

***Solar Electrification for Small and Micro Businesses in Haiti***

***Pilot Project Survey***

***Implementing Organizations***

***FONKOZE***

***Green Microfinance, LLC***

## Summary

Only 30% of the Haitian population has access to electricity. This is compared to 91% in neighboring Dominican Republic. Due to the lack of power infrastructure, economic development in Haiti is severely hampered. In addition, small-scale entrepreneurs are constrained in their ability to obtain capital to generate energy. Creditors avoid lending for the purchase of solar-powered electrical equipment because they lack experience and, therefore, concentrate their lending efforts on safer, more familiar sectors. Haiti also has fewer energy options due to near total deforestation (98%); thus reducing the availability of firewood. A solution using renewable energy is proposed that would target 100-120 small businesses whose productivity would be significantly enhanced by solar electrification. Power produced could be used for water pumping, lighting, computer use, Internet cafes, refrigeration, and small industrial/workshop equipment. The objective of this project is to test a new loan product for purchase of solar energy systems to increase incomes and productivity of small and micro businesses in Haiti.

Providing consumer financing for small solar electric systems will help to overcome the “first-cost barrier” to purchase of solar power. At present, this type of financing is not available in Haiti. This project will help to develop Haiti’s solar electric market. The installation and maintenance of PV systems and sales of PV electricity has also been shown to contribute to rural employment creation. *Several studies<sup>1</sup> have shown that PV can be the least-cost option for providing electricity to remote, dispersed populations that have low energy demands.* In addition, the successful development of this product will reduce the demand for firewood and charcoal, both of which are detrimental to Haiti’s fragile environment.

## Goal

To remedy the lack of access to electricity, Fonkoze, one of the leading microfinance leaders in Haiti, will partner with Green Microfinance (hereby referred to as “Project Team”) and a local solar energy vendor (one or two distributors have already been identified) to design and pilot test a solar loan product for lending to small enterprises. This partnership will enable about 100 small-scale entrepreneurs in Haiti to purchase and benefit from solar electricity. At least one-half of these businesses will be woman-owned and -operated. In addition, the project is expected to benefit Fonkoze, by developing a new and profitable loan product to add to its portfolio. The provider of the solar panels will also benefit, due to the increased sales of solar panels. Green Microfinance will benefit by furthering its mission.

## 1. Objectives

1. Conduct market research to establish purchasing power, financing needs and expectations, current energy sources and costs, identify solar system vendors;
2. Design a PV loan product for delivering sustainable PV credit to over 100 businesses and households;
3. Establish partnership between solar equipment vendor and Fonkoze;
4. Successfully install PV equipment, and ensure maintenance and proper use by microenterprise;
5. Evaluate and document impact.

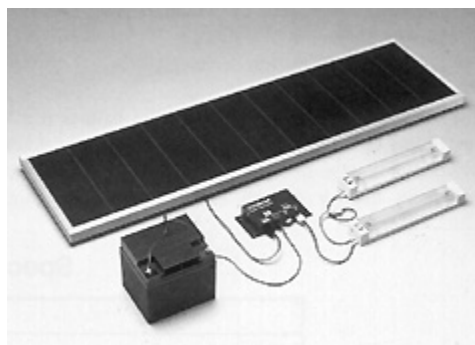
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<sup>1</sup> Douglas Parkerson, “Assessing the Potential for Microfinance Institutions to Finance Solar Photovoltaic Systems in the Dominican Republic”, Working Paper, Brandeis University, (2005).

## Background

People in Haiti want and need electric power. Most of Haiti does not have access to electricity due to a poor grid network, particularly in rural areas. *Even in the most developed urban areas power supply is limited to approximately two hours a day.* Most rural Haitians cannot afford the full capital costs of generators, diesel fuel, fossil or renewable energy-based electrification.

Due to the low rate of electrification, there is pent-up demand for electric services, particularly amongst businesses seeking to gain access to, expand, or improve the reliability of power.



*PV system with fluorescent lamps*

Providing finance will help meet demand, and increase access to solar electrification. The World Bank estimates that approximately 5% of most rural populations can pay cash for a PV system; 20 to 30% can afford a solar electric system with short or medium term credit, and another 25% could afford a system with long term credit or leasing<sup>2</sup>.

## Demand in Haiti

FONKOZE staff conducted a solar panel demand survey with FONKOZE clients and nonclient entrepreneurs during July/August 2005 in thirteen zones of Haiti (Sid/Sides, Mayisad, Devarye, Mibale, Ench, Okap, Wanament, Diwo, Rivie-Kanau, Tomasik, Sant, Mayisad, Ponsonde) (see Annex D). There were thirty-two respondents. Of the Fonkoze clients, their loans ranged from slightly over \$1,000 to more than \$6,000.

Eighty-four percent (84%) of respondents were familiar with the solar technology. One hundred percent (100%) of respondents expressed interest in acquiring a system, and would be willing to take a loan from Fonkoze to do so. When asked how electricity would impact their business, respondents mentioned that they would be able to:

- sell at night
- sell refrigerated items (drinks, etc.)
- sell ice
- conserve fruits in refrigerator
- install a photocopier
- attract customers

Ninety-one percent (91%) said that people in their household would like to have electricity. The stated benefits of this would be:

- better education – “Our children could study at home”
- better mental and physical health – “It would deter thieves”
- increased business opportunities: cyber café, cold drinks sales, sell ice

<sup>2</sup> <http://www.worldbank.org/html/fpd/energy/subenergy/solar/residential.htm>

- provide entertainment, i.e. radios
- save money (on batteries, candles, conserving produce)

The majority of respondents use kerosene (22%), kerosene lamps and candles (22%), and solar panels (16%). Other sources included generators, invertors, batteries, and combinations of these. Respondents said that their households spent from \$1.60 per month (kerosene and candles) to \$114 per month (kerosene and gas for a generator).

In terms of amount of wattage needed, respondents said that they would like to be able to run a refrigerator, TV, and assorted small appliances (radio, blender) on the system.

Finally, security of the panels does not appear to be a problem. Ninety-seven percent (97%) said that they would be able to protect their panels, using various means.

### **Organization Profiles**

**FONKOZE:** Founded in 1994, Fonkoze is Haiti's largest microfinance institution with 23 branches located throughout the country, with 28,000 borrowers and over 69,000 savers. Fonkoze offers a full range of financial services, including solidarity group loans, small and medium enterprise loans, savings products, currency exchange services and remittance services. As of December 2004, Fonkoze had over \$4.9 million in loans outstanding and \$5 million in savings deposits. In addition, Fonkoze offers a pioneering educational program that combines basic literacy training with practical education in subjects such as: business skills, sexual and reproductive health, and use of financial services.

**Green Microfinance:** Green Microfinance (GMf) partners and the GMf network of associates have expertise in environmental management, renewable energy, microenterprise development, and microfinance. GMf has engaged in providing successful workshops on environment and microfinance, and in the development of a solar ovens/lanterns project in Sri Lanka. GMf tools are based on field-testing and consultations with microfinance institutions, US PVOs, and the donor community. GMf project leaders hold degrees in International Economic Development, Development Management, and Natural Resources Management.

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