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AILEG Analysis and Investment for Low-Emission Growth

VOLUME 1: COMMUNITY RENEWABLE ENERGY AND ENERGY EFFICIENCY ACTION PLANS

THE AILEG PROJECT

Contract No. EEM-I-00-07-00004-00
Task Order No. AID-OAA-TO-11-00041

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ACRONYMS

AILEG	Analysis and Investment in Low Emission Growth
CBO	Community – based Organization
CDRT	Community Disaster Response Team
CFL	Compact Fluorescent Light bulbs
EE	Energy Efficiency
GOJ	Government of Jamaica
JA-REECH	Jamaica Rural Economy and Ecosystems Adapting to Climate cHange
JPS	Jamaica Public Service
JSIF	Jamaica Social Investment Fund
JTFA	Jeffrey Town Farmers' Association
LEDS	Low Emission Development Strategies
MLGCD	Ministry of Local Government and Community Development
MSTEM	Ministry of Science, Technology, Energy and Mining
MWLECC	Ministry of Water, Land, Environment and Climate Change
MLSS	Ministry of Labour and Social Security
NGO	Non-Government Organization
PCJ	Petroleum Corporation of Jamaica
PTA	Parent Teacher Association
RE	Renewable Energy
SACDA	St. Catherine Community Development Agency
SDC	Social Development Commission
SO	Strategic Objective
USAID	United States Agency for International Development

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1. BACKGROUND

The United States Agency for International Development (USAID) funded the *Analysis and Investment in Low-Emission Growth (AILEG)* project to assist countries to build their capacity to conduct climate economic and investment assessments to support the transition to low emission economic growth pathways. The USAID's AILEG program supported climate change analytical decision-making and provided assistance to the Government of Jamaica (GOJ) on several capacity-building activities to support low emissions development strategies (LEDS). One component of the Jamaica AILEG project was the development of five-year, community-based energy efficiency and renewable energy action plans (Action Plans) in two communities.

The Community-based Organization (CBO), St. Catherine Development Agency (SACDA) was selected through a competitive bidding process to implement this task in one urban community, Princessfield, and one rural community, Content, where they previously worked and had built relationships with the communities. The Project was executed over a three month period which commenced April 1, 2013 and ended June 30, 2013, and included a presentation at the Final Symposium on July 10, 2013.

1.1 Objective of the Energy Efficiency and Renewable Energy Action Plan Component

The purpose of the community-based component of the AILEG project in Jamaica was to:

1. Foster communication and dialogue among the various agencies and Ministries involved in climate change and local economic development planning (including MSTEM, PIOJ, MWLECC, etc.)
2. Link energy efficiency (EE) and renewable energy (RE), i.e. climate change mitigation, at the community level with economic and social development issues and climate change vulnerability, adaptation and disaster risk reduction
3. Conduct a pilot community EE and RE program and to identify lessons learned and requirements for scaling up such a program Jamaica-wide
4. Facilitate a workshop to discuss lessons learned from the Pilot EE and RE Action Plan task including the approach, process, impacts and issues of scaling up investment in climate change mitigation at the community level, and discuss next steps

With leadership and assistance by the AILEG Community Facilitator, Janet Badasse, SACDA worked to achieve the following in implementing their Grant:

1. Manage the relationship between the AILEG team and the two selected communities, facilitated by the high-level of social capital SACDA had developed with the communities over the past 19 years to facilitate rapid start-up and ensure full community participation;
2. Conduct a baseline assessment through a literature review and co-facilitation of community meetings and workshops;
3. Facilitate awareness raising of climate change and EE and RE options that also support community development;
4. Organize the visioning and action planning process leading to the development of the Community EE and RE Action Plans that support the achievement of climate change mitigation and socio-economic goals as defined by the communities, including employment and youth engagement;
5. Increase awareness among community residents in selected communities on what is required to scale up investments in EE and RE and effect behavior change with EE and RE actions;

6. Support proposal development efforts to identify funding sources for a flagship project in each community.

The two community-based EE and RE Action Plans were developed to support the achievement of climate change goals and socio-economic objectives important to the community, including employment and youth engagement. While assistance in the implementation of projects and activities identified in the Action Plans was outside the scope of AILEG, potential donors were identified and proposals completed and submitted on behalf of the communities for their respective Action Plan flagship projects.

2. ACTION PLANNING PROCESS

This report details how community engagement helped develop community-based EE and RE Action Plans to support achievement of climate change goals and socio-economic objectives important to the communities. It provides the results of the qualitative and quantitative components of the baseline assessment; the two Community Action Plans and related one-year implementation plans; financing options and donor proposals for the Action Plans' flagship projects; a social and environmental impact assessment for the activities within the Community Action Plans (focusing on the plans' flagship projects); and a social marketing plan to encourage behavior change in the use of efficient lighting and cooking fuel. Also documented within this report is "Lessons Learned," an assessment of the potential for scaling up the community-based approach to promoting investment in EE and RE, and important factors for community EE and RE policy development.

2.1 Methodology

2.1.1 Community Mobilization

SACDA assigned a Community Officer to each community to oversee mobilization activities. The communities were zoned by streets, and volunteer leaders from each zone assisted in the communication of project activities to community members. This approach resulted in the involvement of a wide spectrum of community members including women, men, youth, farmers, seniors, business persons and political leaders.

2.1.2 Participatory Action Planning Processes

Participatory action planning processes were employed in developing the Community Action Plans in two phases: 1) Project orientation and establishment of baseline data and 2): Development of a Climate Change Mitigation Goal and development of a Community Action Plan (CAP).

Phase 1: Project Orientation and Establishment of Baseline Data

(i) Introduction to project through various community meetings as well as developing awareness on topics of climate change, energy efficiency and renewable energy;
(ii) Establishment of baseline data for both project communities through application of participatory qualitative and quantitative research tools:
    a. Two qualitative gender-based focus group discussions were held in each community.
    b. A quantitative survey was developed and implemented by local research company Balcostics Ltd.
(iii) Field trip to the Jeffrey Town community in St. Mary's parish, to observe their success in implementing EE and RE projects to support livelihood activities;

Phase 2: Development of Climate Change Mitigation Goal and Strategic Action Plan

Following their participation in the baseline data collection and its validation, and having received first hand evidence of application of EE and RE to support livelihoods in another similar community, the members of the two communities were ready to use the information in Action Planning, which took the form of four mini-workshops—Visioning, Current Reality, Obstacles Identification, and Action Planning—that resulted in the development of five-year CAPs with a first year detailed implementation plan. The mini-workshops are described in more detail in Section 2.3, Action Planning.

2.2 Baseline Data Establishment

The methodology for collection of baseline data for energy use in both Princessfield and Content included a literature review and both qualitative and quantitative research to allow for triangulation of results. The data collection informed Action Planning and the Community-Based Social Marketing behavior change campaign (CBSM) to support implementation of projects and awareness-building in the community to support EE and RE, specifically lighting and cooking end uses. (Volume III- Qualitative Research Annex for Baseline Report).

2.2.1 Literature Review

None of the documents reviewed contained information directly related to the two specific project communities and their use of energy. The Social Development Commission's (SDC) Community Profile completed in 2007 addresses the Bog Walk Community (the Community). Information was extrapolated from this report for Content and Princessfield, as they are two of the 15 districts which comprise the Community. Based on the SDC Community Profile, Bog Walk had an estimated population of 15,389 households in 2007.[1] Electricity is the main source of lighting for 94.8% of the households within the Community and only 5.2% of respondents use kerosene lamps as their main source of light.[2] Gas was the most popular cooking fuel used by households (91.7%) followed by charcoal (36.7%). Other choices of cooking fuel were wood (10.3%) and electric stove (0.6%). [3]

The main findings of the 2007 Residential Consumer End Use Survey (the PCJ Energy Survey) published by UNDP complement those of the SDC Community Profile and indicate that lighting in Jamaica is provided predominantly by electric light bulbs, though some households in rural areas still use kerosene, and a few use candles, as noted on page iii of the report "*Cooking was mainly with Liquid Petroleum Gas (LPG), though some rural households used firewood or charcoal. Water heating was mostly by electricity, though some in rural areas used firewood; there were also some solar water heaters. Home businesses predominantly used electricity. Candles and kerosene were the major sources of backup lighting while some households also used flashlights and rechargeable fluorescents. Few had a generator.*" [4]

The PCJ Energy Survey also revealed an increase in electricity for lighting between 1997 and 2006, and an increase in LPG for cooking, which coincided with a reduction in kerosene for these purposes and a reduction in the use of firewood and charcoal for cooking. Additionally, the survey suggested that "*at a minimum, about 8.2% of all households did not pay for electricity service that they received, with a higher proportion of urban households. Similarly, a higher proportion of households headed by individuals less than 40 years of ages [sic] did not pay for electricity compared to households headed by older persons*."[5]

Electricity consumption in 2007 was higher in urban than rural areas, averaging 440 kWh and 323 kWh, respectively. However, heads of households (HoH) tended to consider energy efficiency in their decisions to

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[1] Social Development Commission (SDC). Draft Bog Walk Community Profile. (2007). SDC. Page 4
[2] Social Development Commission (SDC). Draft Bog Walk Community Profile. (2007). SDC. Page 30

[3] Ibid., page 31

[5] Ibid, page iv.

purchase electrical appliances (more so urban than rural HoH). The most common appliances for communications include television sets in 93% (with 15% having 2 or more televisions) and radios in 74% of households. For kitchen appliances, 82% of households had a refrigerator and nearly 35% had a microwave oven, with the latter almost twice as prevalent in urban households. Other high electricity use appliances were not common, except for 88% with electric clothes irons and over 19% with two or more fans. Only 6% of households had electric water heaters, 11% had deep freezers, 4% had electric stoves and only 3% of households had air conditioning. [6]

The incidence of charcoal use, according to the PCJ Energy Survey, was higher among female headed households compared to those headed by men, and there was no significant difference in the use of charcoal by age of household heads. The main factors associated with charcoal consumption were income, education, HoH gender, household size and cultural preferences. Approximately 50% of households purchased charcoal in small quantities, partially reflecting the impact of unpredictable income flows. Remaining users with more stable incomes bought charcoal in larger quantities in an effort to economize. An estimated 41.9% of households used firewood (though many did not use it regularly) and its use in rural areas was twice that of urban areas, with the usage pattern similar to charcoal. [7]

With regard to energy conservation, about 79% of respondents reported performing energy saving practices routinely. The most identified measure (reported by 73.1% of respondents) was turning off lights and appliances when not in use. Only 26.6% of households stated that their households use energy saving bulbs and the purchase of energy efficient appliances was listed by only a few.[8] (See Volume III – Qualitative Research, Baseline Report for further details)

2.2.2 Qualitative Research

Participatory baseline data collection tools including a Community Transect Walk, Community Mapping, development of Historical Datelines, a Baseline Workshop for resource data collection/livelihood resource discussion, focus group discussions, and a field trip to Jeffrey Town to observe their EE and RE livelihoods project.

The Transect Walks were designed for the purpose of informally talking to community members, as well as observing the conditions in the town with regard to energy use, and listening to conversations. Contact was made with twenty-seven households, and the participants were engaged in discussion on the topics of lighting choices and reducing the use of wood for cooking. The information collected on the walk was used to populate a map that was used for further community discussion. This Community Energy Map included information about the street lights and main community landmarks such as houses, churches, shops, schools, and social clubs. More detail may be found in Volume III – Qualitative Research.

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[6] Ibid, page iv.
[7] Ibid., page vi
[8] Planning Institute of Jamaica and Statistical Institute of Jamaica. Residential Consumer End Use Survey: Volume I – Household Energy and Transport. (January 2007). Petroleum Corporation of Jamaica and UNDP. http://www.jm.undp.org/files/Residential%20Energy%20End%20Use%20Survey.pdf Page xii

The Baseline Workshops focused on gathering additional data about community resources. Participants were assigned to groups to discuss the natural, physical, social, financial, and human resources of the communities. Differences between men and women in terms of livelihoods and quality of life indicators were discussed. The plans for the focus groups and the quantitative research were also introduced, and a representative of the survey team spoke briefly to participants about the purpose and plans for administering the survey.

Focus groups were held in both communities, with separate groups for men and women. In addition to validating attitudes and knowledge, they also explored how the participants are persuaded to make decisions regarding energy use in their homes. The focus groups also investigated perceived barriers and benefits to changing behavior regarding energy efficiency actions and technologies, in particular energy efficiency lighting (compact fluorescent bulbs), using more gas for cooking than traditional fuels such as kerosene and wood, and using gas for cooking more efficiently. The focus groups were designed to answer seven key questions, though indirectly. The seven key questions to be answered during the assessment phase are:

1. Why do they do what they do?
2. How many groups must change their behavior?
3. What groups have influence over their behavior?
4. What are the perceived barriers?
5. What are the perceived benefits?
6. Who do they trust for this information?
7. Where do they look for information?

A guide was developed for the discussion to obtain answers to the questions above. For lighting, the guide questions included what kind of lighting did community members have in their homes, what do they consider in purchasing lighting, the importance of their electricity bills in terms of impact on household expenses, what information is available from trusted sources about electricity use and cost of different lighting options, and knowledge and experience related to lighting purchases, including purchase of CFLs. For cooking, questions included what fuel sources are used for cooking, where community members obtain fuels for cooking, how cooking with different fuels varies in terms of costs and food quality, and sources of information about fuels, cook stoves, etc. Additional information may be found in Volume III: Qualitative Research Annex, Focus Group reports.

The focus groups suggested that there were indeed differences in attitudes, knowledge, behavior, perceived benefits and barriers to changing behavior, and trusted sources of information between men and women. The focus groups also suggested that specific sub-groups included those who use electricity for lighting a large percentage of the time vs. those who use mostly kerosene or other fuels and three groups for cooking, namely those who use only wood or coal, those who use some wood/coal and some gas, and those who use mostly gas.

In determining the target group for the CFL behavior change campaign, the research suggested that some people already use CFLs and some of those had participated in a past CFL promotion program called the Cuban Light Bulb program. Therefore, the target for a CFL promotion behavior change program would likely be those who use electricity for a large proportion of their lighting needs, and do not currently use CFLs.

The proposed target group for the cooking with natural gas campaign was likely to be those who use some gas and some wood/coal. For those who already use mostly gas, using gas efficiently through technology (possibly pressure cookers) would be explored.

2.2.3 Quantitative Research

The purpose of the Quantitative survey was to develop an official baseline for measuring the impact of implementing the EE and RE Action Plan, and to solidify the target groups for the behavior change social marketing campaign to promote CFLs and using more gas efficiently. A local research company, Balcostics Ltd., was contracted by the St. Catherine Community Development Agency (SACDA), to conduct survey in the communities of Content and Princessfield from April 24–May 24, 2013. A survey questionnaire instrument was administered to 299 community members in Content and 355 in Princessfield to assess their attitudes, knowledge and behaviors regarding energy efficiency and renewable energy.

The specific objectives of the survey were to:

1. Establish a baseline as a platform for action planning and monitoring and evaluating its impact, including measuring progress in investment in low emissions technologies and projects within the subject community.
2. Gather information on perceived barriers and benefits of adopting specific energy efficiency behaviors (e.g. CFLs and efficient gas cooking) and to validate the target groups for the social marketing campaign

The survey report, including a description of overall findings as well as cross-tabulations of data by sub-groups, is found in Volume IV – Quantitative Survey Report Annex.

2.2.4 Field Trip

Twenty residents from the Content and Princessfield communities and the SACDA staff visited Jeffery Town in the parish of St. Mary to observe their use of multiple sources of RE for community developmental purposes. The group observed solar (28 photovoltaic panels) and wind (1 windmill) being used to generate electricity at the Jeffrey Town Farmers' Association (JTFA) community center. Batteries are used for energy storage. Power from the Jamaica Public Service grid is used only if absolutely necessary. This allows the JTFA to have a minimal or non-existent electricity bill, and to power community street lights. The community members use the solar energy to support their livelihood and educational activities, especially during natural disasters when the main power lines are usually down. The livelihood activities powered by the solar and wind facilities include:

- A cyber center
- A community-operated radio station
- An agro-processing facility producing jams and breadfruit flour and poultry cold storage
- A rainwater harvesting system with a solar pump to facilitate crop irrigation
- Light manufacturing of sweets

2.2.5 Baseline Data Validation

To complete the baseline assessment, data collected from the literature review and the qualitative and quantitative surveys was presented during the first half of the Visioning Workshops. Each community had the opportunity to review and question the results, and all accepted the findings.

2.3 Action Planning Process

The formal Action Planning process, consisting of four mini-workshops, was conducted over a two-day timeframe with additional working group meetings to develop action plans in greater detail.

