

**COMBINED PROJECT INFORMATION DOCUMENTS / INTEGRATED SAFEGUARDS  
DATA SHEET (PID/ISDS)**

**Concept Stage**

Report No.:

Date Prepared/Updated: 4-28-2017

**I. BASIC INFORMATION**

**A. Basic Project Data**

<b>Country:</b>	Haiti	<b>Project ID:</b>	P156719
		<b>Parent Project ID :</b>	
<b>Project Name:</b>	Haiti: Renewable Energy for All (P156719)		
<b>Region:</b>	LATIN AMERICA AND CARIBBEAN		
<b>Estimated Appraisal Date:</b>	May 29, 2017	<b>Estimated Board Date:</b>	July 13, 2017
<b>Practice Area (Lead):</b>	Energy & Extractives	<b>Lending Instrument:</b>	Investment Project Financing
<b>Sector(s):</b>	Other Renewable Energy (80%), General energy sector (20%)		
<b>Theme(s):</b>	City-wide Infrastructure and Service Delivery (50%), Rural services and infrastructure (50%)		
<b>Borrower(s)</b>	Republic of Haiti		
<b>Implementing Agency</b>	MTPTC Energy Cell and OGEF Fund Manager		
<b>Is this project processed under OP 8.50 (Emergency Recovery) or OP 8.00 (Rapid Response to Crises and Emergencies)?</b>		<b>No</b>	
<b>Financing (in USD Million)</b>			
<b>Financing Source</b>			<b>Amount</b>
Borrower			0.00
Strategic Climate Fund Grant			22.50
Clean Technology Fund			16.00
International Development Association			21.00
Financing Gap			0.00
Total Project Cost			59.5
<b>Environmental Category</b>	B-Partial Assessment		
<b>Decision</b>			
<b>Other Decision (as needed)</b>			
<b>Is this a Repeater project?</b>	No		

## **B. Introduction and Context**

### **Country Context**

The Republic of Haiti shares the island of Hispaniola with the Dominican Republic, and it is the third largest Caribbean nation by area (27,750 km<sup>2</sup>) and population (10.4 million). In addition to an illustrious early history, as the first nation in the world to be led to independence by former slaves, Haiti benefits from proximity and access to major markets, a young labor force, a dynamic diaspora, and substantial geographic, historical, and cultural assets, as well as diverse and abundant renewable energy (RE) resources.

However, Haiti has considerable development challenges. Haiti ranks 163rd out of 188 countries on the 2015 Human Development Index, and according to the most recent national household survey (ECVMAS), nearly 60 percent of the Haitian population is classified as poor (living under the national poverty line of US\$2 a day) and almost a quarter of the population is very poor (<US\$1 a day). Haiti is one of the most unequal countries in the region with a 2012 Gini co-efficient of 0.61, where the richest quintile holds over 64 percent of the total country income, while the poorest quintile holds less than 1 percent.

There are also strong disparities between urban and rural areas. Over the last decade, there have been some improvements in terms of reducing extreme poverty, but the progress has been uneven. In rural areas, where half of the Haitian population lives, there has practically been no progress in reducing poverty in the last 10 years. At least, 70 percent of rural households are considered chronically poor.

Gender inequality is also persistent. Despite sizable progress in school enrollment, adult women are still less well educated and are more likely to be illiterate. Women are significantly disadvantaged in monetizing their economic assets and obtaining relevant returns, particularly in the labor market. Gender-based violence and low participation in the public sphere remain widespread in Haiti.

Haiti's economic performance has been repeatedly compromised by political shocks and natural disasters. The magnitude 7 earthquake in 2010 killed around 230,000 people (including scores of professionals and public servants) and displaced 1.5 million, making it one of the world's deadliest natural disasters on record. It resulted in damages and losses of around US\$8 billion (120 percent of GDP). Then again, on October 4, 2016 the country was smashed by Hurricane Matthew, striking southwestern Haiti near Les Anglais - recorded as the strongest storm to hit the nation since 1964, and the third strongest Haitian landfall on record. Nationwide, the hurricane nearly or completely destroyed around 200,000 homes, leaving 1.4 million people in need of humanitarian aid and a death toll of over 1,000. Monetary damage was estimated at US\$1.89 billion.

