

**PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE**

Report No.: PIDA34238

Project Name	Haiti Modern Energy Services For All (P154351)
Region	LATIN AMERICA AND CARIBBEAN
Country	Haiti
Sector(s)	Other Renewable Energy (75%), Transmission and Distribution of Electricity (10%), Energy efficiency in Heat and Power (10%), General energy sector (5%)
Theme(s)	Rural services and infrastructure (90%), Climate change (10%)
Lending Instrument	Investment Project Financing
Project ID	P154351
Borrower(s)	The Republic of Haiti
Implementing Agency	MTPTC - UCE
Environmental Category	F-Financial Intermediary Assessment
Date PID Prepared/Updated	01-Feb-2016
Date PID Approved/Disclosed	02-Feb-2016
Estimated Date of Appraisal Completion	29-Oct-2015
Estimated Date of First Grant Approval	24-Mar-2016
Appraisal Review Decision (from Decision Note)	

I. Project Context

Country Context

Haiti's geography, people, and history provide it with many opportunities. The third largest Caribbean nation by area and population (10.4 million), Haiti shares the island of Kiskeya with the Dominican Republic. In addition to an illustrious early history, as the first independent nation in the region and 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. The country possesses untapped markets and a pent-up demand for the private sector to explore, including agribusiness, light manufacturing, and tourism, as well as abundant renewable energy (RE) resources to power its economy. However, Haiti's population of 10.4 million, half of which is rural, remains poor. According to the most recent national household survey (ECVMAS, 2012), 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 was extremely poor (<US\$1 a day). The country ranks 161st on the 2014 Human Development Index. Haiti's economic performance has repeatedly been compromised by political shocks and natural disasters. The most devastating impact was registered from the 2010 magnitude

7 earthquake, which killed around 300,000 people and displaced 1.5 million in Haiti's capital and nearby towns, making it one of the deadliest natural disasters on record. It resulted in damages and losses of around US\$8 billion (120% of GDP) from which the country is only now beginning to recover.

Post-earthquake politics were marked by the first peaceful handover of presidential power to an opposition candidate in the history of Haiti. President Michel Martelly succeeded President René Préval on May 15, 2011. Though some electoral irregularities led to demonstrations, there was no widespread violence. New presidential, parliamentary, and municipal elections are now scheduled to be held by the end of 2015.

Although widespread expressions of political violence have been relatively rare since 2010, historically political violence has occurred regularly, including during electoral periods, leading to instability and chronic fragility. Since the end of the Duvalier dictatorships in 1986, Haiti had a succession of short-lived governments. Lacking sufficiently long periods of stability, the country has struggled to develop the institutional mechanisms, capacity, and policy fundamentals essential to economic development and the rule of law, leading to low levels of trust between State and citizens.

Haiti is one of the most unequal countries in the region. The richest quintile holds over 64% of the total country income, while the poorest quintile holds less than 1%. As of 2012, the Gini coefficient was 0.61, the highest in the region. There are also strong disparities between urban and rural areas. While the extreme poverty rate has been falling in urban areas, the rural population has not seen much improvement over the last ten years. One third of the rural population is unable to satisfy its nutritional needs and almost three quarters of rural households are considered chronically poor—both below the poverty line and lacking access to basic goods and services, making it especially hard for them to emerge from poverty.

Gross domestic product (GDP) per capita was US\$846 in 2014 – less than 10% of the Latin America and Caribbean (LAC) average. However, since 2011, Haiti has been experiencing positive GDP growth – averaging 3.7% between 2011 and 2014, allowing GDP per capita to rise by 2.4% a year – as opposed to the historic trend of falling GDP per capita since 1971. Throughout the post-earthquake period, Haiti has also managed to maintain macroeconomic stability and met its quantitative targets under an IMF Extended Credit Facility.

However, moving forward, Haiti will need to accelerate the growth rates even more to meaningfully reduce poverty. The 2015 Systematic Country Diagnostic (SCD) illustrates that significant acceleration of growth rates is needed to reduce poverty, but also that growth has to become more inclusive – to benefit disproportionately the bottom income quintile. This will require, among other measures, more attention to the development of economic opportunities in the secondary cities and rural areas, including improvements in access to basic infrastructure services, such as electricity. The 2015 World Bank's Poverty Assessment identifies access to reliable electricity among the essential inputs to elevate productivity and create jobs in rural areas.