(i) *Visioning Workshop* — This first step in the community action planning process was held in Content on May 27, 2013 and Princessfield on May 31, 2013. The focus question for each was: "*What are some of the accomplishments we want to see in our community at the end of five years with regards to the use of Renewable Energy and Energy Efficiency?*" A vision statement/climate change mitigation goal emerged at the end of the day.

(ii) *Current Reality Workshop* — In these workshops, community participants were engaged in a SWOT analysis of their communities to identify the Strengths, Weaknesses, Opportunities and Threats that could enable or hinder their achievement of the successes identified during the Visioning Workshop.

(iii) *Obstacles Identification Workshop* — Participants further discussed the obstacles identified in the SWOT analysis and how they could be overcome.

(iv) *Action Planning Workshop* — Participants developed Action Plans that included strategic objectives to address the outcomes developed during the Obstacles Identification and Visioning workshops, identified desired results and key activities over a five-year period, and developed first year annual operational plans that included concrete steps and a timeline to begin implementation.

2.4 Challenges and Solutions

Challenges in project implementation included the short period of time in which to implement the project (i.e. effectively 3 months), as well as several limitations in terms of the communities' preparation for the activities and their capacity to manage the planning process. This included the following:

1. Communities did not have the ideal physical setting for workshops as there was inadequate space and furniture. They were also unable to accommodate the large numbers of persons who turned out for the workshops.
    - This challenge was addressed through the creation of Community Energy Action Working Groups that identified the most active community members to complete Phase 2.

2. The CBO and community residents were unfamiliar with the topic of climate change, and communities had limited capacity in terms of technical knowledge of EE and RE, and of the availability of, and requirements to access, financial resources needed for EE and RE related project development. There was inadequate time to make them fully aware of the options for integrating EE and RE into their community livelihood plans.
    - To facilitate community members' understanding of how EE and RE technologies could support their livelihoods and other socio-economic objectives, a field trip was taken to observe a project in Jeffrey Town that had been financed by a well-known NGO, Environmental Foundation of Jamaica (EFJ). This trip enabled the community members to begin to understand how EE and RE could support their objectives.
    - Engaging with donors early, as well as providing the services of a clean energy financing expert, who was already engaged at the national level, to facilitate and build the CBO's capacity to prepare flagship project funding proposals for submission to donors proved to be essential.

3. A bottom-up planning approach is imperative to getting buy-in for a community-based project. Despite the CBO's knowledge and experience with community development, the topic was new enough that assistance was required to make progress quickly.
    - The assistance of the Community Facilitator, who supplemented the CBO's knowledge of strategic planning processes with her strong understanding of, and experience with, participatory processes and community was essential to complete the action planning process

4. Three months was too limited to raise awareness of climate change and EE and RE, developing a complete action plan that included projects as well as behavior change actions, and to secure funding for flagship projects.
    - The social capital developed by SACDA over many years of working with the project communities was essential for building trust. It enabled a quick start to the project and achievement of results quickly.
    - Even with this "ideal" condition, a minimum of six months is really required to achieve all of the objectives of this type of project.

5. Despite high energy prices, climate change mitigation technologies such as EE and RE are new in Jamaica. Therefore, there is a steep learning curve for both communities and CBOs engaged in community development
    - Capacity development of the CBO, in applying the concepts of community development and livelihoods and integrating climate change mitigation, is equally as important for project sustainability as is developing the capacity of the communities.

3. ACTION PLANNING RESULTS - PRINCESSFIELD

3.1 Princessfield's Community Action Plan (CAP)

Princessfield first adopted a climate change mitigation and socio-economic development goal to guide their five-year CAP, which is summarized here in their vision statement:

"*Princessfield community is actively contributing to climate change mitigation through fostering of Energy Efficiency habits and use of Renewable Energy to encourage and sustain livelihood activity development as well as to provide skills training for community members*."

They then reviewed the current reality through an evaluation of strengths, weaknesses, potential benefits (opportunities), and potential pitfalls (potential threats). The outcome of this exercise is summarized in Table 1.

Four Strategic Objectives (SOs) were developed to achieve this vision, including addressing the need to alleviate poverty through training and use of RE technology, increasing knowledge about EE and RE and influence community members' behavior in adopting EE and RE technologies and actions, securing funding to support income generation activities, and establishing and legally registering a community organization to support their community's development. Desired results for each objective and key activities over five years were identified for each objective. The SOs, desired results and five-year key activities are summarized in Table 2.

Thirteen projects were identified from the Princessfield CAP, including a solar-powered facility that will house a Solar Training Centre (STC) and a cyber-center. This flagship project will provide the nucleus from which the socio-economic activities will be developed. A funding proposal has been completed and submitted to the Global Environment Facility (GEF) Small Grants Project (SGP) for this priority project.

Projects

- Flagship Project: Solar Training Centre and cyber-center
- Training programs for (i) Operating Solar Panels (ii) Agro-Processing
- Business Incubator
- Business Center
- Retrofit Basic Schools
- Community Organization Development
- Public Awareness Campaign
- Social Marketing Campaign
- CFL Light bulb Distribution
- Cyber Center
- Laundromat
- Trash-to-Cash
- Solar Street Lamps

3.2 Year One Implementation Plan—Princessfield

A first year implementation plan includes four groups of community members with responsibility for implementing the activities in that year that support each of the four SOs. The focus in year one is on building capacity and formalizing the community group, which will lead and monitor implementation of the plan; securing funding for establishment of the STC and cyber-center; implementing an awareness program with regards to EE actions that can be taken by the community; and implementing a social marketing program to influence adoption of CFLs and more efficient use of clean gas for cooking. Additionally, the group will seek training in proposal writing while researching possible funding sources for implementation of identified projects. The first year implementation plan for Princessfield may be found in Annex 2. A guide to

potential funding sources for the projects in the Action Plan may be found in Volume VI.C Action Plan Projects Annex – Funding Sources for Strategic Action Plan.

Table 1: Our Current Reality—Princessfield

Strengths	Potential Benefits
• Community center owned by community • People • Cooperation and unity in community • Organized groups, e.g. SACDA, farmer, youth, churches, schools • Skills, e.g. teaching, baking, nurse, carpentry, welders, electrical engineer, IT, mason, tiler • Infrastructure – water, light, road • Reservoir • Location of the community • Weather • HEART Training Centre/CXC Classes • Basic Schools • Councilor • Easy access to a town. High schools, church, doctors office, funeral home; industrial belt	• Community center is a building where development can take place. • People – skills training • Capacity building • Mobility • Income generation • Less greenhouse gases • Community development
Weaknesses	**Potential Pitfalls**
• Unemployment • Unskilled • Unattached – no skill, underemployment • Low income • Drought affected running water and farmers • Migration/brain drain, finding lovers outside the community • Crime • Lack of community pride • (Location) stigma e.g. a crime in the adjoining community affects the Princessfield community • Lack of marketing skills and support for produce	• Location/stigma • Prolong drought affecting crops • Brain drain • Lack of community pride • Loss of interest – e.g. if community people no longer display interest in the group.

Table 2: Five Year Strategic Objectives and Key Activities—Princessfield

SO	Description	Desired Results	Key Activities
1	To help alleviate poverty and improve lives through provision of training and renewable energy for development of livelihood activities in the Princessfield community	Community center expanded; fully powered by solar energy; offering cyber center services at affordable rates; providing training for employment; has a business incubator and a business center for micro businesses.	**1.1** Seek professional assistance to design Solar Training Center (STC) **1.2** Implement flagship project (retrofitting of Community Center to become STC) **1.3** Establish internet café **1.4** Design, and implement CFL project for community **1.5** Establish laundromat **1.6** Develop programs & establish skills training in center (agro-processing, computer technology, and sewing) in association with HEART, JBDC etc. **1.7** Establish daycare center for children & elderly **1.8** Retrofit basic school **1.9** Turn Trash into Cash (biomass project)
2	To increase knowledge about Energy Efficiency and Renewable Energy and stimulate behavior change amongst the Princessfield community residents through education, public awareness programs and social marketing programs.	Community residents change their energy use habits as they become more aware of the importance of saving energy and how they can contribute to climate change mitigation	**2.1** Design and implement RE & EE public awareness and education programs **2.2** Design and implement social marketing program for behavior change **2.3** Guide recruitment process for residents requesting training offered through the various programs developed. **2.4** Work with the other work groups to disseminate information about their activities.
3	To secure funding to support development of programs including income generation activities	Adequate funding to support implementation of planned activities to initiate EE & RE activities in the community	**3.1** Get proposal writing training **3.2** Research funding agencies **3.3** Liaise with the other working groups & SACDA to write funding proposals for planned programs **3.4** Organize local fund raising
4	To lead the community's development through a well-established and legally registered community organization.	A legal community organization leading community development activities and monitoring implementation of projects and programs	**4.1** Organize organizational development training for community members **4.2** Register community as legal community-based organization **4.3** Convene community meetings **4.4** Lead the project management & monitoring of activities which will lead to achieving overall goal.

Table 3: One Year Implementation Plan – Princessfield

Group #	Names	Strategic Objective	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Expected Results - Year 1
1	Tameka Barnett, Angelia Campbell, Samantha Barnett, Jennifer English	To help alleviate poverty and improve lives through provision of training and renewable energy for development of livelihood activities in the Princess Field Community.	1. Meet with Climate Finance Expert to further develop the idea of a Solar Training Centre (Flagship project). 2. Design centre and get professional quotations of cost for work to refurbish building and also construct power room to provide Climate Finance Expert developing funding proposal for flagship project. 3. Get professional advuce on Solar panels - how many needed and what willbe required for their installation and commissioning into use. 4. Seek permission from Comissioner of Land and political representative to refurbish and retrofit the Princess Field community center.	1. Design CFL bulbs distribution project. 2. Monitor progress on proposal submitted to potential donors for flagship project. 3. Start discussions with relevant training agencies for design of livelihood activity training programmes.	1. Monitor progress of proposal submitted. 2. Continue discussions for design and training programmes.	1. Commence work on retrofitting and expansion of community center. 2. Desing training programs in collaboration with HEART NTA and Jamaica Business Development Corporation.	1. Establishment of Solar Training Centre Infrasctucture (25% complete). 2. Design one CFL bulb distribution programme for Princess Field. 3. Two livelihood activity training programmes designed in collaboration with HEART NTA and Jamaica Business Development Corporation.
2	Elaine Sinclair, Gloria Abrahams, Michelle Hamilton, Claudine Fisher	To increase knowledge about Energy Efficiency and Renewable Energy and stimulate behavior change amongst the Princess Field community residents through Education, Public Awareness Programs and Social Marketing programs.	1. Seek assistance to design Education and Public Awareness Program. 2. Assist in design of Social Marketing Programme to effect behavior change.	1. Implement Public Awareness Campaign. 2. Implement Social Marketing Campaign.	1. Implement Public Awareness Campaign. 2. Implement Social Marketing Campaign.	1. Implement Public Awareness Campaign. 2. Implement Social Marketing Campaign.	1. One Social Marketing Programme for behavior change designed, funded and 50% implementation complete. 2. One Education and Public Awareness Programme designed, funded and 50% implementation complete.
3	Patricia Howell, Marjorie Laing, Josephine McCarthy, Jasmine Barnett	To secure funding to suport development of programs includig income generation activities.	1. Meet with the CC Finance expert to discuss needs for proposal development to expand, retrofit and equip Princess Field Community Center to become Solar Training Center. 2. Assist CC Expert to get quotations for building and equipment. 3. CC expert develop proposal and submit to potential funding agencies.	1. Research relevant funding agencies that are willing to fund projects identified by the groups. 2. Train in proposal writing.	1. Organize and implement local fundraising activities to offset community organization's legal registration cost and other expenditure. 2. Sign fudning agreement and draw down on funding for flagship prject - STC.	1. Complete research and write and submit proposals to potential funding agencies for livelihood activity training programmes, eg. Cyber Center and CFL distribution programme.	1. Funding secured for implementation of Solar Training Center & Public Awareness & Social Marketing campaigns. 2. Eight community members trained in proposal writing. 3. List of donors and their requirements developed. 4. Funding proposal submitted to two potential donors for CFL light bulb distribution programme. 5. Funds raised through frundraisers in the community to pay for legal registration of community organization. 6. Funding proposals submitted to two potential donors for establishment of Cyber Center. 7. Funding proposals submitted to two potential donors for training in Agro-processing.
4	Tyrone Mitchell, Pauline Beckford, Winston Pryce, Selbourne Graham	To lead the community's development through a well established and legally registered community organization.	1.Meet wit the CC Finance expert and other group members to discuss overall activities. 2.Assist in getting quotations from buidling contractor. 3.Organize community meeting to introduce and launch plan; discuss community's formal organization as a legal entity and guide development activities - subsequent monthly meetings. 3. Contact the Department of Cooperative & Friendly Societies to initiate training for legal registration. 4. Contact SDC for assitance with organizational development. 5. Monitor plan implementation through Project Management Committee.	1. Organizational development training. 2. Legal registration training. 3. Monitor Plan Implementation.	1. Register as legal entity. 2. Monitor Plan Implementation.	1. Monitor plan implementation. 2. Organizational devlopment training. 3. End of Year participatory evaluation of project.	1. Organized and trained community group with at least 25 members registered as a legal entity to lead community development including process of achieving the mitigation goal. 1. One End of Year Project Monitoring Report.

4. ACTION PLANNING RESULTS - CONTENT

4.1 Content's Community Action Plan (CAP)

Content first adopted a climate change mitigation and socio-economic development goal to guide their five-year CAP, which is summarized here in their vision statement:

"*The Content community center and homes are equipped to use energy efficiently and Renewable Energy is being employed to advance community development through people empowerment, training, and support for implementation of livelihood activities*"

They then reviewed the current reality through an evaluation of strengths, weaknesses, potential benefits (opportunities), and potential pitfalls (potential threats). The outcome of this exercise is summarized in Table 4.

Four SOs were developed to achieve this vision, including addressing the need to alleviate poverty through training and use of RE technology, increasing knowledge about EE and RE and influence community members behavior in adopting EE and RE technologies and actions, securing funding to support income generation activities, and establishing and legally registering a community organization to support their community's development. Desired results for each objective and key activities over five years were identified for each objective. The SOs, desired results and five-year key activities are summarized in Table 5.

4.2 Year One Implementation Plan—Content

Fifteen projects were identified in the Content five year action plan. The priority project for the first year is a solar-powered facility that houses a STC and a cyber-center. A funding proposal has been developed for submission to potential donors.

Content's first year Implementation Plan also recognizes that the establishment of the STC and cyber-center is central to the development of planned socio-economic activities; therefore, this activity is being given foremost attention with a funding proposal nearing completion. To take advantage of an opportunity to engage community members in climate change mitigation activities, the first year implementation plan also seeks to implement a CFL bulb program alongside a public awareness campaign and a social marketing campaign to effect behavior change. Content is a member of a Tri-Partite Community Benevolent Society and will seek to establish an independent "Content" arm to help facilitate its role in leading and monitoring activities related to the Climate Change CAP.

Projects

- Flagship Project: Solar Training Centre and cyber-center
- Training programs for
  - (I) Operating Solar Panels
  - (ii) Agro-Processing
- Greenhouse farming
- Business Incubator
- Business Center
- Retrofit Basic Schools
- Community Organization Development
- Public Awareness Campaign
- Social Marketing Campaign
- CFL Light bulb Distribution
- Cyber Center
- Laundromat
- Rainwater Harvesting
- Trash to Cash (e.g. Biomass Project from garbage)
- Solar Street Lamps

The first year implementation plan for Content may be found in Table 6.

