UNDP	X	X	X	X
Component 2						
Roadmap	Cost reduction roadmap, business case, market size	RMI	X	X	X	X
Summit	40 stakeholders at a three-day convening on clean rural electrification in Africa	RMI	X	X		

Annex B: GEF Tracking Tool at baseline

See attached.

Annex C: Overview of Technical Consultancies

***Guidance to project developer**: The following template includes example text to help guide the completion of this template for the project in question. Please remove all example italic text.*

Consultant	Time Input	Tasks, Inputs and Outputs
For Project Management / Monitoring & Evaluation		
Local / National contracting		
International / Regional and global contracting		
For Technical Assistance		
Outcome 1		
Local / National contracting		
International / Regional and global contracting		
Reos *Event Facilitator* *Rate: $ 75,000*	*4 months* *01 January 2018 to* *30 March 2018*	*Outcome 1. Support of the development of the minigrid strategy and process design for 2018* *Outcome 2. Design and facilitation of the minigrid workshop in March 2018* *Roles* *These activities will be undertaken jointly by Reos with an office in South Africa* *Key activities covered by this* *contract include:* *1. Support of the development of the minigrid strategy and process design for 2018* *2. Design and facilitation of the minigrid workshop in March 2018* *Roles* *These activities will be undertaken jointly by Reos Partners and RMI with each playing the following*

		roles. *Reos Partners Responsibilities* *1. Leading process design* *2. Support strategy development for the program* *3. Lead design and facilitation of the minigrid workshop* *4. Training, coaching and other support for RMI staff as appropriate*
Technical Advisor *Rate: $1,153/week*	*October 12, 2017- October 12, 2018*	*Outcome 1. Support planning and confirming site visits, follow up with key stakeholders, perform analysis and synthesize documents for communication with partners and other stakeholders* *Outcome 2. Assist with planning and confirming meetings and site visits*

Annex D: Terms of Reference

Terms of Reference for the Project Board

The Project Board (PB) will serve as the project's decision-making body. It will meet according to necessity, to review project progress, approve project work plans and approve major project deliverables. The PB is responsible for providing the strategic guidance and oversight to project implementation to ensure that it meets the requirements of the approved Project Document and achieves the stated outcomes. The PB's role will include:

- *Provide strategic guidance to project implementation;*
- *Ensure coordination between stakeholders, parallel projects and programmes;*
- *Ensure coordination with various governments' agencies and their participation in project activities;*
- *Approve the work plan and budgets, at the proposal of the Project Manager;*
- *Approve any major changes in the project plans*
- *Oversee monitoring, evaluation and reporting in line with GEF requirements;*
- *Ensure commitment of human resources to support project implementation, arbitrating any issues within the project;*
- *Negotiate solutions between the project and any parties beyond the scope of the project, including countries not yet identified for participation*
- *Ensure that UNDP Social and Environmental Safeguards Policy is applied throughout project implementation; and, address related grievances as necessary.*

These terms of reference will be finalized during the Project Inception Workshop.

Terms of Reference for the Technical Advisory Committee (TAC)

The TAC will provide technical advice and inputs relating to project implementation and will be chaired by the PD with support from the PM. The members of the TAC will consist of representatives from UNDP, RMI, technical experts and other relevant stakeholders to be agreed by the Project Board. Technical experts may be invited in to discuss specific issues. Indicative Terms of Reference are as follows. These will be reviewed by the Project Board during project inception and may be extended as necessary.

