



PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: FULL-SIZED PROJECT

TYPE OF TRUST FUND: GEF TRUST FUND

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PART I: PROJECT INFORMATION

Project Title:	Promotion of mini & micro-hydro power plants in Congo DR		
Country(ies):	DR Congo	GEF Project ID: ¹	4923
GEF Agency(ies):	UNDP	GEF Agency Project ID:	4690
Other Executing Partner(s):	Ministry of Environment and Nature Conservation, Ministry of Energy and Hydraulic	Submission Date: Re-submission Date:	28 March 2012 29 April 2013 31 July 2013 22 August 2013
GEF Focal Area (s):	Climate Change Mitigation	Project Duration (Months)	60
Name of parent program (if applicable): • For SFM/REDD+ <input type="checkbox"/> • For SGP <input type="checkbox"/>	N/a	Agency Fee (\$):	\$302,829

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK²:

Focal Area Objectives	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
CCM-3: Renewable Energy: Promote investment in renewable energy technologies	GEFTF	3,187,669	13,500,000
Total Project Cost		3,187,669	13,500,000

B. INDICATIVE PROJECT FRAMEWORK

Project Objective: To promote investment in mini and micro hydropower (MHP)-based mini-grids for rural electrification in the Democratic Republic of Congo						
Project Component	Grant Type ³	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Cofinancing (\$)
1. Policy & institutional framework for private & community investment in MHP-based mini-grids	TA	Enabling policy and institutional framework for MHP-based mini-grids set up	1.1 Policy framework for MHP-based rural electrification adopted 1.2 Cornerstone policy instrument defined, adopted and enforced, e.g. financially viable tariff for MHP-based mini-grids 1.3 Other policy changes proposed and approved: regulatory framework for MHPs, simplified licensing rules, land and water use rights 1.4 Targeted capacity building program delivered to relevant national agencies 1.5 Output-based (OBA) scheme designed and incorporated in the scope of FONEL's financing and operational	GEFTF	550,000	500,000

¹ Project ID number will be assigned by GEFSEC.

² Refer to the reference attached on the [Focal Area Results Framework](#) when completing Table A.

³ TA includes capacity building, and research and development.

			strategy				
	INV	Financial viability of MHP mini-grid ensured	1.6 Output-based Aid Scheme for MHP-based mini grid set-up	GEFTF	600,000	1,200,000	
2. Technology supply chain	TA	Capacity for delivering turnkey solutions and quality O&M&M services for MHP	2.1 Guidebook on MHP development published 2.2 On-the-job capacity building program for MHP manufacturers delivered, including on MHP design, construction, O&M 2.3 Business and technical advisory services to MHP developers and end-users 2.4 Curricula on MHP design, construction and maintenance developed and introduced in vocational training institutions	GEFTF	441,669	300,000	
3. Pilot investment	TA / INV	Improved confidence in the technical and financial viability of MHP-based rural electrification	3.1 Pilot sites identified and assessed, and institutional/investment model defined 3.2 Projects prepared and financing mobilized 3.3 Up to 10 MW of MHP-based power generation capacity 3.4 Sustainable O&M&M models demonstrated	GEFTF	1,000,000	10,500,000	
4. PR and Investment Promotion	TA	Increased awareness about MHP potential and investment climate	4.1 National clearinghouse mechanism for MHP developers set-up 4.2 PR and investment promotion campaign conducted	GEFTF	454,000	300,000	
Subtotal						3,045,669	12,800,000
Project Management Cost (PMC) ⁴				GEFTF	142,000	700,000	
Total Project Cost						3,187,669	13,500,000

C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
National Government	Ministry of Nature Conservation and Tourism	In-kind	500,000
National Government	Ministry of Energy and Hydraulic	Grant	7,500,000
GEF Agency	UNDP	Grant	2,200,000
Bilateral Aid Agency	Service Public de Wallonie	Grant	300,000
Multilateral Development Bank	World Bank ⁵	Soft loan	500,000
Private Sector	Technology suppliers/IPPs	Equity	2,500,000
Total Co-financing			13,500,000

⁴ To be calculated as percent of subtotal.

⁵ WB soft loan mentioned in the co-financing table is part of PMEDE (Regional and Domestic Power Market Development Project), which is a joint WB, AfDB, and EIB project aimed at improving power sector operations in DRC with a total financing of 429 mln US\$ for the period of 2007-2016. The above-mentioned sub-component of PMEDE, which will represent a co-financing for GEF project, aimed specifically at strengthening capacity of the Ministry of Energy and Hydraulic to develop and implement public-private partnership scheme for hydropower investment and identify and prepare investment proposal for decentralized rural electrification. Co-financing will be used to prepare regulation for PPP investments in decentralized RE-based rural electrification projects, which is an essential part of the required legal and regulatory framework for MHPs which this project aims to support under Component 1.

D. INDICATIVE TRUST FUND RESOURCES (\$) REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹

N/A

E. PROJECT PREPARATION GRANT (PPG)⁶

Please check on the appropriate box for PPG as needed for the project according to the GEF Project Grant:

	<u>Amount</u> <u>Requested (\$)</u>	<u>Agency Fee</u> <u>for PPG (\$)⁷</u>
• (upto)\$100k for projects up to & including \$3 million	<u>\$100,000</u>	<u>9,500</u>

PPG AMOUNT REQUESTED BY AGENCY(IES), FOCAL AREA(S) AND COUNTRY(IES) FOR MFA AND/OR MTF PROJECT ONLY: N/A

⁶ On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

⁷ PPG fee percentage follows the percentage of the GEF Project Grant amount requested.

PART II: PROJECT JUSTIFICATION⁸

A. PROJECT OVERVIEW

A.1 Project Description

Global environmental problems, root causes and barriers that need to be addressed

Context and problem statement

Africa's second largest country with immense economic and energy resources, the Democratic Republic of Congo (DRC) is also the world's poorest nation with the lowest Human Development Index in the globe. Over 70% of Congolese residents live below poverty line and only 9% have access to electric grid. For the rest, the only power supply alternative is via decentralized generators/mini-grids run on imported oil and coal. However, the costs of imports are becoming exorbitant for both importers and consumers who operate under extremely difficult and unpredictable economic and political conditions. As a result, over 60 million Congolese predominantly rely on ligneous fuels (wood, charcoal, plant residues, etc.) for their basic energy needs, a major factor in destruction of the forests and rise of GHG emissions. With envisaged steady increase in population volume and in the absence of affordable and climate-friendly power supply alternatives, GHG emissions from rural energy use in DRC are set to grow.