Table 4: Our Current Reality—Content

Strengths	Potential Benefits
• Ownership of land • Ownership of club house • Good sunlight • SACDA works in community • People with skills/human resources • Organized groups: farmer, benevolent society, CDRT, senior group • Shared vision – we know what we want • Unity in community • New knowledge about EE Raw material for agro-processing • Existing AILEG project • Good communication • Community participation • Lot of wind • Experience of things that did not work •	• Access to funding • Solar powered energy • Networking • Proposal writing skill • Resources • Job opportunity • Training of trainers • Easy to plan • Income generating • Capacity building • Capacity to have wind farm • Increase production • Saving • Cleaner environment • Saving on transportation • Employment • Child development • Community togetherness • Reducing emission that causes climate change
Weaknesses	**Potential Pitfalls**
• Lack of funding • Lack of training in EE and RE technology • Lack of financial management • Drought	• Theft • Natural disaster • Migration/brain drain • SACDA no longer operating in community

Table 5: Strategic Objectives (SO) and Key Activities - Content

SO	Description	Desired Results	Key Activities
1	To seek funding for targeted activities that will support the developmental process in the Content community through the use of Renewable Energy (RE) and Energy Efficiency (EE).	A fully RE powered Solar Training Centre offering IT services, training and livelihood opportunities for community residents.	**1.1** Meet with Climate Finance Expert to discuss flagship project as well as other project ideas and assist in the compilation of information for funding proposal development. **1.2** Conduct research to ascertain which funding agencies would be willing to offer grant funding for the other projects identified to help Content achieve its mitigation goal. 1.3 Develop 10 proposals for submission to identified funding agencies. 1.4 Organize annual local fund raising activities

SO	Description	Desired Results	Key Activities
2	To increase knowledge and awareness on EE and RE among the Content residents and to influence behavior change.	50% of residents have changed habits and are making 'energy efficiency' choices.	**2.1** Provide training in EE and RE for at least 6 members of the Content Public Education team and 4 other leadership persons in the community. (Training of Trainers) **2.2** Design and implement social marketing program for behavior change **2.3** Design and implement education and public awareness program **2.4** Work with the other work groups to disseminate information about their activities.
3	To manage the RE & EE related development activities in Content through an independent Content community arm of umbrella three -community benevolent society.	A fully established, trained and certified Content Branch of the Benevolent Society with at least 25 active members promoting EE and RE for community development, and successfully managing the implementation of activities to achieve mitigation goals.	**3.1** Establish independent community branch of Benevolent Society **3.2** Train at least 25 Benevolent Society members in organizational development **3.3** Lead project management committee and monitor progress in project(s) implementation
4	To facilitate the development of socio- economic activities for residents living in the Content community through use of renewable energy.	A decrease of 10% in the unemployment rate (of 35%) among the residents**.**	**4.1** Construct a larger and stronger solar-powered building to facilitate implementation of income generation projects **4.2** Establish relationship with HEART Trust NTA and Jamaica Business Development Company (JBDC) to design training needs survey and training programs for identified projects. **4.3** Collaborate with HEART & JBDC to implement training programs for livelihood activity. **4.4** Establish business incubator **4.5** Establish business center

Table 6: One Year Implementation Plan – Content

Names	Strategic Objective	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Desired Results (Year 1)
Joan Laing, Sandra Wilson, Juhan McKenzie, Shericka Cobourne, Lorraine Bennett, Sharlene Huggins, Rupert Fuller	To seek funding for targeted activities that will support the development process in Content community through the use of Renewable Energy (RE) and Energy Efficiency (EE).	1. Meet with Climate Finance Expert to further develop the idea of a Solar Training Center (Flagship Project). 2. Desing center and get professional quotations of cost for work to refurbish building and also construct power room to provide to Climate Finance Expert developing proposal for flagship project. 3. Get professional advuce on Solar panels - how many needed and what will be required for their installation and commissioning into use.	1. Design CFL bulbs distribution project. 2. Monitor progress on proposal submitted to potential donors for flagship project. 3.	1. Monitor progress of proposal submitted. 2. Continue discussions for design and training programmes.	1. Commence work on retrofitting and expansion of community center. 2. Desing training programs in collaboration with HEART NTA and Jamaica Business Development Corporation.	1. Solar Training Center infrastructure 25% complete. 2. One CFL buld distribution programme for Content designed and proposal submitted for funding. 3. Two livelihood activity traiing programmers designed in collaboration with HEART NTA and Jamaica Business Development Corporation.
Elaine Worrell, Yvonne Laing, Natalie Jordon, Desmond Ashman	To increase knowledge about Energy Efficiency and Renewable Energy and change behavior among the Content community residents through Education, Public Awareness Programmes and Social Marketing Programmes.	1. Design Education Awareness Program. 2. Assist in design of Social Marketing Programmer to effect behavior change.	1. Implement Public Awareness Campaign. 2. Implement Social Marketing Campaign.	1. Implement Public Awareness Campaign. 2. Implement Social Marketing Campaign.	1. Implement Public Awareness Campaign. 2. Implement Social Marketing Campaign.	1. One Social Marketing Programme for behavior change designed, funded and 50% implementation complete. 2. One Education and Public Awareness Programme designed, funded and 50% implementation complete. 3. Amount of persons using incandescent light bulbs decrease from 68% to 50%.
Lucky Sinclair, Sylvester Harris, Vincent Herron, Novelette Welch, Vincent Herron	To secure fudning to support infrastructure development, income generation program, training program, and education and public awareness programs.	1. Meet with the CC Finance expert to discuss needs for proposal development to construct and equip Content community center to become Solar Training Center. 2. Assist CC Expert to get quotations for building and equipment. 3. CC expert develop proposal and submit to potential funding agencies.	1. Research relevant funding agencies that are willing to fund projects identified by the groups. 2. Train in proposal writing.	1. Sign funding agreement and draw down on funding for flagship prject - STC. 2. Research funding agencies.	Complete research and write and submit proposal to four potential funding agencies for livelihood activity training (2) and CFL distribution programme (2).	1. Funding secured for implementation of Solar Training Center & Public Awareness & Social Marketing campaigns. 2. Five community members trained in proposal writing. 3.A list of 10 potential donors and their requirements developed. 4. Funding proposal submitted to two potential donors for CFL light bulb distribution programme. 5. Funding proposals submitted to two potential donors for training in Agro-processing.
Tanya Huggins, Nadine Thomas, Delrose Jarrett, Orret Wilkie, Sylvester Laing, Trecia Huggins, Sylvena Thomas	To lead the community's development through a well established Content arm of the three community Benevolent Society.	1.Meet wit the CC Finance expert and other group members to discuss overall activities. 2.Assist in getting quotations from buidling contractor. 3.Organize community meeting to introduce and launch plan. 4. Organize and preside over monthly community meetings and Project Management Team. 5. Contact the Department of Cooperative & Friendly Societies to formally establish independent arm of umbrella benevolent society. 6. Contact SDC for assitance with organizational development. 7. Monitor plan implementation through Project Management Committee.	1. Organizational development training. 2. Monitor Plan Implementation. 3.Preside over monthly meetings.	1. Organizational development training. 2. Monitor Plan Implementation. 3.Preside over monthly meetings.	1. Organizational development training. 2. Monitor Plan Implementation. 3.Preside over monthly meetings. 4. End of Year participatory evaluation of project.	1. Organized and trained independent community arm of umbrella benevolent society with at least 25 registered members leading community development including process of achieving the mitigation goal. 2. Minutes of 12 monthly meetings and project monitoring report. 3. SDC conduct at least 6 organizational development training sessions. 4. One End of Year Project Monitoring Report.

5. JOINT STAKEHOLDER WORKSHOP

A Joint Stakeholder Workshop was convened on June 24, 2013 at the Methodist Church Hall in Linstead St. Catherine to:

- Share the community engagement process;
- Provide an opportunity for the two project communities to share their mitigation goal and discuss their action plan with each other; and
- Solicit feedback and sharing of thoughts on the way forward for communities engaging in EE and RE in Jamaica.

Approximately 25 invited guests and 40 community members (30 females and 10 males) from the Princessfield and Content communities were present. Guests included representatives of USAID, the Ministry of Water, Land, Environment and Climate Change (MWLECC), the Ministry of Science, Technology, Energy and Mining (MSTEM), and the Ministry of Local Government and Community Development (MLGCD). MWLECC committed to developing a network of stakeholders to further the involvement of communities in the development and implementation of energy efficiency and renewable energy action plans. Engaging representatives of local and central government was the first step in the process of linking community and government planning on low emissions development. The AILEG team also used the opportunity to introduce to the community members the reasons for and methods on conducting social and environmental impact assessments to their CAP projects and on developing a CBSM. A detailed report on the workshop, including presentations, is included in Volumes II.A and II.B: Joint Community Stakeholder Workshop Annex.

6. PROPOSAL DEVELOPMENT

The AILEG Jamaica Climate Finance Expert worked with SACDA and community members to develop a funding proposal for the flagship project identified by each of the involved communities from their respective CAPs. (See Volume VIA: Community Project Funding Proposals). Information from the AILEG Jamaica Social and Environmental Impact Assessment for Community EE and RE Action Plans was incorporated into the two proposals (See Volume VIB: Community Project Funding Proposals Annex: Social and Environmental Impact Assessment).

7. COMMUNITY-BASED SOCIAL MARKETING PROGRAM

Phase I and II of the data collection (the qualitative and quantitative data) was used to inform the design of a CBSM campaign, which applies the methodology of social science research to fostering, maintaining and evaluating behavior change, significantly influencing behavior to achieve greater impact for EE programs. Community behavior and engagement alters the effectiveness of EE projects worldwide, and influencing local stakeholders is key to achieving results. Traditional "awareness" programs rarely make an impact. CBSM campaigns are especially effective because they are based on qualitative and quantitative research that identifies barriers and benefits to adopting targeted behaviors. The baseline report suggested two behaviors that would help reduce energy demand: community members switching to CFLs for lighting and using more gas for cooking, as well as using gas more efficiently. Focus groups of women and men identified potential barriers and benefits to adopting these behaviors, as well as trusted information sources and media outlets. Surveys then polled communities to verify prevalence of these behaviors and to validate the target audiences. The focus groups and survey were designed to find the answers to seven key questions:

- Why do they do what they do?
- How many groups must change their behavior?
- What groups have influence over their behavior?
- What are the perceived barriers?
- What are the perceived benefits?
- Who do they trust for this information?
- Where do they look for information?

The results of the research were presented to the communities, and used to develop potential messages and channels for a social marketing campaign to be included in their Action Plans.

Monitoring and Evaluation M&E) for CBSM programs is similar to M&E for other development programs. Indicators and targets are developed to measure achievement of outputs, outcomes and impacts. The overall impact of the CBSM campaigns in these two communities is to contribute towards achieving the communities' five-year goals, along with the other projects in the Strategic Action Plans. The outcomes desired are the changed behaviors, i.e. installation of CFLs, fuel switching from coal/wood to bottled gas for cooking, and using pressure cookers to cook with gas (and other fuels) more efficiently. Though the community workshop participants also plan to address other efficient cooking behaviors, these will be part of the general awareness campaign, though not part of the CBSM campaign. Outputs include steps leading to the final behavior change such as numbers of people attending community events, signing pledges to take action, purchasing CFLs and pressure cookers, etc. It will be important to develop a final list of indicators to support implementation of the final campaign, and to develop targets for the following suggested output and outcome indicators based on information collected in the baseline survey and any additional surveys conducted during implementation of the campaigns. Methods of data collection will also need to be established. After two full years of implementation, a follow-up survey should be conducted using the same questions included in any previous surveys, to measure the effectiveness of the CBSM campaigns in achieving the targeted behavior changes in the targeted groups and changes in societal norms.

Communities will seek funding to design the materials and to test and implement the campaign. However, funds will also be needed to update the baseline survey and test the messages in focus groups. The baseline survey will also need to be revised and fielded again. If a CBSM campaign is not implemented within three months, experts recommend resurveying the community, to ensure that barriers and benefits are still the same. Since respondents had difficulty answering the questions about perceived benefits of the targeted behavior changes, the authors recommend that the communities work with a CBSM expert and a survey research firm to revise the survey to verify the benefits and the target groups. In addition, specific questions related to barriers and benefits of using pressure cookers should be added, as questions in the initial survey related only to the strategy of reducing cooking with wood and coal and shifting to gas, rather than specific behaviors to achieve this strategy (including pressure cookers). Testing of questions specific to distinct behaviors will strengthen that campaign. Lastly, missing data that is needed to understand the baseline saturation and potential penetration of the target behaviors should be included in the survey.

The CBSM campaign designs above are draft plans. They should be finalized after an updated survey is fielded, and testing of the proposed messages with focus groups should be completed. Pre-testing the final strategies for each desired behavior change is critical, followed by full implementation.

The Social Marketing Campaign planning process and design may be found in Volumes V.A and V.B: Community-Based Social Marketing Campaign Annex.

8. CONCLUSIONS

The main objectives of the community component of the AILEG project have been achieved including:

i. Socio-economic and energy use baseline data were established for the project communities of Princessfield and Content in St. Catherine, Jamaica;
ii. Two community-based five-year Strategic Energy Efficiency and Renewable Action Plans (the SAPs) were developed, guided by a climate change mitigation goal. These SAPs included Strategic Objectives that achieve climate change goals and socio-economic objectives important to the community including employment and youth engagement. Each community also developed a first year implementation plan;
iii. Awareness was raised of community members on requirements to scale up investments in EE and RE at the community level through a participatory action planning process;
iv. Funding to implement a pilot project in each of the selected communities was identified and proposals developed and submitted to donors. A list of potential funding sources for additional projects included in the SAPs was developed.

9. RECOMMENDATIONS

9.1 Supporting implementation for Content and Princessfield

To ensure successful implementation of the first year implementation plans, continued capacity building of SACDA, and the nascent community groups, is required for successful implementation.

Since consideration of EE and RE can result in the development of new skills, create and increase employment opportunities and contribute to sustainable development, it is imperative that government and stakeholders support small-scale projects that will help stabilize subsistence farmers and other small business operators in these communities who are often affected by climate change. Adoption of a community EE and RE development policy will support the implementation of the SAPs developed by these two communities, as well as any future expansion of the program.

9.2 Scaling up Community-Based EE and RE Action Planning

Scaling up of the process and outcomes of this AILEG activity should be done within a local and central government policy and program framework to ensure communities have the necessary government support for action planning and implementation. This support includes technical assistance for capacity building, training, education and fundraising. Capacity should be developed not only within eligible CBOs but also government community intervention agencies (such as the Social Development Commission or SDC)) for leading the process going forward.

It is critical to identify and highlight livelihood, social and environmental short- and long-term benefits and impact of EE and RE programs. Networking among communities and facilitating knowledge sharing and exchange of experiences, best practice and lessons learned on EE and RE pilot projects is a critical element of any future expansion of the community approach to promoting EE and RE investments.

When designing an expanded program, at least six months is required to implement a project of this nature.

9.3 Recommendations for Community EE and RE Policy Development

An expanded community EE and RE policy development program could be facilitated by central government and operationalized by local government authorities. The following approaches should be considered for incorporation into a Community EE and RE Policy Framework to be adopted by MSTEM, MLGCD, the Jamaica Social Investment Fund (JSIF) and/or other Ministries or agencies:

- Build capacity at the local government level; for example, ensure that the Parish Councils and the SDC have the capacity to provide technical assistance for implementation of community climate and energy programs.
- Lobby for the SDC and the JSIF to revise their community development intervention strategies to include a climate change mitigation approach (EE and RE) which can help provide livelihood activities while decreasing the cost of living in communities.
- Establish institutional framework/partnerships among government Ministries/Agencies to leverage resources and funding. Key Ministries/Agencies include MWLECC, MSTEM, JSIF,

Department of Cooperatives and Friendly Societies (DCFS), HEART Trust National Training Agency (NTA), and Jamaica Business Development Corporation (JBDC).

- Introduce energy efficiency programs before investing in renewable energy, as communities can easily understand the associated reduction of energy costs.
- Include Social Marketing Programs to target behavior change, which often requires little investment and can have a large impact on reducing community members' bills
- Local government should also lead by example by investing in energy efficiency technologies and actions in local government buildings and assets (e.g., LED street lights; energy efficient offices, etc.)

10. REFERENCES

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AILEG Analysis and Investment for Low-Emission Growth

VOLUME II.A: COMMUNITY RENEWABLE ENERGY AND ENERGY EFFICIENCY ACTION PLANS

COMMUNITY JOINT STAKEHOLDER WORKSHOP ANNEX

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ANALYSIS AND INVESTMENT IN LOW EMISSIONS GROWTH (AILEG) PROJECT
Joint Local Stakeholder Consultation
Monday, June 24, 2013 – 10:00 a.m. to 1:00 p.m.
Methodist Church Hall
1 Church Street, Linstead, St. Catherine

1. BACKGROUND AND CONTEXT

The AILEG project is the first initiative in a three year programme for enhancing capacity for low emissions development strategies (EC-LEDS) in Jamaica. AILEG is providing technical assistance to the Government of Jamaica and other stakeholders to analyze low emissions scenarios and integrate them into economic development strategic planning and implementation, as well as conducting economic analysis to promote investment in low emissions technologies and projects. AILEG is working in collaboration with the Ministry of Science, Technology, Energy & Mining (MSTEM), the Ministry of Water, Land, Environment and Climate Change (MWLECC) and the Planning Institute of Jamaica (PIOJ).