Sectoral and institutional Context

The main provider of electricity services in Haiti is the national, government-owned utility Electricity of Haiti (Électricité d'Haiti; EDH), serving some 250,000 (legal) customers, mostly in the Port-au-Prince metropolitan area – with additional 11 isolated grids scattered through the

country. Current electricity infrastructure is aging and has been poorly maintained. Installed generation capacity is about 320 MW, of which only 176 MW is available—insufficient to meet estimated peak load demand of more than 500 MW, resulting in frequent load-shedding and service interruptions.

Most of the power (81%) is supplied through oil-based thermal generation (diesel and fuel oil) with EDH-owned hydropower contributing 19%. These fossil-fuel generation plants are expensive for EDH, straining its financial situation. EDH faces considerable technical, managerial, and financial challenges. Technical and nontechnical losses are 65%. Further, the collection rate is only two-thirds. Consequently, EDH faces difficulties in paying for fuels, basic maintenance, and other operating costs, and depends on government subsidies to bridge the gap. The average daily electricity service of only 16 hours compels most industries to self-generate. It is estimated that the cumulative capacity of individual diesel generators in the country is more than 200 MW.

Haiti has excellent, but largely untapped, RE potential, including hydro, biomass, wind, and solar, as confirmed by recent and current studies. However, despite such abundance, progress in harnessing it has been slow.

Investments in rural electrification in Haiti have remained scarce in the last 30 years, resulting in an official rural (grid) electrification rate kept more or less constant at around 5%. With EDH absent from most of the rural areas, local governments and users have been left on their own to find solutions to their electricity needs. Considering the high costs of running a diesel gen-set, most rural households (i) rely on kerosene and candles for lighting, at extremely high unit costs and low quality; (ii) charge their increasingly spread and vital mobile phones at commercial charging stations; and (iii) buy disposable batteries for their radios and other similar appliances. Only recently have solar lanterns started to emerge as an alternative, but most of the lanterns sold on the market are of low quality, delivering poor service, and breaking frequently.

Haiti's rural poor spend a very large share of their total household budget on basic lighting and energy services, for very poor service quality and quantity at high unit costs. According to project preparation household surveys, the departmental averages for rural households are between US\$10 and US\$20 a month – which is high in international comparison. These high costs are not only a burden on the rural household budgets, but they are also constraining growth and productivity of agri-businesses and other rural SMEs.

A range of renewable energy-based solutions exist today that can provide much superior level of service at price points lower than what the Haitian consumers (both households and businesses) pay today. Not surprisingly, many of these products and technologies are now also emerging on the Haitian market, although their penetration levels are still very low and entry barriers are still significant.

The first two RE markets that have emerged in Haiti in post-earthquake years are those for (i) solar lanterns/pico-PV products, and (ii) larger roof-top solar PV systems for self-supply for (mostly urban) businesses and industries to reduce diesel spending (the "fuel-savers"). More innovative business models, such as pay-as-you-go (PAYG) solar kits and smart micro-grids (see below), are now also beginning to emerge, although all still in the piloting stage. Therefore, off-grid electrification is a viable option in Haiti: (i) consumers have unmet demand and capacity to pay for off-grid solutions, as demonstrated by already high average monthly payments for inferior

alternatives; and (ii) various supply options, which can deliver services to different market segments, exist and have been demonstrated (at least on a pilot basis) to work in Haiti. The challenge is to scale-up from thousands of households served to hundreds of thousands and millions. The scale-up is currently constrained by policy and regulatory uncertainties and early market stage inefficiencies. The key barriers identified in consultation with the existing off-grid energy companies, and supported by consumer surveys and market data, include:

- Consumers lack of confidence due to market spoilage by inferior quality products and difficulty to pay high upfront payments for higher-end products
- Unfair competition between fossil fuels and renewable energy products/technologies
- Lack of private sector financing due to the nascent character of the off-grid industry and underdevelopment of the Haitian financial markets
- Regulatory uncertainties increasing investors risk premium

An effective public sector intervention therefore should focus on removing early stage market inefficiencies, in particular addressing various (initially inflated) risk perceptions from consumers and investors alike in order to build necessary conditions that would allow phasing out of the public support over time. This in particular include:

- Building confidence of consumers in renewable energy technologies by (i) increasing the market share of high quality products, (ii) leveling the playing field with fossil fuel alternatives and (iii) focusing on the development of business models that allow consumers to “test” technologies at low risk
- Building confidence of investors and financiers by (i) reducing regulatory risk, and (ii) demonstrating profitable business models with growth potential

The project contributes to the CPF Objective of Increasing Energy Access and Supporting Renewable Energy as part of the Focus Area on Inclusive Growth.

