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IMPROVED COOKING TECHNOLOGY PROGRAM (RECHO PA'W)

Year 2 Annual Work Plan

November 2012



IMPROVED COOKING TECHNOLOGY PROGRAM

YEAR 2 ANNUAL WORKPLAN

OCTOBER 2012 - SEPTEMBER 2013

Revised April 2013

Contract No. AID-521-C-12-00003

This publication was produced by Chemonics International Inc. for review by the United States Agency for International Development

Cover photo: Women street vendors cooking with LPG at Place St Pierre, Petionville. Note the charcoal stoves thrown away in the background. Credit: Daniel Eliassaint

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ACRONYMS

ANADIPP	<i>Association nationale des distributeurs de produits petroliers</i>
BME	<i>Bureau des mines et de l'énergie</i>
C&K	A hardware store and importer of LPG stoves and parts
CCT	Controlled cooking test
CDM	Clean Development Mechanism
CER	Certified emissions reduction
CME	Coordinating or managing entity
CPA	CDM Program Activity
CQC	C Quest Capital
D&E	D&E Green is a manufacturer of improved charcoal stoves
DNA	Designated national authority
EMMP	Environmental mitigation and monitoring plan
ESF	Environmental screening form
HDF	Haiti Development Fund
HTG	Haitian Gourde (\$1 = 42.5 HTG)
ICS	Improved cook stove
IEE	Initial environmental evaluation
IR	Interim Result
GOH	Government of Haiti
LAC	Latin America and Caribbean
LoA	Letter of Approval
LPG	Liquefied Petroleum Gas
M&E	Monitoring and evaluation
MCI	Ministry of Commerce and Industry
MEO	Mission Environmental Officer (USAID)
MFI	Micro finance institution
MSE	Ministère à la securité énergétique
MSC	A hardware store in PAP
PAP	Port-au-Prince
PMP	Performance Monitoring Plan
PNUD	<i>Programme des Nations Unies pour le Développement</i>
PoA	Program of activities (under the CDM)
RFP	Request for proposals
RTNH	<i>Radio et télévision nationale de Haiti</i>
SAPF	Special activities and partners fund
SBD	Small business development
SHG	Self Help Group
STTA	Short-term technical assistance
SUMS	Stove use monitoring system
TBD	To be determined
ToT	Training of trainers
UEH	<i>Université d'Etat de Haiti</i>
USAID	US Agency for International Development
VC	Valerio Canez --a hardware retailer and importer of LPG stoves and parts
WBT	Water boiling test
ZBP	An improved charcoal cookstove

SECTION 1. INTRODUCTION

Background to the Program

Approximately 80 percent of Haitian household energy needs are met using firewood and charcoal. Although charcoal is produced all over the countryside, speculators and wholesalers gather the product and resell it to retailers in Port-au-Prince and provincial towns. It is estimated that Haitians use at least four million tons of wood annually, about a third of which is transformed into charcoal, mainly for cooking. In urban areas, about 58 percent of household cooking needs are met from charcoal; in Port-au-Prince around 30 percent of family income is spent on charcoal. Rural households primarily use firewood for cooking but do turn to charcoal during the rainy season when dry firewood is less available. Over 80 percent of the charcoal produced in Haiti is consumed in the capital of Port-au-Prince.

Beyond the negative economic impacts of charcoal consumption on the Haitian household, charcoal production has devastating environmental consequences for the country. Charcoal, which is produced by felling or pruning live trees, has contributed to extensive deforestation, soil erosion and the destruction of natural watersheds across Haiti. This deforestation has left Haiti highly vulnerable to severe weather, especially hurricane-force winds, flash flooding, and mudslides that ravage the country every year. A black market charcoal trade is reportedly growing between Haiti and the Dominican Republic, where trees in the Dominican Republic are being cut for charcoal, sometimes leading to violent clashes with Haitian charcoal producers.

Cooking with firewood and charcoal exposes women and young children to smoke and indoor air pollution. The associated health problems, especially respiratory illnesses, are the second largest killer of children under the age of five in Haiti. The World Health Organization estimates that exposure to indoor air pollution leads to nearly 3,000 premature deaths in Haiti each year and represents about three percent of the national burden of disease.

Despite these negative impacts, charcoal production and distribution is an important source of income in both rural and urban parts of Haiti. Many rural households are occasional charcoal makers, especially around the beginning of the school year when extra money is needed by families. The largest beneficiary of the charcoal trade in Haiti is the transportation sector, which takes half of the profit earned on a bag of charcoal. Charcoal resellers within Port-au-Prince represent the lowest of the commerce class and make very little profit from their activities.

Trends in Usage

Historically, urban households have consumed most of the charcoal produced in Haiti. However, during the past decade, urban households have started to shift away from the exclusive use of charcoal and firewood for cooking and have begun using cleaner liquid fuel such as kerosene or Liquefied Petroleum Gas (LPG). Rural populations have less access to cleaner fuels and continue to depend on traditional open fires and/or inefficient biomass (charcoal or wood) cookstoves.

Street food vendors, locally known as *marchanns manje kwits*, are another mass consumer of charcoal. Current estimates show that there are approximately 12,000 street vendors working in Port-au-Prince. The majority of street food vendors are small businesses run by women on their household stoves, which are carried into the street or market near their homes. These vendors provide an important source of food for the most food insecure households, for whom it is less expensive to buy small meals

on the street than to purchase food and fuel for home cooking. The majority of street vendors use charcoal and run their stoves long hours each day, consuming on average 175 kg charcoal per month¹.

In addition to *marchanns manje kwits*², orphanages and schools, especially those supplied by the World Food Programme (WFP), consume large quantities of charcoal and other biomass fuel in implementing vital feeding programs. The WFP is currently feeding 800,000 children each day in public Haitian schools and is looking to expand their feeding programs. Private schools also provide food for their students, typically paid for by their tuition fees.

Prior Cookstove Programs in Haiti

Previous efforts to introduce and scale up the use of more efficient biomass cookstoves have had limited success. Barriers to success are numerous: higher upfront cost, cultural resistance to changing technologies, underdeveloped supply and distribution chains, limited availability of raw materials, lack of quality control for stove production, lack of standards as to what constitutes an “improved” cookstove, and lack of awareness and education to both encourage the adoption of new technology and to properly implement and sustain positive behavioral change. The socio-cultural barriers to change are some of the most difficult to surmount. These barriers include lack of awareness of the benefits of improved cooking technologies, user preferences for technologies they already know, changes in flavor caused by new fuels, and concerns about safety.

Despite these barriers, the price of charcoal is high compared with other parts of the world and other fuels (slightly higher than LPG), which can help promote fuel switching or the uptake of more efficient biomass stoves. In addition, the simple fact that so many homes in Haiti already pay for their cooking fuel (charcoal) greatly increases the attractiveness of Haiti as market to sell improved stoves, since the cost of a stove is typically repaid in a matter of months; in markets where most fuel is collected for free, it is much more difficult to sell improved stoves.

The most recent U.S. government activity to promote improved cooking technologies in Haiti was implemented under the USAID WINNER program and facilitated the switching of about 100 street food vendors from charcoal to LPG. This pilot demonstrated high user acceptance and enthusiasm for switching to LPG, significant cost savings for the food vendors, and high reductions in charcoal consumption. Given that the USAID WINNER program estimates that 60 percent of people in Port-au-Prince eat at *manje kwits*, the adoption of LPG cooking kits by this customer base could reduce charcoal consumption in the capital by as much as 10 percent.

Regulatory Framework for Alternative Cooking Fuels

Haiti currently has no legislation or rules governing the LPG sector. The lack of technical or commercial standards has created safety issues and allowed predatory business practices that have retarded the consumer market. In particular, the uncontrolled development of micro-filling stations has led to installations and operating practices that do not adhere to any internationally recognized technical standards and to commercial practices, such as cross-filling, that has discouraged new investment, especially in LPG cylinders, which is required to grow the market.

The introduction of a regulatory framework governing technical and commercial standards is critical for promoting LPG for households and businesses and for creating an important foundation on which

¹ ICTP Market Analysis, September 2012

² Cooked Food Vendors in Creole; i.e. street food

to base future LPG investment and growth in Haiti. In addition, current LPG pricing in Haiti is unregulated and determined independently by major LPG companies.

Opportunities for Carbon Financing

Carbon finance offers an innovative approach for developing future revenue streams to enhance the financial sustainability of businesses making and selling more efficient stoves or cleaner fuels. These revenues may be used for subsidizing manufacturing costs, lowering prices for retail sale or scaling up and replicating successful models. A carbon asset can be developed around the reduction in CO₂ emissions from fuel-efficient stoves (typically on the order of about 1 ton of CO₂-equivalent per stove per year for the life of the stove), or switching to cleaner fuels such as LPG. When properly monitored and registered, these reductions in emissions create carbon credits that have a monetary value on the global carbon market or through the Carbon Development Mechanism (CDM). Carbon financing is very different from traditional donor funding for cook stove projects in that it only provides revenue if results are achieved. It provides a serious incentive to continue using the stoves over many years, and it provides a great incentive for large-scale efforts that can generate more revenue for similar transaction costs.

Program Objective

In response to these challenges and opportunities, the objective of the Improved Cooking Technology Program (ICTP), also referred to as *Recho Pa'w*¹, is to set Haiti on a path towards long-term sustainable cooking solutions and achieve a significant reduction in charcoal consumption by large users and households. The program team and partners are working together to achieve this objective by expanding the market for improved biomass cookstoves and cleaner fuels, developing clean energy businesses engaged in supplying the market with cleaner fuels and improved biomass cookstoves, educating consumers and generating market demand, and addressing the regulatory issues that are limiting the expansion of LPG in Haiti.

The ICTP works in four programmatic areas to achieve these aims:

1. ***Establishing a thriving local market and industry for household improved biomass cook stoves.*** The strategy for this component is multi-faceted. The program supports the development of a range of stoves to create a true market by targeting both supply- and demand-side constraints to long-term market growth.
2. ***Reducing charcoal consumption by large users, particularly food vendors, schools and orphanages.*** The program will enable more than 10,000 street vendors, orphanages, and schools to switch from charcoal to LPG by increasing access to quality cooking equipment, fuel and financing.
3. ***Building a legal and regulatory framework for LPG.*** The Improved Cooking Technology program works closely with the government of Haiti (GOH), LPG companies and distributors, and other stakeholders to provide needed expertise and to help bring stakeholders to a consensus on LPG regulations, standards, and pricing.

¹ Recho Pa'w means "stove for you" in Creole

4. ***Devising carbon finance and financial incentives for scale-up.*** The program is working to establish local carbon assets that generate long-term revenue streams contributing to the sustainability of the market for improved cookstoves

SECTION 2. OVERVIEW AND RESULTS FRAMEWORK

The ICT Program started in February 2012 with the arrival in Haiti of a Chemonics start-up team tasked with establishing a project office in Port-au-Prince and the recruitment of local national staff. The program director, Martin Bush, arrived on March 18, 2012.

The program held a work-planning workshop in March 2012, at which it was agreed that ICTP should have a name in Creole. The project name *Recho Pa'w* (meaning "stove for you" in Créole) was formally adopted by the participants, including USAID, at the planning workshop.

The program is managed and implemented by Chemonics International as prime contractor leading a consortium composed of Mercy Corps and C-Quest Capital (CQC).

- Chemonics is responsible for oversight and management of all programmatic areas, local subcontractors, public-private partnership development, and project monitoring and evaluation.
- Mercy Corps provides technical assistance in the development and implementation of activities aiming at improved biomass cook stoves market growth.
- C-Quest Capital leads the carbon financing activities, which includes serving as the coordinating or managing entity (CME) for the CDM program of activities (POA).

2.1. Organization

The organizational chart, presented on the following page, outlines the program's management structure. Program Director Martin Bush is responsible for overall program implementation, working closely with USAID and the GOH to ensure their support, integration, and participation in all activities. Mr. Bush is responsible for the timeliness and quality of all deliverables and for reporting under the terms of the contract and work plan. He provides direct supervision, oversight and strategic guidance to the project team.

The technical team is responsible for designing and supervising the delivery of technical and financial assistance. Long-term team members provide technical assistance on a strategic basis, utilizing the services of local partners and individual short-term consultants who provide technical assistance as required. Technical Leader [REDACTED] is responsible for implementing the biomass energy components of the program. Technical Leader [REDACTED] is responsible for leading the LPG components of the program.

A legal specialist, [REDACTED], is available on an as-needed basis to assist with the management of legal issues related to the certification of cookstoves and the promulgation of the law related to the management of the LPG sector.

Cross-cutting components for the program include:

1. Small business development including micro finance, under the supervision of [REDACTED]
2. Communication and outreach, managed by [REDACTED]
3. Community organization, participation, and gender, directed by [REDACTED]

- 4. Monitoring and evaluation of program activities and validation of the program's reported results are the responsibility of [REDACTED]

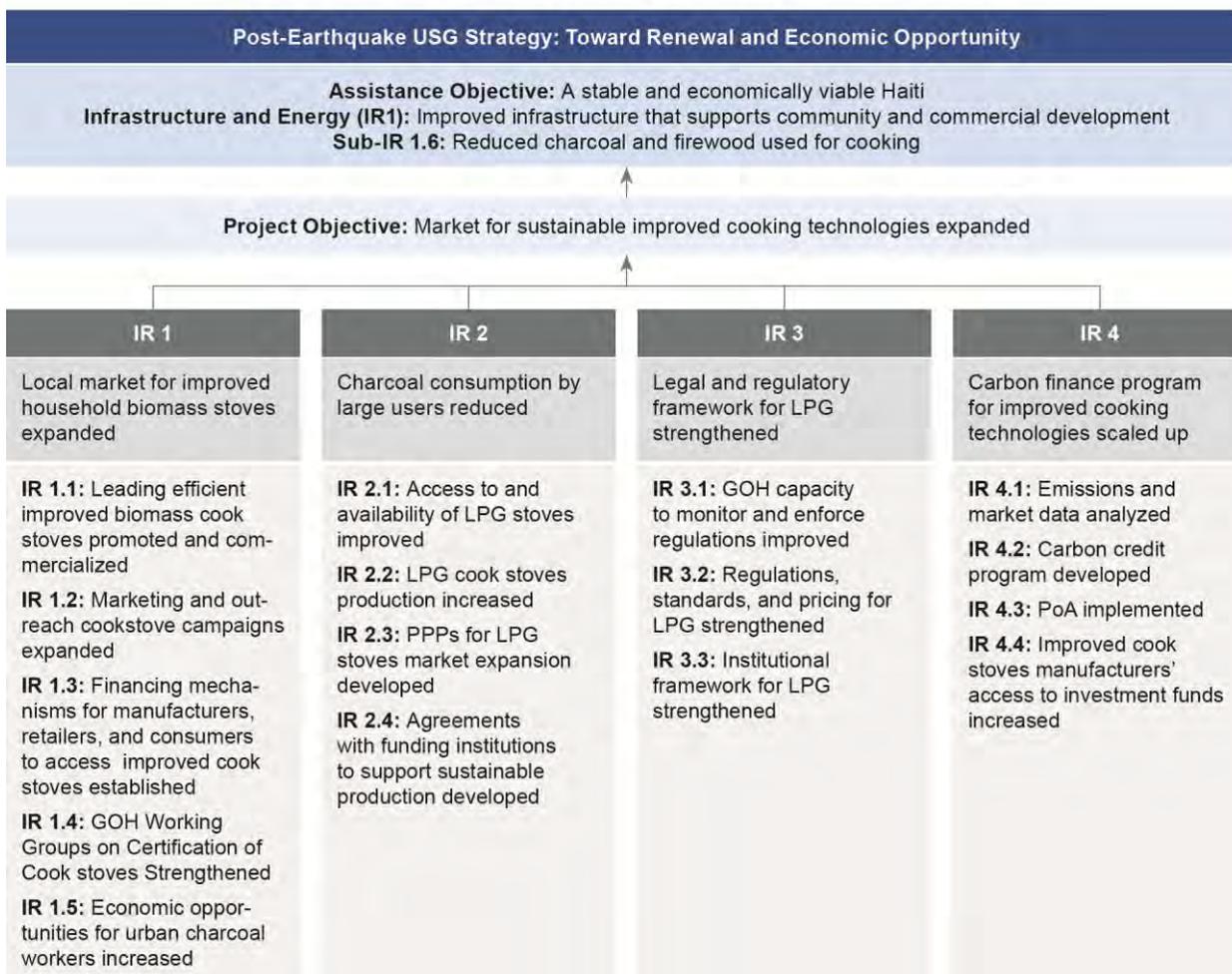


2.2. Results Framework

ICTP’s results framework identifies the building blocks of the strategy to achieve the project objective of setting Haiti on a path towards long-term sustainable cooking solutions and achieving a significant reduction in charcoal consumption by large users and households.