Lacking sufficiently long periods of stability, Haiti has struggled to develop the institutional mechanisms, capacity, and policy fundamentals essential for economic development. Most recently, on February 7, 2017, Jovenel Moise was inaugurated as Haiti's President, ending a two year-long electoral process and paving the way towards much needed stability to attract investment and boost growth. President Moise is coming after two years of the interim government, which was put in place when former President Martelly completed his term in February 2015 without a successor, while the first round of the Presidential elections had to be repeated due to the fraud allegations.

Gross domestic product (GDP) per capita was US\$818.3 in 2015—less than 10 percent of the LCR average. In addition, while the post-earthquake period was generally characterized by a positive economic growth, which allowed a moderate increase in GDP per capita, the last two years were marked by the political uncertainties resulting from contested elections and the impact of natural hazards, which have slowed down the economic growth and accelerated inflation and gourde depreciation.

World Bank's 2015 Systematic Country Diagnostic illustrates that significant acceleration of growth rates is needed to reduce poverty, but also that growth has to become more inclusive. This calls for more attention to the development of economic opportunities in secondary cities and rural areas, including better access to basic infrastructure services, such as electricity.

### **Sectoral and Institutional Context**

The energy sector in Haiti is overseen by the Ministry of Public Works, Transportation and Communication (MTPTC) through its Energy Cell. There is no regulatory agency currently in place. MTPTC oversees Haiti's national electricity utility EDH (Electricité d'Haïti), which is the main distributor of power in Haiti, which until recently had a monopoly over transmission and distribution of electricity.

Haiti's energy sector is characterized by low access to electricity, intensive biomass use and increasing reliance on imported fossil fuels. Total primary energy consumption is 0.4 tons of oil equivalent per capita, one of the lowest in the world; of which biomass (wood and charcoal primarily) represent around 74 percent, petroleum products 23 percent, and hydropower 3 percent.

Haiti electricity sector's reliance on petroleum products is increasing. The generation capacity on Haiti's electricity grids – managed by EDH – is about 320 MW; however, only about 176MW are available for dispatch, inadequate to meet peak demand estimated well above 400MW. Most of this on-grid power generation (81 percent) is supplied through oil-based thermal generation (diesel and fuel oil, mostly provided through independent power producers). EDH-owned hydropower contributes 19 percent. While on-grid capacity has not increased significantly, the total aggregated capacity of diesel engines, used for self-generation and back-up power has been growing steadily since the 1990s. It is now estimated at striking 500MW -- three times the available generation capacity of EDH.

Haiti's reliance on imported petroleum products is costly. EDH's average costs of thermal generation (from IPPs and own generation) is around \$0.30/ kWh, and generally it is higher on its smaller isolated grids, running on diesel. The average costs of generation from individual diesel gensets varies depending on their size and efficiency, but typically ranges from US\$0.40 to almost US\$2 per kWh. While renewable energy generation costs are site-, context- and transaction-specific, renewable energy, such as solar PV, is highly competitive in such price conditions, even without considering positive environmental externalities.

Haiti has excellent renewable energy resources. The available studies of renewable energy potential in Haiti confirm that economic potential exists for hydropower, solar PV, wind and biomass generation. As of now, however, only hydropower potential has been at least partially exploited.

About a third of the Haitian population have “some”, mostly sporadic and unreliable access to electricity, a rate that has remained practically unchanged for the past 40 years. Electricity access is sparse and sporadic throughout the country and absent in much of rural Haiti – less than 15 percent of rural Haitians have access to electricity. Furthermore, access is highly skewed towards higher income quintiles and increasingly provided through illegal and informal connections, which are ironically seen as more reliable than the legal EDH connections. Off-grid electrification is beginning to fill in the access gap in rural areas, but there is still in its infancy, constrained by barriers typical to the early stage of off-grid energy development -- lack of financing, regulatory constraints and lack of knowledge and trust in off-grid technologies.

The Republic of Haiti has been selected as one of the recipients of the Scaling up Renewable Energy Program (SREP) in Low Income Countries. In May 2015, the SREP Sub-Committee endorsed a US\$30 million SREP Investment Plan for Haiti, to be implemented by the World Bank (US\$23 million) and IFC (US\$7 million). The proposed Project covers the World Bank-led SREP components, amounting to US\$23 million.

### **C. Proposed Development Objective(s)**

#### **Development Objective(s) (From PAD)**

The Project Development Objective is to scale-up renewable energy investments in Haiti in order to expand and improve access to electricity for Haitian households, businesses and community services.