- *Review planned activities and ensure that they are technically sound and that, wherever possible, there is integration and synergy between the various project components during planning and implementation;*
- *Promote technical coordination between institutions and government agencies, where such coordination is necessary and where opportunities for synergy and sharing of lessons exist;*
- *Share information on project progress and lessons learned with related stakeholders*
- *The TAC or a subset of its members may be requested to undertake specific project-related tasks, such as preparing or reviewing analytical reports, strategies and action plans, etc.;*
- *Other tasks as indicated by the Project Board*

Terms of Reference for Key Project Staff

Project Manager

Background

The Project Manager (PM), RMI, will be responsible for the overall management of the Project, including the mobilisation of all project inputs, supervision over consultants and sub-contractors. The PM will report to the Project Board in close consultation with the assigned UNDP RTA for all of the Project's substantive and administrative issues. From the strategic point of view of the Project, the PM will report on a periodic basis to the Project Board. The PM will perform a liaison role with governmens, UNDP and other stakeholders, and maintain close collaboration with other donor agencies providing co-financing.

Duties and Responsibilities

- *Plan the activities of the project and monitor progress against the approved work-plan.*
- *Supervise and coordinate the production of project outputs, as per the project document in a timely and high quality fashion.*
- *Coordinate all project inputs and ensure that they are adhere to UNDP procedures for NGO modality projects.*
- *Supervise and coordinate the work of all project consultants and sub-contractors ensuring timing and quality of outputs.*
- *Coordinate the recruitment and selection of project personnel, consultants and sub-contracts, including drafting terms of reference and work specifications and overseeing all contractors' work.*
- *Manage requests for the provision of financial resources by UNDP, through advance of funds, direct payments, or reimbursement using the UNDP provided format.*
- *Prepare, revise and submit project work and financial plans, as required by Project Board and UNDP.*
- *Monitor financial resources and accounting to ensure accuracy and reliability of financial reports, submitted on a quarterly basis.*
- *Manage and monitor the project risks initially identified and submit new risks to the project board for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log.*
- *Liaise with UNDP, Project Board, relevant government agencies, and all project partners, including donor organisations and CSOs for effective coordination of all project activities.*
- *Facilitate administrative support to subcontractors and training activities supported by the Project.*
- *Oversee and ensure timely submission of the Inception Report, Project Implementation Report, Technical reports, quarterly financial reports, and other reports as may be required by UNDP, GEF and other oversight agencies.*
- *Disseminate project reports and respond to queries from concerned stakeholders.*
- *Report progress of project to the steering committees, and ensure the fulfilment of PSC directives.*
- *Oversee the exchange and sharing of experiences and lessons learned with relevant stakeholders in the region*
- *Assist community groups, municipalities, CSOs, staff, students and others with development of essential skills through training workshops and on the job training thereby increasing their institutional capabilities.*
- *Encourage partners and consultants such that strategic, intentional and demonstrable efforts are made to actively include women in the project.*

Required skills and expertise

- *A university degree (MSc or PhD) in a subject related to renewable energy and/or electrical engineering*
- *At least 5 years of demonstrable project/programme management experience.*

- *At least 5 years of experience working with governments, ministries, national or provincial institutions that are concerned with natural resource and/or environmental management.*

Competencies

- *Strong leadership, managerial and coordination skills, with a demonstrated ability to effectively coordinate the implementation of large multi-stakeholder projects, including financial and technical aspects.*
- *Ability to effectively manage technical and administrative teams, work with a wide range of stakeholders across various sectors and at all levels, to develop durable partnerships with collaborating agencies.*
- *Ability to administer budgets, train and work effectively with counterpart staff at all levels and with all groups involved in the project.*
- *Strong communication skills, especially in timely and accurate responses to emails.*
- *Strong computer skills, in particular mastery of all applications of the MS Office package and internet search.*
- *Excellent command of English and French*

Annex E: UNDP Social and Environmental Screening Procedure and plans as needed

The completed template, which constitutes the Social and Environmental Screening Report, must be included as an annex to the Project Document. Please refer to the Social and Environmental Screening Procedure and Toolkit for guidance on how to answer the 6 questions.