The program uses this framework as a planning and management tool. The results framework conveys the development hypothesis implicit in the approach to achieving contract results, as well as the cause-effect relationships between the program's four intermediate results and the project objective.

Project Results Framework



Collectively, the four Intermediate Results (IRs) in the framework are designed to capture the outputs and outcomes of the tasks and deliverables outlined in the program contract. Additionally, the program contributes to the Modern Energy Services program element under the Economic Growth objective within the United States Foreign Assistance Framework.

For the purposes of planning and implementing the work of the program, the program's four IRs are aligned with the four program components. Following the organizational chart shown earlier, Elisha Moore-Delate is responsible for achieving IRs 1 and 4, and Michel Simon is tasked with achieving IRs 2 and 3.

2.3. Principal Achievements For Each IR in Year 1¹

IR 1: Local Market for Improved Household Biomass Cookstoves Expanded

Under Intermediate Result (IR) 1, the program is working to promote and commercialize leading improved biomass cookstoves, expand the marketing of cookstoves through various outreach activities and marketing campaigns, establish financing mechanisms to facilitate purchases of improved cookstoves, strengthen the GOH's working group's capacity to develop and manage the certification of cookstoves, and increase alternative economic opportunities for urban charcoal workers.

IR 1 Principal Results in 2012

- Stove testing identified six stoves that meet the certification requirements for an improved cookstove.
- Three new sales points were identified: Bon Repos, Croix de Bouquets and in 16 IDP camps across Port-au-Prince.
- A map of distribution points produced for International Lifeline Fund.
- A social marketing and commercialization strategy has been prepared.
- The program helped re-launch the Cookstove Working Group with the BME.
- A draft stove testing protocol has been prepared in collaboration with the BME.
- Three BME staff were trained by the program on stove testing methodologies.
- Definition developed for the criteria that will define the quality seal for improved stoves.
- SHG methodology piloted helping charcoal workers find alternative livelihoods.

IR 2: Charcoal Consumption by Large Users Reduced

To achieve IR 2, the program is focusing on increasing access to and ensuring the availability of LPG stoves, increasing LPG stove production, developing public-private partnerships (PPPs) for LPG stove

¹ From February-September 2012

market expansion, and facilitating agreements with funding institutions to support sustained production of LPG stoves.

IR 2 Principal Results in 2012

- Two manufacturers of LPG stoves in the metropolitan Port-au-Prince area manufacturer stoves that comply with technical standards set by the program
- 173 large users of charcoal (street food vendors and schools) have switched to LPG
- 5,889 tons of charcoal were saved in the first (partial) year of the program as a result of program assistance.
- A marketing and awareness-raising strategy for LPG has been developed
- The program has conducted 14 public demonstration of commercial LPG stoves
- The quantity of LPG sold in metropolitan Port-au-Prince during the period March to September 2012 has increased by 13 percent
- 7,982 household stoves have been sold in the Port-au-Prince area (although not all directly attributable to the program)
- 26 technicians were trained on the repair of LPG stoves
- 2,000 valves and 2,000 knobs have been ordered by Port-au-Prince retailers in order to repair older LPG stoves
- The SONAPI industrial park has agreed to switch entirely from charcoal to LPG

IR 3: Legal and Regulatory Framework for LPG Strengthened

To accomplish IR 3, the program will improve the GOH's capacity to monitor and enforce LPG regulations, strengthen regulations, standards, and pricing for LPG stoves, and reinforce the institutional framework for the management of the LPG sector.

IR 3 Principal Results in 2012

1. Following advocacy from ICTP staff, thirteen meetings of the LPG working group and its sub-committees have now been held.
2. The draft of the LPG law has been finalized by the LPG Working Group with the assistance of the program.

IR 4: Carbon Finance Program for Improved Cooking Technologies Scaled Up

IR 4 will be achieved through analyzing emissions and market data on household energy consumption, supporting the development of a carbon credit program, designing an effective POA, and increasing access to investment funds by improved cookstove manufacturers.

IR 4 Principal Results in 2012

- A market analysis has been completed and the report submitted to USAID
- Design of the Longitudinal Study completed
- Port-au-Prince household baseline pilot completed
- Charcoal usage baseline survey instrument finalized and ready for implementation
- Literature reviews for national and Port-au-Prince household baselines completed
- Draft POA and CPA Design Documents completed
- Stakeholder consultation event planned for October 15

SECTION 3. WORK PLAN FOR YEAR 2

This section presents the activities, detailed tasks, and expected results to be delivered by each of the four components of the program. The timing of each activity and its associated tasks are set out in detail in the Gantt charts annexed to this document.

INTERMEDIATE RESULT 1

Local market for improved household biomass stoves expanded

Under Intermediate Result 1, the program is working to promote and commercialize leading improved biomass cookstoves, expand the marketing of cookstoves through various outreach activities and marketing campaigns, establish financing mechanisms to facilitate purchases of improved cookstoves, strengthen the Government of Haiti's working group's capacity to develop and manage the certification of cookstoves, and increase alternative economic opportunities for urban charcoal workers.

1.1 Leading efficient improved biomass cook stoves promoted and commercialized

1.1.1 Guide three manufacturers towards commercialization

Narrative:

During Year 1, the program selected four improved cookstove models and their manufacturers to participate in the program's commercialization efforts of improved charcoal cookstoves. The stoves were identified and tested through CCT testing, and through user feedback from focus groups and studies conducted by Entrepreneur du Monde.

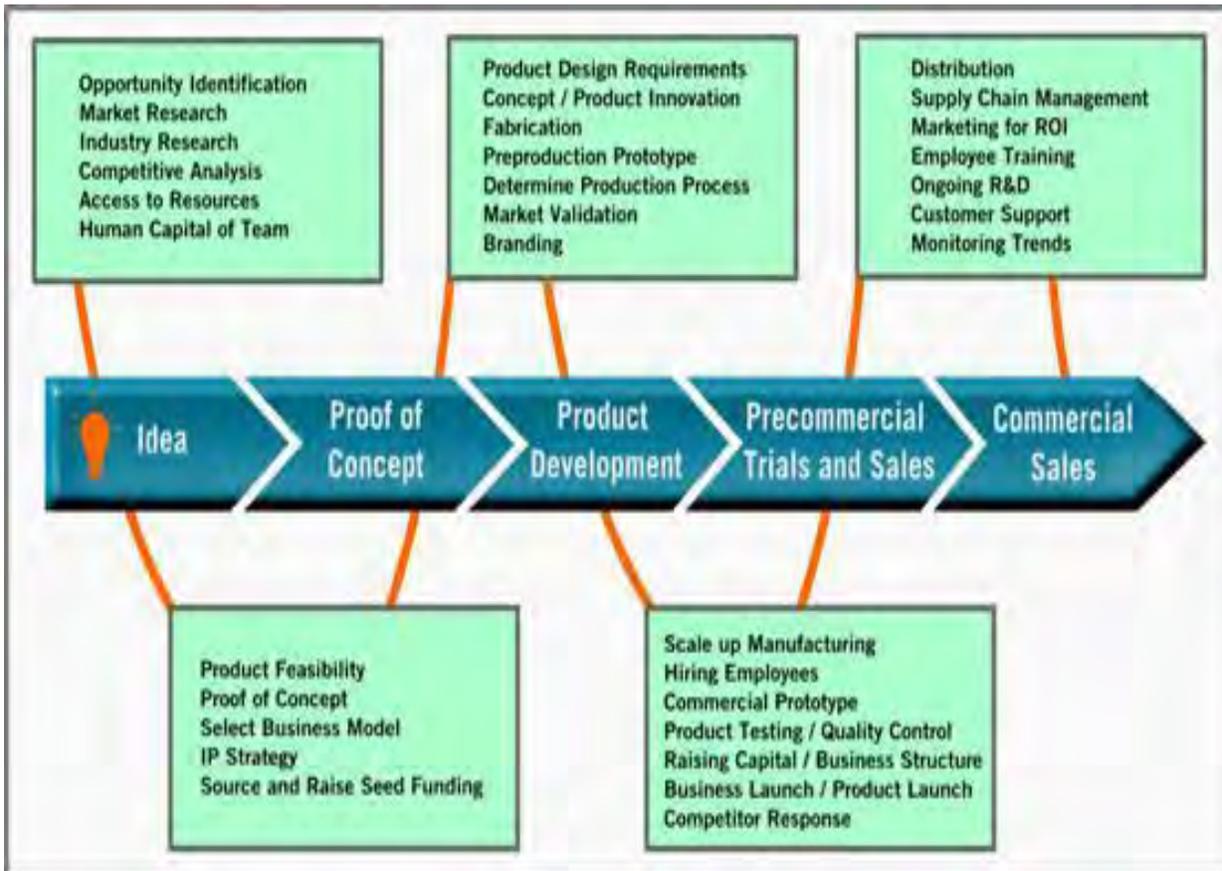
The four stoves identified for commercialization support are:

1. The Prakti Rouge Improved Charcoal Stove
2. The International Lifeline Fund (ILF) Plop Plop Improved Charcoal Stove
3. The Eco Recho Improved Charcoal Stove
4. The Haiti Metal Recho Men Improved Charcoal Stove

These stoves form the initial improved biomass stoves that the program plans to promote and guide through the commercialization process.

This planned process is shown schematically on the next page.

Schema 1: Commercialization process for Improved Biomass Cookstoves¹



Year 1 Commercialization Activities focused on the first three steps in the process: 1) the idea or establishing which biomass stove types to commercialize first, in this case charcoal stoves since it is the most available combustible available in Port au Prince and the program's overarching objective is charcoal reductions; 2) The proof of concept-testing the stove for its real capacity to reduce charcoal and examining each manufacturer's or stove producer's capacity to produce or import and distribute stoves in Port au Prince within the life of the project; 3) Product development-again testing the stoves and providing technical assistance on improving the stove designs as well as evaluating the manufactures' capacity to scale up production. Though product development was initiated in Year 1 it will be completed in Year 2 through the marketing and scaling up production activities.

Year 2 commercialization efforts will focus on the last three steps of the commercialization process:

- 1) Continuing Product Development
- 2) Pre-commercial Trials and Sales

¹This schema is a generic visual of the commercialization process taken from the website <http://www.bcit.ca/appliedresearch/ar1o/commercialization/process.shtml>. The orange lines going from left to right indicate the sequence of associated tasks.

3) Commercial Sales

1) Continuing Product Development

Between October 2012 and April 2013, the program plans to issue competitively sourced in-kind grants to manufacturers to acquire tools and equipment to help them increase their production capacity and management. The program will engage short term technical assistance (STTA) to finalize stove designs, build up the manufactures" business management structure and capacity and increase manufacturers access to capital. Throughout Year 2, the program will continue to test the stoves to ensure quality control among the selected manufacturers, while working with government partners to establish a Haitian testing and certification body, which will take over this role in Year 3 and beyond the life of the project.

2) Pre-commercial Trails and Sales

Towards the end of Year 1, the program connected the International Federation of the Red Cross (IFRC) with the four selected manufacturers to facilitate the distribution and sales of 9,000 improved charcoal stoves in 16 Internally Displaced Persons (IDP) camps. These sales will take place in year 2 of the ICTP. For this activity, the program and IFRC agreed on a process of stove sales rather than direct distributions. Entrepreneur du Monde (EdM) was integrated into this activity to help recruit and train stove sales agents to conduct marketing and sales campaigns within the camps. The program and partner organizations will use the lessons learned from this activity to improve sales and marketing activities for the wider Port au Prince market. If stoves can be sold to IDPs, without additional subsidies, then they can be sold to the wider Port au Prince market. ICTP plans on working with partners; including IFRC, EdM and others; to sell a total of 10,000 improved cookstoves for the total Year 2 objective. This number includes the 9,000 stoves to be sold within the camps.

This activity will be one of a number of pre-commercial trials and sales in Port au Prince to test consumer interest in the purchase and adoption of Improved Cookstoves. Upon generating some lessons learned, the program will work with manufactures to duplicate these pre-commercialization trials in Carrefour Feuille with American Red Cross (ARC) and in Croix de Bouquet with EdM retailers that manage individual household energy shops, selling not only stoves but also solar lanterns and other energy products.

3) Commercial Sales

Widespread commercial sales occur quickly when coupled with a marketing mix at least addresses the four Ps:

- Product
- Place
- Price
- Promotion

Consumers must be aware of the products, have access (and availability) to sales points , accept the the price, and are educated on the product and its value. All of these points will be targeted in Year 2 of the program. Commercial sales efforts will begin in earnest in Year 2 but real results are more likely to be evident in Year 3 of the program.

Specific Tasks:

1. Conduct a competitive Expressions of Interest (EOI) process to award in kind grants to manufacturers for equipment and tooling to produce at scale
2. Procure the relevant equipment after grant award
3. Engage STTA for stove manufacturers in ceramics for ceramic combustion chambers and improved kiln construction
4. Engage STTA for stove manufacturers in aerated cement
5. Engage additional STTA as required
6. The other specific tasks required for stove commercialization are highlighted in subsequent IRs and sub-IRs

Key Partners: IFRC, ARC, EdM, ICS manufacturers, ICS retailers, Chemonics, Household consumers and social groups and networks like Churches and Parent Teacher Associations.

Expected Results by September 2013

- Four Improved Cookstoves that meet the program's proposed certification standards will be available on the market in Port au Prince for household consumers
- 10,000 stoves sold in pre-commercial trails and sales

1.1.2 Increase number of improved cookstove sales points**Narrative :**

The identification and evaluation of existing distribution points for Improved Cookstoves was completed during the first year. These distribution points involve the retailer networks of a number of manufacturers and distributors in the Port au Prince (PAP) metropolitan area, including Trees, Water & People (TWP), D&E Green Enterprises Inc (D&E), ILF, Prakti and Entrepreneurs du Monde (EdM). Program communication with these manufacturers and distributors resulted in an increased understanding of the characteristics of these retailer networks, the systems and procedures in place as well as the nature of the relationships between retailers, manufacturers and distributors. The program produced a map of the known distribution points of Improved Cookstoves for ILF, EdM, D&E and Prakti, which was presented in the Year 1 Annual Report.