One of the components of the AILEG project is Community Engagement for Climate Change. Two communities were selected in St. Catherine to act as pilots for the engagement of communities to address climate change (CC) issues through the incorporation of renewable energy (RE) and energy efficiency (EE) technologies in local development planning. Community-based EE and RE plans were developed through a participatory process. These plans will support the achievement of CC mitigation goals and socio-economic development. The objectives of the community component of AILEG are:

- To facilitate a process which will lead to the development of a community driven energy efficiency and renewable energy action plan to support achievement of climate change goals and socio-economic objectives important to the community, including employment and youth engagement
- To increase awareness among residents in selected communities on what is required to scale up community level investments in RE and EE
- To support the effort which will lead to the identification of funding sources to implement a pilot project in selected communities
- To decide on a local climate change mitigation goal

2. RATIONALE

Through this consultation, the AILEG project sought to engage stakeholders within government agencies which have objectives that are complementary to the community RE and EE development process. The purpose of the engagement was to present the community engagement process and the community action plans to multiple stakeholders, solicit comments and suggestions for improvement and also to initiate a discussion regarding a process for up scaling and factors to be considered in any related policy development.

3.0 CONSULTATION OBJECTIVES

1. To provide an opportunity for members of both pilot communities to share their Action Plans with each other and obtain feedback
2. To engage government stakeholders in the process of planning the way forward for mainstreaming the community projects and processes into national planning
3. To present an assessment of the expected social impacts of the planned actions and introduce participants to methodologies for assessing and mitigating potential environmental impacts.

4.0 PARTICIPANTS

Participants were mainly community residents who have been involved in the planning processes. Specially invited guests included representatives from MWLECC, MSTEM, the Parish Council, the office of the Local Government Councilor for Content, the office of the Member of Parliament, USAID and the Jamaica Rural Economy and Ecosystems Adapting to Climate Change (Ja REEACH) project. Invitees were selected based on the significance of their programmes of work for enhancing the development process in the communities and the contributions that their respective agencies could bring to the dialogue on mainstreaming community CC actions.

5.0 METHODOLOGY/APPROACH

A presentation on the community engagement process was made by Nellie Richards of the St. Catherine Development Association (SACDA). This presentation provided an overview of the steps undertaken for the development of the Community Action Plans. This was followed by presentation of the Action Plans by community members. This was done using PowerPoint. Lorraine Cole presented the Princess Field Plan and Joan Laing presented the Content Plan. Participants were given the opportunity to discuss the contents of the plans and to provide feedback to the communities.

After the community presentations, Dianna Gillespie, an Abt Analyst, provided a graphic demonstration of the potential socio-economic impacts of the planned community projects. Her presentation also included the introduction of a strategy for identifying and addressing the possible environmental impacts that the projects might create. This tool will enhance the planning process by enabling the communities to develop strategies for addressing negative impacts and changing course if impacts are significant and cannot be mitigated.

The final session was a plenary discussion which engaged government representatives in dialogue on the roles that each of their agencies/ministries could play in the up scaling and mainstreaming of community CC actions into national planning.

6.0 SUMMARY OF PRESENTATIONS

6.1 The Community Engagement Process

The communities were led in a participatory process to develop a climate change mitigation goal and Action Plans which detailed activities for achieving the goal. The main components of the process were:

- Selection of the CBO and communities through a competitive bidding process
- Contracting of the CBO and provision of a community facilitator to lead the process
- Community mobilization – this process involved churches, schools, farmers' groups and word of mouth strategies
- Collection of baseline data through both quantitative and qualitative methods

Qualitative Methods: A participatory appraisal was conducted through community meetings, community mapping, transect walks and creation of a historical timeline.

Quantitative method: A survey was conducted by a research company and information collected using a quantitative survey questionnaire.

- Community members were taken on a field trip to Jeffrey Town. This community is successfully using RE and EE technologies to drive economic activities. The experience and knowledge gained on the field trip generated ideas for the visioning and action planning processes in Content and Princess Field.
- Training of community officers – Two community officers received training under the Climate Change Action Training (CCAT) project. The CCAT training complemented the project activities as the officers became more equipped to undertake assigned tasks.
- A visioning workshop was conducted to lead community members in a process for identifying the current realities in their communities and defining a desired future depicting where they want to see their community in five years. SWOT analyses were conducted to provide information for moving into the action panning process.
- The results of the visioning exercise were used to develop the communities' climate change mitigation goals and develop five year action plans for achieving those goals.

The challenges encountered and lessons learned during the engagement process were shared and in her presentation, Ms. Richards noted that the community engagement process was tedious and challenging but worthwhile.

Lessons Learnt:

- A bottom-up planning approach is imperative for securing buy-in for this type of project.
- The social capital created through previous SACDA activities impacts positively on project implementation.

- Zoning and the creation of manageable working groups allows for a representative, participatory and manageable planning process.
- The role of the community facilitator is a key to advancing the implementation process.
- When community residents unite around a common goal much can be achieved.
- Awareness, networking and sharing can impact the planning process positively.
- Networking boosts community members' enthusiasm for wanting to know how RE and EE can benefit them.

Challenges Encountered:

- The time frame for project implementation was short.
- There was inadequate space and furniture for the workshops so the large number of persons who turned out could not be accommodated.
- The climate change topic was unfamiliar to the CBO and community residents.

6.2 Community Action Plans

Both of the pilot communities presented similar action plans. In trying to understand why the plans were similar, a review of the baseline data was conducted and this revealed that the similarities were reflective of the fact that the communities had similar socio-economic realities and needs.

Both communities presented their action plans using the following PowerPoint outline:

- The planning process
- Baseline data on energy use
- Strategic objectives – each community presented 4 strategic objectives as well the planned actions for achieving the objectives.
- Desired results
- Supporting actions
- Detailed Year 1 implementation plan

Princess Field

Climate Change Mitigation Goal

At the end of 2018 the Princess Field community is actively contributing to climate change mitigation through fostering of energy efficiency habits and use of renewable energy to encourage and sustain livelihood activity development as well as provide skills training for community members.

Projects identified from the Plan:

- Flagship project: Solar training centre
- Training programmes for (i) operating solar panels and (ii) Agro-processing
- Business incubator
- Retrofit Basic schools
- Community organization development
- Public Awareness campaign
- Social marketing campaign
- CFL light bulb distribution
- Cyber centre
- Laundromat
- Trash to cash
- Solar street lamps

Content

Climate Change Mitigation Goal

By 2018 the Content community centre and homes are equipped to use energy efficiency and renewable energy is being employed to advance community development through people empowerment, training and support for implementation of livelihood activities.

Projects identified from the Plan:

- Flagship project: Solar training centre equipped with computers
- Training programmes for (i) operating solar panels and (ii) Agro-processing
- Greenhouse farming
- Business incubator
- Business centre
- Retrofit Basic schools
- Community organization development
- Public awareness campaign
- Social marketing campaign
- CFL light bulb distribution
- Cyber centre
- Lundromat
- Rainwater harvesting
- Trash to cash (e.g. biomass project from garbage)

- Solar street lamps

The presentation of the plans was followed by a discussion session. Comments received from participants included:

The Action Plans are extremely impressive. They are well organized, clear and implementable. The community members did well in the way the plans tie back into the needs of their respective communities and integrate them into a single approach.

Although the AILEG project is coming to a close, community members are on the ground working daily and getting support from government agencies for implementation. Additional networking is being done to increase support.

HEART Trust NTA and Jamaica Business Development Centre (JBDC) are both government agencies that operate at the community level. HEART provides training so they will be invited to work with the community. The Member of Parliament for the constituency has indicated that she is wiling to work with HEART to secure information technology (IT) training for the community residents. She is also planning to approach Universal Access Fund (UAF) to help with the IT aspects of the project. After community members have been trained they can enroll at an established HEART centre to pursue further training. JBDC works with communities and individuals through an incubator process for new businesses. They also assist with the creation of business plans, so can be approached to provide technical assistance for the community.

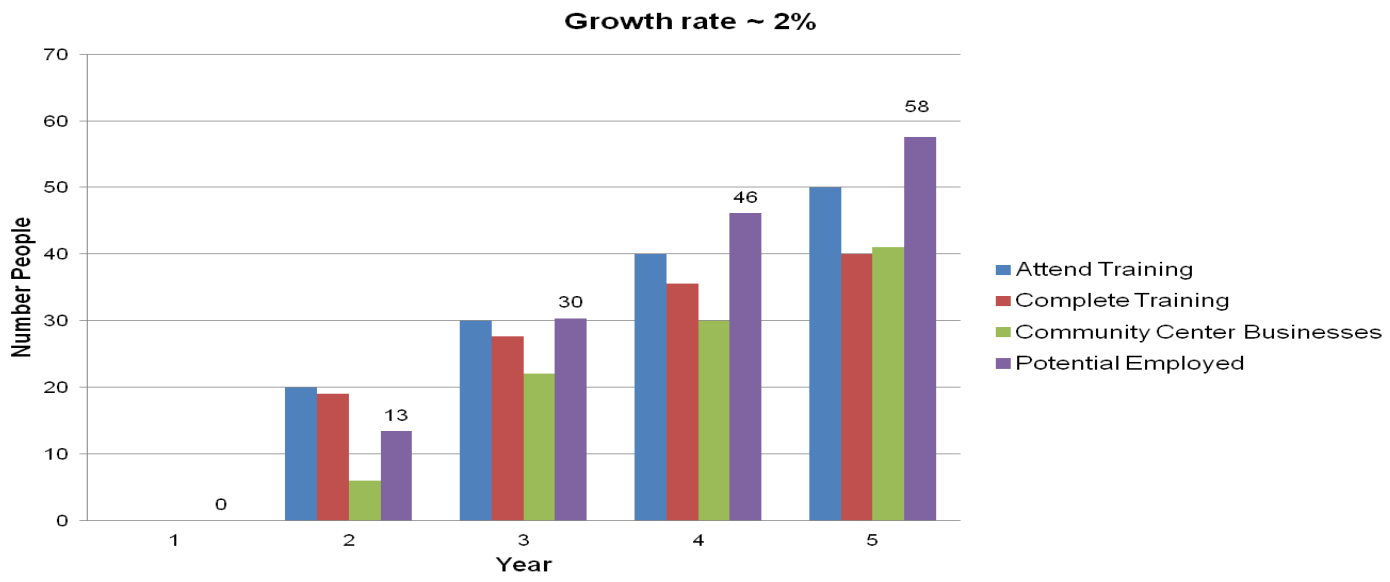
Most of the Year 1 first quarter work has been completed so the quarter 2 activities can be fast tracked. This will help the communities to achieve the objectives in the time scheduled.

6.3 Social Impact Assessment & Environmental Impacts Mitigation Planning

Social Impact Assessment

The information contained in the Community Action Plans was used to conduct a social impact assessment. The results of the assessment were presented at the workshop and summarized in the following graph. The graph depicts the potential employment that can be generated over the five year period covered by the Acton Plans. It shows a growth rate of 2% over the five years. This is a conservative estimate. It should be noted that the final write-up fort the impact assessment (See Volume VI.B_Action Plan Projects Annex - Soc&EIA Report), no longer contains the following graph. It was determined that the level of uncertainty was too high for the specific activities completed under the Community Action Plans and the number of people each are intended to employ. Instead an estimate of job potential is provided only for those who complete the STC trainings.

Potential Employment Over 5 Years

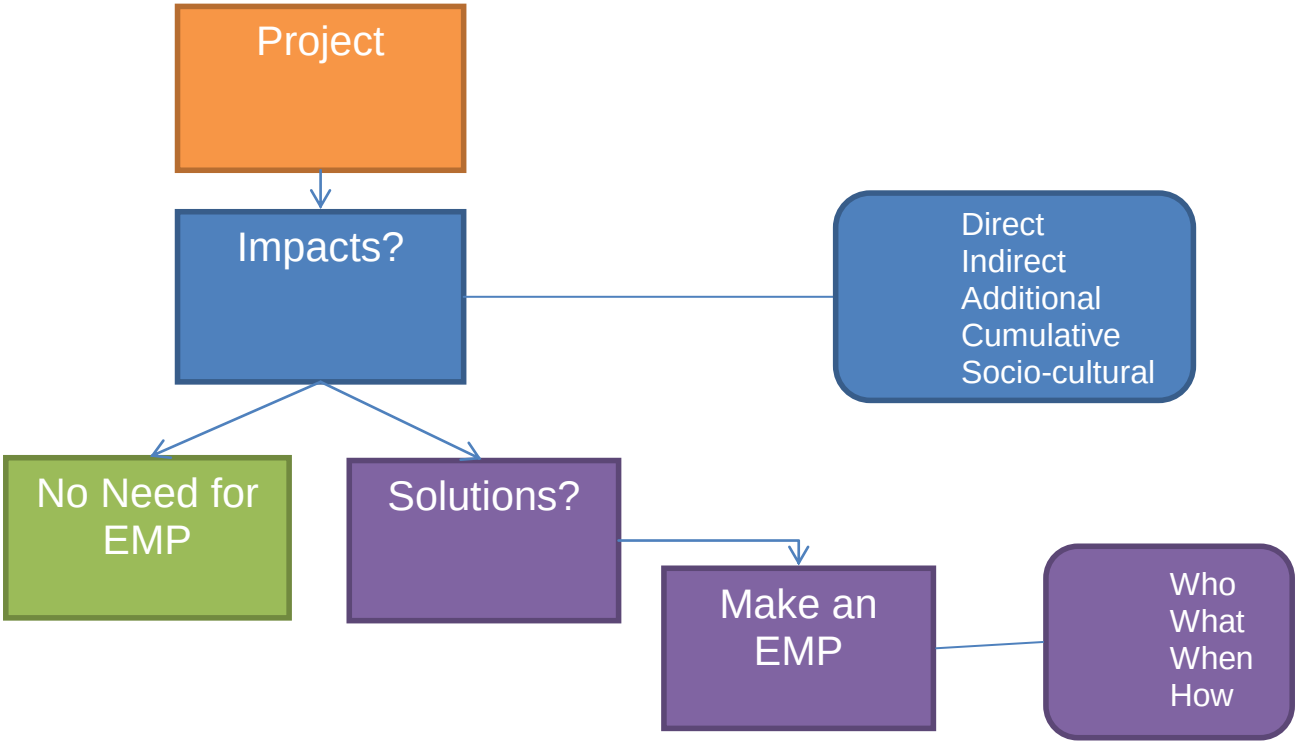


Environmental Impacts Mitigation Planning

Several of the actions in the plans e.g. use of CFLs, Agro-processing and operating a Laundromat can have negative environmental impacts. Therefore, more community planning needs to be done to address these potential problems. The USAID LAC Environmental Mitigation Plan (EMP) screening tool was introduced to the participants as it provides a checklist that will allow them to determine impacts and solutions. A brief exercise in using the tool was undertaken using information from the Action Plans. This will enable the communities to use the tool on their own.

A process map which outlined steps for developing a mitigation plan for addressing the potential environmental impacts of the planned community projects was introduced to participants. This will aid in further planning and the development of mitigation actions. The process map is presented below:

Process for Environmental Mitigation Planning



6.4 Social Marketing Campaigns

A key component of AILEG is the engagement of two communities, Princess Field and Content, to pilot the process of community engagement for renewable energy (RE) and energy efficiency (EE). The process will include the development of social marketing (SM) plans to effect behavior change to achieve climate change goals. The SM plans will form part of the communities' broader social outreach and communication plans.

DISCUSSIONS

- The community research findings will be used to develop a Social Marketing Plan for each community.
- The community research was completed in two phases:
    - Qualitative information was gathered through meetings and focus groups. The qualitative research findings and potential target behavior changes were presented:

RESEARCH FINDINGS	TARGET BEHAVIOURS
Electricity costs are a big concern and lighting is a significant use of electricity	Lighting: Individuals who currently do not use CFLs will install CFLs in commercial and residential buildings ***Support required***: Availability of CFLs
Some Content and Princess Field community members participated in the Cuban Lighting program	-
The cost of cooking fuel has forced high and inefficient use of traditional fuels (wood and charcoal)	Cooking: Increase use of gas and decrease use of wood and coal for cooking ***Support required***: Technology, such as pressure cookers, to reduce gas use during cooking

- A quantitative survey was conducted which verified information gathered in the meetings and focus groups. One of the purposes of the quantitative research was to see how large the groups with unique features were (a minimum of 300 people per target group to use the social marketing approach). The research verifies the size and features of potential groups and clarifies their perceived barriers to and benefits of adopting the new behaviors to be promoted.

Research has shown that mass campaigns intended to raise awareness will not lead to behavior change. Actions must be directed at a target group and must be formulated around their peculiarities. In developing an SM campaign at least 300 people should be targeted, and each segment should be at least 100 persons.