Given its location in the center of the immense hydrographical basin with its bodies of water covering more than 86,080 km² and a green ocean of dense tropical vegetation receiving around 30 % of the annual precipitation for the entire African continent, DRC is blessed with nearly unlimited hydropower resources. The exploitable hydropower potential is estimated to be in the order of more than 700 TWh/year or 66% of Central Africa's potential, 35% of the whole of the continent's, and 8% of the world's hydro potential. When expressed as firm power capacity, this is equivalent to 100GW. There is a huge gap, however, between the potential and the reality: less than 3% or 2.6 GW is currently being exploited, mainly via large Inga Dam (2.4 GW).

For DRC, one of the most sparsely populated countries in Africa⁹, harnessing abundant hydropower resources via decentralized micro hydropower (MHP)-based¹⁰ mini-grid systems can provide for an economically viable, environmentally sustainable and climate-friendly power supply alternative, especially in the country's remote and rural areas.

Baseline scenario and associated baseline projects

The Government of the Democratic Republic of Congo views the lack of energy access as a major detrimental factor for country's economic development, social and political stability. The National Poverty Reduction Strategy set the goal of doubling the energy access rate in DRC from current 9% up to 18% by 2016 and up to 60% by 2025. Pursuant to this goal, new electricity strategy was articulated in 2009 with the following key objectives:

- Expedited development of hydropower potential;
- Promoting private sector participation in power sector projects;
- Ensuring national energy access.

Regarding energy access, the Government adopted a two-staged approach. This approach aims first at tackling the energy deficit in cities and larger towns with under-developed economic potential, and second at encouraging decentralized power provision in rural areas. In view of logistical and economic challenges of importing and transporting liquid fuels, low-head (run-of-river) hydropower is considered to be the main source of all new power generation in secondary towns, cities and rural locations.

⁸ Part II should not be longer than 5 pages.

⁹ 22 inhabitants per square kilometer as compared to 340 in neighboring Rwanda

¹⁰ Micro and mini-hydro power (MHP) plants targeted in this project will be in the capacity range of 100kW- 3MW

The first leg of the strategy envisages expansion of large hydropower capacity by an additional 2.5 GW by 2016 which requires over 2.5 bln US\$ in investment, plus the urgent need to improve distribution and transmission capacity and power sector management. By January 2013, about a quarter of the planned investment program has been implemented with over 600 mln US\$ leveraged from the Government, power utility, the Société Nationale d'Électricité (SNEL), and IFIs (the World Bank, African Development Bank, KfW, European Investment Bank).

As far as promotion of decentralized MHP projects are concerned, the following initiatives are envisaged, which will form the baseline of the proposed GEF project:

In May 2013, the new Electricity Code (Code de l'électricité) was adopted by the Congolese Parliament. This puts an end to the monopoly of the government in the electricity sector through its public utility company called the "SNEL". The ultimate aim is to open up the electricity market to other operators in a dynamic competitive environment. The new Code contains a number of specific provisions regulating operations of Independent Power Producers, as well as the establishment of independent Power Sector Regulatory Agency, as the key entity in charge of tariff regulation for IPPs.

New Electricity Code also envisages the creation of the National Electrification Fund (FONEL). FONEL is seen as a new financial mechanism, which will accumulate and manage all national and international sources of financing for rural electrification in DRC. The potential beneficiaries eligible for funds will be private operators, small businesses, NGOs, rural cooperatives, and financial institutions. The following types of financial support are foreseen:

- grants, loans or guarantees to operators of rural electrification projects, including decentralized systems based on renewable energy;
- credit lines at concessional terms via local banks and financial institutions;
- direct investment in rural electrification projects.

PMEDE (Regional and Domestic Power Market Development Project) is a joint WB, AfDB, and EIB co-funded project aimed at improving power sector operations in DRC with a total financing of 429 mln US\$ for the period of 2007-2016 (mainly for rehabilitation of the Inga hydro power plants and construction of a new transmission line to Kinshasa). An additional component of this project has recently been introduced aimed specifically at strengthening capacity of the Ministry of Energy and Hydraulic to develop and implement public-private partnership scheme for hydropower investment. A legal review of private sector proposals for power sector investments has been completed and a framework with guidelines for PPP investments is under preparation with support from an international law firm.

In addition, the Government of Wallonia (Belgium) is ready to offer support to national authorities to build their capacities on the promotion of micro-hydro power and establish the enabling environment for private investment in the sector (the exact scope and conditions of this grant are not defined yet). Finally, under the national preparatory process of the Sustainable Energy for All (SE4ALL) initiative, the Government with UNDP support has identified a package of potential MHP projects and secured partial financial commitments (up to 8 mln US\$) from a range of bilateral donors and other partners to support their implementation¹¹.

All in all, it seems likely that under BAU an 18% energy access target can be reached by 2016 due to increased large hydro power capacity and improved power supply for the urban population in major cities. However, even at 18% access rate DRC will be below the sub-Saharan energy access average and the vast majority of its rural residents will remain off-grid relying on ligneous fuels and imported oil leading to

¹¹ This includes financing from the Government of DRC and contributions of bilateral donors to be channeled via UNDP

continued rise in GHG emissions and deforestation.

Baseline GHG emissions from energy use in rural DRC

Baseline GHG emissions from energy use in off-grid rural communities in Congo DR, which the proposed project aims to reduce include the following:

- *CO₂ emissions from diesel-based off-grid electricity generation.* Stand-alone electric generators are estimated to produce around 19MW of electricity annually consuming cca 15 mln toe of diesel resulting in annual GHG emissions of 0.16 MtCO₂e¹². Due to suppressed demand and high economic growth, the rate of diesel use for power generation has been steadily growing: it has increased 5 fold since early 2000 (See Table 1). Therefore, the emissions baseline assumes that demand for diesel fuel for electricity generation will increase at the rate of forecasted GDP growth of 7 % per year leading to annual CO₂ emissions of over 0.3 MtCO₂ by 2020.

TABLE 1: Diesel Fuel Consumption for Electricity Generation in DRC, 2000-2011, toe

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
3,111	2,719	5,818	3,847	7,378	9,428	10,185	14,055	13,442	14,075	14,216	15,070

Source: Ministère des Ressources Hydrauliques et Electricite. 2012. *Systeme d'information énergétique: Rapport Annuel*. Cited in IISD 2013.

- *CO₂ emissions from lighting systems.* The three main lighting sources in rural DRC are firewood, kerosene and vegetable oil lamps. Kerosene lamps are most widely used, accounting for 42 percent of rural households. The average weekly consumption of kerosene was roughly 0.75 liters per household in rural areas or about 9.75 mln toe annually for all rural population¹³, which results in GHG emissions of over 1.6 MtCO₂ annually. Use of firewood for lighting is also common: 20% of rural households use firewood for lighting. Other sources of lighting in rural areas (37%) include vegetable oil lamps, traditional lamps that use resins for combustion and modern lamps that use non-rechargeable batteries. All other lighting sources also contribute significantly to GHG emissions, however their exact estimation is problematic due to non-commercial nature of fuel used and the absence of reliable statistics¹⁴.
- *CO₂ emissions from firewood use for cooking and water heating.* Firewood burning is the second largest source of GHG emissions in Congo DRC, i.e. 7 mln tCO₂/year (IISD 2013). While the project is not focusing on providing alternative solutions to traditional cooking stoves, it is plausible to assume that some of the users, especially communal facilities and private sector, which currently use firewood for water heating, will switch to electricity thus reducing demand for biomass and GHG emissions.