In Year 2, through the SAFP fund and direct technical assistance and training activities, the program will provide manufacturers and retailers with the resources necessary to develop new sales points for improved charcoal stoves. These sales points will increase stove sales as it will allow customers to have easier access to the stoves. Initially the program will focus its efforts on EdM, Fonkoze and Prakti as they have immediate plans to create new sales points. One important step will be reaching an agreement with Fonkoze regarding the creation of new sales points amongst their loan clients in PAP. The program will also work with ILF, TWP and D&E as they expand their current retail network.

In Year 2, the program will hold two workshops to bring together manufacturers and retailers of Improved Cookstoves and create strong working relationships. These workshops will enable retailers to enter into agreements with manufacturers to sell particular program-approved stove models. An understanding of the stove models each retailer is selling will allow the program to produce custom-made documents such as sales books and order forms for each retailer. This is essential in order to

ensure efficient business processes and allow for the proper tracking of the certified Improved Cookstoves sold in PAP for monitoring purposes.

The program will also work with manufacturers, distributors and retailers to develop capacities in business and marketing skills. Firstly, the development of a checklist of standard business and marketing skills will facilitate the scoring of manufacturers, distributors and retailers against the checklist. This process will identify gaps in business and marketing skills that need to be addressed through training. The program will then develop business and marketing toolkits to provide resources for the training of retailers, distributors and manufacturers. This approach will increase not only the retailers' customer service and management skills but will also allow ICTP and partners to track the stoves and demonstrate actual sales.

Following this Training of Trainer (ToT) sessions will be conducted for manufactures and distributors in appropriate business and marketing skills and ultimately the program will then support these manufacturers and retailers to train their own retailers. As the capacities of retailers are developed and sales improve over time, EdM, Prakti and Fonkoze will expand their retailer network across PaP, and due to the ToT model will be able to deliver business and marketing skills training independently.

Specific tasks:

1. Develop business and marketing minimum standards checklist and score manufacturers and retailers
2. Organize two workshops to create strong working relationships between manufacturers and retailers
3. Work with manufacturers to develop business and marketing toolkits
4. Deliver ToT sessions in business and marketing skills with manufacturers and distributors
5. Support manufacturers and distributors in initial training sessions for their retailers

Key Partners: Mercy Corps, EarthMatters, Local Marketing Company (to be identified via RFP), EdM, ICS manufacturers, ICS retailers,

Expected Outputs by September 2013

- 4 Training modules composed of business management and marketing information generated and distributed to program participants
- Specific Manufacturer sales books and order forms distributed to manufacturers and their identified retailers
- 20 Trainers trained--four training of trainer sessions for each manufacturers and their nominated four ToT retailers
- One Training module composed of business and marketing information generated and distributed to program participants
- All new sales points (12) and their associated retailers selling improved cookstoves will use receipts to increase stove tracking and M&E
- Specific Manufacturer sales books and order forms distributed to manufacturers and their identified retailers

Expected Results by September 2013

- 15 new sales points established across Port-au-Prince
- 2,000 improved charcoal stoves sold from new sales points across Port-au-Prince

1.2 Marketing and Outreach Cookstove Campaigns Expanded

1.2.1 Conduct widespread media campaigns to increase consumer awareness of Improved Cookstoves and quality seal

Narrative:

In Year 1, EarthMatters LLC, an international specialist in stove marketing, was selected to help the program develop the improved cookstoves social marketing and commercialization campaigns and prior to the end of Year 1 had submitted a draft social marketing and commercialization strategy and draft logos and quality seals for the consumer awareness campaigns. At the end of Year 1, an RFP was released to identify a local marketing company. The draft strategy that was completed in Year 1 will be finalized in Year 2 by a local media company to be selected using a competitive bidding process.

The selected marketing experts will conduct an assessment of ways to motivate consumers to switch from their traditional stoves to more efficient ones. This will include reviewing past marketing and awareness efforts for Improved Cookstoves and alternative fuels and analyzing lessons learned. The assessment will gather information from core partners, families currently using improved stoves, and feedback and ideas from key stakeholders such as manufacturers and retailers. The results will be used to shape the program marketing strategy and activities, and to target price points designed to reduce price-based consumer resistance to product purchase and finalize the Social Marketing and Commercialization Strategy Report.

The program is taking customer-focused approach to its marketing activities with public awareness and marketing campaigns pursued until the end of the program. This approach will reinforce the program's market driven approach, rather than distributing stoves for free, it will develop comprehensive awareness and marketing campaigns. These campaigns will use different types of media, including billboards, radio, television, street plays, a music competition--to develop a jingle, direct messaging via SMS, and pilot a word of mouth commission system to promote sales. Educational marketing will be implemented in close collaboration with the Haitian Government and other key partners. The campaigns will educate the public about the benefits of Improved Cookstoves, identification of certified and tested Improved Cookstoves, characteristics and efficiencies of various stoves, as well as health, fuel and costs issues associated with them.

The program will work with people at all economic levels to test message delivery. Hotdog street vendors may receive special deals to promote stoves and to demonstrate stove versatility. Youth (young men) who currently tend to walk through neighborhoods selling traditional stoves, will be offered the opportunity to pilot selling Improved Cookstoves in a similar way or with bicycles (to increase visibility).

While the youth tend to roam as mobile sales units and thus will be suitable for marketing the stoves at the same time, women traditionally tend to sell at fixed points. Mobile retailers can only sell a limited number of stoves per tour, while fixed retailers can carry a larger number of stoves and thus have a

larger stock available for consumers. Through marketing the two types of sellers could collaborate and both benefit. The female retailers will be encouraged to work with these youth to advertise their fixed access points for a commission and potential delivery services.

In close collaboration with USAID, the program will seek to enlist the services of famous/ well known Haitian figures, especially women, willing to contribute their time and fame to promote Improved Cookstoves. A certified cookstove quality seal will be promoted, highlighting the key characteristics and efficiencies a consumer should identify with improved stoves. The program will also take advantage of important Haitian holidays, such as Mother's Day and Agricultural Day, and other events such as International Women's Day to conduct public demonstrations for both improved biomass cook stoves and LPG in collaboration with key stakeholders. The program will invite manufacturers to ICTP organized fairs and events and will encourage manufacturers and their associated retailers to organize their own public demonstrations after church services and in town squares to reach consumers across all socioeconomic levels.

The overall goal for the marketing activities beyond increasing visibility is to:

- Build consumer confidence that these stoves work well and hold value (are worth the money spent)
- Consumer recognition of the quality seal--legitimizing and allowing consumers to recognize "real" Improved Cookstoves from non certified cookstoves
- Inform the consumers that the stoves should work at a certain quality and thus if they do not work will have some sort of guarantee
- Increase consumer understanding and retailers understanding of customer service

Specific tasks:

1. Select local media company
2. Identify appropriate and culturally effective marketing techniques through focus groups consultations and interviews
3. Develop and implement targeted awareness campaigns and marketing strategies e.g. public demonstrations during holidays
4. Periodically evaluate the marketing campaigns, and adjust them as necessary
5. Focus group testing of proposed logo and quality seal
6. Finalize logo and quality seal for mass marketing
7. Organize music competition to identify artist and jingle for media campaign
8. Work with Digicel to create SMS messaging campaign
9. Organize December 22, 2012 demonstration at Place St Pierre including media campaign, and manufacture participation
10. Produce visibility materials : hats, aprons, T-shirts for use in public demonstrations
11. Create public demonstration schedule, including budget, calendar, for camps, holidays, and monthly events
12. Organize public demonstration of ICS in 16 camps
13. Organize monthly public demonstrations by retailers and manufacturers

Key Partners: EarthMatters LLC, Mercy Corps, GOH, local communications firms

Expected Results by September 2013

- Four specific media campaigns conducted in and covering the metropolitan area of Port-au-Prince focusing on quality recognition, access points, payback period and stove benefits for household, and customer service (stove warranty).
- 8 culturally appropriate marketing messages produced and used in marketing, SMS advertizing and visibility activities
- Specific messaging for Haitian Diaspora developed by the program and shared and used by partners to increase stove sales via remittances
- Logo selected by Focus Groups used in public awareness campaigns and recognized by consumers
- Quality seal and associated stoves recognized by consumers
- 10% of consumers who purchase stoves have heard or been exposed to at least one of the programs marketing campaigns or messages

1.2.2 Launch raffle scheme to increase consumer awareness and adoption

Narrative :

As part of year 2's expanded marketing activities for Improved Cookstoves, ICTP will directly pilot raffles to increase consumer awareness of stoves. A raffle system, where numerous participants purchase tickets for one prize, is fairly sustainable and low cost, and also increases consumer exposure to improved charcoal cookstoves.

The structure of the activity is that the program will recruit and train community organizers to sell raffle tickets for twenty five Haitian Gourdes (HTG) per ticket. Each raffle will occur after 24 tickets have been sold, which is enough revenue to pay for one improved cookstove (about 400 HTG) and a commission for the community organizer (200 HTG). This will allow the raffle process to be at no or low cost for the organizer and eventually for the manufacturers; but also allows for increased linkages between the manufacturers and communities; thus increasing access and exposure. In addition to recruiting and training the community organizers, the program will provide them with visibility materials, specifically T-shirts and stove brochures, and the raffle tickets. The program will also initially provide logistics support, such as stove pick up and distribution to the different community organizers but will transition this responsibility to the manufacturers by Year 3.

The activity will first be piloted in five churches with ten community organizers in and around Delmas, an area with a mixed income household purchasing power, in November and December 2012, and if it appears popular will be expanded to one hundred community organizers throughout Port-au-Prince for the rest of Year 2. The first ten raffles will be held among church groups and will later expand to other social groups and networks like Parent Teacher Associations, rotating credit groups, and other social or community groups, including IDP camps that are willing to participate.

If the raffles are successful, some community organizers may wish to become retailers. The program will directly link them with the manufacturers whose stoves they wish to sell and as they transition into this role will support them through additional retailer trainings. The raffle activity is a way to conduct low cost pre-commercial trails that will lead to increased stove sales within the targeted communities.

Specific tasks:

1. Identify church raffle community organizers
2. Test raffles in five churches
3. Test raffles in IDP camps
4. Hold meeting for feedback on process and if successful recruit and train new community organizers
5. Implement wider program of raffles

Key Partners: Church, Community and Social Groups, Individual Community Organizers, Manufacturers, Retailers, Chemonics

Expected Results by September 2013

- 100 Community Organizers from communes within Port au Prince recruited and trained
- 1,000 raffle rounds (a raffle round occurs when 24 tickets have been sold and 1 prize is issued) conducted (10 raffles per community organizer)
- 1,000 improved cookstoves distributed and won by 1,000 users in Port-au-Prince
- 2.5% increase in stove sales in areas where raffles are conducted compared to baseline figures

1.3 Financing mechanisms for manufacturers, retailers, and consumers to purchase improved cookstoves established

1.3.1 Develop loan fund or financing mechanism available to manufacturers and work with MFIs to develop inventory finance scheme for retailers

Narrative :

In Year 1, the program worked with manufacturers, retailers and consumers to assess their financial needs required to ensure the widespread commercialization and adoption of improved charcoal cookstoves. This was summarized in the Annual Report in a table highlighting each selected manufacturers' financial needs. The program estimated that the four selected manufacturers need approximately a cumulative two million dollars in additional financing to achieve commercial success. Existing retailer networks like EdM require approximately three hundred thousand dollars to create inventory finance mechanisms for individual retailers to purchase a stock of stoves and household energy products.

Because the cost of an improved cookstove retails for about \$10 USD, neither consumers nor MFIs were interested in taking or providing loans for the cost of stoves alone and thus the program, via EdM, is testing providing consumer loans for household energy products. The loans will be for 2,000 HTG and will allow consumers to purchase a combination of solar products, LPG household stoves and/or improved cookstoves. If this works for EdM and ID Microfinance clients, the program will work with MFIs to increase access to similar loan products.

In Year 1, Mercy Corps took the lead on developing these loan products. In order to accelerate this activity in Year 2, the project will hire a specialist for three to six months to work specifically on developing three types of loan products; tailored to three targeted populations, manufacturers, retailers

and consumers via household energy loan packages). The specialist would also look for ways to collaborate with ArcFinance who has funding to match sales for the Haitian Diaspora when they purchase energy products. Working in collaboration with SogeExpress, ArcFinance contributes to a percentage of the purchase and delivery of energy products paid for by the Haitian Diaspora and delivered to households in Haiti.

In Year 2 the program will ensure that consumers can easily purchase Improved Cookstoves using remittances, which many households rely upon for household spending. At present there are a number of programs and initiatives developing and managing remittance programs, including the USAID-funded LEAD program implemented by PADF, and Arc Finance, which is working with SOGE Express, a goods-based remittance company. We will foster the incorporation of energy product options in their remittance program, specifically Improved Cookstoves as a purchase option for the Haitian Diaspora to send directly to their relatives in Haiti.

The program will work with microfinance institutions (MFIs) to provide access to inventory credit to smaller stove retailers. The current system of charcoal and traditional stove sales demonstrates that it is likely to be women and young men (youth) who will be the smaller retailers and who will need access to credit through MFI's. A specific loan product will be established where these small retailers can purchase between 12-15 stoves and after selling all stoves, will reimburse the MFI and be eligible for another round of credit. The program will work with all parties to ensure that retailers will receive a reduced price on the stoves that they purchase from the manufacturer and thus can re-sell the stove at a reasonable price, without too much mark up to consumers, but still have enough to reimburse their credit.

Specific tasks:

1. Identify leading local and international funding mechanisms and work with financial entities to develop loan products for large- and small-scale cookstove manufacturers, wholesalers, retailers, and consumers that are catered to the project's commercialization efforts.
2. Assess the small business loan products available from traditional banks in Haiti, design loan product prototype for cookstove financing, and present and discuss prototype with executive directors, operations and branch managers, loan officers, and clients
3. Review improved stove manufacturers' business plans, credit history, collateral, and potential to access bank and microfinance institution loans or other funding schemes, and establish a list of pre-qualified loan clients in the Port-au-Prince metropolitan area.
4. Plan and conduct a three-day workshop with loan facilities to explain products to clients, as well as three days of in-house technical assistance for each microfinance facility to pilot loan products.
5. Hire short term technical assistant to develop loan products for manufacturers, retailers and consumers via the Haitian Diaspora
6. Link Diaspora consumers to remittance services for purchasing improved cook stove through partner promotions in the US and Canada
7. Provide direct technical assistance to retailers and distributors to build capacity to manage loans
8. Establish signed MOUs with banks or financing institutions for specific ICS loan products, one for manufacturers, one for retailers, and one for consumers, which may include the Haitian Diaspora;
9. Individualized financing plans prepared for two manufacturers of improved cookstoves
10. Three-day workshop conducted with loan facilities to explain products to clients;
11. In-house technical assistance provided to each microfinance facility to pilot loan products.

Key Partners: Banks, MFIs, STTA Loan Product Developer, Chemonics, EdM

Expected Results by September 2013

- At least one organization that supports retailers will access the financial products developed by the program;
- 25 small retailers will access inventory finance;
- At least one remittance company offers improved stoves (both charcoal and LPG) in their product line and is marketing these services abroad;
- With leadership from the program, at least three ICS manufacturers or distributors and retailers will access agencies that will either provide financing or provide tax alleviation in order to reduce the funding gap identified by the program.