The benefits of behavior change must be communicated to the target group and the barriers must be overcome. Communications to the general population will also support the campaign, and will have the benefit of raising community awareness levels and is key to the success of the project, as it will develop a sense of ownership.

Questions to consider when developing an SM campaign include:

- What messages should be conveyed?
- What major themes should be embodied in the messages?
- What convincing evidence can be provided?
- What do you want people to know or to do?
- How should the information be packaged?
- How should the information be presented?
- What channels will be used to convey information?
- When should information be disseminated and how often should they be repeated?

The Process for developing a social marketing campaign:

- Assessment – Population research
- Design and plan
- Pre-test and revise
- Implement
- Monitor and evaluate

NEXT STEPS

Focus groups will be established and a meeting convened for the communities in July to develop the social marketing campaign. The campaigns will be included In the Community Action Plans.

7.0 PLENARY DISCUSSION

During the plenary discussion the government representatives focused on opportunities for advancing the planned developments in the community and integrating community actions into national development planning. Princess Field and Content have created the draft for a 1st model which demonstrates how other communities can adopt RE and EE for development. The lessons learnt and challenges presented can be used to start the more long term dialogue between communities and the government. This is where the dialogue should begin as no one knows the communities like the residents themselves. So the mechanism developed could start dialogue at the community level, advance it to the parish level and finally through to the national level.

A key ingredient of the process is the development of channels for community information to be fed to MWLECC. MWLECC has a big stake in what is happening and therefore would like to see successful implementation of the community action plans, as this would enable the Ministry to use the pilot communities as models for replication across Jamaica. MWLECC would want to take the lead in building awareness that this is the best path for Jamaica, and getting information across the country and to the various ministries. Although the National Climate Change Policy is not yet complete, it contains a framework for networking among government ministries. The policy framework calls on all ministries to mainstream climate change and to identify Focal Points to address both adaptation and mitigation goals. Therefore, CC will be mainstreamed into planning in the various ministries to reflect their emerging responsibilities. The institutional arrangements that will be created by the network of focal points will help MWLECC with monitoring and moving forward. Nevertheless, all focal points do not have to be in place to get going as MWLECC is already working with MSTEM. Other points on the network have to be established so that decisions can be made about carrying the objectives forward.

In addition to these future actions at the ministerial level, Councilor Peter Abraham indicated that he will work with the Princess Field community and his staff will be part of the team going forward. They will work through the parish council to advance the development of the plans presented. However, Content falls under a separate councilor, whom Ms. Bedasse indicated is willing to support that community's plans.

The representatives from the Parish Council and MWLECC agreed that a meeting of key players could be convened over the next three weeks to look at the way forward. The participants would be a subset of the ministry focal points.

AILEG PROJECT JAMAICA: COMMUNITY PILOT PROJECT RENEWABLE ENERGY & ENERGY EFFICIENCY

JOINT LOCAL STAKEHOLDER CONSULTATION

Venue: Methodist Church Hall, 1 Church Street, Linstead (Road leading off King Street, opposite Courts Ja. Ltd.)

Time: 10:00am – 1:00pm

GOAL OF THE AILEG PROJECT: The goal of AILEG is to build capacity of the Government of Jamaica and other stakeholders to analyze low emissions scenarios and integrate them into economic development strategic planni ng and implementation, as well as conducting economic analysis to Promote investment in low emissions technologies and projects. Community-based energy efficiency (EE) and renewable energy (RE) Action Plans will be developed in one or more communities to support achievement of climate change goals and socio-economic objectives important to the community, including employment and youth engagement.

MAIN OBJECTIVES OF THE COMMUNITY COMPONENT:

- To facilitate a process which will lead to the development of a community- based driven energy efficiency and renewable Action plan to support achievement of climate change, goals and socio-economic objectives important to the community including employment and youth engagement.
- To increase awareness among community residents in selected communities on what is required to scale up investm ents in RE and EE at the community level.
- To support the effort which will lead to the identification of funding sources to implement a pilot project in selected communities.
- To decide on a local climate change mitigation goal.

***PURPOSE OF THE CONSULTATION*:** The purpose of the Joint Stakeholder Consultation is (i) to provide an opportunity for the project communities to share their mitigation goal and discuss their action plans with each other and invitees; and (ii) to solicit feedback and sharing of thoughts on the way forward for communities in Jamaica.

AGENDA

Chairperson – Janet Bedasse

10:00 a.m. – 10:10 a.m.	Welcome & Prayer
10:10 a.m. – 10:20 a.m.	Introductions
10:20 a.m. – 10:40 a.m.	Presentation: The Community Engagement Process – Nellie Richards (SACDA)
10:40 a.m. – 11:00 a.m.	Presentation: Princess Field Action Plan - Lorraine Cole
11:15 a.m. – 11:35 a.m.	Presentation: Content Action Plan – Joan Laing
11:35 a.m. – 11:50 a.m.	Discussion
11:50 a.m. – 12:00 p.m.	Social Impact Analysis – Dianna Gillespie - Analyst, Abt
12:00 p.m. – 12:30 p.m.	PLENARY DISCUSSION

	The Way Forward – How can we continue to use Community RE and EE planning in Jamaica to support achievement of climate change goals and socio-economic objectives important to the community, including employment and youth engagement
12: 30 p.m. – 12:45 p.m.	Wrap up & Adjournment

PARTICIPANT'S LIST

Name	Gender	Stakeholder Type	Affiliation
Alyson Newlond	F	Government	Office of the Prime Minister - Minister Natalie Headley
Angella Campbell	F	Community	Princessfield Energy Action Group
Chad Allen	M	Government	St. Catherine Parish Council
Charles Jordon	M	Community	Content Energy Action Group
Delores Jarret	F	Community	Content Community
Desmond Ashman	M	Community	Content Energy Action Group
Donna McKenzie	F	Community	Content Energy Action Group
Elaine Sinclair	F	Community	Princessfield Energy Action Group
Elaine Worrell	F	Community	Content Energy Action Group
Elizabeth Laing	F	Community	Content Community
Eugenie Palmer	F	Community	Princessfield Energy Action Group
Glenmore Cobourne	M	Community	Content Energy Action Group
Gloria Abrahams	F	Community	Princessfield Energy Action Group
Herman Davidson	M	Community	Princessfield Community
Jean Golding	F	Community	Content Community
Jeannette Fisher	F	Community	Content Energy Action Group
Jesica Campbell	F	Government	Office of the Prime Minister - Minister Natalie Headley
Joan Laing	F	Community	Content Energy Action Group
Karen Gyles	F	Community	Princessfield Community
Kimberley C. Brown	F	Government	St. Catherine Parish Council
Loraine Cole	F	Community	Princessfield Energy Action Group
Lorraine Bennett	F	Community	Content Community
Lucky Sinclair	F	Community	Content Community
Malden Miller	M	USAID	USAID/Jamaica
Marjorie Laing	F	Community	Princessfield Energy Action Group
Marlene Daley	F	Government	Ministry of Water, Land, Environment and Climate Change (MWLECC)
Michael Hanowsky	M	USAID	USAID
Michelle Hamilton	F	Community	Princessfield Energy Action Group
Nadia Ferguson	F	NGO	ACDI/VOCA
Nadine Thomas	F	Community	Content Energy Action Group
Natalie Harris	F	Community	Content Energy Action Group
Nicola Brown	F	Government	Office of the Prime Minister - Minister Natalie Headley
Novelette Welch	F	Community	Content Energy Action Group
Oral Khan	M	Government	Ministry of Water, Land, Environment and Climate Change (MWLECC)

Paulette Blair	F	Community	Content Energy Action Group
Pauline Beckford	F	Community	Princessfield Energy Action Group
Peter Abrahams	M	Government	Local Government
Rohan Noble	M	Community	Princessfield Community
Rupert Fuller	M	Community	Content Energy Action Group
Sandra Gordon	F	Community	Princessfield Energy Action Group
Sandra Wilson	F	Community	Content Energy Action Group
Selbourne Graham	M	Government	Cou. Abrahams Office
Sharlene Huggins	F	Community	Content Energy Action Group
Sharon Gulick	F	USAID	USAID
Sherika Cobourne	F	Community	Content Community
Sylvester Harris	M	Community	Content Energy Action Group
Tanya Huggins	F	Community	Content Energy Action Group
Tricia Huggins	F	Community	Content Community
Tyrone Jones	M	Government	USAID
Tyrone Mitchell	M	Community	Princessfield Energy Action Group
Victoria McDonald	F	Community	Content Energy Action Group
Victoria McDonald	F	Community	Content Energy Action Group
Vincent Herron	M	Community	Content Community
Winston Pryce	M	Community	Princessfield Energy Action Group
Yvonne Ashman	F	Community	Content Energy Action Group
Yvonne Barrett Edwards	F	Government	Mininistry of Science, Technology, Energy and Mining (MSTEM)

VOLUME II.B: COMMUNITY RENEWABLE ENERGY AND ENERGY EFFICIENCY ACTION PLANS

COMMUNITY JOINT STAKEHOLDER ANNEXES

THE AILEG PROJECT

CONTRACT NO.:EEM-I-00-07-00004-00
TASK ORDER: AID-OAA-TO-11-00041

October 2013

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IMPACT ASSESSMENT

Linstead, 24 June 2013

Purpose

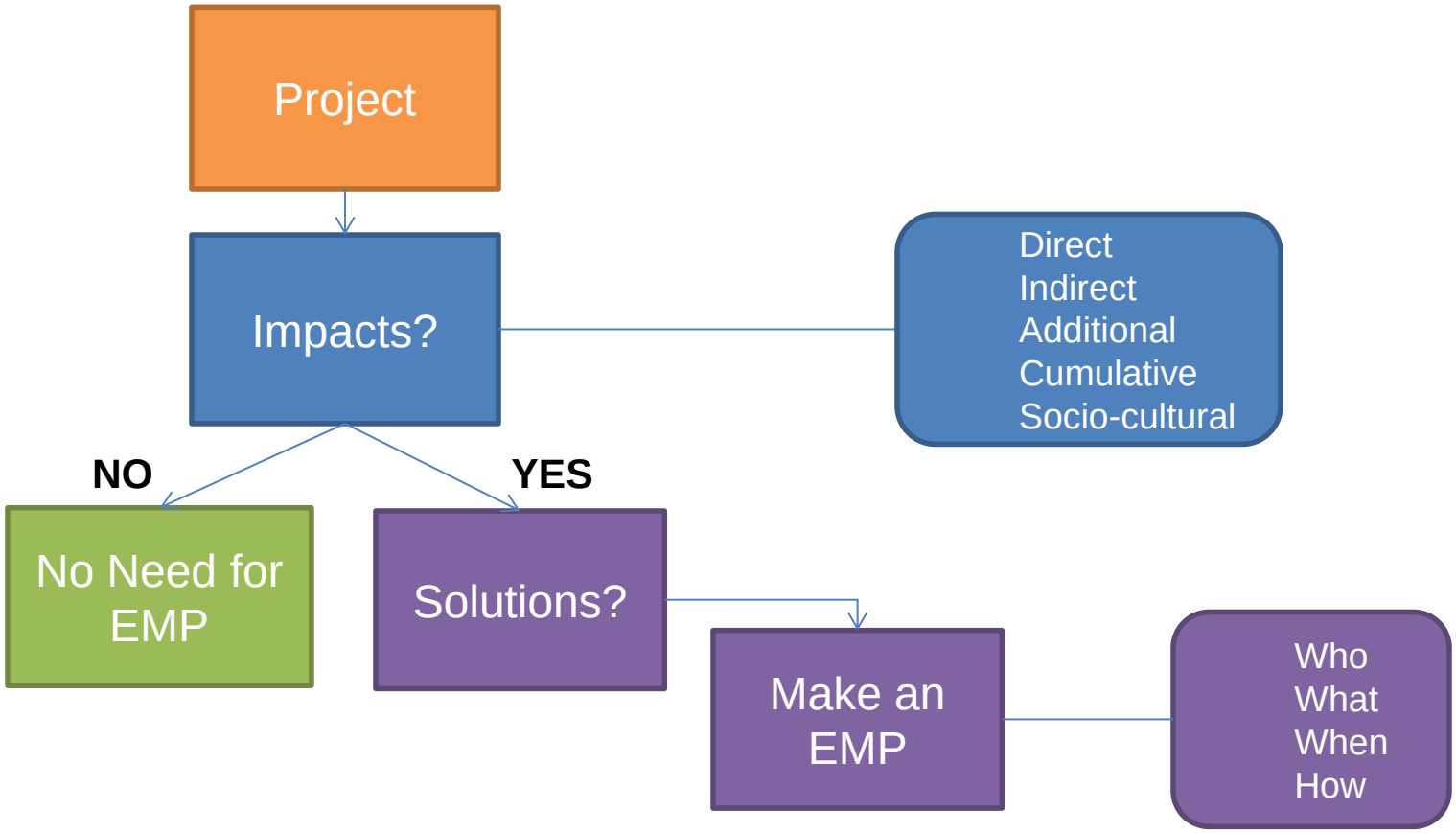
- Environmental Impact
  - Environmental Management Plan (EMP)
- Social Impact
  - Potential job creation

Any Potential Problems?

- CFLs
- Agro-processing
- Laundromat

PLANNING

Process for EMP



Example: Community center construction

Are there potential issues?

- USAID Latin America and Caribbean Environmental Mitigation Plan – Screening Tool

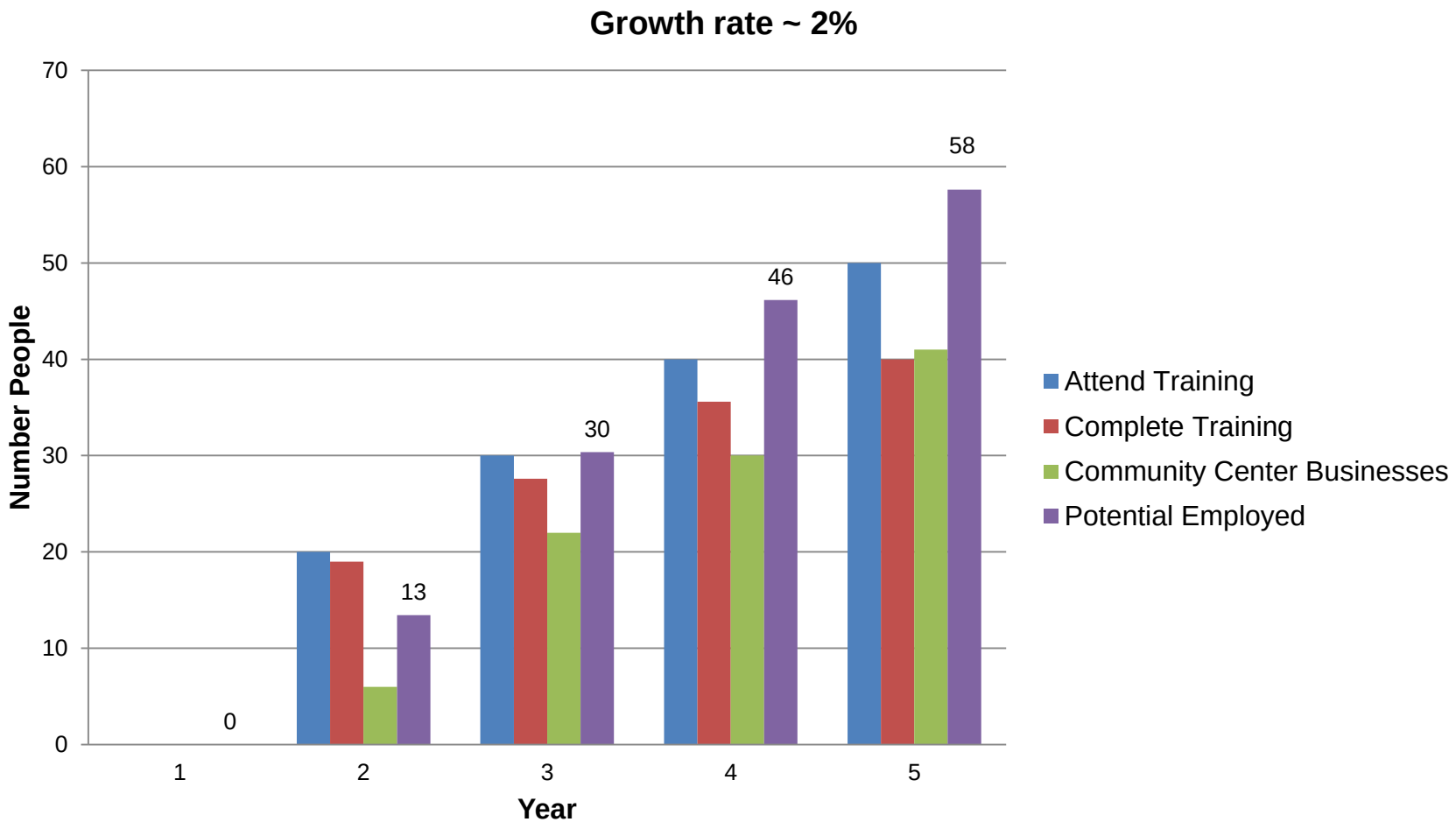
What are the Potential Problems & Solutions?