As described above, baseline energy use and GHG emissions in rural DRC comes from a number of GHG-emitting sources. In pilot locations with existing diesel based mini-grids (there are some 14 local power supply companies in the proposed project areas), MHPs will replace diesel-based generation. But even in locations where no diesel-based power generators currently operate, MHP-based electricity will replace kerosene for lighting (which surpass by a factor of 10 the use of diesel), as well as firewood for provision of communal energy services. Also, based on the past and projected trends of diesel use for power generation, the likelihood of installation of new diesel generators should be taken into account.

¹² International Institute for Sustainable Development (IISD). 2013. Democratic Republic of Congo: Greenhouse gas emissions baseline projection.

¹³ Based on the following input data: rural population - 65,000,000 (WB 2012), average size of a household - 5 people (UNICEF 2010)

¹⁴ Source of data on lighting energy use in DRC: Lighting Africa. 2012. Policy report Note: Democratic Republic of Congo.

Barriers to accelerated development of mini and micro hydro power:

In spite of on-going efforts by the Government and development partners to promote rural electrification, there has been no significant involvement of private operators in MHP-based mini grid systems up to now. In the past, MHPs have been funded by multilateral development banks, such as the African Development Bank and World Bank, and some are still under operation. They were designed to provide power to some local mining activities. It has been reported that either these facilities have already stopped operations because they did not operate well or these are still operational but at levels lower than their rated design capacities. This is due to a number of barriers, which are enumerated below:

Legal, regulatory and institutional framework: The current legal framework is a barrier to the development of micro hydropower in DRC because there are no specific provisions enabling independent power producers (IPPs) to implement and operate MHP-based mini-grids. There are a number of critical issues which haven't been addressed, such as land and water use by MHP, tariffs, certification and licensing, procedures for conflict resolution, incentive measures, etc. Institutional and human capacities at all levels (sub-regional, national and local) are also insufficient (if at all existent) to support rural electrification based on decentralized mini and micro hydro power plants. The Agency for Rural Electrification has not fully established and there is no dedicated staff or unit in charge of rural electrification within the Ministry of Energy and Hydraulic.

Technology supply chain: The Technology supply chain for micro hydropower in DRC is also in a very nascent stage. There are a few local SMEs capable of assembling simple MHP installations based on imported machinery and turbines, but they lack the technical and engineering capacities to ensure optimal system design, installation and maintenance. In the rural areas there is only very limited local technical expertise available on how to properly administer, operate and maintain MHP systems. The low quality and quantity of skilled and competent workers in the power sector adds additional risks and increases the cost of MHP operation due to the need to rely on expensive imported services even for basic repair and maintenance.

Sustainable O&M&M model: The lack of experience with and demonstration of sustainable operation, maintenance and management (O&M&M) of MHP-based mini grids proved to be a key bottleneck and the reason for the failure of past donor-funded projects. The barrier is aggravated by the fact that DRC is a post-conflict society and the conflict is still on-going in parts of the country. As a result of prolonged civil war, political, technical and managerial capacities are extremely low at the local level, especially in rural areas: local governance structures have been destroyed and community leaders have been killed or fled during the conflict. The same problem exists with local enterprises: the ranks of experienced managers and trained technicians, already in short supply in rural areas, have been further depleted due to the effect of conflicts.

Before any large-scale replication can take place, sustainable O&M&M model has to be demonstrated. The key aspects of such a model (which are currently missing), are: local capacities for technical oversight over plant operations, efficient tariff structures which adequately cover both start-up and O&M&M costs, an effective financial management structure, billing and payment collection system, customer relations and conflict resolution procedures, engagement of productive end-users.

Access to capital: significant upfront investment requirements remain a roadblock for implementation of many projects. Micro hydropower projects are capital intensive with significant investment requirements that are generally beyond the capacity of local companies or communities. In addition, the local banking sector is not sufficiently capitalized to facilitate financing for MHP projects with longer pay-back and substantial risks.

Investors' awareness and perception of risks: Information about the potential and the benefits of micro hydropower for rural electrification and development is scarce in DRC. There is very little data about

prospective sites, their hydrological, climatic and other characteristics. Even when such studies exist, they often are not publicly available. Basically, there is no single information point where a potential developer can receive required guidance and data to make an informed investment decision. The Government and its entities are unable to pull it together on its own due to limited budget resources, staff capacities, lack of prior experience and over-all vision of how to promote MHP and private sector investment. Whereas national energy strategy does acknowledge the importance of MHP development in tackling energy deficit in rural areas of DRC, the primary focus and efforts of the Government so far have been on addressing urban energy deficit and facilitating implementation of large hydro power projects with public and IFI financing. Promotion of MHP requires different approach, more geared towards private sector and local communities, and the one which implies open and transparent access to information for investors. The scarcity of successful and sustainable MHP projects is limiting opportunities to raise the awareness and to build up the confidence of local communities, project developers and investors, and is in itself a big deterrent to market development for the perceived risks of a first-of-its-kind investment are always higher than the risks associated with replication of a successful model.

Project objective:

The proposed project will support the Government of DRC in accelerating the implementation of its rural electrification strategy by promoting investment in decentralized mini and micro-hydro power based- mini-grid systems.

The proposed project will comprise of 4 components each of which will address specific barriers identified above.

Component 1: Policy & institutional framework for private & community investment in MHP-based mini-grids

This component envisages preparation and adoption of comprehensive policy framework for promotion of MHP-based rural electrification, as part of broader national rural electrification and power sector reform policies and plans. The proposed policy framework will set up timeframe and targets for MHP developments, as well as define specific instruments, such as principles of tariff setting, regulatory framework for MHP-based mini-grid, the scope, means and criteria of public support (Output 1.1). Such policy document is required to create high-level political buy-in and legal basis for MHP promotion with clearly defined mandates and responsibilities for implementation of MHP policies among various Governmental agencies.

Activities under Component 1 will include the selection and adoption of a cornerstone policy instrument (proposed: financially viable tariff for MHP-based mini-grids – output 1.2) and supporting policy framework, including, but not limited to regulation for MHP-based mini-grids, simplified and harmonized licensing rules, land and water use rights for MHP projects (output 1.3). In order to support implementation of identified policy and financial de-risking instruments targeted capacity building program will be provided to the concerned national and local agencies, first of all the Ministry of Energy and Hydraulic (output 1.4).