1.4 GOH working groups on certification of cookstoves strengthened

1.4.1 Train BME staff and interested stakeholders in international testing standards and protocols for ICS

Narrative:

The Component 1 team has been involved in ongoing communication with the BME energy laboratory to assess their commitment to creating a stove certification center and to the public awareness campaign. The BME has expressed clear interest in facilitating a stove certification process and in housing the stove certification laboratory, but the program continues to have concerns regarding the BME's stated preference for the Recho Mirak stove. The BME has deep historical ties to the development of this stove and they would like to continue to support the promotion of this specific stove at the expense of others, which conflicts with the need for the stove certification body to remain completely neutral. The program has begun to train key staff from the BME energy laboratory, focusing on the execution of Controlled Cooking Tests (CCT) and on the facilitation of stove Focus Groups with Haitian cooks. During the training the BME team was introduced to the CCT protocol, to the unique benefits of CCT tests, to CCT data collection forms, to focus group facilitation guides and questionnaires targeted at collecting feedback from individual cooks. The program team facilitated a CCT testing session so that the BME team could participate in the execution of a test and practice facilitating data collection and focus group sessions.

In Year 2 of the program, ICTP in collaboration with the BME and if possible a local University, will establish a National Stove Laboratory with the goal of catalyzing more extensive and effective clean cookstove activities in Haiti. The laboratory is the backbone of the certification process that will support the quality seal that forms the foundation of the program's consumer education campaign. The establishment of the national stove certification program has three main expected outputs. The first objective is to facilitate knowledge of current and potential cookstove designs on the Haitian market. The second is to assure that civil society, private sector and government actors have access to information that improves their capacity to implement and support cookstove activities. The third is that the profile of clean cookstoves in Haiti is enhanced through advocacy and promotion via the quality seal, which was discussed with marketing activities.

The BME will be responsible for the national laboratory that will support the certification process. Their staff will be trained in CCT, WBT and KPT testing protocols and in the proper use of the laboratory equipment that supports these tests

The program will engage an international stove research center will to install the national laboratory. The stove research center will mentor the laboratory team on the establishment and maintenance of the laboratory; including the use and maintenance of lab equipment, data analysis, record keeping, the protocols used for testing emissions and the thermal efficiency of cookstoves, and the role that focus group sessions play within laboratory testing. The skills learned will be first applied by the trained staff as they support the program by conducting WBTs on stoves used in program field studies and then consistently applied when the national stove certification process is fully operational. At the end of the training, participants will be formally assessed on the key aspects of cookstove testing and design.

The program will also provide the senior management within the host institution with technical assistance to establish an appropriate business model that will lead to an economically viable and sustainable laboratory. The model will balance the need for financial sustainability with ensuring accessibility and impact. The model will therefore likely involve a payment structure for GOH testing and training services, but with different tier-pricing based on whether the user is a local NGO, private sector business, government institution or international NGO. Public and donor funding for the laboratory may also be necessary for the sustainability of the laboratory. The laboratory will need a clear operating model and management system that includes items such as contract templates, price structures and information dissemination strategies.

Key Partners: BME, Mercy Corps, Chemonics and possibly the State University

Specific tasks:

1. Train BME staff and stakeholders in CCT WBT and KBT testing protocols
2. Issue an RFQ for the procurement of testing materials for the new national laboratory
3. Train BME lab staff in use and application of testing equipment and lab testing protocols
4. Engage BME staff as active participants in the longitudinal study

Expected Results by September 2013

- One MOU signed by the BME (GOH) and ICTP
- Formally establish with the BME an approved documented stove certification process that supports the quality seal and public awareness campaigns

1.5 Economic opportunities for urban charcoal workers increased

1.5.1 Support charcoal workers to develop alternative livelihoods using SHG methodology

Narrative:

In Year 1, the program piloted the Self Help Group (SHG) methodology to determine if Self Help Groups offer a sustainable strategy for helping charcoal workers launch alternative livelihood activities. The two foundational principles of a Self Help Group are helping people recognize their

individual potential and also demonstrating that what one person can't achieve alone they can achieve if they work together with others. Each SHG develops an internal credit program that supports each member develop or expand upon economically viable businesses. Like a traditional credit activity, this is managed by the group and rotates among group members to help them diversify their business activities.

There are four basic principles that guide the Self Help Groups: Firstly, group meetings are held each week (1 hour maximum per meeting) with obligatory 75% presence of all members (verified by a meeting register). Each SHG should have between 20 to 25 members. Secondly, if someone is absent or late to a meeting that group member pays a fine. Each week each group member deposits an amount of money (decided by the group) into the groups savings account, this fund is then loaned out to one group member each week, as the savings grows the loans grow. The loans normally begin at 500 to 1,000 HTG. Additionally, each member pays 5 Gourdes each week into a social fund that is available to all group members in times of crisis. Thirdly, each group member must participate in the loan program and must use the loan to invest in an economically viable activity. Each member has a bank book that records the amount of money they have deposited and the amount of money they owe. Each member pays back loans at an interest of 10% after one month. The interest then goes back into the pooled loan fund. Fourthly, each group member takes a turn facilitating the group meetings.

In September, six diagnostic visits were carried out in six charcoal markets. During these initial visits existing leadership structures and leaders were identified, basic market dynamics were investigated and potential meeting locations were identified. The program developed a survey to identify the current livelihood strategies and practices of the charcoal vendors. Over 70 charcoal vendors were interviewed in 6 charcoal markets. The following six markets were assessed: Marché La Rochelle (large market), Marché Delmas 31 Airport (small market), Delmas 32 (medium market), Marché Kwa Bosal (large market), Marché Kwa Dè Boukè (large market), and Marché Martisan.

Three explanatory meetings followed the diagnostic visits in the three markets that demonstrated the most interest in the SHG methodology. The first three meetings were held in the Croix de Bouquet, Delmas 3, and Delmas 32 markets. As a result of these meetings, three groups of charcoal workers committed to participating in the SHG process. In the Croix de Bouquet market 20 women have signed up to participate in the SHG process. In the Delmas 31 Market, 18 people have signed up to participate in the SHG process, and in the Delmas 32 market 12 men and 8 women have signed up to participate in the process. After the diagnostic visits and the initial meetings the SHG specialist feels that the SHG methodology can successfully create a platform for diversifying charcoal workers current economic activities (selling charcoal).

In Year 2, Mercy Corps' SHG facilitator will conduct a series of training sessions with the three groups of charcoal workers that have been identified in Phase One. The facilitator will host the first three group meetings (one meeting each week per group) and will participate at the fourth, fifth and sixth meetings as an observer. After the sixth meeting of each SHG the facilitator will continue to meet with each group once per month to offer ongoing training sessions in the establishment of the internal rotating credit program, business development and management skills. Prior to developing the new business activities, the facilitator works with each member of the SHG to ensure that their business activity is viable. As the management of the internal credit program is solidified and the entrepreneurial endeavors of the SHG members are diversified, the facilitator will reduce their involvement in the SHG incrementally.

All the proposed new business activities will be reviewed by the program's small business development advisor to ensure that proposals are realistic and financially viable.

Key Partners: Mercy Corps, Local Partner Organization, Charcoal Workers

Specific tasks:

1. Hire one facilitator and two animators to work directly with charcoal workers on SHG
2. Continue to hold SHG meetings with charcoal workers
3. Conduct business and capacity building for each of the three self help groups
4. Continue to reinforce three established SHGs via a program grant
5. Explore ways to match SHG savings to build solid livelihoods options

Expected Results by September 2013:

- Three Self Help Groups functioning
- Support charcoal workers to develop one alternative livelihood strategy each using the Self Help Group (SHG) methodology
- 50 charcoal workers have diversified their livelihood strategies through the participation in Self Help Groups

INTERMEDIATE RESULT 2

Charcoal consumption by large users reduced

The target beneficiaries for Component 2 are the large users of charcoal in the Port-au-Prince metropolitan area. The principal elements of this group are street food vendors, schools, and orphanages. Almost without exception, street food vendors have expressed a desire to switch to LPG, but the initial cost of the stoves and the bottles of gas have been a major barrier to the widespread adoption of LPG in this segment of the market. In the past, LPG stoves have been expensive on the retail market, being seen as a luxury item and priced accordingly. However, there is now a view among manufacturers and retailers that the market for LPG is large, and that prices should be reduced to encourage sales.

In 2012, the program calculated a proposed retail price for the commercial LPG stoves manufactured in Haiti by looking at the unit cost of all the component parts, factoring in labor and other associated costs, and setting the profit margin at no more than 30 percent. Two stove manufacturers in Port-au-Prince agreed to reduce their prices based on this formula, with an expectation of increased demand. In addition, after discussions with the Program, the company importing the burners (Valerio Canez) agreed to reduce the retail price of the burners from \$50 to \$30 to permit local stove manufacturers to further reduce the price of their LPG stoves.

The program also defined and provided to manufacturers specifications for the size of the commercial stoves and the materials to be used for their construction. For example, no rubber tubing is allowed within the stove frame because of the risk that the tubing will catch fire.

The program drafted a proposal and submitted it to all seven of the stove manufacturers located in the Port-au-Prince area, asking the manufacturers to build stoves that complied with the standards set by the program's technical expert. Of the seven manufacturers contacted at that time, six agreed to manufacture their stoves in compliance with the standards. The program also worked with local suppliers of angle iron and negotiated with them to reduce their prices. Manufacturers that comply with the conditions and meet the technical standards are registered with the program.

2.1 Access to and availability of LPG stoves improved

2.1.1 Conversion of street food vendors to LPG

Narrative :

To promote the commercial LPG stoves manufactured by the two companies registered with the program, staff began to show these stoves at public events, including the important May 1st agricultural fair at the Ministry of Agriculture's campus at Damien. The stoves were used to cook traditional Haitian dishes that were sold to people attending the event.

Although nearly all street food vendors know about LPG, many of them are unfamiliar with the stoves and have never cooked on a LPG stove. The program will continue to teach street food vendors how to use LPG stoves. The (mostly) women will be selected from groups of street food vendors working in areas of Port-au-Prince where large numbers of people buy hot food each day.

These are priority areas for the introduction of LPG as it is expected to create momentum in for other vendors

In FY 2012, the program organized 14 public demonstrations on the benefits of commercial LPG stoves. These demonstrations involve cooking traditional Haitian food on the LPG stoves. More than 100 street vendors participated in these demonstrations. The program does not directly sell LPG stoves. However, these demonstrations translate into increased sales of LPG stoves by the project's two registered manufactures, who were present at the demonstrations to take orders for their stoves.

In FY2013, public demonstrations will be conducted by a mobile team of *animatrices* (female organizers) specifically engaged for this purpose. Demonstrations will be conducted every week both in public areas and in schools and orphanages. The priority will be areas with the largest concentration of street food vendors, and the schools and orphanages with the largest number of students and orphans.

The program will also work within the eight Communes¹ of metropolitan Port-au-Prince to establish street food cooking areas where all cooking is done entirely with propane. The model for this Public-Private Partnership initiative is the charcoal-free cooking zone that will be established in the SONAPI industrial park (see Section 2.3.2). This will be a collaborative effort with the program working with the mayors of each Commune. An Open House event is planned at the Recho Pa'w office in early 2013 to which the mayors of the eight Communes will be invited. The Open House will showcase the commercial LPG stoves produced by the manufacturers registered with the program and feature a slideshow of the model SONAPI charcoal-free food zone. Tours of the SONAPI food zone will be organized by the program for mayors that are interested in creating LPG street food areas in their Communes.

In order to reduce the transactional costs for consumers switching to LPG, the program will also focus on reducing the cost of the stoves, the gas cylinders, and the LPG itself. This objective can be attained by:

- Reducing import duty on imported stoves, imported gas cylinders, and commercial stove parts such as burners
- Importing smaller LPG cylinders (12.5 lb) that are more affordable for households and easier to refill
- Importing 50 lb cylinders from the Dominican Republic that are less expensive than cylinders sourced from outside the island.
- Eliminating the import duty on the LPG itself

Specific tasks:

1. Contact mobile team *animatrices* trained by WINNER
2. Advertise for new *animatrices*, and select six
3. Train *animatrices* on demonstration techniques and updated technical aspects
4. Select street food vendor locations in PAP for demonstrations
5. Conduct LPG stove demonstrations - minimum 2 per week, 8 per month
6. Organize the Open House event for mayors from the 8 Communes of metro Port-au-Prince
7. Arrange tours of the SONAPI charcoal-free food zone for the mayors of the Communes
8. Plan for demonstrations at major fairs with GOH and LPG companies

¹ Delmas, Croix-des-Bouquets, Kenskoff, Port-au-Prince, Cité Soleil, Petionville, Tabarre, and Carrefour

9. Plan for Xmas fair in Place St Pierre with TOTAL and SODGAZ
10. Plan for 2013 fairs (Mother's Day, Agricultural Day and Labor Day)
11. Meet regularly with the Ministry of Commerce and Industry and advocate for waiving import duty on LPG stoves, stove parts, and the LPG itself.
12. Identify Asian suppliers for 12.5 lb cylinders, and DR manufacturers of 50 lb cylinders and meet with SODIGAZ and TOTAL to explain the advantages of importing these cylinders.

Key Partners: TOTAL, SODIGAZ, Ministry Energy Security, BME

Expected Outputs by September 2013

- Three major fairs used as showcase events for commercial LPG stoves
- 100 public demonstrations conducted by the demonstration team (including schools, orphanages and other large users of charcoal)

Expected Results by September 2013

- 4,450 large users of charcoal switch to charcoal in the metropolitan PAP area
- Four communes in metropolitan Port-au-prince establish street food zones where cooking is only with LPG
- Import duty is reduced or eliminated on household stoves, imported stove parts, and on the LPG itself

2.1.2 Conversion of schools and orphanages to LPG

Narrative :

In addition to targeting street food vendors, the program aims to convert 800 schools from charcoal to LPG. In FY2012, the program met with the director of the *Programme National de Cantines Scolaire* (PNCS), which is responsible for feeding programs at several schools on two occasions. The director of the PNCS indicated that it is the school that chooses how food is cooked for the students. Before the end of the calendar year, the Program will mount a campaign focused on persuading schools using charcoal to switch to LPG, which is a cheaper fuel than charcoal. The WFP representative in Haiti is collaborating on this initiative. The campaign will involve demonstrations held at key schools, looking to target several schools at a time, a cluster approach. The larger orphanages will also be targeted.

The program will organize a second Open House event in early 2013 to which representatives from all schools and orphanages in the Port-au-Prince metropolitan area currently cooking with charcoal will be invited. Representatives from microfinance institutions will also be invited. This will be a high profile event hosted at a Petionville Hotel. The aim will be to showcase the commercial LPG stoves being manufactured by the enterprises registered with the program, to highlight the advantages of propane compared to charcoal, to calculate and show the cost-savings for schools switching from charcoal to propane (LPG), and to identify financing mechanisms that these institutions can access to provide funding to pay for the switch to LPG.

The program will arrange tours of the SONAPI charcoal-free food zone for those who are interested in actually seeing the site. The question of providing financing to schools and orphanages to facilitate the conversion from charcoal to LPG will also be discussed and proposals formulated.