#### **Key Results**

The PDO will be measured against the following indicators:

- Capacity of energy capacity constructed or rehabilitated (MW) (Bank core);
- People provided with new or improved electricity service (Bank core), of which female
- Enterprises provided with new or improved electricity service
- Enabling policy and regulatory framework for clean energy and access enacted
- Private investment and commercial lending leveraged.

The project will also include gender-related and citizen engagement indicators.

The project will establish a baseline using the Multi-Tier Framework global survey, and will measure progress against this baseline.

**The proposed Renewable Energy for All Project is based on the SREP Investment Plan, approved by the SREP sub-committee in May 2015.**

The Project proposes a comprehensive investment and capacity building program to unlock the most promising RE investment opportunities in Haiti. The objective is to use renewable energy to drive energy access expansion and to improve quality of electricity service provision. Considering the fragmented nature of Haiti’s electricity system (nine isolated grids operated by EDH, over 30

municipal grids and 500MW estimated in self-generation), investments in distributed renewables have in particular been prioritized.

The project has two components:

- Component 1: Grid-Connected Distributed Renewable Energy; and
- Component 2: Off-grid Distributed Renewable Energy

### **Component 1: Grid-Connected Distributed Renewable Energy**

Component 1 will initiate the scaling up of on-grid RE investments in Haiti, by demonstrating the feasibility and benefits of injecting solar PV generation into EDH grids and building supporting policy and regulatory environment for private sector-driven RE investments. The Component aims at building 6-12 MW of RE capacity (solar PV + battery), which would hybridize 2-3 EDH isolated grids, currently running on diesel power, resulting in 5-10 GWh of annual renewable energy generation, and improved access for at least 100,000 people and 1,000 enterprises. Given the tremendous generation capacity deficit and high costs of thermal generation by EDH, the replication and scale-up potential is enormous. The Component will engage private sector in the construction and operation of the PV plants and build a path towards attracting commercial investments in solar PV generation. It will demonstrate the potential of solar PV energy to simultaneously reduce costs of electricity generation for EDH, while improving service quality for EDH users. It will be the first grid-connected solar PV investment in Haiti.

The Component will be implemented in a phased approach through which the first solar investments would be publicly financed to demonstrate the feasibility of connecting mid-size solar PV plant with storage to the relatively small and weak grid in Haiti. Subsequently, upon successful development of publicly-financed solar investments, private investment will be sought if feasible. In such a case, the project may be restructured, to allow a part of Component 1 funding to be used as a guarantee.

The Component will have two sub-components:

Sub-component 1.a: Demonstration solar PV project: This sub-component will finance solar PV + battery storage plants to feed 2-3 EDH isolated grids. The sub-component aims at building 6-12 MW of RE. The final generation capacity depends on the final site selection, completion of feasibility studies determining the final absorption capacity of the selected grid, decision on how much battery storage and the degree of private sector participation.

Sub-component 1.b: Technical assistance and enabling framework for RE scale-up: This sub-component will finance technical assistance to the Energy Cell and other key stakeholders for the design, implementation and monitoring of the demonstration projects. In addition, the sub-component will finance development of a broader enabling policy and regulatory framework to support renewable energy investments and private sector

participation in the long term.

## **Component 2: Off-grid Distributed Renewable Energy**

Component 2 will extend access to clean and modern energy services to households, communities and enterprises that are not served by EDH. The Component will provide (mostly) first-time access to at least 660,000 households and 7,000 enterprises and community service institutions, such as schools, health centers and community water pumping services. The Component will deploy a wide range of off-grid electrification options: village grids, larger stand-alone systems for productive and community uses, and smaller solar home and pico-PV systems for households. While the household system segment is the most dynamic and has the potential to reach the highest number of households, mini-grid and productive/community use sub-components are prioritized to ensure that the newly acquired electricity access is also used to drive economic transformation in rural Haiti. All renewable energy sources -- solar PV, biomass, wind and micro-hydro power, including hybrid RE technologies with battery storage and/or diesel, will be eligible. The Component will leverage private sector dynamism and innovation, learning and applying successful business models from more advanced off-grid energy markets, such as East Africa and South Asia.