Issue	Problem/Impact	Solution/Mitigation
Site Selection		
Site has a steep slope		
Area is has trees		
Planning and Design		
Will produce solid waste		
Will include a water supply improvement		
Construction		
Construction crews & camps		
Use of toxic materials (paint, solvents, vehicle fluids, etc)		

Who is responsible, when?

- USAID Latin America and Caribbean Environmental Mitigation Plan – EMP

Potential Employment Over 5 Years



Example: Content Draft Action Plan

Year	Activities
1	<u>By 4th Q:</u> - Establish relationship with HEART Trust NTA and Jamaica Business Development Company (JBDC) to design training needs survey and training programmes for identified projects. - Design 2 livelihood activity training programmes
2	<u>Assumption: Begin 2 livelihood activity training programmes:</u> - Laundry/Garment Training for 10 people; 9 complete. - IT Training for 10 people (1 person/computer); 10 complete. <u>Assumption: Begin community center business incubation:</u> - Laundromat with 5 people employed. - IT Center with 1 person employed.

THANK YOU – QUESTIONS?

AILEG JAMAICA – COMMUNITY SOCIAL MARKETING CAMPAIGNS

June 24, 2013
Linstead, Jamaica

Presented by: Dana Kenney
AILEG Jamaica Country Manager

A I L E G

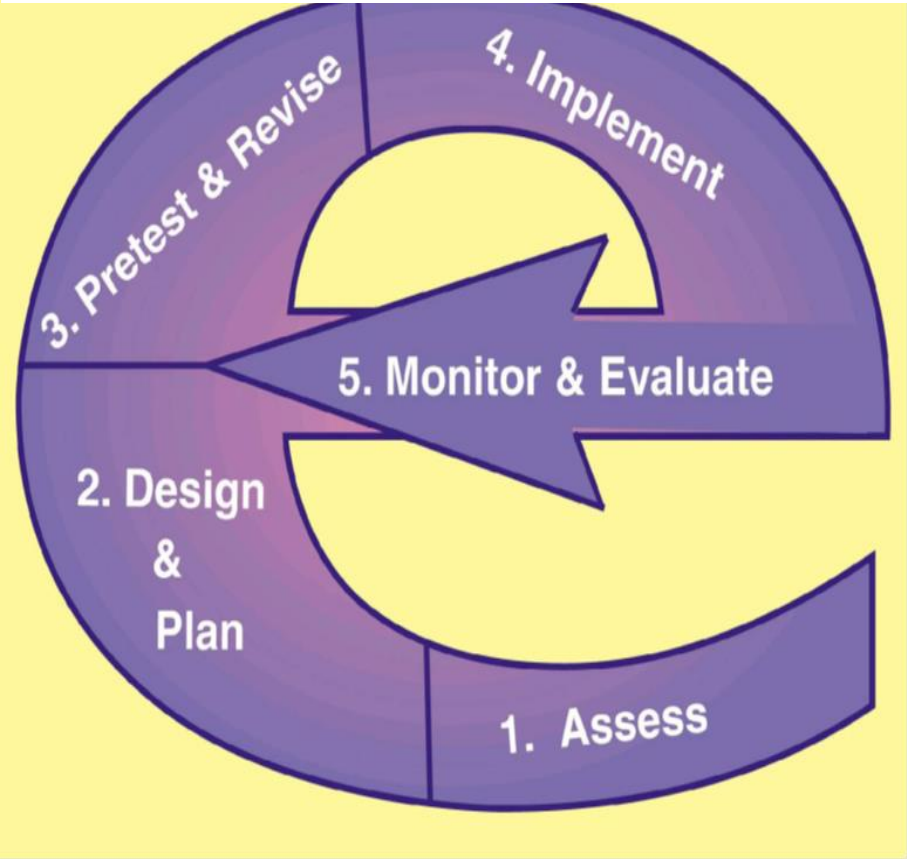
SOCIAL MARKETING

Is…

- the application of marketing to the solution of social and health problems
- a framework/structure that draws from psychology, sociology and anthropology
- focuses on changing the behavior of individuals by understanding
  - the target group's perceived benefits of adopting the new behavior
  - the target group's perceived barriers to adopting the new behavior

- and provides…
- a mechanism for tackling social problems by encouraging people to adopt behaviors good for
  - their own health and well-being
  - beneficial to society

PROCESS FOR DEVELOPING A SM CAMPAIGN



1. ASSESS

- Informal qualitative research
  - Community meetings
  - Interviews
- Qualitative Focus Groups
  - Content Men
  - Content Women
  - Princessfield Men
  - Princessfield Women
- Quantitative Survey Research

INFORMAL QUALITATIVE RESEARCH FINDINGS AND TARGET BEJAVIORS

FINDINGS

- Electricity costs are a big concern and lighting is a significant use of electricity
- Some Content and Princessfield community members participated in the Cuban Lighting program
- The cost of cooking fuel has forced high and inefficient use of traditional fuels (wood and charcoal)

TARGET BEHAVIORS

- Lighting: Individuals who currently do not use CFLs will install CFLs in commercial and residential buildings

Support required: Availability of CFLs

- Cooking: Increase use of gas and decrease use of wood and coal for cooking

Support required: Technology, such as pressure cookers, to reduce gas use during cooking

QUALITATIVE FOCUS GROUPS - FINDINGS

QUESTIONS

- Why do people do what they do?
- How many groups must change their behavior?
- What groups have influence over their behavior?
- What are the perceived barriers?
- What are the perceived benefits?
- Who do people trust for this information?
- Where do people look for information?

1) Content men also mentioned that sometimes coal is wasted and that coal is only good if wood is good. These are potential reasons to use less coal/wood and more gas and can be considered benefits of using gas, but could also suggest the opportunity to promote more efficient methods of cooking with biomass (wood, coal)

RESULTS

Barriers or Benefits	Content Women	Content Men	Princessfield Women	Princessfield Men
CFLs benefits	Save money (some)	Longer life; easy on eyes (children); TV; safer; cooler	Cooler, last longer	Last longer; save money for school fees
CFLs Barriers	Cost	Cost; only avail in town	Cost; current ones not as good as Cuban	Only avail in town; don't know brands, good quality (most not as good as Cuban)
Cooking Gas benefits 1)	Reduced smoke – health/odor; faster; clean pots	Food flavor; black pots – less women's complaints	Faster; cleanliness; flavor; reduced smoke	Less time to cook; cleaner/less dirty pots; reduced smoke; gas is modern
Cooking Gas Barriers	Cost	Cost? (not clear this is a barrier)	Cost; some think fuel choice does not matter	Cost

CHOOSING GROUPS TO TARGET

TYPES OF GROUPS

- Audiences include:
  - Primary audience
  - Influencers
  - The rest of the community – ability to support the behavior change or a shift in social norms
- Why different audiences?
  - Campaign works only for a portion of the community
  - Different groups have/use: different behaviors, different tools, perceived benefits and behaviors, different medi sources

Notes: If < 100, deal with the group directly, not through a mass campaign; ALWAYS engage the entire community

DETERMINING PRIMARY AUDIENCES AND INFLUENCERS

Differentiators	Yes	No
Do they have different behaviors or use different tools?	One segment for every audience of 100+ people	Not a segment
Respond to different messages or different barriers/benefits?	One segment for every audience of 100+ people	Not a segment

Question	Large Group?	Small Group?
Significant influence or provide support	If more than 100, include as a "support group"	If less than 100, engage the group in the campaign, but not through social marketing

POTENTIAL TARGET GROUPS IN CONTENT AND PRINCESSFIELD

LIGHTING

- Probable Target Groups:

Content and Princessfield:

1. Men who use electricity for lighting > 70% of the time and do not use CFLs now

2. Women who use electricity for lighting > 70% of the time and do not use CFLs now

Support Groups:

People who participated in Cuban light bulb program and still use CFLs; others who use CFLs now?

COOKING

- Probable Target Groups:

Content and Princessfield:

1. Men who use more gas and less coal/wood;

2. Men who use gas sometimes and coal/wood sometimes;

3. Women who use gas more and less coal/wood;

4. Women who use gas sometimes and coal/wood sometimes

* Support Groups: Those who already have found efficient ways to cook with gas (how to identify?)

DESIGN CAMPAIGN: MESSAGES, PRESENTATION FORMAT, CHANNELS AND DISSEMINATION METHODS

QUESTIONS TO CONSIDER

- Messages? Major themes? Convincing evidence? What do we want people to know or do?
- Packaging information? Presenting messages? Format?
- Channels to convey information?
- When do disseminate messages and how often repeated?

APPROACHES FOR TARGET AUDIENCES?

- Lighting: Content Men

Benefits: Long life, easy on eyes, TV, safer, cooler

Barriers: Cost

- Lighting: Content Women

Benefits: Save money

Barriers: Cost

DESIGN CAMPAIGN: MESSAGES, PRESENTATION FORMAT, CHANNELS AND DISSEMINATION METHODS

QUESTIONS TO CONSIDER

- Messages? Major themes? Convincing evidence? What do we want people to know or do?
- Packaging information? Presenting messages? Format?
- Channels to convey information?
- When do disseminate messages and how often repeated?

APPROACHES FOR TARGET AUDIENCES?

- Lighting: Princessfield men
- Lighting: Princessfield women

Are these groups the same?

Benefits: cooler, last longer, save money

Barriers: Cost; current bulbs not as good as Cuban light bulb program; do not know “good brands”

DESIGN CAMPAIGN: MESSAGES, PRESENTATION FORMAT, CHANNELS AND DISSEMINATION METHODS

QUESTIONS TO CONSIDER

- Messages? Major themes? Convincing evidence? What do we want people to know or do?
- Packaging information? Presenting messages? Format?
- Channels to convey information?
- When do disseminate messages and how often repeated?

APPROACHES FOR TARGET AUDIENCES?

- Cooking: Content Men

Benefits: Food flavor; less women complaining about dirty pots

Barriers: None clear, even cost

- Cooking: Content Women

Benefits: Reduced smoke; clean pots; cook faster

Barriers: Cost

DESIGN CAMPAIGN: MESSAGES, PRESENTATION FORMAT, CHANNELS AND DISSEMINATION METHODS

QUESTIONS TO CONSIDER

- Messages? Major themes? Convincing evidence? What do we want people to know or do?
- Packaging information? Presenting messages? Format?
- Channels to convey information?
- When do disseminate messages and how often repeated?

APPROACHES FOR TARGET AUDIENCES?

- Cooking: Princessfield Women

Benefits: Gas is faster, cleaner, improved flavor of food; reduced smoke

Barriers: Cost, Some not sure whether fuel choice makes any difference

- Cooking: Princessfield Men

Benefits: Gas faster, cleaner, improved food flavor; reduced smoke, a modern fuel

Barriers: Cost

USAID FROM THE AMERICAN PEOPLE

AILEG Analysis and Investment for Low-Emission Growth

VOLUME III: COMMUNITY RENEWABLE ENERGY AND ENERGY EFFICIENCY ACTION PLANS

QUALITATIVE RESEARCH ANNEX

THE AILEG PROJECT

CONTRACT NO.:EEM-I-00-07-00004-00
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October 2013

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Analysis and Investment for Low Emissions Growth (AILEG) Community Renewable Energy (RE) & Energy Efficiency (EE) Project

QUALITATIVE BASELINE DATA REPORT

Prepared by St. Catherine Development Agency (SACDA)

May 7, 2013

ACRONYMS

AILEG	Analysis and Investment in Low Emission Growth
CBO	Community – based Organization
CDRT	Community Disaster Response Team
CFL	Compact Fluorescent Light bulbs
EE	Energy Efficiency
GOJ	Government of Jamaica
JPSCO	Jamaica Public Service Company
LEDS	Low Emission Development Strategies
PCJ	Petroleum Corporation of Jamaica
PTA	Parent Teacher Association
RE	Renewable Energy
SACDA	St. Catherine Development Agency
SDC	Social Development Commission
USAID	United States Agency for International Development

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1.0 Background

The United States Agency for International Development (USAID) is funding the *Analysis and Investment in Low-Emission Growth (AILEG)* project to assist countries to build their capacity to conduct climate economic and investment assessments to support their transition to lower-emission economic growth pathways. The USAID's AILEG program supports climate change analytical decision-making and is providing assistance to the Government of Jamaica (GOJ) on several capacity-building activities to support low emissions development strategies (LEDS).

One component of the Jamaica AILEG project is the development of two community-based energy (EE) and renewable energy action plans. This task is being undertaken in one urban community called Princessfield and one rural community called Content in the Parish of St. Catherine, Jamaica. The Community-based Organization (CBO) St. Catherine Development Agency (SACDA) is working with these communities to carry out the assigned task. The CBO and communities were chosen through a competitive bidding process. The Project will be executed over *a* three months period which commenced April 1, 2013 and will end June 30, 2013. The short project period is strongly supported by the social capital that the CBO has developed with the participating communities over the past 19 years. This report details the results of the qualitative research using participatory methodologies carried out to contribute to the establishment of baseline data relevant to the nature of the project. The results of Focus Group Discussions are however documented in another report. The action planning process which will also include design of a social marketing campaign to target behavior change as relates to lighting choices and use of wood for cooking will be reliant on the information provided in the baseline data.

1.1 Goal of AILEG Jamaica

The goal of AILEG is to build capacity of the Government of Jamaica and other stakeholders to analyze low emissions scenarios and integrate them into economic development strategic planning and implementation, as well as conducting economic analysis to Promote investment in low emissions technologies and projects. Community-based energy efficiency (EE) and renewable energy (RE) Action Plans will be developed in one or more communities to support achievement of climate change goals and socio-economic objectives important to the community, including employment and youth engagement.

11.1 Main objectives of the community component

1. To provide the main link and manage relationship between AILEG team and the selected communities in order to collect and document baseline data and co- facilitate community meetings and workshops
2. To facilitate the process which will lead to the development of a community- based driven energy efficiency and renewable Action plan to support achievement of climate change, goals and socio-economic objectives important to the community including employment and youth engagement.
3. To increase awareness among community residents in selected communities on what is required to scale up investments in RE and EE at the community level.
4. To support the effort which will lead to the identification of funding sources to implement a pilot project in selected communities
5. To decide on a local climate change mitigation goal

1.2 Methodology for Baseline Data Collection

The methodology for collection of baseline data as regards energy use (lighting & electricity options and cooking fuels) in both Princessfield (urban) and Content (rural) includes document review and both qualitative and quantitative research to allow for triangulation of results This report presents the findings from the qualitative research. Participatory community data collection tools have been utilized and are:

(i) Community Transect Walk

(ii) Community Mapping

(iii) Historical Datelines

(iv) Baseline Workshop for Resource data collection

(v) Focus Group Discussions (reported on in the 'Draft Research Report').

The results are presented by community in sections 2.1 and 2.2 respectively.