WB co-financing (500,000 US\$) under PMEDE project will be used to prepare standard legal package for PPP investments (PPA and concession agreement) in decentralized RE-based rural electrification projects, which is an essential part of the required legal and regulatory framework for MHPs.

Cornerstone instrument: cost-reflective tariff. Setting appropriate tariffs to obtain the right energy price is one of the most important factors to ensure sustainability of MHP-based mini-grids. Permitting cost recovery and cost-based tariffs is essential to enabling community-based organizations and private sector entities to implement renewable energy mini-grid systems. These developers have no ability to cross-subsidize electricity rates and must demonstrate financial viability to obtain financing. The key challenge and task here is to set up mini-grid tariffs at such level that balance profitability of MHP investment, on one side, with affordability of service for consumers, on the other side. The project will conduct a

comprehensive assessment and prepare a proposal for tariff setting methodologies, which would balance the requirements for minimizing public subsidies, ensuring adequate rates of return for investors and respecting the social electrification objectives set by the government. The project will work closely with the newly established Power Sector Regulatory Authority on introduction of tariffs and streamlining permitting process for IPPs, including provision of required training and capacity building of the Agency's staff.

Output Based Aid (OBA) scheme. While cost-recovery tariff structure is essential to ensure commercial viability of the service providers for mini-grid systems, in practice, it is usually unrealistic to expect full cost-recovery tariff, given the low ability to pay in rural areas. The ability of MHP operators to secure required cash flow to recoup its investment and cover O&M cost will depend on two factors: a) consumer's ability to pay; and b) existence of high-paying consumers, such as commercial enterprises, willing and able to pay higher than average tariff rate (e.g 9 cents US\$/kWh and above). Worldwide, almost all rural electrification programs, in developing and developed countries alike, involve some form of public subsidies. Therefore, OBA scheme is proposed as additional financial incentive to service providers in the situations when application of financially viable tariff is not feasible. OBA schemes have proved to be a powerful instrument to jump start the market, leverage private interest and investments and ensure adequate O&M&M for micro hydro power-based mini grids across the world. GEF resources will be used to develop and co-finance such OBA scheme to reduce the operational, delivery and market-related risks of pilot investment projects to be facilitated under Component 3. The scheme will cover the price-premium (i.e. the differential between market tariffs and financially viable tariffs for MHP projects) with GEF contributing up to 60% of the price difference in the initial years of plants operations¹⁵. The design of OBA scheme will be done at PPG stage based on detailed financial and barrier analysis and consultation with MHP developers. Tentatively the following structure is being proposed (subject to refinement and validation at PPG stage):

- OBA grants will be paid to qualified MHP producers based on established and approved eligibility criteria (such as, for example, min number of low-income households connected to mini-grid, minimum tariff collection rate, sound O&M&M model, etc)
- Grant release will be linked either to number of connections (relevant output: connections to MHP-based mini-grids for low-income households or other qualified categories of consumers, e.g. social facilities) and/or production of electricity (relevant output: kWh of MHP-based electricity produced). Most likely a combination of connection-based and production-based grants will be proposed.
- The amount of subsidies will be gradually phased-out and their provision will be limited to the initial stage (e.g up to 3 years) of MHP project operation), i.e. the time needed for MHP operators to establish sustainable O&M&M model and develop client base, as well as for customers to gain confidence in new supplier.
- OBA scheme will cover only a portion of MHP costs (i.e. a share of connection costs and the difference in tariff between socially acceptable and financially viable) and therefore in no way will reduce the need for effective tariff collection. To avoid such disincentive to happen, one of the eligibility criteria for MHP developers could be the minimum tariff collection rate (i.e. only those operators able to demonstrate 80% or above collection rate will be eligible for OBA subsidy for production).

¹⁵ The current size of funding for OBA scheme was very tentatively assessed based on the following assumptions:

- Annual power generation from pilot projects: 25,500 MWh/year
- Financially viable tariff - 9 cents US\$/kWh
- Expected revenue stream – 2.29 mln US\$
- OBA coverage (on average 25% of the required revenue stream during first 3 years of MHP operations) - 1.7 mln US\$

In practice, configuration of OBA scheme and the amount of subsidies per project will depending on the level of financially viable tariff for specific location and local clients' ability to pay. It might happen that some projects with strong private sector demand will not require public subsidies at all, whereas others in the location with limited economic activities and widespread poverty, would need higher amount of subsidies to break even.

There is also a high interest among the international donor community to explore the application of OBA scheme for promoting rural electrification and energy access in Africa: Norway-led Energy+ Partnership, DFID and the European Commission have all expressed interest in supporting such scheme and approach.

To ensure sustainability of the scheme beyond the time-frame of UNDP-GEF project, close collaboration with FONEL is envisaged. The decision of the Government to establish National Fund for Rural Electrification presents an excellent opportunity to integrate specific provisions and financial support scheme for MHP-based mini-grids in Fund's operations. In this regard, implementation of pilot OBA scheme will provide essential information and lessons regarding the scope of required support and specific modalities of its provision (i.e. performance-based subsidies). In parallel with implementation of pilot OBA scheme, proposal will be prepared for the Government to include financial support program for MHPs in the scope of FONEL's work. This will include assessment of the required amount of public subsidies, establishing eligibility criteria for financial support, modalities of financial support for different project types (Output 1.5).

All in all, the combination of two instruments, market tariffs and OBA scheme is seen as the most suitable choice of instruments to effectively address the underlying barrier, i.e. high financial risks faced by MHP projects in rural DRC.

Component 2: Technology supply chain

This component will address technical barriers to the implementation of MHP-based mini-grids. The Ministry of Energy and Hydraulic has identified at least 6 domestic manufacturers, which will benefit from project's assistance. The aim is to help these local manufactures, as well as service providers upgrade their capacity for delivering turnkey solutions for MHPs with up to 50% of the value provided by locally made goods and services. International technology transfer partner (an experienced MHP manufacturer) will be sub-contracted to deliver such assistance.

In addition, the project will provide O&M&M training courses to the entities located in pilot sites who will take on responsibility for MHP operation and maintenance, either existing mini-grid operators or newly established companies or community-based organization, depending on adopted business and ownership model for pilot projects. The purpose is to create lasting capacities on the ground to ensure adequate O&M&M services. Also, community organizations in pilot locations (local NGOs and SMEs/productive users) will be provided with assistance and advice on the relevant aspects of MHP operations, such as identification of potential sites, pre-feasibility assessment, business planning.

To institutionalize MHP training program, partnership will be established with national educational institutions, involved in provision of technical and vocational training for engineers, manufacturers and other technical specialists. The project will support development of training curricula and educational materials, whereas partners will be required to include the proposed program in the list of regularly taught courses. The selection of educational partners will be conducted at PPG stage.