Specific tasks:

1. Contact school and orphanage directors and schedule demonstrations
2. Contact manufacturers and get a representative designated from each one
3. Demonstrations organized for schools using cluster approach
4. Demonstrations for orphanages included in the planning
5. Conduct demonstrations for schools and orphanages minimum 1 per week
6. Organize a major Open House event for schools and orphanages

Key Partners: WFP, PNCS

Expected Output by September 2013

- At least 50 demonstrations organized for schools and orphanages

Expected Results by September 2013

- 300 schools and orphanages switch from charcoal to using LPG for cooking

2.1.3 Media campaign to promote LPG stoves for large users

Narrative :

The program will engage a Haitian media and marketing company to implement the communication strategy developed by a Haitian consultant in October 2012. The strategy focuses on emphasizing very specific key messages. For example:

- The economic benefits of LPG stoves compared to charcoal
- The reduction in cooking time--important for women
- Health benefits of LPG compared to charcoal--both for the cook and for children in the kitchen
- The availability of sales points
- Recognizing a certified LPG stove and understanding what that means
- Being informed about the price of the stoves

A Request for Proposals will be issued by the program in November 2012 in a competitive process to select the local company that will be contracted to implement the strategy.

Specific tasks:

1. Post RFP on websites and in the Nouvelliste
2. Select media company to conduct campaign (both charcoal and LPG) in a competitive process
3. Sign contract and start campaign (12 month campaign)
4. Monitor and assess impact during the campaign and adjust if necessary
5. Conduct formal evaluation of impact in September 2013

Key Partners: TOTAL, SODIGAZ, Local Media Company

Expected Results by September 2013

- High profile media campaign on radio and other media starts and continues promoting commercial LPG stoves

2.1.4 Development and sale of commercial stove kits with TOTAL and SODIGAZ

Narrative :

In August 2012, after discussions with TOTAL and SODIGAZ, the program developed a new approach to marketing commercial LPG stoves. The new approach introduces the idea of a 'kit' that comprises a commercial LPG stove, a gas bottle, and the necessary accessories (rubber hose¹, clips, and coupling). The main LPG suppliers, particularly TOTAL, are proposing to put together and sell these kits at their service stations throughout the country. This approach has the major advantage for the program of potentially providing sales points at every TOTAL service station in Haiti. During the next year the project will undertake key steps to implement this approach and facilitate the sale of more kits to consumers.

Specific tasks:

1. Coordinate with TOTAL and SODIGAZ on organizing kits and agreeing on prices
2. Develop and implement a marketing strategy and campaign for the kits in collaboration with TOTAL and SODIGAZ

Key Partners: TOTAL, SODIGAZ, registered LPG manufacturers

Expected Results by September 2013

- The program signs MOUs with TOTAL and SODIGAZ that sets the price of the commercial stove kits sold at service stations

2.2 LPG cookstoves production increased

The program works directly with commercial LPG stove manufacturers with the aim of helping them increase their level of production. In addition, the program works to ensure that existing LPG stoves are maintained, repaired if necessary, and put back into service. For this to occur, technicians must be trained to repair the stoves, and spare parts must be available from local suppliers.

2.2.1 Increase number of registered manufacturers

¹ A rubber hose is acceptable as a connection between the stove and the gas bottle, but not as an interior part of the stove itself--where it is too close to the burner.

Narrative :

Two commercial stove manufacturers were registered by the program in 2012: Jean Baptiste Enterprise and Filière Congelée. At least another seven small businesses are manufacturing commercial stoves in the PAP area. The program aims to increase the number of registered manufacturers of commercial stoves by working with the manufacturers to improve the quality of their stoves, and by negotiating a retail price that provides an acceptable profit margin for the manufacturer while keeping the price for the consumer at a reasonable level.

The program will provide grants to eligible stove manufacturers that comply with technical norms and construction standards. The in-kind grants will provide tools and equipment that will enable manufacturers to substantially increase production.

Specific tasks:

1. Identify additional stove manufacturers and get contact information
2. Assess technical and business needs and provide training and capacity building support
3. Sign MOUs with eligible manufacturers who agree to comply with technical standards
4. Issue a registration certificate that manufacturers can display
5. Provide in-kind grants for equipment and tools for eligible manufacturers of commercial LPG stoves
6. Prepare brochures and flyers for registered manufacturers
7. Link registered manufacturers with TOTAL and SODIGAZ kit programs

Key Partners: BME, TOTAL, SODIGAZ, LPG stove manufacturers

Expected Results by September 2013

- 9,500 commercial LPG stoves are sold by registered manufacturers in metropolitan PAP area
- Six stove manufacturers will receive grants and will double their production rates for commercial stoves

2.2.2 Provide technical assistance to retailers to import burners and parts**Narrative :**

In 2012, the program recognized that one of the most serious constraints to the increased production of commercial LPG stoves in Haiti was the unavailability of key inputs in the manufacturing process, namely high-quality LPG burners. To address this constraint, the project held extensive discussions with the senior management of Valerio Canez (whose stock of 516 commercial stove burners sold out in August 2012), and C&K Hardware. The program worked with both retailers to present a sound business case for a substantial increase in the stock of LPG burners and as a result, in July 2012, the two retailers placed substantial orders for commercial burners, including an order for 1,000 burners and 4,000 valve parts by Valerio Canez, and orders totaling 3,000 burners for C&K Hardware.

The program will continue to work with these two hardware retailers but will aim to bring two more retailers into the market by providing them with the necessary information that will enable them to source stove burners and parts from Chinese suppliers.

Specific tasks:

1. Identify two more retailers willing to import burners and spare parts
2. Identify opportunities for manufacturers to combine orders and shipments to reduce units costs
3. Identify more manufacturers of burners and spare parts via website searches
4. Contact additional suppliers of burners and spares in China and elsewhere
5. Work with retailers to import container loads of burners and spare parts

Key Partners: Valerio Canez, C&K hardware, Matelec, and other hardware companies willing to import and stock stove burners and spare parts.

Expected Results by September 2013

- Four hardware companies import commercial LPG burners and stove parts at least once during the year
- At least 20,000 burners are imported into Haiti in FY 2013

2.2.3 Capacity building of manufacturers' and stove technicians**Narrative :**

One of the major constraints preventing the greater use of LPG stoves is a lack of qualified technicians who can repair the stoves, once purchased. The program found in FY2012 that there were many commercial-size LPG stoves owned by street food vendors in Port-au-Prince that are no longer used because the burners are blocked or the ignition mechanism has failed.

In 2012, the program ran two training activities for technicians in LPG stove repair and maintenance. The technicians were selected from government agencies (BME), from the private sector (SODIGAZ and TOTAL), and from among street food vendors themselves.

The technicians completing the course were provided with a set of basic tools that enabled them to repair LPG stoves, and to offer their services to stove users. Several technicians indicated that they intended to work together to manufacture commercial stoves.

This training program will continue in 2013. The technicians will be selected from government agencies, the private sector (hardware stores), and from the main LPG suppliers: TOTAL, SODIGAZ and ECOGAZ.

Specific tasks:

1. Continue training of technicians and users (50% women) in stove repair and maintenance
2. Assess training needs of stove manufacturers - technical and small business development (SBD)
3. Design technical training course for stove manufacturers
4. Design SBD training course for manufacturers management staff
5. Conduct training as soon as possible before March 2013
6. Evaluate impact of training programs and capacity building

Key Partners: BME, TOTAL, SODIGAZ

Expected Results by September 2013

- 60 technicians are trained in LPG stove repair and manufacturing techniques
- Two technicians trained by the program will start manufacturing commercial stoves

2.3 Private public partnerships for LPG stoves market expansion developed

2.3.1 Advocate waivers on tax and duty with GOH on burners and spare parts

Narrative :

Expanding the market for LPG stoves requires collaboration with the major suppliers of LPG in Haiti. Three firms dominate the market: SODIGAZ, TOTAL, and ECOGAZ. These firms want to sell significantly more LPG in Haiti, where the per capita consumption of LPG is 50 times less than the consumption in neighboring Dominican Republic. In collaboration with the Government of Haiti, the program has sought ways to partner with these companies to help expand the market for LPG.

TOTAL is on record as stating that the company will invest \$50 million in the LPG sector for new gas cylinders if the GOH passes the LPG law now before the Prime Minister (see section 3.1). The program is committed to getting the legislation passed, the regulations enforced, and working with TOTAL to getting the new gas cylinders into the market place.

In a continued effort to reduce the retail price of the commercial LPG stoves, the program is collaborating with the major LPG suppliers and will continue discussions with the Ministry of Commerce and Industry with a view to reducing or eliminating the import duty on items and materiel essential for the manufacturing of LPG stoves. The first priority is the commercial LPG burners on which a 16 percent import duty is paid. The burners account for approximately 30 percent of the price of the commercial LPG stoves.

Specific tasks:

1. Advocate through the LPG working group for waivers on duty for burners and spare parts
2. Work through the LPG working group to persuade MCI and the Minister-delegate of Energy Security to support proposal for waivers on burners and other parts for LPG stoves
3. Engage a local expert to strengthen advocacy effort

Key Partners: MCI, Ministry of Energy Security, TOTAL, SODIGAZ

Expected Results by September 2013

- Two PPP agreements that expand the market for LPG are developed and signed
- The GOH reduces import duty on commercial LPG stove burners
- Total public and private funds leveraged by USG for energy projects is more than \$10 million

2.3.2 Complete SONAPI conversion to LPG

Narrative :

One of the major successes of the program's first year was a successful partnership to refurbish the canteen area of the industrial park run by the parastatal *Société Nationale des Parcs Industriel* (SONAPI) in Port-au-Prince. After the program presented the economic, environmental and health benefits of switching to LPG, SONAPI management decided that there will be no more cooking with charcoal in the park. SONAPI is the largest industrial park in the Port-au-Prince area, where every workday more than 10,000 workers buy a cooked lunch in the open canteen area.

All the food vendors at the site have agreed to switch from cooking on charcoal to using LPG stoves. The 52 vendors (49 of whom are women) currently serve 12,000 meals a day. This initiative is a very high profile development that may be used as a model for the "LPG-only" Restoration Zones (*zones de restauration*) that the GOH is considering establishing in and around Port-au-Prince. SODIGAZ is a partner in this initiative and will invest in infrastructure that will provide LPG to the food vendors without the need for the vendors to leave the Park.

The program has signed a MOU with SONAPI and SODIGAZ that sets out the terms of the organization and management of the SONAPI food zone. Under the terms of this agreement, SODIGAZ will provide, free of charge, two 100-lb LPG bottles to each of the food vendors working in the area, and will ensure that LPG is available in the park for the vendors to purchase when needed. SONAPI will provide security in the area and will ensure that the gas bottles and stoves are not stolen from the zone.

The opening of the new charcoal-free food zone is planned for December 2012. The program will coordinate with SONAPI, SODIGAZ, and with the GOH to ensure that the inauguration of the food zone is a showcase event that demonstrates the advantages of switching from charcoal to LPG for street food vendors in Haiti.

Specific tasks:

1. Assist SODIGAZ with the logistics of acquiring 100 commercial stoves from registered stove manufacturers
2. Provide logistical support to SONAPI if necessary to install the stoves and LPG cylinders
3. Plan opening ceremony of Parc Industriel with SONAPI and SODIGAZ
4. Organize and manage media coverage of this event

Key Partners: SONAPI, SODIGAZ, Ministry of Energy Security, MCI

Expected Results by September 2013

- The SONAPI food zone is declared charcoal free
- More than 50 food vendors in the SONAPI food zone are cooking with LPG

2.4 Agreements with funding institutions to support sustainable production developed

2.4.1 Develop additional MFI agreements providing loans to manufacturers, retailers, and users

Narrative :

A commercial two-burner LPG stove together with a full 50 lb cylinder of LPG costs a minimum of \$250, a significant investment for a street food vendor. In addition, the LPG stove manufacturers in Haiti have limited financial resources and have difficulty purchasing the necessary quantity of burners, and a sufficient stock of angle iron, tubing, and sheet metal that would enable them to significantly increase the production of commercial LPG stoves. Microfinance institutions (MFIs) play an important role in providing financial support to both street food vendors and stove manufacturers.

During FY2012, the program established contact with several MFIs, including EdM, SOGESOL, MCN, and FINCA¹, with a view to developing financial products both for street food vendors and LPG stove manufacturers. Of the four agencies, SOGESOL was the most interested in developing a financial product suitable for street food vendors and manufacturers.

In June 2012, the Program signed an MOU with SOGESOL under which the MFI provides street food vendors with access to credit for purchasing commercial stoves. SOGESOL started developing its credit program including training credit officers on the financing procedures for the purchase of LPG stoves. SOGESOL credit officers agreed terms with approximately 60 food vendors who asked for credit to purchase a commercial LPG stove. However, none of the street food vendors was prepared to actually sign a loan agreement with SOGESOL, saying that they were not yet ready to take that step.

In August 2012, both TOTAL and SODIGAZ stated that they prefer to work with their own partner microfinance institutions, and not with SOGESOL. SODIGAZ is partnered with Unibank and TOTAL is partnered with EdM. This means that street food vendors and other clients who purchase commercial LPG stove kits from either SODIGAZ or TOTAL will be offered financial products developed by Unibank or EdM, but not by SOGESOL.

SOGESOL is still in a position to provide loans to stove manufacturers, but here again the situation is evolving. None of the LPG stove manufacturers contacted by the program in 2012, including the two registered manufacturers, was interested in borrowing money from a financial institution at that time. This reluctance may change as demand for the commercial LPG stoves increases substantially over the next few months, but at the present time the need for financial support from funding institutions to support sustainable production appears to be much less than anticipated.

Specific tasks:

1. Identify and design financial products that are requested by street food vendors
2. Identify and design financial products requested by manufacturers
3. Identify financial products requested by retailers
4. Discuss with MFIs their willingness and interest in providing these products
5. Develop financial products in coordination with the MFIs

¹ SOGESOL, MCN and FINCA refer respectively to the Société de gestion haitienne de solidarité, Fondation internationale pour l'assistance communautaire, Micro Credit International....

6. Design training products with participating MFIs

Key Partners: SOGESOL, other MFIs

Expected Results by September 2013

- At least one MFI develops a financial product that successfully finances manufacturers of commercial LPG stoves

INTERMEDIATE RESULT 3

Legal and Regulatory Framework for LPG Strengthened

The promulgation and enforcement of laws regulating the LPG sector is regarded by the major LPG suppliers (TOTAL and SODIGAZ) as essential if they are to substantially invest in new infrastructure and the sector is to develop to its full potential. A working group tasked with proposing a regulatory framework for the LPG sector had been meeting in 2011 before the program started. However, meetings had not taken place for several months and the development of draft legislation was stalled for reasons that are not entirely clear. The program was tasked with reconvening the Working Group and with assisting the group with finalizing the legislation regulating the LPG sector.

3.1 GOH Capacity to Monitor and Enforce Regulations Improved

3.1.1 Identify GOH staff and train on regulation of LPG sector including microcenters

Narrative :

The program will take on the task of training GOH staff and private sector stakeholders in understanding and applying the new LPG regulations once the law is passed and the regulations have been clearly defined. However, this activity cannot be implemented until the LPG is passed and the regulatory framework has been defined and set into law.