The Component will have four sub-components, covering different market segments and capacity building needs:

Sub-component 2.a: Renewable energy village grids: This sub-component will provide grants for village grids developed under a public-private partnership (PPP) arrangement involving the MTPTC Energy Cell, municipalities and private sector village grid operators. The grants (covering generally the costs of the distribution network) will be used to bring down the village grid investment costs so that the resulting tariff is in line with the affordability levels of rural Haitians. The sub-component is expected to provide electricity access to at least 60,000 people.

Sub-component 2.b: Renewable energy for productive and community use. This sub-component will support productive uses of off-grid renewable energy in order to support rural economic development in Haiti. Community service institutions include schools, health centers, and community water pumping services.

Sub-component 2.c: Household Systems. The sub-component 2.c aims at unlocking the enormous market potential for distributed energy service companies (DESCO) to provide solar home system and pico-PV solutions to households, using new technologies and business models, such as PAYG. To do so, the sub-component will provide well-targeted grants to provide seed capital and support early growth of DESCOs, and increase penetration of quality-certified products on the Haitian markets.

Sub-component 2.d: Capacity building and TA. RE scale-up therefore requires comprehensive and systematic efforts to eliminate these barriers nationally for all types of RE investments. For that reason, the SREP Project would include a specific component for

these crosscutting issues, focusing both on immediate TA activities needed to carry out the SREP Component 2 and broader capacity building to support renewable energy and off-grid access scale-up in Haiti.

The task team has the responsibility to immediately alert the RSA of any changes in project design or of any new information that could warrant a different approach for safeguards management.

#### **E. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)**

The project covers the entire national territory; however, the specific locations of individual subprojects to be financed under the Project are not known.

For Component 1 (on-grid investments), subprojects will necessarily be on or near the existing EDH grids. EDH is operating nine isolated grids that are scattered throughout the country, serving mainly secondary cities and larger rural towns. The selection of subprojects will depend on their feasibility, readiness for implementation, expected impacts and availability of funding. The selection criteria will include size, likely technical compatibility with the solar PV + battery plant, status of local grid and generation, logistics of PV and battery installations, potential availability of land, potential for demonstration effects in post project scale-up, and ability to generate revenues to cover O&M costs. Priority will be given to areas devastated by Hurricane Matthew. Final sites will be selected by MTPTC Energy Cell in consultation with EDH, MEF and the World Bank, based on the confirmation of the selection criteria and taking into account the emerging economic development priorities of the GOH.

Similarly, for Component 2 (off-grid investments) the locations are not known. Subprojects will cover a range of technologies and business models. Technologies include: mini-hydro, solar PV, biomass and wind. Financing mechanism involve PPP, with grant funding provided from the proposed project, covering partially investment costs. The remainder of the investment costs will be financed by the private sector, which are expected to be primarily local SMEs. Investments include renewable energy and hybrid (RE with diesel and/or battery) village (mini-) grids and individual renewable energy (mostly solar) systems for households, productive and community uses. Clients include: households, agri-businesses, and other rural micro- and small and medium (MSME) enterprises, public institutions, and community services. The selection of subprojects will depend on their feasibility, readiness for implementation, expected impacts and availability of funding, and will be driven by the interest of the private sector to co-invest. Thus, subprojects could be in any location in the country and their type, scale, and level of impacts could vary considerably.

Impacts will furthermore depend on Haiti's natural and social environment. Haiti is in a tropical cyclone zone, and is traversed by two seismic fault lines (the Septentrional and the Enriquillo-Plantain Garden fault lines). Also, Haiti's natural environment is subject to considerable pressure such as erosion and deforestation from unsustainable land use practices (logging, charcoal production, agricultural expansion, unregulated construction). Furthermore, waste management is a challenge in Haiti, as there are no adequate, operational solid waste management facilities, or hazardous waste storage/processing facilities. However, Haiti is also home to some unique habitats

and species, and several Key Biodiversity Areas (KBAs) have been identified, which are home to some vulnerable and unique species.

Thus all activities designed under the project will take into consideration, and implement adequate mitigation measures against, the risk of tropical storms, cyclones and earthquakes; impact on rare or unique natural habitats or species, especially in designated KBAs; and the production and management of waste (solid waste, toxic waste, used oil, etc.).

#### **F. Environmental and Social Safeguards Specialists on the Team**

Hana Salah (GSU04)

Nicolas Kotschoubey (GEN04)

Safeguards responsibilities and oversight are endorsed by the Practice Manager.