Component 3: Pilot investment in a selection of micro-hydro power station in rural communities

The project will support development, installation and operation of pilot micro-hydropower stations up to a total of 10 MW. Table 2 presents a list of pre-identified pilot projects along with the main criteria for their selection. These criteria are based on the following elements: availability of basic hydrological data about the sites which prove their hydropower potential, existence of substantial and densely concentrated unmet energy demand, as well as existence or high likelihood of securing co-financing commitments from financial partners. All potential sites are located in rural communities and one in the city of Mbankana. The expected outcome from this component is the improved confidence of communities, developers and potential investors in the technical and economic viability of MHP-based mini-grids for rural electrification and local socio-economic development as a complimentary alternative solution to centralized grid-

expansion schemes.

Through the implementation of pilot investment projects, the appropriateness of proposed financial incentives, OBA scheme, will be validated (Component 1). The demos/pilots will also be used as a testing ground for developing domestic technology supply chain (Component 2). Pilot project preparation will coincide with activities under Components 1 and 2 (policy, regulatory and capacity building), while actual implementation (construction and operation) will take place at a later stage in order to test the proposed arrangement and adapt them as necessary to the realities on the ground. Furthermore, these demos/pilots are expected to generate valuable information on the suitability of, and the practical implementation of the operation & maintenance & management (O&M&M) models that will be developed. The project will seek to test a few alternative models, i.e. involving community-based organizations (CBOs) (e.g. MHPs owned by association of energy users), and private operators (there are some 14 local power supply companies operating diesel-based mini-grids which are interested in exploring alternative energy supply sources, such as mini hydro).

MHP-based electricity will be supplied to a variety of users depending on the needs and economic and social context of each community. The primary target will be households and community users, such as clinics, schools, community centers, churches and so on. However, involvement of productive users, such as SME and agricultural enterprises, will also be critical to maximize revenue generation potential of MHPs and their sustainability. The exact range of users will be defined based on the result of stakeholder consultation and socio-economic analysis of pilot projects.

Table 2: List of potential pilot investment projects

	Region	MW	Estimated Costs (mln USD)	Secured Financing (mln USD)	Main Criteria of Site Selection
1	Nord-Kivu	0.5	2	1.1	The hydro system is meant to secure a greater energy access to post-conflict population.
2	Sud-Kivu	1.5	5	1.2	The hydro system is meant to secure a greater energy access to post-conflict population.
3	Maniema	3	7.2	2.2	The regions of Maniema and Equateur are the poorest in terms of energy access and the gap will increase if nothing is planned in these regions due to high rate of population growth. The site combines a high potential with a high population density without access to electricity
4	Province Orientale	3	6	2	In this remote province, mini grid fed by hydro-power is the only alternative as national grid is unlikely to cover the power needs.
5	Bandundu	1	2.4	0.5	Good hydro potential and high unmet demand
6	Bas Congo	1	2.2	0.3	Strong demand from local community and a group of local SMEs/productive end-users.
7	Equator	2	4	1	The national SE4ALL gap analysis study has identified this province as the one with lowest rate of electricity access in DRC. This pilot will aim, inter alia, at demonstrating how improved access can boost local economic development and poverty eradication.
	Total	12	28.8	8.3	

Note: Some sites, especially in Nord and Sud Kivu, are located in the areas with high security risk. The decision on their inclusion in the scope of the project and implementation modality will be taken at PPG in consultation with national and local authorities and UN/UNDP Security Advisors.

An important part of pilot project implementation will be the identification of a sustainable O&M&M model. Some of the short-listed projects are more suitable for community-based operation (below 500 kW),

while larger ones (1.5-3 MW) will require an external investor and experienced mini-grid operator. For larger projects, assistance will be provided to the Government with organization of public tenders, facilitating the signature of concession agreements, feasibility assessment, and other preparatory and monitoring activities to ensure that pilot projects are designed and implemented in line with best international standards. For the smaller community-based projects, GEF resources will be used to cover their higher O&M&M costs by providing the required training and institutional support to local plant and grid operators. Also, special attention will be given to the design of power generation and distribution scheme in order to ensure that the electricity generated are utilized in productive activities to generate sufficient revenue flow and thus ensure financial sustainability of the projects.

Component 4. PR and investment promotion

This component will address the informational barrier. Assistance will be provided to collect and present all essential information for potential MHP developers, such as a) prospective sites and their characteristics; b) required process for permitting and licensing; c) policies and regulations governing MHP project development; d) information about local technology service providers; e) potential sources of financing and incentive. The information will be presented on-line and published as MHP investor guide. Also support will be provided to assigned national entity (e.g. Secretariat for Small Hydro Resources under National Energy Commission) to ensure its regular update and wide dissemination after project completion. The functions of clearinghouse will not be limited to information storage and update, but will also include MHP portfolio development and promotion of investment opportunities in MHP among local and foreign partners, financial institutions, social impact investors via targeted PR campaign, conferences and other marketing and communication tools. It will thus play an important function of linking interested MHP developers with potential financiers and, as such, will address the financial barrier as well. For this purpose, partnerships with selected High Impact Opportunities (HIOs) under UN SE4ALL Initiative will be established, specifically with Renewable Energy Performance Platform (REPP, led by EIB), CleanStart (UNCDF/UNDP), and Africa Clean Energy Access Facility and Working Capital Fund (Shell Foundation and Bank of America). The project will help connect MHP developers with relevant HIO, identify their needs and prepare project proposals in line with HIO requirements.

5) Global environmental benefits

The project will result in direct GHG emission reduction from pilot MHP projects in the amount of 20,000 tCO₂/year or about 300,000 tCO₂ over technology 15 years lifetime. As elaborated above, under BAU the implementation of decentralized MHP projects is unlikely to happen before 2016 and therefore all project-supported pilots and their associated GHG emission reduction impact is deemed additional and attributable to GEF intervention. The estimates are based on expected average power generation by pilot MHP plants (Table 1) and conservative¹⁶ emission factor of 0.5 tCO₂e/MWh.

6) Innovativeness, sustainability and potential for scaling up

Innovativeness: The project has several distinctive features, which make it highly innovative. First, it will pilot output-based aid scheme to support MHP-based power generation thus making provision of grant resources more targeted and performance-oriented. Second, it will focus on identifying and supporting private sector-led MHP projects, thus maximizing long-term financial and operational sustainability of MHP. Finally, as opposed to the traditional approach of delivering readily-available turn-key solutions for rural electrification, the project will work with the entire domestic value chain for MHP, starting with

¹⁶ The project will replace various sources of GHG emissions in the baseline, such as diesel-based generators (existing and planned), kerosene-burning lamps and community biomass-burning system. For estimation of emission reduction highly conservative emission factor of 0.5t tCO₂e/MWh was used (emission factors for kerosene and biomass are in the order of 1-2 tCO₂e/MWh depending on system efficiency, diesel-based generators have emission factor of 0.786 tCO₂/MWh.)

design through construction and commission and up to operation, maintenance and management.