II. Proposed Development Objectives

The Project Development Objective (PDO) is to accelerate private sector-driven, renewable energy-based off-grid electrification in rural and peri-urban areas of Haiti.

III. Project Description

Component Name

Enabling environment and program oversight

Comments (optional)

To achieve the desired off-grid electrification acceleration, it is essential to improve the business environment. While minimum conditions for operating off-grid business in Haiti exist today, as demonstrated by the vibrant (yet low quality) solar lantern market and emerging innovative business models, their scale-up is constrained by the early market inefficiencies. Component 1 will include TA activities related to improving fiscal and regulatory environment, setting quality standards and promoting energy efficient solutions, improving consumer awareness of RE technologies, promoting gender-sensitive approaches, strengthening capacities and carrying out knowledge exchanges. It will also support the Energy Cell of MTPTC in its OGEF oversight functions.

Component Name

Off-grid Electricity Fund (OGEF)

Comments (optional)

This component will establish a flexible Off-grid Electricity Fund (OGEF), consisting of equity,

debt and grant financing modalities responding to different needs of the off-grid energy enterprises, serving different consumer segments.

Component Name

Facility management, pipeline development and technical support

Comments (optional)

4. This component will cover Fund Manager fees (the fee will be determined through the bidding process). In addition, the component will provide funding for the market development activities; monitoring, verification and evaluation; and provision of technical support to the beneficiaries.

IV. Financing (in USD Million)

Total Project Cost:	16.00	Total Bank Financing:	0.00
Financing Gap:	0.00		
For Loans/Credits/Others			Amount
Borrower			0.00
Clean Technology Fund			16.00
Total			16.00

V. Implementation

The project has two implementing agencies.

The Ministry of Public Works, Transportation and Communications (MTPTC), through its Energy Cell will implement Component 1. MTPTC is already implementing the IDA-financed PRELEN Project and the same arrangement and team (which would be further strengthened) will be used for the implementation of Component 1. MTPTC's Energy Cell will provide technical oversight for all activities. Procurement and financial management will be initially carried out through the PIU established for the IDA PRELEN project, until the Energy Cell develops sufficient procurement capacity to take over procurement and financial management functions. .

A competitively selected Fund Manager will manage OGEF and associated activities (Components 2 and 3). The Fund Manager is expected to consist of a partnership between a local financial intermediary with a start-up/SME investment track record (to bring local know-how and facilitate local learning) and an international fund manager with a proven track record with financing off-grid businesses (to ensure sector expertise). The Fund Manager will be contracted by the Government to manage CTF funds for an established time period (10 years), with a possible renewal if both parties agree.

VI. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	x	
Natural Habitats OP/BP 4.04		x
Forests OP/BP 4.36		x
Pest Management OP 4.09		x
Physical Cultural Resources OP/BP 4.11		x

Indigenous Peoples OP/BP 4.10		x
Involuntary Resettlement OP/BP 4.12	x	
Safety of Dams OP/BP 4.37		x
Projects on International Waterways OP/BP 7.50		x
Projects in Disputed Areas OP/BP 7.60		x

Comments (optional)

VII. Contact point

World Bank

Contact: Frederic Verdol
 Title: Sr Power Engineer
 Tel: 473-6566
 Email: fverdol@worldbank.org

Contact: Dana Rysankova
 Title: Senior Energy Specialist
 Tel: 458-9514
 Email: drysankova@worldbank.org

Borrower/Client/Recipient

Name: The Republic of Haiti
 Contact: Jacques Rousseau
 Title: Minister of Public Works, Transport, Energy and Communicatio
 Tel: 50937270414
 Email: hubejack@gmail.com

Implementing Agencies

Name: MTPTC - UCE
 Contact: Jacques Rousseau
 Title: Minister MTPTC
 Tel: 50937270414
 Email: hubejack@gmail.com

VIII. For more information contact:

The InfoShop
 The World Bank
 1818 H Street, NW
 Washington, D.C. 20433
 Telephone: (202) 458-4500
 Fax: (202) 522-1500
 Web: <http://www.worldbank.org/infoshop>