Project Information

Project Information	
1. Project Title	Clean Rural Electrification for African Countries
2. Project Number	6182
3. Location (Global/Region/Country)	Regional - Africa

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?
Briefly describe in the space below how the Project mainstreams the human-rights based approach
The project is mainly on promoting rural renewable energy based electrification, services and productive applications in several African countries. While mainstreaming the human rights based approach is not specifically covered in the project, in general terms, the design and implementation of the project activities will be in line with the principles of human rights based approach. The implementing partners as well as the project partners acknowledge human rights practices under international law and the application of human rights-related standards in the design and implementation of the project. The project is designed to enhance the availability, accessibility and quality of benefits and services for all relevant target groups including those that are potentially marginalized individuals and groups.
Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment
The proposed GEF project will involve women working in all relevant management and technical departments of the government agencies/institutions that will be involved in this project and who can play important roles in the design, development and implementation. The project envisages prioritizing communities and projects that support productive uses of renewable energy and that focus on gender goals including women-owned RE enterprises. The project design will also include assessment and enhancement of the role of women in deployment of rural renewable energy, thereby coming up with gender-sensitive policies. It will also recognize the possible contributions of women in the management and implementation of rural renewable energy development.
Briefly describe in the space below how the Project mainstreams environmental sustainability
The project is geared towards promoting and supporting renewable energy services and productive applications as among the key elements for the satisfactory achievement of the energy, environment and development agenda of African countries. These interventions will be designed in such a way that proper evaluation of the potential impacts to the natural environment will be done. While promoting sustainable energy and low carbon technology applications, this should not have negative impacts on the surrounding environment as well as to the people who are also present in such environment. All relevant government departments will be coordinating closely with the Ministries of Environment the siting, design, development and implementation of the demo projects that will be carried out directly by the project, and coordinate also the replications that are expected to follow towards the end of project implementation and during the influence period. This may involve, for projects such as micro/mini-hydropower facilities, the conduct of environmental impact assessments.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? *Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any "Yes" responses). If no risks have been identified in Attachment 1 then note "No Risks Identified" and skip to Question 4 and Select "Low Risk". Questions 5 and 6 not required for Low Risk Projects.*	**QUESTION 3: What is the level of significance of the potential social and environmental risks?** *Note: Respond to Questions 4 and 5 below before proceeding to Question 6*			**QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?**
Risk Description	***Impact and Probability (1-5)***	***Significance (Low, Moderate, High)***	***Comments***	***Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.***
Risk 1: The Project could potentially result in secondary or consequential development activities which could lead to adverse social and environmental effects, or it could generate cumulative impacts with other known existing or planned activities in the area.	I = 3 P =2	**Moderate**	By promoting rural electrification, the project introduces the means for a more substantive development. This could potentially have negative consequences, if not properly assessed and guided.	To note, this project will be mostly generating a potential pipeline of future rural electrification project proposals, so it will be important to prepare SEA guidance for those future projects. A broader environmental and social assessment will be undertaken after the pipeline of electrification projects has been proposed. This will then take into account potential secondary development activities which could lead to social and environmental impacts.
Risk 2: The potential outcomes of the Project could be sensitive or vulnerable to potential impacts of climate change	I = 3 P = 2	**Moderate**	Depending on the source of RE selected, the mini-grids could be more or less vulnerable (e.g. hydro-based systems could be vulnerable to changing rainfall patterns, affecting the resource).	Only when proposals made by countries attending the summit will it be possible to determine whether these are sensitive or vulnerable to the impacts of climate change.
Risk 3: Elements of Project construction and operation, could potentially pose potential safety risks to local communities	I = 3 P = 2	**Moderate**	In the participating countries, actual mini-grids will be piloted, involving some construction and physical interventions that could, if not mitigated, result in	A proper assessment of this risk will be undertaken during the PPG phase, once the selection of countries, sites and technologies have been made, so that specific mitigation measures can be incorporated.