## **II. IMPLEMENTATION**

The implementation of the Project, including safeguards aspects, will be overseen and coordinated by MTPTC through its Energy Cell. MTPTC created the Energy Cell in 2012, to support energy sector development, which will also be the key implementing unit for SREP. To highlight the importance of this program, the Government has appointed a coordinator for SREP and CTF renewable energy program. In addition, the Energy Cell will be further strengthened with more staff and/or consultants as required for SREP Project implementation. The Energy Cell will also use services of the Project Implementation Unit (PIU), a separate unit within the MTPTC which has been implementing all donors-funded energy projects in the last ten years. The PIU in particular will be in charge of procurement and financial management, but will also provide expertise for managing the environmental and social aspects of the project. In addition, entities implementing sub-projects will be provided with support and training during the course of the project to ensure adequate impact monitoring.

The project will benefit from the extensive past safeguards experience of MTPTC's PIU, which managed safeguards of complex energy infrastructure investments in Haiti for the last ten years, both Government and donors financed (including World Bank's Rebuilding Energy Infrastructure and Access Project, and IDB funded Peligre hydropower project rehabilitation. On environmental and social safeguards, the Ministry is relying on transversal services, also solicited for public works and transport projects, and the power utility has a dedicated team to manage environmental issues for its projects and operation. The scope of environmental and social safeguards successfully overseen by the PIU in the past also covered renewable energy projects, e.g. rooftop solar plant (100kW, in urban areas), large power storage, decentralized power storage, mini-hydro and large hydro projects. Moving forward, the Energy Cell will also be strengthened in the environmental and social safeguards aspects. The energy cell's environmental expert will receive further training, and a social expert will be hired. The social specialist will be trained on social screening and monitoring of sub-projects and on the design/ implementation of the project level Grievance Redress Mechanism as needed.



Sub-component 2c will be implemented by the Industrial Development Fund (Fonds de Développement Industriel – FDI), which in partnership with a competitively selected International Fund Manager, will jointly administer the Off-Grid Energy Fund (OGEF), created by a parallel CTF-funded Modern Energy for All Project (P154351), which focuses on commercially viable off-grid electrification investments. SREP grants will co-finance OGEF investments. Nevertheless, the MTPTC Energy Cell will retain the overall oversight of safeguards also for this component (Energy Cell also acts as the Secretariat of the Advisory Committee, supervising OGEF) through the social (to be hired) and environment safeguards specialist.

### III. SAFEGUARD POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	<p>OP 4.01 is triggered because negative environmental, social, health and safety impacts during construction and operation are possible, in association with solar PV plants serving EDH isolated grids, municipal village grids, or power supply to institutions and enterprises: production of waste in the form of batteries, possibly on a large scale; impacts on soil, vegetation, habitats and/or biodiversity when installing infrastructure (solar panels, power transmission and distribution lines, biomass digesters/furnaces, wind turbines/micro-hydro turbines, etc.).</p> <p>Beyond resettlement aspects, social impact screening will cover labor safety and standards, community health and safety issues, and potential violence and security risks, and impacts related to labor influx in the proposed sites</p> <p>The project is categorized as ‘B’. subproject investments will not be unprecedented or of a scale to merit category A, and/or they will be excluded in the ESMF.</p> <p>The project will develop an Environmental and Social Management Framework (ESMF) which will define procedures and technical support needed for environmental and social management. It will include a description of the types of potential risks, impacts and mitigation measures that need to be adopted to address these impacts, and the procedure to screen, review and implement these mitigation measures.</p> <p>The ESMF will build on the ESMF which was prepared under the Modern Energy for All / CTF</p>