Sustainability:

- Sustainability of pilot projects: From technical and economic points of view, the sustainability of MHP-based power generation has been proven in the international market, both in the context of developed and developing countries. By addressing the underlying policy and financing barriers that impede the development of MHP in DRC, the creation of a sustainable niche for MHP systems will be realized. Financial sustainability of MHP will be ensured via the introduction of financially viable tariff structure, which will level the playing field for MHP investment compared to other alternatives. In addition, the project will support the integration of local industries into the MHP sector by addressing capacity needs of all actors across the entire MHP value chain. This will be achieved through the provision of focused support to local engineering firms/specialized engineering workshops for installation, maintenance and repair of electro-mechanical equipment at the MHPs. With the increase over time in MHP installations, it is envisaged that such efforts will intensify with opportunities being created for additional players to provide such services.
- Sustainability of OBA scheme: In line with the decision of the Government of DRC and recently adopted Electricity Code, the establishment of the National Fund for Rural Electrification (FONEL) is foreseen as the principal source of financing for rural electrification projects in DRC, including decentralized renewable energy-based projects. Throughout design and implementation of pilot OBA scheme, the proposed UNDP-GEF project will work closely with the Government and other international partners interested in supporting RE-based rural electrification in DRC, to create a model for financial support scheme for MHPs and the required regulatory framework for its subsequent incorporation in the scope of FONEL's operation, thus ensuring sustained financial support to MHPs after project completion.
- Sustainability of capacity building program for technology providers will be ensured via introduction of educational curricula in the universities and vocational training program for technical specialists.
- Sustainability of clearinghouse mechanism: The means required for clearinghouse mechanism are mainly associated with gathering and presenting essential information for MHP investors (on-line platform, Investors guidebook, and other forms), this will be done with project support. Once such information data base is set up, the cost of its maintenance and regular update are minimal and can be easily borne by a suitable local partner. It might be the National Energy Commission or other public entity, NGO or Industry Association. Exit arrangements for the clearinghouse mechanism and identification of its most appropriate successor will be made during project implementation.

Potential for scaling-up: DRC's large, but unexploited potential for hydro power development means there is a substantial scope for replication and scaling-up investment in MHP-based mini-grids, especially for rural electrification where 95% of customers are yet to be served. By removing policy, financial and technical barriers, the project aim at linking this vast supply potential with equally sizable demand. Pilot MHP plants to be supported by the GEF project were selected bearing this high replication potential in mind: all of them are located in the areas with high density of population without access to electricity and confirmed hydro power potential, which make them ideal grounds to demonstrate social, economic and environmental feasibility of MHP-based mini grids. The successful pilots, along with adopted policy framework, will provide for a viable alternative for rapid scale up of rural electrification in DRC.

A.2. Stakeholders. Identify key stakeholders (including civil society organizations, indigenous people, gender groups, and others as relevant) and describe how they will be engaged in project preparation:

The project will involve a diverse range of public and private stakeholders (See Table below) whose involvement is essential because each partner has a distinctive mandate and a role to play in the area of power sector policy-making and operations, private sector engagement, promotion of renewable energy,

and climate change mitigation. In order to ensure their proper involvement and coordination, a Project Steering Committee (PSC) will be formed consisting of representatives of all relevant agencies listed in the Table plus selected CSOs and NGOs. The PSC will be monitoring and governing the project, coordinating and providing political support to the Project. The PSC will be chaired by the Ministry of Environment, as the GEF political and operational focal point, and the UNFCCC focal point. The following key stakeholders have been identified by this project:

Stakeholders	Expected role
Ministry of Energy and Hydraulic, including the Secretariat for Hydro Resources and National Energy Commission	<ul style="list-style-type: none"> • Coordination of the overall project preparation activities • Integration of proposed MHP policy framework in the national strategies and plans for rural electrification • Establishment of Rural Electrification Fund (FONEL) and advice on design of OBA scheme • Facilitating investment promotion, support for MHP, and issuance of co-financing letters • Plan activities related to transfer and development of domestic MHP supply chain and O&M&M models
Ministry of Nature Conservation	<ul style="list-style-type: none"> • Program coordination, including with other relevant climate change mitigation and adaptation project • GHG accounting and monitoring
Agency for Rural Electrification (once established)	<ul style="list-style-type: none"> • Advice on formulation of MHP policy framework and its integration with the national strategies and plans for rural electrification
National Fund for Power Sector Development (once established)	<ul style="list-style-type: none"> • Collaboration on the design and implementation arrangements for OBA scheme
Power Sector Regulatory Agency (once established)	<ul style="list-style-type: none"> • Proposal for developing financially viable tariff structure and methodology for MHPs
Private sector (mini-grid operators, MHP manufacturers)	<ul style="list-style-type: none"> • Contribute to selection and prefeasibility assessment of potential sites • Provide letters of co-financing • Contribute to technology need assessment • Participate in development of O&M&M models for pilot sites
Local communities organization¹⁷	<ul style="list-style-type: none"> • Facilitate consultation with local communities
Women organizations	<ul style="list-style-type: none"> • Participation in local consultation and ensure buy-in in rural communities
SE4ALL High Impact Opportunities on Finance	<ul style="list-style-type: none"> • The project will work in close partnership UN SE4ALL Initiative, in particular its High Impact Opportunity (HIO) Programs on Finance, such as Renewable Energy Performance Platform (REPP, led by EIB) and CleanStart (UNCDF/UNDP). Consultations at PIF preparation stage indicated strong interest from SE4ALL global partners to finance RE-based rural electrification projects in Congo DRC. Within the framework of Component 4 (clearinghouse mechanisms for MHPs), the UNDP-GEF project will help identify and connect MHP developers in DRC with relevant HIOs so that eligible MHP projects can benefit from available support, both in the form of additional technical assistance, but most importantly credit enhancement and debt financing needed to become bankable for commercial investors and lenders.

¹⁷ Section A. 2 list activities where community engagement is foreseen during project preparation, i.e. consultation and community engagement. For the implementation stage, their role and involvement will be bigger and closely linked with all stages of pilot project design, implementation and operation.

A.3 Risks. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable):

Environmental Risks: Low

Micro hydropower technology presents few environmental risks. Impacts related to weirs, which may potentially affect the safety of local communities and surrounding areas, are being addressed through responsible plant design and installation, as well as prevention and emergency response plans.