			potential safety risks to local communities.	
Risk 4: the Project involves large-scale infrastructure development (e.g. dams, roads, buildings)	I = 3 P = 3	**Moderate**	The project promotes mini-grids, which involve some level of infrastructure development, although no "large scale", but will include the power generating assets (likely to be PV panels), as well as wiring and distribution hardware, including some small buildings.	The minigrids anticipated to be developed are targeted to serve small isolated populations; by virtue of their size, these are unlikely to involve large scale infrastructure. That said, this risk will be taken into account if and when larger proposals are made during the implementation phase of the project.
Risk 5: the Project could potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts	I = 3 P = 3	**Moderate**	Depending on the final selection of technologies, this could be a potential issue, in particular in the case of PV technology with battery back-up. The batteries will need to be properly disposed off at the end of life	The project will take into consideration the potential issues relating to pollutants, which will vary in their nature depending on which technologies are selected in Component 1. These will be addressed as part of the legal and regulatory framework to support the development of minigrids in SSA.
Risk 6: The proposed Project could potentially result in the generation of waste (both hazardous and non-hazardous)	I = 3 P = 3	**Moderate**	Depending on the final selection of technologies, this could be a potential issue, in particular in the case of PV technology with battery back-up. The batteries will need to be properly disposed off at the end of life	The project will take into consideration the potential issues relating to waste, especially in relation to batteries. These will be addressed as part of the legal and regulatory framework to support the development of minigrids in SSA.
	QUESTION 4: What is the overall Project risk categorization?			
	Select one (see SESP for guidance)			**Comments**
	Low Risk	☐		
	Moderate Risk	☒		**The project will promote mini-grids in a number of demonstration sites. Depending on the site and the technologies, there may be some negative impacts, that however can be adequately mitigated through a proper assessment and management plan to be followed during implementation.**
	High Risk	☐		
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?			
	Check all that apply			**Comments**

	Principle 1: Human Rights	☐	
	Principle 2: Gender Equality and Women's Empowerment	☐	
	1. Biodiversity Conservation and Natural Resource Management	☐X	Considered fairly minor and of limited potential impact
	2. Climate Change Mitigation and Adaptation	☐X	Considered fairly minor and of limited potential impact
	3. Community Health, Safety and Working Conditions	☐X	Will require proper and detailed assessment during PPG
	4. Cultural Heritage	☐	
	5. Displacement and Resettlement	☐	
	6. Indigenous Peoples	☐	
	7. Pollution Prevention and Resource Efficiency	☐X	Will require proper and detailed assessment during PPG

Final Sign Off

Signature	***Date***	***Description***
QA Assessor	Dd/mm/yyyy	UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver	Dd/mm/yyyy	UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.
PAC Chair	Dd/mm/yyyy	UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks		
Principles 1: Human Rights		**Answer (Yes/No)**
1.	Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2.	Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? [22]	No
3.	Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	No
4.	Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	No
5.	Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	No
6.	Is there a risk that rights-holders do not have the capacity to claim their rights?	No
7.	Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
8.	Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Principle 2: Gender Equality and Women's Empowerment		
1.	Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2.	Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
3.	Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No
4.	Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? *For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being*	No
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services?	No

[22] Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

	For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes	
1.2	Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	No
1.3	Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4	Would Project activities pose risks to endangered species?	No
1.5	Would the Project pose a risk of introducing invasive alien species?	No
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
1.7	Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8	Does the Project involve significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	No
1.9	Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10	Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? *For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.*	Maybe
Standard 2: Climate Change Mitigation and Adaptation		
2.1	Will the proposed Project result in significant[23] greenhouse gas emissions or may exacerbate climate change?	No
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	Maybe
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? *For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding*	No
Standard 3: Community Health, Safety and Working Conditions		
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	Yes
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No
3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	Yes

[23] In regards to CO_2, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	No
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage		
4.1	Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2	Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3	Is there a risk that the Project would lead to forced evictions?[24]	No
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No
6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? *If the answer to the screening question 6.3 is "yes" the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.*	No

[24] Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

6.4	Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.7	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.8	Would the Project potentially affect the physical and cultural survival of indigenous peoples?	No
6.9	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency		
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	Yes
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	Yes
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs? *For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol*	No
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	No