Specific tasks:

1. Identify GOH staff to be trained
2. Assess training needs and capacity building of GOH agencies
3. Develop training materials for LPG training
4. Present materials in a workshop for stakeholders
5. Commence training of GOH staff and private-sector technicians

Key Partners: BME, MCI,

Expected Results by September 2013

- Four GOH staff are trained by the program in understanding, applying, and enforcing the LPG regulations
- At least one training activity is conducted for LPG retailers on the application of the regulations

3.2 Regulations, standards and pricing for LPG strengthened

3.2.1 Support working group to reach agreement on draft regulations

Narrative :

The members of the LPG Working Group are the main stakeholders in the sector. For the GOH, this is the Ministry of Commerce and Industry (MCI), the Ministry of Economy and Finance, BME, and the Minister-delegate of Energy Security. The private sector comprises the LPG importers and distributors: TOTAL, SODIGAZ, and ECOGAZ. LPG filling station¹ owners are represented by the *Association Nationale des Distributeurs de Produits Pétroliers* (ANADIPP).

In 2012, the project held several preliminary meetings with the State Secretary for Energy, René Jean-Jumeau, to emphasize the importance of reconvening the LPG Working Group. As a result of the program's efforts to encourage support for the working group, Jean-Jumeau contacted the MCI, and with support from the program, organized the first working group meeting, which was held in June 2012.

Following this meeting, the MCI created a sub-committee charged with defining:

1. LPG characteristics and LPG importation norms
2. Standards for stocking LPG
3. Standards for filling LPG cylinders and bottles
4. Standards for transporting LPG
5. Standards for LPG security in general

The LPG Working Group met 12 times in 2012, including meetings of the sub-committee charged with the preparation of the LPG law. The program's LPG component leader is a key member of the LPG Working group and the sub-committee. The MCI has engaged the Program's legal specialist to finalize the draft legislation.

The draft law prepared by the Working Group proposes that an Inspection Unit be established under the auspices of the MCI. However, since the law has not yet been passed (and the proposed inspection unit may not necessarily be approved), the program has not yet commenced any training of GOH staff in the application of the law and the enforcement of its regulations.

The program, through its involvement in the working group and the MCI's sub-committee, was successful in introducing an important element into the draft legislation to enable the Government of Haiti to declare LPG a "strategic" fuel. Under current Haitian law, this enables the Government to work directly with LPG suppliers in order to coordinate the retail price of LPG, keeping costs down for end-consumers. Given the limited number of suppliers, there is currently inadequate competitive pressure for LPG suppliers to lower their margins on the retail price of LPG. Enabling the Government to coordinate LPG pricing with the suppliers will therefore result in lower costs to consumers until such time as a more competitive LPG market can develop.

The program will advocate for a policy that allows licensed microfilling centers to provide consumers with the option of purchasing LPG in small quantities, instead of having to purchase a full cylinder of LPG. The program intends to work with SODIGAZ and TOTAL to make 12.5 lb cylinders readily available to households, and the availability of smaller cylinders and the option of buying LPG in small quantities will make it easier for households to manage their expenditures.

Specific tasks:

¹ The filling stations are called micro-filling centers. They sell LPG in small quantities much like gasoline at a service station. However, at the present time these microfilling centers are unlicensed and unregulated.

1. Work within working group to reach agreement on final draft legislation
2. Engage local legal expert to work part time on getting law passed
3. Work within working group to propose a pricing policy for LPG

Key Partners:

Expected Results by September 2013

- One policy reform or administrative procedure is drafted and presented for public consultation to enhance governance or facilitate private sector participation and competitive markets

3.2.2 Work with GOH to promote LPG nationally

Narrative :

The program will initiate a high-profile marketing, outreach, and media campaign in December 2012 aimed at promoting the use of LPG by both large users (street vendors, schools, orphanages, and businesses that use wood as a fuel), and households. The campaign will use radio, television, and billboards as the media to present and convey the promotional messages.

The GOH will facilitate this campaign by making available to the ICT program its radio and television stations, and by providing airtime for radio spots and emissions, and time on national television for other forms of marketing.

Specific tasks:

1. Collaborate with GOH resources on the production of radio spots and emissions
2. Use GOH-owned and GOH-sponsored media to present and convey the promotional messages to the public

Key Partners: BME, MCI, Ministry of Energy Security

Expected Results by September 2013

- Two MOUs signed with Ministry of Communications that specify access to these media by the ICT program
- Sales of household LPG stoves in the metropolitan PAP area increase to more than 15,000 per year
- Annual sales of LPG in metropolitan PAP area increase to 20,000 tons

3.3 Institutional framework for LPG strengthened

3.3.1 Advocate for the creation of a parastatal entity to manage the LPG sector

Narrative :

When the legislation regulating the LPG sector is passed in 2013, the regulations will need to be enforced. This is the responsibility of the GOH, but at present the GOH has no structure in place that could effectively accomplish this task. The draft legislation includes a proposal for establishing an Inspection Unit to be located within the MCI. If this proposal is accepted, the program will work with the MCI to train the inspectors, and to develop the Unit into an operational and effective agency. Activities aimed at strengthening the institutional framework through transparency are planned to start once the law is passed.

Specific tasks:

1. Work with the Working Group to advocate for the creation of a parastatal agency to manage and regulate the LPG sector

Key Partners: MCI, BME**Expected Results in 2013**

- 50 % of microfilling stations in the metropolitan PAP area abide by the regulations concerning the sale and distribution of LPG

INTERMEDIATE RESULT 4

Carbon finance program for cooking technologies scaled up

The implementation of a carbon finance program depends on a complex series of procedures that are based on detailed and verifiable data from the field. These procedures are summarized in the text below. The program has initiated a series of market analyses and field studies that will provide the data necessary for the validation of the carbon finance program under the CDM.

4.1 Emissions and market data analyzed

4.1.1 Implement longitudinal study on 9 cookstoves

This study is important for the project and for Haiti as it will help establish current and accurate consumption and adoption patterns of improved cookstoves and combustibles. Past documents and studies have often relied on household testimony rather than real measurements or third party observations. This activity consists of disseminating 15 samples of each of nine stove models among Haitian households to assess consumer preferences and explore key stove design issues that reduce efficiency and durability under daily stove use for an extended period. The study will gather qualitative and quantitative data through surveys, visual inspections, and Stove Use Monitoring Systems (SUMS) that record temperature time series. The results of the study will be useful to guide stove design improvements, and assess emissions reductions over the life of stoves, and inform on key considerations that affect household adoption of Improved Cookstoves.

Key Partners: C-Quest Capital, Stove Manufacturers, Chemonics, field partner

Specific tasks:

1. Analyze Port-au-Prince fuel usage baseline and market study to select participating households
2. Disseminate 145 improved charcoal stove samples from 9 different models in participating households
3. Perform two rounds of Water Boiling Tests on 3 samples of each stove model
4. Conduct a household registration survey
5. Conduct one detailed survey on households
6. Perform two monitoring surveys and visual inspections in participating households
7. Collection of 2 cycles of SUMS data
8. Analyze data collected Perform additional rounds of WBTs
9. Continue monitoring households and obtaining information (two additional detailed surveys and two more monitoring surveys and visual inspections)
10. Create final reports

Expected results by September 2013

- Initial report outlining study design and sampling strategy for participating household selection produced
- Thermal efficiencies of 9 improved stove models assessed
- Report of second round of Water Boiling Tests

Expected results by September 2013

- First report presenting detailed feedback on key stove's performance indicators¹

4.1.2 Complete Port-au-Prince and national baseline studies to determine current household fuel consumption

Measurement of emissions reductions for improved biomass stove projects requires an understanding of fuel consumption patterns in the absence of improved stoves. The amount of fuel consumed in the absence of improved stoves is a quantitative measure of the baseline scenario, where traditional cooking systems continue to be used. Woody biomass² savings are referenced to the baseline fuel consumption. The baseline is further adjusted to account for the use of multiple stoves in a single dwelling and seasonal variations (if applicable) to determine the impact of a single stove on fuel savings.

The determination of baselines requires a detailed study developed under the CDM's Executive Board (EB) 69 Report which requires statistically robust samples. Three baselines will be conducted in Haiti:

- A baseline describing charcoal consumption among Port-au-Prince households.
- A street-vendor and school baseline to describing charcoal consumption in these sectors. These groups are the largest charcoal consumers in the commercial/institutional sector.³
- A Haiti wide baseline for households which includes describing charcoal and fuel-wood consumption in areas outside of the Port-au-Prince metropolitan area.

The program will establish the sampling frame, survey/measurement mechanisms, guide a field partner in data collection exercises, and analyze the data. CQC and its team of consultants have considerable experience in the validation of baselines with Designated Operational Entities (DOEs).⁴

Key Partners: C-Quest Capital, Chemonics, field partner

Specific tasks:

1. Conduct baseline household surveys for Port-au-Prince
2. Refine survey instruments for schools and street vendors
3. Conduct pilot tests for street vendors and schools.
4. Conduct surveys for street vendors and schools.
5. Randomly select localities for national baseline surveys
6. Create Request for Proposal for national baseline and expansion of street-vendor and school baseline
7. Develop survey instruments for Haiti national baseline
8. Refine national baseline sampling frame and study
9. Pilot national baseline surveys

¹Stove manufacturers will be presented with feedback for their own stove model

²Woody biomass can be charcoal or fuelwood

³After 2010 Nextant Report

⁴ A DOE is an independent auditor accredited by the CDM Executive Board (CDM EB) to validate CDM projects

10. Implement surveys
11. Analyze survey data for all baselines
12. Create baseline reports

Expected results by September 2013

- All baseline studies are completed and the reports available

4.2 Carbon credit program developed

4.2.1 Design a carbon credit program (pre-validation)

In Year 1, the program created drafts of PoA design documents. In Year 2, the DOE will scrutinize the information provided in the design documents to confirm alignment with the CDM standards.

In parallel, as the Coordinating Managing Entity (CME), CQC will design a monitoring system for carbon credit generation with an evolving baseline. As each stove cluster is registered they measured and generate carbon credits on a carbon reductions per year basis. This is the vintage year of the stove cluster. The monitoring system objectives are to determine if improved stoves are operating, to ascertain simultaneous use of stoves (stove stacking) in single households. The monitoring system should also capture the stove efficiencies of different vintages over time. These parameters are required to monitor and will affect the number of CERs that can be claimed. The system will be facilitated through cellular phone Short Message Systems (SMS) and adapted for increased efficacy under Haitian local conditions. Information provided by stove users through SMS (e.g. location of stoves and serial numbers) will be checked with short surveys/inspections and updated in a data repository. The integrity of the monitoring data will be verified by a DOE on an annual or biennial basis to issue Certified Emissions Reductions (CERs).¹

The program will continue the work with the Haitian Designated National Authority (DNA) for the CDM to obtain a Letter of Approval (LoA) for the PoA. The LoA will be provided along with validated design documents to the CDM Executive Board for PoA registration.

The program will also build on the work initiated by the WINNER project to strengthen the Designated National Authority (DNA)--which is based in the Ministry of Environment. The program will provide training and, if necessary, short-term technical assistance to the DNA to ensure that this essential CDM function operates effectively. The Program will provide support to the DNA in public workshops in an entirely transparent and impartial manner so as to avoid any possible conflict of interest.

Key Partners: C-Quest Capital, DOE, DNA

Specific tasks:

1. Scrutinize design documents for CDM rule compliance
2. Create specific CPAs
3. Adapt monitoring plan for street vendors and schools

¹It is expected that the data will be verified in early 2015 when carbon-credit-generating stoves would have been in operation for about a year

4. Develop cell-phone monitoring instruments
5. Obtain LoA from Haitian DNA
6. Provide technical assistance to strengthen DNA

Expected results by September 2013

- Letter of approval issued by Haitian Ministry of the Environment¹
- Cell phone monitoring system deployed

4.2.2 Program of Activities validation

The PoA and CPA Design Documents will be reviewed by the DOE and modified accordingly by the program. The review process will end with the submission of the PoA for CDM registration. ICTP consortium partner, CQC, has significant experience validating improved stove PoAs, but validation timelines vary widely depending on the location, DOE, and characteristics of each program. As such, CQC will prioritize activities that can accelerate the process but cannot provide guarantee on the validation completion timing.

Key Partners: C-Quest Capital, DOE, CDM Executive Board

Specific tasks:

1. Submit PoA-DD and CPA design documents for DOE validation
2. Modify program design and documents according to DOE reviews
3. Follow-up with DOE comments for validation (if needed)

Expected results by September 2013

- PoA Design Document submitted for DOE review

4.3 PoA Implemented

4.3.1 Conduct a pilot stove marketing and distribution

A market pilot test consists of commercializing a number of stoves to understand consumer responses to stove pricing, impact of marketing, and efficacy of distribution and monitoring systems (e.g. SMS tool). The information obtained through the pilot would be used to refine commercialization strategies and monitoring systems and to plan for full-scale implementation. The market pilot test will be implemented after the PoA is validated.

Key Partners: C-Quest Capital, Stove Manufacturers

¹Note: the issuance of an LoA depends on the Ministry of the Environment, and is therefore not entirely under the control of CQC.

Specific tasks:

1. Design market pilot study
2. Contract with relevant parties to execute market pilot study
1. Coordinate stove orders, distribution, and data collection procedures
2. Assess suitability of commercialization and monitoring systems

Expected results by September 2013

- Commercialization of stoves earning carbon credits (contingent on validated PoA)

4.4 Improved Cookstoves manufacturers' access to investment funds increased**4.4.1 Seek capital to fund stove distribution under the PoA**

Pre-financing may be provided to one or more selected manufacturers within the project's life to improve market penetration.¹ CQC will endeavor over years 2 and 3 to find financing options, including non-traditional sources of finance, for stoves under this PoA.

C-Quest Capital will market the Haiti PoA to European carbon credit buyers, sovereign countries and private companies. CQC will present the ICT program, share timelines for validation and discuss prices above market levels. There are interested parties willing to pay more than market prices, and this concept will be discussed in more depth after the validation process has moved forward.

Key Partners: C-Quest Capital

Specific tasks:

1. Refine financial projections for the program
2. Endeavor to find traditional and non-traditional sources of financing for the program
3. Continue to identify and leverage investments in the improved stove manufacturing business

Expected Result in 2013

- A source of financing will be found

Carbon Financing Outlook

This Carbon Finance Outlook, an addendum to the Annual Work Plan, identifies partners, levels of investment of partners, financial projections, and a scheme for re-investing the carbon revenues, based on the latest information available to the ICT Program.

¹ Provision of finance is contingent on financial feasibility of the program

Identification of Partners

C-Quest Capital (CQC) is the ICTP partner responsible for developing the carbon finance asset. CQC is establishing a Clean Development Mechanism (CDM) Programme of Activities (POA) for Haiti, named “Improved Cookstoves for Haiti” (hereinafter “the POA”). At present, CQC is in the process of validating the POA Design Document and the specific CPA Design Document, which are posted for global stakeholder comment on the United Nations Framework Convention on Climate Change website. CQC is also in the process of evaluating the economic viability of the project as well as identifying potential third-party funding sources for the project.

Levels of Investment of Partners

The level of direct investment made by C-Quest Capital is dependent on a number of factors, outlined in our discussion of the scheme for re-investing carbon revenues developed under the POA, presented below. CQC is evaluating options to invest and is currently engaging with CER buyers in the European Union to obtain higher-than-market prices for the carbon credits. To date, CQC has already committed \$125,000 from its own funds for the finalization of the PoA. These costs include Designated Operational Entity fees, software development for SMS tracking of stoves, and independent contractor overheads. Subsequent investments by CQC will be dependent on the economic viability of the project and access to third party funding.