None of the micro hydropower schemes considered in this project will lead to the resettlement of communities or the displacement of existing farms. In each case, and by design, special care is taken to ensure that water conveyance structures as well as grid-tie arrangements make maximum use of existing rights-of-way.

Overall, the environmental risks, which can be further curtailed with proper monitoring during the implementation phase, do not constitute major obstacles to the development of micro hydropower systems. Air and water pollution, which can be a threat during the installation and maintenance of micro hydropower systems, is a minimal risk because the equipment necessary for micro hydropower systems is small and can be installed quickly. The development of micro hydropower systems will be a means for DR Congo to reduce its dependence on imported hydrocarbons and traditional energy sources and benefit from cleaner renewable energy sources.

Policy risks: Medium

The project's design is fully aligned with the mandate and policy objectives of key national counterparts, such as national Poverty Reduction Strategy and national electrification strategy, which already ensured their buy in and commitment. Their political support will be further secured via close involvement in project preparation and implementation activities.

Natural Risks: Low

As the primary energy source used in this project is water, the availability of sufficient water is a prerequisite to ensure the success of the operation of the micro hydropower demonstrations that will be carried out under this proposed GEF project. The pre-feasibility studies and extensive surveys that will be carried out under the project by the demonstration hosts will establish whether the water resource is not a constraining factor and that site potentially at risk will not be considered for the demonstrations. Mitigating alternative exists and may be used only if deemed necessary, like designing small dams and reservoirs to regularize the flow of water and ensure continuity of power service during dry seasons when water resources are scarce. Wherever designing small dams or reservoirs proves too risky, the alternative will be to size the plant based on minimal forecasted water flow rather than average. The overall natural risks are not significant to prevent the implementation of the micro hydropower project. All selected sites have fast flowing rivers, and many of them have sizeable waterfalls.

The screening and selection process will focus on sites that offer the most promising hydrological profile so the concept could be successfully demonstrated. Fast flowing streams hemmed in by steep banks are considered the best sites. Slower and shallower streams, which may be interrupted by falls or rapids, are also included in the analysis.

Technical Risks: Medium

Given the low literacy rate and the lack of technical capacity among rural communities, maintenance issues represent a significant risk for micro hydropower system operations. Minor turbine repairs jobs have to be done by locally trained staff to prevent micro-hydropower equipment from being idled for long periods. Spare parts have to be standard among sites, locally manufactured if possible, readily available for transport and installation at minimal costs. The building of technical and operational capacities among rural communities will be critical to mitigate these technical risks. This will be done by providing basic technical training jobs in rural areas, sponsoring local institutions that take on

maintenance tasks.

Financial Risks: High

There are many financial risks that can threaten the successful implementation of micro hydropower projects. For instance, difficulties to gather the required financial investment for the pilot micro-hydro power plants, lack of funds to operate and maintain the micro-hydro power plants, inadequate financial resources for people in the rural communities to pay for the electricity produced by the micro-hydropower plants, absence of financial resources to fund productive use agro-activities that will make use of the electricity generated by the micro-hydro power plants. Although the rural electricity is expected to create income generating activities, it is fair to assume that the initial financial investment required to start a business may be prohibitive for most rural people. The implementation of OBA scheme, as well as policy framework under component 1 and investment promotion under component 4 will help mitigate and address this risk.

Civil conflict: High

DRC is a post-conflict society, but the conflict and military actions are still going on in parts of the country; this poses substantial risk to project implementation. Evolution of conflict will be closely monitored by UNDP CO's security team, which will be regularly consulted in the course of project preparation and implementation; their inputs and advice will be sought on the security situation in the prospective project sites. Also, community involvement and consultation will be an integral part of the project in order to ensure buy-in and minimize the risk of conflict escalation and other potential tensions.

Climate Change Risks: Low

Results of climate models for Congo basin region will be incorporated in the design and selection of pilot sites. The existing and projected climatic data will be used to ensure that the chosen sites are not highly affected by irregular rain trends and are least vulnerable to projected changes in hydrological regime. In addition, policy recommendations for MHP promotion will include regulations to protect watersheds in order to maintain the necessary vegetation and forest cover.

A.4. Coordination. Outline the coordination with other relevant GEF financed and other initiatives:

The project will be closely coordinated with and complement on-going Regional and Domestic Power Market Development Project (PMEDE), which is a joint WB, AfDB, and EIB initiative aimed at improving power sector operations in DRC with a total financing of 429 mln US\$ for the period of 2007-2016. One of its sub-component, financed by the World Bank (500,000 US\$ - TA) will be used to prepare standard legal package for PPP investments (concession agreement) in decentralized RE-based rural electrification projects, which is an essential part of the required legal and regulatory framework for MHPs which this project aims to support under Component 1. GEF funds won't be used to cover the cost of PPP model development (namely, concession agreement and rules and procedures for issuing concession), but will be used to prepare other required policy and regulatory documents, which are not financed by the World Bank, such as simplified licensing and permit issuance procedures, land and water right uses, tariffs, financial support scheme (i.e. Outputs 1-5). WB also has plans to prepare specific investment proposals for decentralized rural electrification, but such projects haven't been identified yet and no resources committed to support this activity. To avoid any potential overlaps and maximize complementarity of future efforts, coordination mechanisms will be established between two projects. The details will be presented at CEO endorsement stage.

The proposed UNDP-GEF project will also coordinate closely with the Sustainable Energy for All Initiative's program of work at the country and global level building on the results of Gap Analysis, which has recently been concluded. It will also work closely with GEF-supported project on preparation of DRC National Communication to UNFCCC and the Biannual Update Report (BUR), as well as with

UNDP Global Low-Emission Capacity Building Program, which, inter alia, will support DRC in identification and implementation of NAMA in energy sector.

The proposed project is one of a series of similar UNDP-GEF initiatives aimed at promoting MHP- based mini-grids in Africa (Sao Tome and Principe, Equatorial Guinea, Republic of Congo). These projects share the same market transformation approach and model for MHP-based rural electrification. UNDP-GEF Regional Coordination in Africa will facilitate coordination between these nationally-executed projects by supporting analysis and dissemination of lessons learnt, providing technical exchanges between experts and authorities, and organizing regular face-to-face and virtual networking, knowledge sharing and outreach activities and events. Also, UNDP will liaise with GEF-funded MHP project teams in Nigeria and Tanzania (both are scheduled to be completed in 2015, where implementation will only begin in DRC) in order to find ways for DRC project to benefit from and make use of their results. For example, this might include adaptation of technical manuals and proposed MHP-related policy frameworks developed with GEF support in these countries to DRC conditions.

UN-REDD+: The project will work closely with UN-REDD+ program for DRC to ensure that UNDP-GEF-supported activities do not generate any negative environmental impact on forests or lead to deforestation. It will promote the adoption of REDD Social and Environmental standards by the wood processing companies, if such are to be supplied by MHP-based power from the project. Other forms of collaboration with UN REDD program in DRC will be established to further strengthen linkages between these climate mitigation programs at national/policy and local level.