		<p>Project (P154351). To the extent possible the two frameworks will be harmonized given that it is expected that the two projects may co-finance the same sub-projects (e.g. loan from CTF and grant from SREP).</p> <p>The Operational Manual of the project will reference the ESMF and define staffing and training (capacity building) needed to execute the ESMF. Requirements and options for institutional capacity and training to implement the ESMF will be explored during Project preparation.</p> <p>Consultations on the ESMF will take place before Appraisal, and the document will be disclosed on the World Bank's and Government's websites.</p> <p>Project implementation and E&amp;S management will be under the supervision of the MTPTC Energy Cell.</p>
Natural Habitats OP/BP 4.04	Yes	OP 4.04 is triggered to evaluate potential impacts on biodiversity and natural habitats (e.g., impacts on birds and bats from wind turbines). While the project is not expected to have negative impact on natural habitats and any activities with impacts on natural habitats will be screened out using the ESMF (i.e. RE generation units will be outside any natural habitats, mangroves, humid forest, cloud forest, national park, wetlands, including Ramsar sites, KBAs, known bird/bat areas, including migration routes, etc.), OP 4.04 is triggered for screening purposes.
Forests OP/BP 4.36	No	No sub projects affecting forests will be eligible for funding under the Project. Likewise, the project will not exploit, nor promote, forestry.
Pest Management OP 4.09	No	No sub project utilizing herbicide or other similar chemicals will be eligible for funding under the project.
Physical Cultural Resources OP/BP 4.11	Yes	The OP on physical cultural resources is triggered to outline chance finds procedures in the case of any construction activities. During installation of solar PV arrays, wind turbines, run-of-river hydro, etc., civil works may expose cultural, historical religious, traditional, or architectural relics. The ESMF includes procedures to be followed for chance findings when installing infrastructure.
Indigenous Peoples OP/BP 4.10	No	No indigenous people, as defined by the policy, are included in the project, or in Haiti

<p>Involuntary Resettlement OP/BP 4.12</p>	<p>Yes</p>	<p>Some project activities may lead to resettlement (particularly of squatters), land acquisition and loss of economic livelihood. Because the sub-projects and locations are currently unknown (component 1 on-grid investments on or near EDH isolated grids and component 2 off grid activities possibly including mini-hydro, solar PV, biomass and wind), a Resettlement Policy Framework (RPF), laying out the overall guidelines will be prepared in the local language, French. Consultations on the RPF will take place before Appraisal, and the RPF and subsequent RAPs will be disclosed on the World Bank's and Government's website. Special attention will be given to the eligibility of potentially affected persons to ensure that the rights of those without formal legal rights to land are recognized in the RPF and subsequent RAPs, per OP 4.12 in order to ensure appropriate resettlement assistance.</p> <p>The Energy Cell of the MTPTC will be responsible for site-specific screening of sub-projects for social impacts, and monitoring Resettlement Action Plans (RAPs), with the exception of sub-component 2c, which will be carried out by the OGEF Fund Manager. Entities implementing sub-projects will be provided with support and training during the course of the project to ensure adequate social impact monitoring.</p> <p>. The Energy Cell and OGEF Fund Manager will need to submit all sub-project safeguards instruments to the Bank's non-objection in the first two years of project implementation. Following the first two years, only more complex projects (mini-grids and beyond) will require the Bank's approval.</p>
<p>Safety of Dams OP/BP 4.37</p>	<p>Yes</p>	<p>The project may support small hydro, which may trigger OP 4.37. The ESMF will outline the necessary steps to be taken if a subproject triggers this policy; review by a qualified engineer if the dam is less than 15 m high. Projects with dams higher than 15 m will not be eligible under the Project.</p>
<p>Projects on International Waterways OP/BP 7.50</p>	<p>No</p>	<p>No projects on international waterways, as defined in the policy, will be financed,</p>
<p>Projects in Disputed Areas OP/BP 7.60</p>	<p>No</p>	<p>No projects in disputed areas, as defined in the policy, will be financed</p>

#### IV. Key Safeguard Policy Issues and Their Management

## *A. Summary of Key Safeguard Issues*

### **1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:**

Environmental: Potential environmental impacts include production of waste in the form of batteries, associated to solar PV, possibly on a large scale; production of waste from biomass digesters; impacts on birds and bats from wind turbines; loss or modification of aquatic environment from micro-hydro; health and safety issues with all models of RE; impacts on soil, vegetation and/or biodiversity when installing infrastructure (solar panel arrays, power transmission lines, biomass digesters/furnaces, wind turbines, micro-hydro, etc.) Impacts during construction could include those associated to the influx of workers; noise, traffic disruption and dust during construction.

Social: Potential land acquisition, resettlement (especially squatters), loss of economic livelihood, potential safety and security impacts are possible.

### **2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:**

Individuals who may be adversely affected are those who charge phones for community members for a fee. When people have access to their own systems, such individuals may be forced to shut their business. The ESMF will include mitigation measures targeting this group.

Indirect and long-term effects of the project include indiscriminate dumping of batteries, some of which could be toxic (containing lead). ESMF will include mitigation measures related to the disposal of batteries.

However, beneficial impacts include increased use of solar power that would reduce use of kerosene, candles and disposable batteries.