1.3 Document Review

None of the documents reviewed had information directly related to the specific project communities and their use of energy. The Social Development Commission's (SDC) Community profile which was completed in 2007 addresses the Community of Bog Walk. Content and Princessfield are two of the fifteen districts which Bog Walk comprises. Bog Walk in 2007 had an estimated population of 15,389. Household heads

employment was 67% with 44% being full time and 40.1% self-employed. Among the unemployed at the time, 35.7% were males and 64.3% were females. The data also revealed that most of the unemployed members were unwaged for five years or more (41.6%). *(SDC Bog Walk Draft Community Profile, 2007)*
Most of the respondents at the time reported the presence of a longstanding health problem within their household (52.9%). Among household heads and family members, hypertension was the most common illness (22.4%); 8.7% suffer from asthma. There is one health care facility within the Community. The main challenge to accessing health care reported by respondents is financial constraint (42.7%). *(SDC Bog Walk Draft Community Profile, 2007)*

The top five developmental challenges reported by the respondents were; high levels of unemployment and youth unemployment, limited/no opportunity for training or employment, low skills level, poor representation by elected political leaders and high levels of high school dropouts. *(SDC Bog Walk Draft Community Profile, 2007)*
The main method of garbage disposal was by burning (77.9%). This was followed by "picked up by truck " (37.0%) while the least popular method was recycling which represents 1.1% of the households.
Electricity was the main source of lighting used for 94.8% of the households within the Community and only 5.2% of respondents used kerosene lamps as their main source of light.
Gas was the most popular cooking fuel used by households (91.7%) followed by charcoal (36.7%). Other less popular choices of cooking fuel were wood (10.3%), and electric stove (0.6%). *(SDC Bog Walk Draft Community Profile, 2007)*

The main findings of the Petroleum Corporation of Jamaica's (PCJ) Energy Survey (2007) complement those of the SDC Bog Walk Draft Community Profile (2007) and indicated that lighting in Jamaica was predominantly by electricity though some households mainly in the rural areas, still used kerosene and a few used candles: "*Cooking was mainly with Liquid Petroleum Gas (LPG), though some rural households used firewood or charcoal. Water heating was mostly by electricity, though some in rural areas used firewood; there were also some solar water heaters. Home businesses predominantly used electricity. Candles and kerosene were the major sources of backup lighting while some households also used flashlights and rechargeable fluorescents. Few had a generator."*

The PCJ Energy survey (2007) also revealed an increase in the use of electricity for lighting by 2006, and

an increase in the use of LPG for cooking, which coincided with a reduction in kerosene for these purposes and a reduction in the use of firewood and charcoal for cooking. Additionally the survey suggested that *"at a minimum, about 8.2% of all households did not pay for electricity service that they received, with a higher proportion of urban households. Similarly, a higher proportion of households headed by individuals less than 40 years of ages did not pay for electricity compared to households headed by older persons."*

Electricity consumption was higher in urban than rural areas, averaging 440 Kwh and 323 Kwh respectively. However, heads of households tended to consider energy efficiency in their decisions to purchase electrical appliances, (more so urban than rural heads of households).The most common appliances for entertainment were television sets in 93% of households, while about 74% had radios and 40% had component sets/stereos. DVD players and recorders were in nearly 39% of homes. For kitchen appliances, 82% of households had a refrigerator and nearly 35% had a microwave oven; the latter were almost twice as prevalent in urban households. Other high electricity use appliances (in addition to microwave ovens) were not common; electric water heaters were only in 6% of households, deep freezers in 11%, electric stove in 4% and air conditioners in 3% of households. The exception was the electric clothes iron in 88% of households. It was found that 16% had two or more televisions and over 19% had two or more fans.

According to the PCJ Energy survey (2007), the incidence of charcoal use was higher among female headed households compared to those that were headed by men and there was no significant difference in the use of charcoal by the age of household heads. The main factors associated with the consumption of charcoal were income, education, gender of household head, the size of households and cultural preferences. According to the survey, approximately 50% of households purchased charcoal in small quantities (Butter/cheese, Kerosene, and Paint Tins). This partially reflected the purchase by lower income households with unpredictable income flows. The remaining users, with more stability in income, bought charcoal in larger quantities (Rice/Fertilizer bags, Crocus bags) in an effort to economize. The Rice/Fertilizer bag and the Paint tin were the most common units of purchase for charcoal.

An estimated 41.9% of households used firewood (though many did not use it regularly), and its use in rural areas was twice that in urban areas. The pattern of use was similar to charcoal. Firewood was mostly used for "home cooking" followed by "special events".

With regards to Energy Conservation, about 79% of households routinely performed energy saving

practices. The most identified measure by 73.1% of respondents was the turning off of electric lights and appliances when not in use. About 40.0% said that they ironed less, while 28.0% reported that they opened the refrigerator less. Only 26.6% stated that their households used energy saving bulbs. The purchase of energy efficient appliances was listed by only a few, while some were watching less television. (PCJ Energy Survey, 2007)

2.0 Results of Qualitative Baseline Survey

2.1 Princessfield, St. Catherine (Urban)

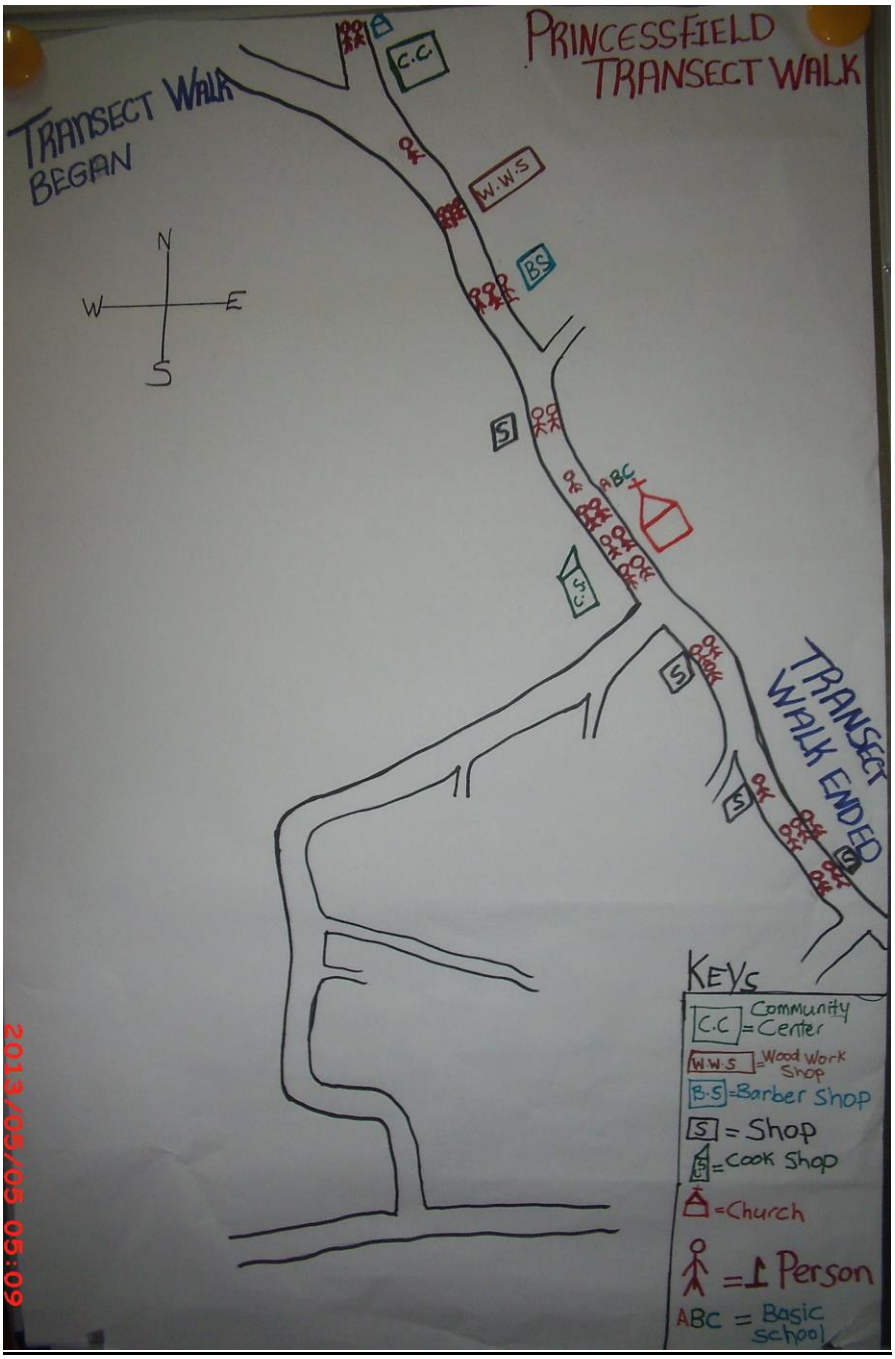
2.1.1 Transect Walk – Princessfield

The main road leading through the Princessfield community was selected to conduct the Transect Walk (Figure 1). The participants in the Transit Walk observed the use of Energy in the form of lighting and cooking. This road was selected as it is the main corridor that links the community to the outside Town. During the walk we talked, observed and listened. The Transect Walk started at Burton Community Center and ended at the intersection of High Mountain, Princessfield and August Town. The information collected on the walk was used to populate a map which was used for further community discussion.

Observation:

- There are several incandescent street lamps on the main road but not much in the lanes leading off between the intersection of Azar Lane and the Community Centre
- Approximately ten street lamps were identified
- There are two informal incandescent lamps on poles close to the community center.
- There are many illegal connections to the JPSCO lines
- Loose electrical wires dangled at the intersection of Azar Lane and main road.
- There are sections of the community with dwelling houses but no utility poles. These sections are off the main road. However these dwellings appear to have electricity.

Figure 1: Transect Walk – Princessfield



During direct observation, contact was made with twenty-seven householders in the area.

The table below gives a breakdown. Participants were engaged in discussion on two topics:

1. Reducing the use of wood for cooking
2. Lighting choices

Table 1 demonstrates that most persons who participated in the discussions use a combination of gas, coal and wood as cooking fuels. Table 2 demonstrates that most persons engaged in the discussion use incandescent light bulbs. Additionally, more women (5) than men (3) spoke of using a combination of CFL and incandescent light bulbs.

Table 1: Fuel Used for cooking – Princessfield

Age cohort	Gender	Coal only	Gas only	Wood only	Coal & gas	All 3
0-18=0 19-30=3 31-59=4 60-79=2 80+	Male	nil	nil	nil	2	7
0-18=1 19-30=8 31-59=5 60-79=4 80+	Female	1	3	nil	3	11

Comments:

- Most people interviewed responded by saying times are hard so they do what is necessary to save on cooking fuel.
- When asked if they know about the negative impact on the environment when they cut down trees and burn charcoal they responded by saying they know it's bad for the environment but they don't have a choice as LPG gas is expensive so they will have to use coal and wood as this was the only way they are able to survive.

- On the question of how often coal and/or wood are used. Answers vary as it is dependent on what is being prepared.
- "*When gas finish or when you are preparing something that takes a long time*," one person remarked.

Table 2: Lighting Choices – Princessfield

Age cohort	Gender	CFL only	Incandescent only	Both CFL & Incandescent	Other (Kerosene Candle)
0-18=0 19-30=3 31-59=4 60-79=2 80+	Male	1	5	3	9 (when there is a power cut)
0-18=1 19-30=8 31-59=5 60-79=4 80+	Female	nil	13	5	18 (when there is a power outage)

Comments

- Resident disclosed that they sometimes use the regular (incandescent) bulbs because they can't get the CFL when they need it. CFL are not available in the immediate community so residents have to travel to the town center to access CFL. "*By the time I take a taxi and pay $200.00 for fare to go to Linstead (nearby Town) I just go up the shop and buy the regular bulbs for $65.00"*
- Respondents argued that they know that CFL save energy but are more expensive.
- They also disclosed that a number of factors hinder them from accessing electricity such as land tenure and affordability.
- "*I live on lease land and when I went to get the light they (JPS) told me I need tax receipt"*
- "Is squat land I live on so I can't get anything legal, so I throw up wire"

- As it relates to saving money respondents argued that despite the fact that they try to do some of the following electricity bill is still high:

-Iron clothes once per week

-Turn off lights when not in the room

-Unplug appliances when not in use

-Not using TV as radio

-Use a kerosene lamp in the nights

2.1.2 Community Mapping

The community energy map (Figure 2) uses green dots to represent incandescent street lights. The red "X s" indicate light posts which all have incandescent light bulbs. The main community landmarks are shown as (i) Community Centre (ii) Reservoir (iii) churches and (iv) Basic Schools. They all use incandescent lighting.

Figure 2: Princessfield Energy Map

Note: This is a photograph of the Map done by Community Participants on the Transect Walk led by the SACDA Community Officer for Princessfield. The original is kept in the SACDA Office.

2.1.3 Historical Profile

Table 3: Princessfield Energy Historical Profile

Timeline	Action
1950	First stand pipe
1961	Water came to community
1967-1968	Reservoir was built
1950-1970	Electricity came to community (by sections)
1970-1980	Residents connect to grid (continues)
2000 - 2013	Illegal connection escalated

2.1.4 Baseline Workshop – Princessfield

2.1.4.1 Introduction

The Baseline Workshop was convened at the Calvary Holiness Church in Princessfield St. Catherine on Tuesday April 30, 2013 commencing at 10:00 am. The Prayer, introduction and welcome were done by Community Project Officer, Marlene Martin. Janet Bedasse, (AILEG Community Facilitator) Dr. Alicia Hayman (AILEG Country Coordinator) and the Balcostics Research team members were introduced to the participants. Dr. Alicia Hayman informed the participants that she was observing the day's activities.

The results of the workshop were instrumental in making the pastor of the church where the workshop was held realize that the church is also serving as a community center:

- It has been housing the senior citizen programme for over six years
- It accommodates the CDRT meetings and other activities such as:

-Farmers meeting

-Information Fair

-Fund raising activities for the various groups

-Community meetings

Groups represented: 67 community members including males, females and youths attended the session (15 males and 52 females). Some of the persons included in this group of participants are members of the following community groups:

-Church

-Basic School

-Youth club

-Community Disaster Response Team (CDRT)

-Parent Teachers' Association

-Farmers Group

-Senior Citizens

2.1.4.2 Purpose of Workshop

Community Facilitator, Janet Bedasse discussed the purpose of the workshop, which was to gather additional data about the resources of the community. She also formally introduced the Balcostics Research Team to members of the Princessfield community. A representative of the research team spoke briefly to the participants about the purpose of the questionnaire survey they will administer and expectations of community cooperation.

2.1.4.3 Workshop facilitation and Methodology

The workshop was facilitated by Nellie Richards, SACDA Programme Manager. The methods employed were:

- Small Group discussion
- Plenary discussion
- Large group discussion

2.1.5 Data Collection Results

Participants were assigned to groups using a numbering system 1-5 with all like numbers forming a group. A total of five groups were assigned to conduct different tasks then report to the plenary.

The tables below illustrate the findings of the various groups with respect to the natural, physical, social, financial, and human resources of the Princessfield community.

Table 4: Natural Resources in Princessfield

Natural Resources	Uses
Wind	Dry clothes, ventilation
Sun	Natural Light
	Solar Energy
	Dry clothes
	Vitamin E
	Energy for the plants
Rain	Drinking water
	Cooking
	Washing
	Bathing
	Watering plants
Soil	Farming
	Food
	Minerals
	Bauxite
	Lime stone
Trees	Shade
	Fruits
	Food
	Fuel
	Carbon dioxide
	Prevent soil erosion
	Paper
Medicinal plants Tree of Life, Aloe Vera, search me heart, Bittergoard, Bissey Fever Grass, etc.	use for different ailments (these plants are boiled for drinking)

Table 5: Physical Resources in Princessfield

Physical Resources	Uses
Churches	-worship -wedding -concerts -funerals -meeting -Graduation -Health Fair -fun days -Community meeting -Senior Citizen meeting
Basic School	-Education -Bar-b-que -sports -fairs -meeting -Storage
Community center	-Education(evening Classes) -sports (foot ball, community sport) -farmers meeting -Family reunion -concerts
Shops	-Grocery -Fuel(Gas, Coal, Kerosene oil) -Entertainment
Madison Square Garden (Cock Pit)	-Gambling -Entertainment -Cock fight
People	-Labour force

Physical Resources	Uses
Reservoir	-Water
Road	-Transportation -Job creation -Vending

Table 6: Social Resources in Princessfield

Social resources	Types of social gatherings
Churches	-Concerts - YP cook out -Rallies -Beach trips
School	-Sport days -Graduations
Youth Club	-Net Ball -Foot ball -weekly meetings
Senior Citizen Club	-Outings -Christmas Treats & Dinner -Games day
Farmers Group	-monthly meeting -Games Day
Schools	-Sporting Activities
Cock pit (Madison Square Garden)	-Cock Fighting -Gambling
CDRT	-Chicken back Fridays -Gospel Concerts -Beach Trips

Table 7: Financial Resources in Princessfield

Financial Resources	Types
Farming	-Poultry Rearing(Broiler, Layer) -livestock (Pig Farming, Goat, cow) -Crops (yam, banana, plantain, cabbage, callalo, Pumpkin, coco, sweet pepper)
Shops	-Groceries -Gas -Coal -Toiletries
Coal Burning	-Coal (retail & Wholesale)
Taxi, School Bus	-Transportation
Gambling	-Pick three -cash Pot -Cock fighting
Remittance	
Hustling	-CD, DVD
Small Businesses	-Hair Dresses - Barbers - Mechanic shop (garage) -Cook Shop -
Partner	-Weekly -Dailey -Monthly

Table 8: Human Resources in Princessfield

Human Resources	
Nurses	-Practical nurse -Register Nurse
Teachers	-Principals -Basic School teachers -Primary School -High School
Police	-
Pastors	
Accountant	
Councilor	
Justice of the Peace	
Security Guard	
Engineer	
Mechanical Engineer	-Specialized in energy
Farmers	
Taxi Drivers	
Bus Drivers	
Undertakers/Embalmers	
Small Business operator	-Coal vending -Grocery Shops -Cook Shop/Chefs -Higglers -Garage -Mechanics -Computer Repair

Law Clerk	
Craft Maker	
Professional Dancers	
Musicians	

Table 9: Remittances – Princessfield

Participants were of the opinion that it is hard on the persons sending remittance to them. They believe it is just as difficult for relatives and friends living abroad to keep jobs in this financial meltdown.