The project will establish collaboration with the EU Energy Initiative Partnership Dialogue Facility (EI PDF). EUEI PDF provides technical support for design of organizational framework for the newly set-up ANSER (Rural Electrification Agency) including legal, operational and financial aspects of the Agency's operation. Also, EUEI PDF, is currently implementing a project to develop and disseminate an Africa "Mini-Grid Policy Toolkit" with REN21 and the Alliance for Rural Electrification (ARE). The Toolkit will target at policy-level decision-makers and senior technical staff in African countries towards supporting them in shaping up the policy and regulatory framework for rural electrification through renewable energy or hybrid mini-grids.

SE4ALL High Impact Opportunity (HIO) on Finance: HIO on Finance seeks to accelerate and maximize the mobilization of private investment towards the achievement of Sustainable Energy for All's objectives, in particular the Objective 1 "Achieving Universal Energy Access". At PIF preparation stage consultation were held and agreement reached regarding cooperation with the following innovative financial programs set forth in this HIO:

- **Renewable Energy Performance Platform (REPP)** is aimed at helping African governments and the private sector overcome investment hurdles for "firstmover" projects operating within newly supportive policy environments. The REPP will provide such projects with a mix of credit enhancement, result-oriented support, technical assistance and debt financing needed to become bankable for commercial investors and lenders. The aim is to establish a cluster of renewable energy projects that provide a demonstration effect for both policy and commercial viability, positioning the targeted sectors for further rollout. Typical projects will be in the 1 to 15 Megawatt range, employing proven technologies that are new to the country and usually operating within a nascent policy environment. Both grid-connected and mini-grid installations will be supported. Key financing partners are the European Investment Bank (EIB) and KfW.
- **Clean Start:** CleanStart supports low-income households and micro-entrepreneurs to have access to modern energy through microfinance. CleanStart aims to support up to 18 financial service providers in six countries in Asia and Africa (including DRC) to provide microfinance for clean energy solutions at scale. It will also work towards building a sustainable supply chain for energy technologies or services chosen for lending. CleanStart is a joint initiative of the UN Capital Development Fund (UNCDF) and UNDP.

B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

B.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NCSAs, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.:

This project is fully compatible with the DR Congo National Poverty Reduction Strategy Paper for the period 2011-2015. This strategy includes provisions to enhance access to modern energy services for improving economic growth, productivity, wealth creation and improved quality of life for the whole population. The target is to increase from 9% to 18% the level of rural electrification by 2015.

2nd National Communication to UNFCCC identified promotion of micro and mini hydro power among the priority mitigation measures. Specifically, the proposed project will play critical role in helping the Government to realize its stated intention to put in place 50 MHP projects described in 2NC.

The National Action Plan for Adaptation to Climate Change (NAPAs) published in 2009 highlighted how the low access to modern energy (particularly electricity) contributes to maintain rural population & in particular forestry communities in a high dependency of forest products and is one of the cause of deforestation. The present project will reduce the impact of the rural population on forest by providing electric power for productive use & the associated diversification of source of revenues.

National Portfolio Formulation Exercise (NPFE): This project is among the priority GEF-5 CCM projects stated in the National Project Formulation Document (NPFDD). The NPFDD specifically states UNDP as the GEF Agency for this project.

Finally, it is expected that during the preparatory phase (PPG), in-depth consultations will be undertaken to establish partnerships and practical modalities for linking and collaborating with several planned projects and programs linked to access to sustainable modern energy. Such consultation has already initiated under UN SG Sustainable Energy for All (SE4ALL) initiative. A strategy and plan for collaboration with relevant ongoing and planned initiatives will be prepared during the preparatory phase, including defining the roles and responsibilities of critical stakeholders.

B.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities:

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

B.3 The GEF Agency's comparative advantage for implementing this project:

UNDP has implemented over 230 GEF clean energy projects in close to 100 developing countries, and has acquired a unique base of institutional knowledge on transforming renewable energy markets in developing countries. One of UNDP-GEF's three signature climate mitigation programs – Clean Energy – specifically promotes access to clean and affordable energy supply. Two recent UNDP publications on de-risking renewable energy investment environments ('Transforming Renewable On-Grid Energy Markets' and 'De-Risking Renewable Energy Investment') summarize UNDP's empirically- and theoretically-robust 'theory of change' for catalyzing private-sector renewable energy investment. With specialized staff devoted to energy, finance, NAMAs and carbon mechanisms, UNDP is one of very few international organizations with the understanding of national conditions and priorities (backed by its global network of 129 Country Offices), renewable energy sectoral expertise to be able to design and implement such a program.

UNDP has also developed and implemented in DR Congo, aside from peace building in such a post-war country, many environment-related projects such as:

- UN REDD unit: The UN REDD is the United Nations Collaborative initiative on Reducing Emissions from Deforestation and forest Degradation (REDD) in developing countries. The Programme was launched in September 2008. In DR Congo, the UN-REDD program assists the national authorities to prepare and implement national REDD+ strategies in order to protect the Congo Tropical Forest.
- DR Congo Second National Communication to the UNFCCC: The government of DR Congo is currently finalizing its national communication.
- Preventive Development (Disaster Management Project): in order to raise coordination on DRR activities in RDC, a national and sub national disaster risk management system including is planned for the next five years comprising a contingency plan, an early warning system, needs and risk assessments, support to capacity building of both local and national activities and finally initiatives for appropriate mitigation of disasters.


UNDP is one of the few UN agencies with experience of implementing large-scale development programs, including energy-related projects in conflict and post-conflict zones, such as, for example, Energy for Rural Development Project in Afghanistan which facilitated construction of 18 MHPs across the country. The lessons learnt in Afghanistan and other similar countries have been incorporated in the design of this project. This is first and foremost the need for close engagement and constant dialogue with local communities, good understanding of their needs, capacities and constraints, and identification of local champions/leaders which is required to build communities' trust and buy in. Also, standard security measures and precautions should be observed, especially for the staff operating on the ground, which often necessitates higher than usual project management costs.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this template. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Mr. KASULU SEYA MAKONGA	GEF focal point	Ministère de l'Environnement, Conservation de la Nature et Tourisme	21 AUGUST 2013

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.					
Agency Coordinator, Agency name	Signature	DATE (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Adriana Dinu UNDP/GEF Officer-in-Charge and Deputy Executive Coordinator		22 August, 2013	Benoit Lebot Marina Olshanskaya RTA EITT Saliou Toure	+221 33 869 0676 +421 907 840 152 +221 33 869 0789	benoit.lebot@undp.org marina.olshanskaya@undp.org saliou.toure@undp.org