Re-Investment of Carbon Revenues

A range of potential financing arrangements may be used to increase the affordability and availability of improved cookstoves (ICS) to consumers in Haiti. The market conditions, both for Haiti and in the carbon markets, dictate the characteristics of any potential investment in carbon credits. In general, carbon credit revenues are used to repay investments and operate the PoA.

At its most basic level, financial projections include the expected carbon intensity (tonnes of CO₂ reduced/appliance/year), projections of carbon generation, and CDM operation costs. Estimates of these factors are being determined in the following manners:

- Carbon intensity. The measurement of this component includes knowing the baseline fuel consumption, thermal efficiency of improved cook stoves, and traditional stove thermal efficiency. Measurements of these components are underway. Traditional stove thermal efficiency must be approved by the DOE, but the default value is likely to be set at 20% for charcoal stoves (versus a 10% value for traditional wood stoves; lower values generate more carbon credits).
- Projections of carbon generation. These include projections of stove sales forecasts, useful life of stoves (to understand the number of years for which carbon credits can be claimed), and the fraction of stoves that can be found every CDM monitoring period.¹ On this last point, if the price of stoves is subsidized, then any stove that is not

¹ The stoves must be monitored every 1 or 2 years to understand the fraction that continues to be in operation as well as the presence of multiple stoves in PoA households (which reduces the amount of carbon credits)

found, whether through wearing out or due to the owner moving household, represents a loss of the investment subsidy.

- CDM Operation costs. These costs are mostly understood, as they replicate more or less from other CQC projects. These are included in the proprietary prototype financial model developed by CQC and available for sharing. Note that depending on CDM regulations, monitoring costs may vary. At the moment of writing this document, CDM required 30 WBTs for every stove distribution vintage (e.g. if a stove lasts two years, there would be 2 vintages and 690 WBTs to conduct in every monitoring period), and these costs are not entirely understood. CDM regulations may change in the future in terms of required sample sizes.

In all cases, CQC capacity to leverage investment will depend on the returns from the project, which are –as in any normal investment—weighted to the project risks. It is possible that carbon intensity and useful life of stoves in Haiti are lower as compared to other stove PoAs in CQC’s portfolio. These factors are being explored in more detail in the baseline studies and the longitudinal study to better project cash flows. In addition, carbon credit prices are at record lows. To account for these contingencies, CQC is – in addition to exploring a suite of alternatives for PoA implementation – working in the following areas to increase the financial attractiveness of the project:

- Targeting of potential carbon credit buyers. Certain compliance buyers (those who are mandated to reduce greenhouse gas emissions) are interested in carbon projects with social co-benefits, like cook stove projects. Even though Certified Emissions Reductions (CERs) market prices are currently below one euro, some sovereign buyers have indicating interest paying materially higher prices for carbon credits to increase the economic viability of carbon credit projects. Potential buyers targeted by CQC have recently indicated an interest in purchasing CERs from certain stoves projects for prices in the range of 5-6 euros (though this range is subject to change due to fluctuations in the carbon markets and competition between projects for CER buyers). Final prices are determined through negotiation and are highly dependent on market and project specific factors
- CQC is also trying to target social-impact investors with a higher risk/return tolerance for projects that bring social co-benefits or who are willing to provide grants or low or no- interest debt for specific project activities project in order to increase returns to private investors to attractive levels.
- CQC is currently investigating household baseline fuel consumption in order to understand the quantity of CERs resulting from the use of more efficient stoves. These data will inform

generated). Given the short operational lifespan for stoves in Haiti, monitoring would most likely be on an annual basis.

investment strategy and planning and provide estimates of the viability of various financing models, potentially including the use of remittance financing. .

Although the carbon economics of stoves projects under this Haiti PoA are still being analyzed, CQC has provided a prototype financial model for a better understanding of the CDM costs and cash flow structure. It has now been updated with the most current information available, but still utilizes several assumptions that would need to be updated and/or confirmed as the project develops. These assumptions include:

- Baseline multiple-stove use correction factor. The baseline charcoal consumption for Port-au-Prince households is close to 2.2 Kg/day. However, this estimate is the overall charcoal consumption per household. This consumption is spread by most households in multiple stoves (e.g. 77% of households in the Port-au-Prince household baseline report using more than one burner for cooking). An improved cook stove intervention through carbon credits envisions the introduction of one stove (and most likely one burner per stove) per household. Consequently, the baseline must be adjusted to obtain measures of charcoal consumed per stove/burner. The Port-au-Prince household baseline presented some issues with the data for estimating multiple stove usage in homes. These issues are being addressed for the national baseline and the peri-urban Port-au-Prince baseline (included in the national baseline scope of work) will shed light on this adjustment factor. The baseline for street vendors and schools is still to be determined.
- Cost of the stove. The Eco-Zoom Jet stove included in the first CPA (note, however, that the PoA can accept multiple stove models) is still going through some design iterations that may affect the cost and to a lesser extent the efficiency of the stove. Landed costs into Haiti, after the stoves are cleared from customs are also unknown as well as any distribution costs.
- Useful life of the stove. This is another critical element of the model which is largely unknown. Charcoal in Haiti seems to be more corrosive due to high saline content, which affects the stove durability. The longitudinal study will illuminate if stoves last for more than a year.
- Sales price of the stove. This is the price people would be willing to pay for stoves. At the moment there is no hard evidence of the prices people would be willing to pay for a given model of stove sold under a certain business model (e.g. trial periods, rent-to-own, remittances). The market pilot test and current marketing operations in Haiti should yield information on this data point.

- Number of stoves that can be tracked and found during monitoring. This parameter is uncertain and will depend on stove-user mobility, cell phone number turn-over, and responsiveness of users to SMS prompts.
- CDM monitoring costs. Although estimates for the cost of survey data can be readily obtained, it is still uncertain what the cost will be to conduct 30 Water Boiling Tests in Haiti for each stove vintage (e.g. if the stove useful life is 2 years, monitoring would include 60 WBT; or 30 WBTs for each year the stoves are in operation). Furthermore, it is possible the CDM may alter the regulation requiring a minimum sample size of 30 for thermal efficiency testing. CQC is still to determine the staffing and hardware needs for tracking stove location with SMS systems.
- Other costs to scale up distribution. These may include manufacturing, marketing, logistics, and other operational costs.
- Financial structuring. This element relates to the type of and the obligations acquired with finance providers (e.g. if a financing source includes debt, this has to be factored into the financial projections).

Price of the CERs that can be obtained for the project. This element is yet to be discussed with interested carbon credit buyers once the PoA is in late stages of validation or registration.

Financial Summary

Note: this financial summary excludes service fees and financing costs. Investment in the project and funding of any net losses from the project will be dependent on the project being economically viable and securing third party funding.

Household stoves

Year	2014	2015	2016	2017	2018	2019	2020	2021
COSTS								
Stove Subsidies	\$12,500	\$50,000	\$75,000	\$100,000	\$125,000	\$150,000	\$150,000	\$150,000
CPA Creation and Inclusion Costs	\$20,000	\$0	\$20,000	\$0	\$40,000	\$20,000	\$20,000	\$20,000
Yearly Verification Costs	\$0	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Annual Monitoring Costs	\$0	\$14,000	\$14,000	\$14,000	\$28,000	\$28,000	\$28,000	\$28,000
<i>Total costs</i>	<i>\$32,500</i>	<i>\$114,000</i>	<i>\$159,000</i>	<i>\$164,000</i>	<i>\$243,000</i>	<i>\$248,000</i>	<i>\$248,000</i>	<i>\$248,000</i>
REVENUES: CER revenues	\$0	\$13,038	\$78,229	\$182,535	\$260,765	\$338,994	\$417,224	\$469,377
Profit before depreciation and taxes	(\$32,500)	(\$100,962)	(\$80,771)	\$18,535	\$17,765	\$90,994	\$169,224	\$221,377

Street Vendor Stoves

Year	2014	2015	2016	2017	2018	2019	2020	2021
COSTS								
Stove Subsidies	\$2,500	\$6,250	\$15,625	\$15,625	\$15,625	\$15,625	\$15,625	\$15,625
CPA Creation and Inclusion Costs	\$20,000	\$0	\$0	\$0	\$0	\$20,000	\$0	\$0
Yearly Verification Costs	\$0	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Annual Monitoring Costs	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000
<i>Total costs</i>	<i>\$36,500</i>	<i>\$70,250</i>	<i>\$79,625</i>	<i>\$79,625</i>	<i>\$79,625</i>	<i>\$99,625</i>	<i>\$79,625</i>	<i>\$79,625</i>
REVENUES: CER revenues	\$0	\$5,559	\$25,013	\$73,650	\$132,015	\$173,704	\$173,704	\$173,704
Profit before depreciation and taxes	(\$36,500)	(\$64,691)	(\$54,612)	(\$5,975)	\$52,390	\$74,079	\$94,079	\$94,079

School stoves

Year	2014	2015	2016	2017	2018	2019	2020	2021
COSTS								
Stove Subsidies	\$1,500	\$2,100	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
CPA Creation and Inclusion Costs	\$20,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Yearly Verification Costs	\$0	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Annual Monitoring Costs	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000
<i>Total costs</i>	<i>\$35,500</i>	<i>\$66,100</i>	<i>\$66,500</i>	<i>\$66,500</i>	<i>\$66,500</i>	<i>\$66,500</i>	<i>\$66,500</i>	<i>\$66,500</i>
REVENUES: CER revenues	\$0	\$4,876	\$16,578	\$31,531	\$38,032	\$40,633	\$40,633	\$40,633
Profit before depreciation and taxes	(\$35,500)	(\$61,224)	(\$49,922)	(\$34,969)	(\$28,468)	(\$25,867)	(\$25,867)	(\$25,867)

As previously stated, these financial projections are based on several assumptions made by CQC. CQC has created a version of this proprietary model that is available for use by other developers and financiers to assess the opportunity of carbon finance under the POA, and is available for reference

SECTION 4. CROSS-CUTTING THEMES

4.1 COMMUNICATIONS AND MARKETING

Reducing the consumption of charcoal in the metropolitan area of Port-au-prince depends on encouraging more than 10,000 large users of charcoal to switch to LPG, and persuading at least fifty thousand urban households to purchase more efficient charcoal cookstoves over the next two years. To accomplish this task, the program in Year 2 will implement a high-profile communication strategy that continually emphasizes the advantages of the new cooking technologies.

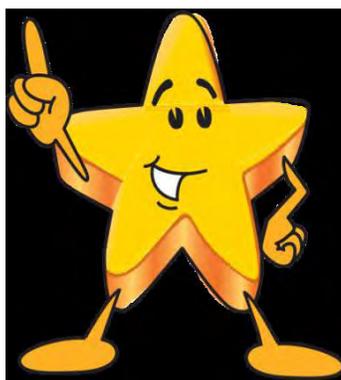
4.1.1. COMMUNICATIONS FOR IMPROVED CHARCOAL STOVES

There are two broad categories of improved charcoal cookstoves: locally made and imported. The primary differentiator is price, with the imports being considerably more expensive, in general. The other major difference is in features and quality, with the imports generally superior in both regard. While poor households are willing to part with cash for something that they find enough value and/or cost savings in (for example, households are willing to pay \$10 to \$12 for a cooking pot that they find value in), price is still a critical piece to the purchasing puzzle. The Program concentrates on locally-made charcoal stoves, with room for imports at the lower end of the import price spectrum. The added benefit of working with locally made stoves is the resulting job creation and contribution to the economy of target Haitian communities.

The household survey conducted in 2012 showed that the four most important factors that influence the purchase of a new charcoal stove are (in descending order of importance): fast cooking, less fuel consumed, cost, and less smoke--exposure to indoor air pollution. The surveys demonstrated a clear preference for radio as the most relied upon media among target groups. This survey was complimented by the Market Analysis which surveyed 1,600 household and demonstrated that besides radio, word of mouth is a powerful medium for popularizing products in Haiti.

For both the awareness campaign and the marketing/advertising campaign a theme has been developed that will accompany both campaigns. It is a simple unifying statement that will become instantly recognizable. The theme statement will be "Life Gets Better" (*la vi ka pi bon*).

For the generic logo, it has been demonstrated that humor and something instantly recognizable should be employed. In December 2012, the logos shown below will be tested for consumer preference and effectiveness in a series of focus group meetings.



The marketing campaign will include the organization of a contest associated with naming the character to draw attention to the products. A background theme song or jingle will also be developed. Each campaign will include three to four radio spots and two TV spots.

The program will ensure that initial messaging is tested by focus groups to be sure that the intended audience will be receptive to what is being planned, and that all messaging has a single goal--which is to dramatically increase sales of improved cookstoves.

4.1.2. LPG

In contrast to the promotion of charcoal stoves, the emphasis with the promotion of LPG is on the fuel, not on the characteristics of the stove.

In August 2012, discussions with three focus groups of randomly-selected women from middle-class households in Port-au-Prince produced evidence that:

- Very few of the women use LPG although they all knew about the fuel.
- Although LPG is actually less expensive than charcoal, there is a perception among the women that LPG is more expensive than charcoal.
- Some women believe that LPG is dangerous, particularly if there are young children in the house.
- The cost of the stove and the gas cylinder is a constraint to switching to LPG.
- LPG cannot be purchased in small amounts the way that charcoal can be purchased in very small quantities (less than a kilogram), and on a daily basis if necessary.
- The women acknowledged that LPG is cleaner, cooking is easier to control, cooking is quicker; and cleaning pots and pans is easier.
- The women are aware that cooking with LPG means more free time for them because cooking is quicker.
- The women know that LPG is much better for their health and they would suffer less from smoke, burns, and eye problems.
- LPG is seen as a sign of social advancement; this makes LPG desirable for the women.
- The cost of transporting a bottle of gas is not seen as being more difficult or more expensive than transporting a sack of charcoal.

The objectives of the Year 2 media campaign to promote LPG are therefore:

1. To promote the use of LPG as the best way of cooking
2. To create incentives for switching to LPG
3. To promote LPG as a fuel accessible to everyone

The principal target groups are

1. Street food vendors
2. Housewives who potentially will switch to LPG
3. Orphanages
4. Schools

To be effective in changing the perception of LPG in relation to charcoal, the media campaign will employ a more psychological approach that presents LPG as an affordable cooking technology that is used by the modern woman in search of a better quality of life. The slogan proposed is *Recho Gaz Pwopa'n, pi bon pri sans traka*.

The key messages for the consumer will be:

- *Le Recho Gaz Pwopa'n yo bon mache* (LPG stoves are a good deal)
- *Ou kab achte Gaz Pwopa'n an detay nan tout micro sant* (You can buy LPG at all the micro filling centers)
- *Fanm ki sou menyo se ak Recho Gaz Pwopa'n yo sevi* (Real women use an LPG stove)

The key messages for the distributors will be:

- *Recho Gaz Pwopa'n yo gen gro benefis sou yo* (LPG stoves bring lots of benefits)
- *Recho gas Pwopa'n yo vann kou pate cho* (LPG is quick to cook)

The marketing mix will be :

Product. The campaign will stress the economic advantages, clean cooking, and rapid cooking, in comparison with charcoal.