Annex F: Stakeholder Engagement Plan

Stakeholder Group	Why included (interests)	Participation methods		Timeline
		Method	Responsibility	
The GEF	The GEF is the main donor and driver of this project. Its interest is in the identification of child projects to be developed under the GEF-7 cycle	N/A	To assess the eligibility and quality of projects identified for funding under GEF-7	N/A
GEF Agencies	These agencies are enablers of GEF projects, through which projects will be proposed to the GEF for funding under GEF-7	Prior to summit, remote participation; at the summit, remote participation; post-summit, a combination	To assist in identifying, developing and implementing rural electrification projects under GEF-7	March 2018 design summit and follow-up through 2018
Upstream Equipment and Software	Participation and strategic decisions play key roles in cost and growth of markets	Prior to summit, remote participation; at the summit, active participation; post-summit, a combination	To contribute perspective on cost-drivers, potential cost, market barriers, and potential solutions; to support pilot project pipeline	October 2017 to March 2018 design summit, and follow-up through 2018
Downstream Project Developers and Operators	On-the-ground, local knowledge is crucial to generate insights, and for continued success of a real pipeline of minigrid pilot projects	Prior to summit, remote participation; at the summit, active participation; post-summit, a combination	To contribute perspective from on-the-ground experience on cost, barriers, and solutions; to support pilot project pipeline	October 2017 to March 2018 design summit, and follow-up through 2018
Investors	Finance is essential to growing the market	Prior to summit, remote participation; at the summit, active participation; post-summit, a combination	To contribute financing perspective and what can be done to unlock capital for market growth; to support pilot project pipeline	October 2017 to March 2018 design summit, and follow-up through 2018
Governments, Regulators, Utilities	The presence of a strong regulatory framework is required for company and investor confidence	Prior to summit, remote participation; post-summit, a combination of remote, bilateral, and multilateral engagement	To contribute political, regulatory perspective; to host pilot project pipeline	From October 2017 to summit follow-up through 2018
NGOs, Development Partners	Both NGOs and development partners support enabling environments for market growth through advocacy, policy, market knowledge and concessional finance	Prior to summit, remote participation; at the summit, active participation; post-summit, a combination	To contribute perspective of long-term advocates and funders; to support pilot project pipeline	October 2017 to March 2018 design summit, and follow-up through 2018
Civil Society Community	Ensure the success of local markets through finance, education and	Prior to summit, remote participation; at the summit, active	To contribute perspective of consumer advocates and market knowledge;	October 2017 to March 2018 design summit, and follow-up through 2018

	awareness, and outreach	participation; post-summit, a combination	to support pilot project pipeline	

Who, Why: Stakeholder groups include upstream minigrid equipment and hardware providers; downstream minigrid project developers and operators; investors; appropriate government, regulation and utility representatives; NGOs and development partners working with minigrids; and civil society community members working with minigrids. Stakeholders have been selected on the basis of Rocky Mountain Institute's stakeholder analysis and two prior years of work in sub-Saharan Africa on minigrid market development. Extensive on-the-ground conversations with every stakeholder group, in combination with field visits to operating and potential minigrid sites across Africa, have informed the selection of stakeholders. An effort has been made to balance experts and industry leaders from leading African markets and from the international community. Each stakeholder group represents a key part of the nascent minigrid market in sub-Saharan Africa and the participation of each is necessary for the growth of the market.

What: Leading up to the design summit, in addition to the invitations extended to participants, a select group of industry leaders will be consulted to inform the design of the summit and to support preparation. Using these interviews, a comprehensive document will be shared with all participants to provide a shared baseline for the state of the minigrid market, costs, regulatory frameworks, and financing. All stakeholders will be active participants in the four-day event, contributing their knowledge and perspective to the development of a cost-reduction roadmap and the realization of a minigrid project pipeline in the region. Following the design summit, stakeholders will be engaged through a multilateral meeting to communicate the findings of the event. After this multilateral meeting, ongoing bilateral discussions with stakeholders will facilitate the implementation of the minigrid pilot project pipeline and the development of projects themselves.