### **3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.**

Different alternatives were considered and were informed by two previous projects, Rebuilding Energy Infrastructure and Access (IDA funding) (PRELEN) (P127203) and Modern Energy for All Project (CTF funding) (P154351). Lessons learned in these projects, as well as from similar projects in other regions, were applied in selecting the current project design to overcome the key energy access barriers identified by the key stakeholders during the preparation of the SREP Investment Plan for Haiti in order to initiate a transformation from primarily diesel-based power generation to a more diverse generation mix relying on an increasing share of renewable energy (RE).

These include the evolving legal policy and regulatory framework; fiscal policies that are unfavorable to RE; limited knowledge of RE systems with energy professionals, technicians, and users; lack of local capacity and skills; and the spoilage of the market due to an influx of low quality RE products. Based on this knowledge, the market-based, technology-neutral and business model-neutral alternative was selected.

**4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.**

The Borrower has engaged a consultant to address safeguards issues through the preparation of the ESMF and RPF. The ESMF and RPF will include guidelines for the production of specific EAs, EIAs or RAPs for subprojects, depending on the magnitude of impacts e.g., solar panel arrays, biomass, wind turbines, micro-hydro, etc. These EAs/EIAs and RAPs will be subject to review and approval by the Bank, and will address, as needed, environmental, social, health and safety impacts. In the case of micro-hydro, generic safety measures designed by qualified engineers will be included as part of the EIA for small dams (large dams will not be financed by the project).

To manage used batteries, which will become obsolete in the next 5-10 years; the Borrower will:

1) Promote low toxicity (Li-ion) batteries. Sub-projects will provide recycling and disposal plans for larger batteries (e.g. for mini-grids), and propose systems to collect and dispose of used batteries (from SHS and lanterns) as part of their application for SREP funding.

2) In the meantime, the MTPTC will commission a study that will cover (i) evaluation of risks posed by batteries produced under the project; (ii) evaluation of options for disposal and (iii) possible private sector solutions to recycling / disposal of batteries. MTPTC will solicit financing to carry out the recommendations of the study once it is concluded. The Energy Cell and MTPTC have indicated that they are favorable to allocating land for the disposal/storage of used Li-ion batteries.

As detailed section II above, the project will benefit from the extensive past safeguards experience of the MTPTC PIU to plan and implement safeguards measures, which managed safeguards of complex energy infrastructure investments in Haiti for the last ten years, both Government and donors financed. More recently, MTPTC has created the Energy Cell in 2012, implementing unit for SREP, which will include, a social and environment safeguards specialist to be hired before project effectiveness. The social specialist will be trained on social screening and monitoring of sub-projects and on the design/ implementation of the project level Grievance Redress Mechanism as needed. In addition, entities implementing sub-projects will be provided with support and training during the course of the project to ensure adequate impact monitoring.

**5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.**

Stakeholders include entrepreneurs, households, businesses, communities, NGOs, the Ministry of Public works (MTPTC) and its Energy cell and FDI. Consultations were held under the related Modern Energy for All Project (CTF funding) (P154351) in Port-au-Prince targeting entrepreneurs, Government agencies, and civil society and in the Artibonite Department targeting households and small businesses. During consultations, special attention was given to understanding the gender-differentiated impacts of off-grid energy options.

Further consultation under the current project will be held prior to Appraisal.

Lastly, individual subprojects will be subject to dialogue and consultation between the sponsor and the beneficiary, as the private sector will present competing proposals for available sites.

**B. Disclosure Requirements (N.B. The sections below appear only if corresponding safeguard policy is triggered)**

**If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.**

**If in-country disclosure of any of the above documents is not expected, please explain why:**

N/A

## V. Contact point

### World Bank

Contact: Dana Rysankova  
Title: Senior Energy Specialist

Contact: Frederic Verdol  
Title: Senior Power Engineer

### Borrower/Client/Recipient

Fritz Caillot	Title: Minister MTPTC or
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### Implementing Agencies

Nicolas Allien	Title: MTPTC Energy Cell Engineer
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## VI. For more information contact:

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## VII. Approval

Task Team Leader(s):	Name: Dana Rysankova, Frederic Verdol	
Approved By:		
	Name	Date
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Practice Manager:	Name: Antonio Barbalho	May 2, 2017

Country Director:	Name: Mary A. Barton-Dock	May 3, 2017
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