Price. The program will hold promotional public events at which the price of the LPG stoves will be reduced; special offers will be available on both the stove and the gas bottles.

Pipeline. It is essential that LPG is easily and conveniently available. The program will work with the major companies (SODIGAZ, TOTAL, ECOGAZ) to ensure that LPG is available in all the districts of Port-au-Prince.

Promotion. There will be a major effort on a promotional publicity campaign to change perceptions, attitudes, and behaviors. The slogan *Piyay Recho Gaz* ("Cheaper gas stoves") is proposed as the slogan for the publicity campaign.

The media used for the promotional campaign will focus on the radio, but the program will also produce TV spots, launch billboards, and conduct demonstrations at the large popular fairs that take place in Haiti during the year. The radio and TV stations proposed for carrying a six-month publicity campaign are:

- Radio Caraibes FM
- Radio Ginen d'Haiti
- Radio Horizon 2000
- Radio Shallom
- Radio Lumiere
- Radio Quisqueya
- Télé Caraibes
- Télé Ginen
- Télé Eclair
- Télévision Nationale d'Haiti

4.2 GENDER

Gender is an element that cuts across all four of the components of the ICT program. The program's gender strategy focuses primarily on women, and by extension on children, given that the program's main objective is to change the way cooking is carried out in Haiti. Cooking in the home and commercially on the street is currently almost entirely done by women. Women do most of the preparation of the food sold in the street and around the commercial and industrial centers, and in institutions such as schools, health centers, and restaurants--although men often cook in the more expensive and up-market restaurants. Above all, more than ten thousand women cook and sell food in the streets of the urban centers; they are known as *marchann manje kwit*.¹

The approach taken by the program is based on the principle of building and strengthening the capacity of the women employing the different cooking technologies. This approach is applied across all program components and targets the different groups of women involved in the program. The approach is not simply focused on encouraging the women to abandon charcoal and move on to LPG. The approach aims at building confidence and knowledge among women related to the use of LPG, including how to set up the stoves and gas cylinders and how to maintain and repair the stoves.

The change from cooking on charcoal to cooking with LPG has the potential to transform the lives of tens of thousands of urban women who spend hours each day cooking over a hot and smoky charcoal stove. Switching to LPG saves households both time and money. This transition means more time for women to pursue income-generating activities like informal-sector commerce, and spending less money on cooking fuel means more disposable income available for essential expenditures like school materials for children and buying medicines when family members fall sick. Reduced expenditures on household energy makes poorer households less vulnerable and better able to cope with damaging weather events. And LPG cylinders are much more resistant in the case of rainstorms and gales that often ruin a household's store of charcoal.

During the first year of the program, an important activity focused on providing support to the women cooking in the food zone of the SONAPI Industrial Park. Of the 52 food sellers, 49 are women. At this major commercial food zone, women cooking on charcoal are providing lunch to more than 10,000 workers a day. The program has worked with SONAPI to clean up and refurbish the area, and to convert all the cooking over to LPG. The program aims to replicate this model in other areas of Port-au-prince.

In Year 2, the program will continue to organize training sessions aimed at teaching technicians how to repair LPG stoves and how to use the necessary tools. The most recent training activity was in September 2012 when 14 technicians, including two women, were trained. The success of this initiative has encouraged the program to include greater numbers of women technicians in Year 2 training activities. The program will also employ a majority of women in the mobile demonstration teams that will be mobilized in December 2012. Women trained by the program are more effective in demonstrating LPG stoves to street food vendors--the majority of whom are women.

Women are also the backbone of the M&E team. Six of the ten data collectors recruited by the program to conduct the 2012 household survey for the annual M&E study were women.

Lastly, program activities related to health messaging mainly target women and children. Acute lower respiratory infections are the leading cause of death of children under five in Haiti. In a Caribbean

¹ The phrase means "merchant of cooked food".

island country with little industrialization, the consensus is that these infections are linked to the widespread use of wood and charcoal for cooking in the home. The transition from charcoal to LPG in Haitian households will have significant and measurable positive benefits for the health of women and children and especially in the poorest urban households.

In the second year of the program, the program will focus on:

- Training women how to maintain and repair LPG stoves. Fifteen women will be trained by the program as stove repair technicians in FY2013;
- Ensuring that women take the lead in the public demonstrations of LPG stoves in metropolitan Port-au-Prince;
- Reinforcing the message that the transition to LPG has a significant and important positive impact on the health of women and children;
- Reinforcing the image of women as not just cooks but as people that know how to use LPG stoves, and who can also repair LPG stoves and train others to do so.

SECTION 5. MONITORING AND EVALUATION

5.1 INTRODUCTION

In the first year of the ICT Program, a comprehensive Monitoring and Evaluation (M&E) system was designed, established and operationalized. The program's approach to M&E is guided by the following principles:

Results-oriented. An integrated approach uses the program's results framework to link the work plan and the Performance Monitoring Plan (PMP). Indicators are linked to specific high-level, intermediate, and sub-intermediate results. The team and partners collect data on indicators designed to directly measure progress of program activities and inputs toward achieving agreed-upon outcomes.

Adaptive. Indicators, frequency of data collection and reporting, and data analysis are designed to enable program staff, USAID, partners, and government stakeholders to continuously evaluate and adapt to changing contextual factors in order to improve progress towards planned outcomes and allow systematic testing of key hypotheses and questions.

Participatory. Performance management is most effective when it involves the entire program team and relevant stakeholders.

- *Program team participation.* Technical staff members were involved in the design of the M&E plan, and are involved in data collection, interpretation, and strategic use of M&E information. Since they are in direct contact with partners and data sources, they are well placed to efficiently collect and verify M&E data. Program staff will regularly provide feedback on the M&E system and indicators to ensure that it remains relevant and updated.
- *Stakeholder/partner participation.* The GOH and private sector partners play a critical role in the implementation of the M&E plan, especially for data collection and information dissemination. Strengthening the capacity of the GOH in monitoring the certification process is a critical component to the success of the program. Private sector retailers will also need to have their monitoring capabilities reinforced. M&E data is shared on a regular basis with key stakeholders and with USAID.

Efficient, comprehensive, and cost-effective. The program has streamlined its systems of measurement so that it is collecting and reporting on the information that is most directly useful for performance management, and which meets USAID's reporting needs. The program has sought to decrease the management burden and cost while meeting the need for information. The M&E Specialist oversees the design of an appropriate mix of tools for collecting both qualitative and quantitative data.

Communications plays a vital role in performance management. In communicating results, the Program shares information in a transparent manner that will advance learning and accurately demonstrate the results. The program is communicating results as jointly achieved by USAID and the GOH, and sharing performance information with local partners. The team is also carefully communicating limitations in data quality and communicating achievements and attributing results accurately.

The detailed design of the M&E system is laid out in the indicator reference sheets (called PIRS) in the PMP. These sheets spell out the precise definition of each indicator, management utility of tracking the

information, unit of measure, method of acquisition, frequency of collection, data source, and the program staff member responsible for collecting the data. By specifying each indicator in detail, it ensures that data is handled consistently throughout the life of the Program.

5.2 PERFORMANCE INDICATORS AND TARGETS

The program has identified life-of-program performance indicators to measure results at the program objective, intermediate, and in some cases sub-intermediate result level as shown in the results framework on Page 7. The indicators and Year 2 targets defined for the ICT Program are shown in the table that follows¹.

The targets for year 2 of the program are shown in column labeled '2013 target'. Since the program expects to meet these targets, they are included as "Expected Results by September 2013" under the activities set out in Section 3.

The first two indicators shown in the table on page 51 relate to the impact the program will have as a result of activities planned for all four components presented in Section 3 of this workplan. By September 2013 :

- 19,500 beneficiaries have improved energy services due to USG assistance
- The reduction in the consumption of charcoal as a result of the increased use of improved cooking technologies promoted by the program is 65,935 tons

The 26 indicators are designed to track implementation of activities against targets; capture program outcomes for learning and communications; and contribute to USAID's performance management and reporting needs. During the implementation of work plan activities, the program tracks lower-level output indicators and/or milestones to monitor progress of each planned activity, and these measures are also reported on as they are linked to the program-level indicators and results framework.

¹ The indicators and their target values are those that were submitted to USAID in the PMP of 27 August 2012.

Indicator Code	Performance Indicators	Unit of Measure	Disaggregated by:	Data Source & Implementing Partner(s)	Frequency	Baseline Year/Month	Baseline Value	2012 Target	2012 Actual	2013 Target	2013 Actual	End of Project Target	End of Project Actual
Project objective: Market for sustainable improved cooking technologies expanded													
1	Number of beneficiaries with improved energy services due to USG assistance (FACTS 4.4.1-31)	Number	Sex (M/F); Type of energy or technology used	Project records; Annual survey	Annual	2012 June	0	300	TBD	19,500	TBD	38,950	TBD
2	Amount of charcoal consumption reduced as a result of increased use of improved cooking technologies due to project assistance	MT	Type of cooking technology	Annual survey	Annual	2012 June	TBD	8,020	TBD	65,935	TBD	139,342	TBD
Intermediate Result (IR) 1 Local market for improved household biomass cookstoves expanded													
3	Number of certified improved biomass stoves sold in metropolitan Port-au-Prince	Number	Type and name of stove	Retailers	Quarterly	2012 June	0	0	TBD	10,000	TBD	35,000	TBD
4	Number of manufacturers that meet proposed requirements for certification of improved biomass cookstoves	Number	Name of stove	Project records	Quarterly	2012 June	0	1	TBD	2	TBD	3	TBD
Sub IR1.1 Leading efficient improved biomass cookstoves promoted and commercialized													
5	Number of new sales points for improved cookstoves in Port-au-Prince	Number	Type of stove sold; Location	Retailers	Quarterly	2012 June	TBD	3	TBD	15	TBD	20	TBD
6	Number of manufacturers and retailers receiving training in commercialization	Number	Sex (M/F); Manufacturer or Retailer; Type of training	Project training records	Quarterly	2012 June	0	0	TBD	20	TBD	30	TBD
Sub IR 1.2 Marketing and outreach cookstove campaigns expanded													
7	Number of media campaigns conducted in and covering target area	Number	Type of media outlet used	Project records	Quarterly	2012 June	0	0	TBD	8	TBD	8	TBD
8	Percentage of target population that recognizes the national eco-label and logo	Percent	Sex (M/F)	Survey and focus groups	Annual	2012 June	0	0%	TBD	15%	TBD	20%	TBD
Sub IR 1.3 Financing mechanisms for manufacturers, retailers, and consumers to purchase improved cookstoves established													
9	Number of manufacturers and retailers that have accessed financing to improve the affordability of improved cookstoves with project assistance	Number	Manufacturer or Retailer; Type of financing; New vs. Continuing	Project and partner records	Quarterly	2012 June	TBD	2	TBD	10	TBD	15	TBD
Sub IR 1.4 GOH working groups on certification of cookstoves strengthened													
10	Number of protocol proposed for improved cookstoves developed by GOH working groups	Number	Type of Standards	Project records	Quarterly	2012 June	0	1	TBD	1	TBD	1	TBD
Sub IR 1.5 Economic opportunity for urban charcoal workers increased													

11	Number of charcoal workers trained in alternative economic opportunities	Number	Sex (M/F); Type of economic opportunity	Project training records	Quarterly	2012 June	0	0	TBD	50	TBD	100	TBD
Intermediate Result 2 Charcoal consumption by large users reduced													
12	Number of large users of charcoal that have switched to LPG as a result of project assistance	Number	Sex (M/F); Type of user	Survey; Project records	Quarterly	2012 June	TBD	350	TBD	4,550	TBD	9,500	TBD
13	Quantity of LPG sold in metro Port-au-Prince	MT	None	LPG suppliers	Quarterly	2012 June	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Sub IR 2.1 Access and availability of LPG stoves improved and Sub IR 2.2 LPG cookstoves production increased													
14	Number of commercial LPG stoves sold by manufacturers in target area	Number	Manufacturer	Manufacturer sales records	Quarterly	2012 June	TBD	300	TBD	9,500	TBD	13,950	TBD
15	Number of technicians trained in LPG stove repair and manufacturing	Number	Sex (M/F); Type of training	Project training records	Quarterly	2012 June	0	30	TBD	60	TBD	90	TBD
Sub Result 2.3 PPPs for LPG stove market expansion developed													
16	Number of PPP agreements signed that expand the market for LPG	Number	Value; Type of recipient	Project records	Quarterly	2012 June	0	1	TBD	2	TBD	4	TBD
17	Total public and private funds leveraged by USG for energy projects (FACTS 4.4.1-32)	USD	None	Project records	Quarterly	2012 June	0	TBD	TBD	TBD	TBD	TBD	TBD
Sub Result 2.4 Agreements with funding institutions to support sustained production developed													
18	Number of loans from funding institutions to large users to purchase stoves from manufacturers	Number	Type of stove; Type of loan recipient; Funding institution	Partner funding institutions	Quarterly	2012 June	TBD	60	TBD	1,140	TBD	3,000	TBD
*Intermediate Result 3 Legal and regulatory framework for LPG strengthened													
19	Number of policy reforms/laws/regulations/administrative procedures drafted and presented for public/stakeholder consultation to enhance sector governance and/or facilitate private sector participation and competitive markets as a result of USG assistance (FACTS 4.4.1-33)	Number	Type of legal document; Topic; Stage: Proposed, Adopted, or Implemented	Project records	Quarterly	2012 June	0	0	TBD	1	TBD	1	TBD
20	Number of GOH staff trained by project in regulation and enforcement of LPG distribution	Number	Sex (M/F); Topic	Project training records	Quarterly	2012 June	0	2	TBD	4	TBD	6	TBD
21	Percentage of micro-filling stations in metropolitan area that follow new regulations concerning the sale and distribution of LPG	Percent	None	Survey using observation and questionnaire: LPG distributors	Annually	2012 June	0	0%	TBD	50%	TBD	80%	TBD

22	The increase in sales of household LPG stoves as a result of the program's promotion of LPG.	Number	Type of stove; Name of retailers, number of burner	Retailers records	Quarterly	2012 June	TBD	0	TBD	TBD	TBD	TBD	TBD
*Intermediate Result 4 Carbon finance program for improved cooking technologies scaled up													
23	Amount of baseline studies on carbon reductions based on household charcoal consumption	Number	Port-au-Prince vs. National ; Type of survey	Surveys, studies	Quarterly	2012 June	0	0	TBD	3	TBD	3	TBD
24	Number of stove models available in target areas that meet carbon emission reduction requirements	Number	Stove type	Manufacturers; Retailers; Project records	Quarterly	2012 June	TBD	2	TBD	4	TBD	4	TBD

Custom / BSC indicators													
25	Number of stove/equipment manufacturers, distributors and retailers developed through USG assistance	Number	Consumer type, type of financing or subsidy	Manufacturers, retailers, distributors, records	Quarterly	2011	0	0	TBD	30	TBD	20	TBD
26	Percentage reduction in energy expenditures by households and businesses	%	Consumer type (HH, business)	Surveys, project records	Annually	2011	0	0	TBD	TBD	TBD	TBD	TBD

*Indicators under these Intermediate Results measure progress across the corresponding sub-IRs and are adequate and sufficient measures of project results for IR.3 and IR.4
 FACTS indicators are Standard Foreign Assistance Indicators, which are reported through the Foreign Assistance Consolidated Tracking System (FACTS)