How: Leading up to the design summit, communication with stakeholders outside of Nigeria will be through email and phone communication. Stakeholders in Nigeria will meet with the RMI team in person. Communication during the design summit will be in-person, with a handful of high-level investors and government officials participating in the final day of the summit. Communication after the design summit will be in-person in the case of the multilateral follow-up event, along with focused bilateral meetings in-person to support development of a minigrid pilot project pipeline. Other communication will be done remotely, via email and phone.

When: Stakeholders will be consulted before and after the summit and throughout the duration of the project.

Responsibilities: Stakeholders invited to the summit and those consulted for the duration of the project will be responsible for materially contributing to the design and refining of the minigrid cost reduction pathway and pilot program.

Resources: Stakeholder engagement is a key component of the overall budget with its cost embedded in the component-specific work.

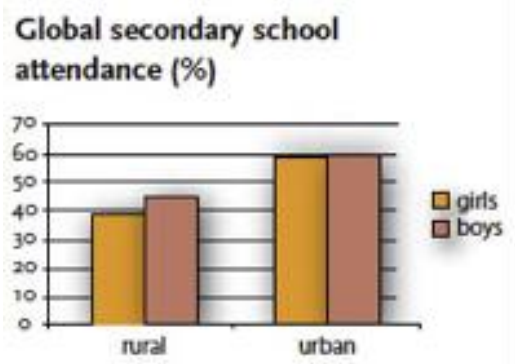
Annex G: Gender Analysis and Action Plan

Rural women spend more time than urban women and men in reproductive and household work, including time spent obtaining water and fuel, caring for children and the sick, and processing food. This is in part because of poor rural infrastructure and a lack of access to electricity; this severely limits women's participation in employment opportunities.

Faced with a lack of services and infrastructure, rural women carry a great part of the burden of providing water and fuel for their households. As can be seen below, there is a clear trend that women and girls in rural areas of Sub Saharan Africa spend significantly more time collecting wood and water.

Average hours a week spent fetching wood and water in rural areas of Sub Saharan African countries					
	Guinea	Madagascar	Malawi	Sierra Leone	Average
Women	5.7	4.7	9.1	7.3	**6.7**
Men	2.3	4.1	1.1	4.5	3
Girls	4.1	5.1	4.3	7.7	**5.3**
Boys	4.0	4.7	1.4	7.1	4.3

Women and girls are further disadvantage in that secondary school attendance in rural SSA is lower in girls than it is in boys; this demonstrates the time-value of women in the household, such that the aforementioned “services” can be provided. This further entraps girls, and eventually women, into settling for labour intensive roles and jobs within these communities.



By seeking to provide electricity to rural communities, the project will directly impact women and girls by significantly reducing the need for firewood and collection of water; these will be replaced by electric lights and pumps. Furthermore, capacity building exercises to train and develop engineers and installers of small renewable energy technologies will favour participation of women as well as girls who have as of yet been unable to attend secondary school. The project will, therefore, ensure that the gender component forms part of the core of each of the proposals made at the summit.

Annex H: UNDP Risk Log

#	Description	Date Identified	Type	Impact & Probability	Countermeasures / Mngt response	Owner	Submitted, updated by	Last Update	Status
1	Lack of political will to move forward with proposed sub-Saharan Africa capacity-building and minigrid pilot program	02/01/2018	Political	In a worst-case scenario, the lack of political will could completely compromise the project. Political will is an essential driver of the project and its complete absence would be high impact. P = 2 I = 5	the project will aim to catalyze political will during the Minigrid Summit and galvanize donor grant and concessionary financing to ensure commitment to financing minigrids for rural communities without access.	Project Manager (with RMI input)	RTA	28/02/2018	Reducing

2	Minigrid Summit is not well attended or does not lead to actionable outcomes	02/01/2018	Strategic	Although important, the summit's low attendance or lack of actionable outcomes is not a high impact risk to rural electrification; the GEF cycle is 4 years and the summit could be reorganized during the project's lifetime. P = 2 I = 3	The Minigrid Summit will be prepared and executed with a high degree of oversight and invitations will be disseminated widely. RMI has already been working with many of the leading minigrid companies and several of the leading government agencies. These partners will be engaged early and often when designing activities and outcomes.	Project Manager (in RMI input)	RTA	28/02/2018	Reducing
3	Minigrid Summit does not mobilize donor funding required to finance minigrids to be identified and prepared	02/01/2018	Financial	Donor funding is essential to the project, as it is required for a significant proportion of derisking and up-scaling activities to enable and sustain the Minigrid market.	Direct outreach before, during, and after the Minigrid Summit will help galvanize support from bilateral agencies,	Project Manager (with RMI inputs)	RTA	28/02/2018	no change

	under the proposed sub-Saharan African capacity building and minigrid pilot program			Its absence could compromise the Project. P = 2 I = 4	donor groups, and impact investors to agree to provide grant and concessional financing for minigrids identified and prepared under the proposed sub-Saharan African capacity building and minigrid pilot program. This risk will be further mitigated with support from The Rockefeller Foundation and Virgin Unite who have both committed to mobilizing donor partners to contribute both debt and investor grant and concessional				

					financing for identified minigrid pilot projects.				
4	Demand too low to support minigrid business models	02/01/2018	Operational	This is very unlikely, but high impact nevertheless. If demand is too low, then there would be an increased likelihood of co-financing not materialising. P = 1 I = 5	Ensure that minigrid pilots be sited in locations where productive demand already exists or can be created through setting up other businesses that require power. Include strong demand-stimulation programs, such as loans for appliances. Bring to bear RMI's years of analysis of minigrid business models, along with the market experience,	RMI	RTA	28/02/2018	no change

					data, and intuition of leading development partners such as DFID, GIZ, the World Bank, and the African Development Bank				
5	Demand outstrips minigrid capacity	02/01/2018	Operational	Minigrids are designed to match worst case scenarios / maximum peak; The pricing mechanism is often the tool that will be used to drive down demand. As demand rises, typically the cost of electricity will rise, too. This is beneficial to investors as it typically leads to increased profits. This could, however, lead to revenue erosion, which may discourage future investments and	Design and build each minigrid pilot so that it can be inexpensively expanded if demand grows to exceed capacity. Rely on the technical expertise of major upstream hardware developers like GE and ABB, the experience of minigrid developers on the ground handling modular capacity challenges, and	RMI	RTA	28/02/2018	no change

				slow down the market. P = 3 I = 3	the demand forecasting ability of the leading minigrid software companies such as HOMER and Odyssey Energy.				
Th6	Unfavorable government regulations and policies	02/01/2018	Political	Policy derisking is an essential part of the DREI methodology, which has been proven to significantly improve the incremental cost of renewables. Policy derisking seeks to remove the underlying barriers that are at the root of risks. Unfavourable government regulations and policies will, therefore, lead to increased risks and a weaker economic/financial climate for minigrids.	Carefully identify and detail the components of a supportive minigrid regulatory framework, typified by those in Tanzania and Nigeria. Work closely with leading rural electrification agencies, such as the agencies of Nigeria and Uganda, to ensure the necessary regulatory environment and ultimately	RMI	RTA	28/02/2018	no change

				P = 2 I = 5	attract both companies and investment. After sighting initial minigrid pilots in countries with favorable regulations and policies, work with other supportive countries to improve theirs by demonstratin g success, closely communicati ng, and bringing them along as learning occurs. RMI's partnership with SE4ALL, the UN organization focused on the energy transition, should further help				

					us to overcome government barriers.				

Annex I: Results of the capacity assessment of the project implementing partner and HACT micro assessment

SEE HACT RESULTS HERE - waived

Annex J: Additional agreements

See attachments