"*Sometime when you calling them they don't answer because they believe you are going to beg them money*"

Remittances	**Sender**
Who is sending?	-Boyfriend -Husband - Children -Family -Friends
What the sender does to earn	-Two jobs -Partner -Domestic work - Chef -Hotel Work
How often they receive?	-"when you ask them" -"every two weeks" -At Christmas time -Monthly -every six months

2.1.5.1 Differences between Male and female and how they make a living in Princessfield

Participants discussed the differences in how men and women make a living at length and could not find anything apart from 'domestic work' as the females do all other jobs but the men don't do domestic work.

Female

"*We do anything to make a living, we have to eat bread"*

"We are not afraid to burn coal or mix cement"

"The only thing we do that men don't do is domestic (household helper) work"

2.1.5.2 Quality of Life indicators

Focus Question for discussion:

'What do you need to have to say or think you have a good quality of life?'

This was discussed in the large group extensively. Overall, residents thought it doesn't take a lot of material things to have a good quality life.

However some of the younger participants thought it important to enjoy **good** quality of life.

They believe a good character is more important than cars and big houses.

Participants were very open in their comments some of which are shared below.

- "Good attitude and values are most important"
- "A good Education"
- "It is your quality of life, sharing with others, being respectful"
- "Your personality, honesty, discipline determines whether or not you have a good quality of life"
- "The way you relate to people, loving your neighbor"
- "Good health"
- A male participant commented "*I burn coal and don't live in a big house but I enjoy a good quality of life"*
- A younger participant stated "Yes it's important to have a good character but you still need to have some material things like a car and a concrete house"

2.1.5.3 Closing Session

At the end of the workshop, the participants were introduced to the idea of setting up a smaller working group to carry forward some of the activities. The persons who volunteered are named in the participants' listing in Appendix 1.

The workshop was adjourned at 2:00pm

2.2 Content Community, St. Catherine (Rural)

2.2.1 Transect Walk

The Transect Walk was undertaken in the Content Community on April 24, 2013. The purpose was to explore the energy usage by observing, asking, listening, looking and producing a transect diagram (Figure 3). The walk was done on the main road from Content Square leading down to Cameron, two lanes leading off the main road, Gate Hill and Turner Town. During the walk, forty-nine households were engaged in discussion on the two topics – 'Lighting & Reducing the use of wood for cooking. The information collected during the Walk was used to populate a map based on which further discussion was held among residents.

Observation:

- It was observed that four incandescent street lamps were on the main road leading down to Cameron.
- No street lamps in the lanes leading off the main road
- Two private incandescent street lights and three other incandescent lights that persons improvise at their gates.
- There were some illegal connections that were very discreet; in one case you could hear an electric plane working but could see no JPSCO connection.

The table below shows the breakdown of residents engaged in discussion (males-21, females-28), and the results. Most male household heads (13) used a combination of coal and gas followed by 6 users of coal and wood. Most women household heads (14) used coal and wood followed by 9 users of coal and wood.

Table 10: Fuel used for Cooking - Content

Age cohort	Gender	Coal only	Gas only	Wood only	Coal & gas	Coal &wood	All three
30-50= 11 51-60=2 61-70=6 71- 80=1 80+=1	Male	nil	nil	nil	13	6	2
30-50=17 51-60=2 61-70=2 71-80-=4 80+=3	Female	nil	nil	1	9	14	4

Comments:

- Some persons said that the gas is very expensive so they have to use it only when they are pressed for time like early in the mornings when the children are going to school.
- *"Although the wood burn my eyes sometimes and cause them to run water,*

I have to use the wood along with the coal as the wood is free and can be found everywhere," one lady said**.**

- ***"****I love my gas, can't do without it at all, even if me don't have what to cook on it, I still love to have it,"* another lady remarked.

Figure 3: Transect Walk - Content

Table 11: Lighting Choices - Content

Age cohort	Gender	CFL only	Incandescent only	Both CFL & Incandescent	Other (Kerosene Candle)
30-50=11 51-60=2 61-70=6 71- 80=1 80+=1	Male =21	1	17	3	21(when there is an outage)
0-18=1 19-30=8 31-59=5 60-79=4 80+	Female =28	1	22	5	28(when there is an outage)

Table 11 demonstrates that the popular choice for lighting by both men and women are incandescent light bulbs. More women (5) than men (3) spoke of using a combination of CFL and incandescent light bulbs.

Comment:

- "*Mi really have to try to change out all the bulbs to florescent and see if the light bill will go down. A me alone live and me can't understand how come the light bill so high*." A 62 year old male remarked.

2.2.2 Community Mapping

The community mapping exercise captured the houses, churches, shops, schools, social club and street lights. All use incandescent light bulbs.

Figure 4: Community Map – Content

Note: This is a photograph of the Map done by Community Participants led by the SACDA Community Officer for Content. The original is kept in the SACDA Office.

The small yellow circles depict street lights which are all in working order but use incandescent bulbs.

2.2.3 Historical Energy Profile - Content

Table 12: Historical Energy Profile – Content.

Timeline	Action
1980	Electricity came to the community
2000	Illegal connection escalated
2008-2009	650 gallon black tank water harvesting project

2.2.4 Baseline Workshop - Content

2.2.4.1 Introduction

The Baseline Workshop was conducted in the Content Community, St. Catherine on April 29, 2013. Devotion, welcome and introduction were done by Nellie Richards, Programme Manager. Among the persons in attendance were:

- Mr. Gerald Lindo representing the Ministry of Technology, Science, Energy and Mining
- Community Facilitator, Janet Bedasse
- Research Team from Balcostics Research Company
- SACDA's staff

2.2.4.2 Purpose of Workshop and Agenda

Nellie Richards, Programme Manager, explained the purpose of the workshop as well as the agenda. She introduced the Community Facilitator, Janet Bedasse who facilitated the session.

2.2.4.3 Presentation

Mr. Gerald Lindo, a representative from the Ministry of Technology, Science, Energy and Mining did a presentation on Community RE and EE in Jamaica. While he could not speak to specific projects he advised that the practice of energy efficiency through use of fluorescent light bulbs could go a long way in providing savings on energy. Also discussed was how people use their electrical appliances. The plugging out of refrigerators at night time and the plugging out of all electrical appliances when not in use were suggested as energy saving practices which worked well. He used the club house in which the meeting

was being kept as an example for renewable energy use and after being told that the light bill was presently at $1000/month told the community members that an investment in solar energy/photovoltaic cells could mean no electricity bills at all. Additionally Mr. Lindo used the opportunity to share a more efficient "wood packing" methodology with the coal burners. In doing this he emphasized less air openings when the coal kiln is being packed.

2.2.4.4 Introduction of Research team

The Balcostic Research team was formally introduced to members of the Content community who were present at the meeting.

2.2.4.5 Resource Data Collection

The Facilitator took the participants through a large group discussion session where the participants identified and discussed available resources in the Content community and their uses. The following tables outline the information generated from the discussion about natural, physical, social, financial and human resources in Content.

Table 13: Natural Resources in Content

Natural Resources	***Uses***
Wind	Drying clothes, ventilation
	Keeps you cool
Trees	Food, fruits, dinner, health juice/drink, rainfall, breaks the wind, prevents soil erosion, stores carbon dioxide, and gives shades and flowers for beautification.
Medicinal Plants Dog Blood, Guinea Hen Weed, Tree of Life, Pepper Rila, Sour Sap Leaves,	For various types of ailment

Natural Resources	***Uses***
Crease, Jack –in –the bush, Fever Grass, Pepper Mint, Noni. Medical Plants	
Sun	Lighting, drying of clothes, Energy for human, warming the body
Rainfall	Water Harvesting, drinking washing, bathing, watering plants
Land	Soil (fertile) for farming and buildings.

Table 14: Physical Resources in Content

Physical Resources	**Uses**
Club House	Community meetings, birthday parties, crusade Funeral, other community events.
Gas Dealers	Supplies community residents
School (basic)	Educate our children
Churches	Funerals, graduation, concerts, rally, anniversary
Shops	Flour, sugar, rice, chicken back, toiletries ,
	Cooking oil (buy bottle and measured)
Road (fairly good condition)	Travelling
Hair Dresser, Nail Tech. Car wash	Beauty & hygiene
Water Tanks (3)	Store water for domestic uses for the residents
Street Light	Lighting (illumination)
Water Harvesting	Black Plastic Tanks & concrete tanks
Postal Agency	Neighboring community serves Content residents.

Physical Resources	Uses
1. Primary School & 3 basic.	Neighboring community serve Content children.
Entombed Spring (for water in Giblatore and its environs.)	Serves Content community residents.

Table 15: Financial Resources in Content

Financial Resource	Description
Farming	Crops, livestock, poultry
Partner	Daily, weekly, monthly
Remittances	Fortnightly, monthly
Selling	Farm produce and charcoal
Travelling Sales Persons	Clothes
Domestic Work	Day, weekly, fortnightly
Trading	Cash for Gold
Shop Keepers	grocery
Vending	school
Hustling	Linstead and Bog Walk to earn money
Water Harvesting	Black Plastic Tanks & concrete tanks
Postal Agency	Neighboring community serves Content residents.
1. Primary School & 3 basic.	Neighboring community serves Content children.
Entombed Spring (for water in Giblatore and its environs.)	Serves Content community residents.

Table 16: Human Resources in Content

Farmers	Social Worker
Dressmakers	Quantity Surveyor
Tailors	Solider

Carpenter	Mechanics
Masons	Search and Rescue Officers
Welder	Businessman/woman
Cabinet Maker	Chef
Hair dresser	Cooks
Lawyer	Housewives
Police Officer	Store Clerks
Correctional Officer	Taxi Drivers
Minister of Religion	Security Officer
Justice of the Peace	Farm Worker (Ministry of Labour)
Teacher	
Research Officer	

Table 17: Social Resources in Content

Peer Support Group	Giblatore Combined Benevolent Society
Farmers Association	First Aiders
Community Disaster Response Team	Light Search & Rescue Team
Shelter Management	
Senior Citizen	

Table 18: Farming in Content

Types	Description
Crops	Sweet Pepper, tomatoes, sorrel – ($25.00 per pound at Christmas time) Callalo,
	Cabbage, carrot, pak choi,yam, sweet potatoes
	Red peas, gungo peas, corn, plantain, banana, cassava.
Livestock	Pigs, goats, cows
Poultry	Broiler & layer
Casual Laborer	Working in citrus & cane fields (male& female) Days work on a

	farm,- $1500.per week

2.2.4.6 Differences in work done by women and men in the Content community

The participants discussed the differences between how men and women make a living.

It was argued that although men and women make a living by doing the same job, more men are laborers and involved in burning charcoal than the number of women. While on the other hand more women are employed as domestic workers compared to men. "*The men cannot do domestic work - people will call them sissy or maama man."* a participant remarked.

Table 19: Livelihood activities by gender in Content

Men	Women
Farm	Farm
Higglering	Higglering
Coal burning(more)	Coal burning
Labourer (more)	Labourer
Farm Workers	Domestic Workers

2.2.4.7 Quality of life

Participants listed the following as necessary for them to have "a good quality life".

- Good house with concrete structure
- Good job which pays them enough to take care of a family
- Have a nice car such as a Lexus, Honda, X6
- "If a person has a Nissan or a Toyota the person is enjoying a good quality life, it is what the person has"

2.2.4.8 Closing session

The next sets of activities under the project were discussed with participants. Community members verbalized that energy saving was taken for granted and that they have never given priority to energy saving.

3.0 Participants List for Princessfield and Content

3.1 List of participants in data collection activities – Princessfield

Name	Gender	Introduction Of project To community April 16,2013	Focus group May 2,2013	Baseline Workshop April 30,2013	Working group
Sandra Gordon	Female		✓	✓	✓
Claudine Fisher	Female	✓	✓	✓	✓
Merilda Young	Female	✓	✓	✓	✓
Herman Davidson	Male			✓	✓
Karen Gyles	Female	✓	✓	✓	✓
Tyrone Davis	Male	✓	✓		✓
Winston Pryce	Male	✓	✓	✓	✓
Eugenia Palmer	Female		✓	✓	✓
Angela Campbell	Female	✓	✓	✓	✓
Joshua Gyles	Male	✓	✓	✓	✓
Michael Chambers	Male	✓	✓	✓	✓
Wilton Johnson	Male				✓
Tyrone Mitchell	Male	✓	✓		✓
Isaiah Barnett	Male	✓	✓		✓
Fitzhugh Sepaul	Male	✓	✓	✓	✓
Lydia Russell	Female	✓		✓	✓
Bincata Edwards	Male	✓	✓	✓	✓
Navado Palmer	Male			✓	✓
Eric Edwards	Male	✓	✓	✓	✓
Nadane Brown	Male	✓		✓	✓
Royal Young	Male			✓	✓
Olive McPherson	Female	✓		✓	✓
Pauline Beckford	Female	✓		✓	✓
Tameka Barnett	Female	✓	✓	✓	✓
Michelle Hamilton	Female	✓	✓	✓	✓
Samantha Barnett	Female	✓	✓	✓	✓
Deloris Davidson	Female	✓	✓	✓	
Clifton Walker	Male	✓		✓	

Patrice Howell	Female	✓	✓	✓	✓
Ritenella Sinclair	Female	✓		✓	
Ruth Douglas	Female	✓		✓	
Carolee Jadoo	Female	✓		✓	
Irene Patterson	Female	✓		✓	
Jasmine Barnett	Female	✓		✓	
Acacia Campbell	Female	✓		✓	
Shantel Laing	Female	✓		✓	
Elaine Sinclair	Female	✓		✓	
Winifred Stewart	Female	✓		✓	
Rigg Maiden	Female	✓		✓	
Algeria Bryan	Female	✓		✓	
Velmarie Francis	Female	✓		✓	
Veronica Hibbert	Female	✓		✓	
Ernest surgeon	Male	✓		✓	
Tivyana Marshall	Female	✓	✓	✓	
Ironie Panton	Female	✓	✓	✓	
Marjorie Laing	Female	✓		✓	
Esmine Williams	Female	✓		✓	
Nicole Prendergast	Female	✓		✓	
Jhennell Laing	Female	✓		✓	
Brenda Campbell	Female	✓		✓	
Dorothy Alvaranga	Female	✓		✓	
Maureen Campbell	Female	✓		✓	
Larraine Cole	Female	✓	✓	✓	
Petrona Campbell	Female	✓		✓	
Sharon Thompson	Female	✓		✓	
Camille Scott	Female	✓		✓	
Kaydean Smellie	Female	✓		✓	
Juliet Williams	Female	✓		✓	
Estrella Witting ham	Female	✓		✓	
Ionie Lawrence	Female	✓			
Gloria Abrahams	Female	✓	✓	✓	
Enka Brown	Female	✓		✓	
Agatha Garricks	Female	✓	✓	✓	
Joycilda Green	Female	✓		✓	
Zeta Campbell	Female	✓		✓	
Patrick Steele	Male	✓	✓	✓	

Priscilla Campbell	Female			✓	
Daphne Williams	Female	✓		✓	
Wilfred Campbell	Male	✓	✓		
Icilda Thompson	Female	✓			
Detha Campbell	Female	✓			
Izet Robinson	Female	✓			
Kayla Aldane	Female	✓			
Steven Lynch	Male	✓			
Marcia Brown	Female	✓			
Mavis Simms	Female	✓			
Princess Pringle	Female	✓			
Javalene Ellis	Female	✓			
Renaika Walker	Female	✓			
Neisha Munn	Female	✓			
Shanque Spence	Female	✓			
Shaniel Spence	Female	✓			
Trevene McDonald	Female	✓			
Kemeisha Fenton	Female	✓			
Latascia Campbell	Female	✓			
Tasmin Scott	Male	✓			
Milton Clarke	Male	✓			
Deedan Codrington	Male	✓			
Beverly Scarlet	Female	✓			
Isaac Smart	Male	✓	✓		
Desmond Young	Male	✓	✓		
Bancroft Campbell	Male		✓		

3.2 List of participants in data collection activities – Content

#	Name	Gender	Community Meeting (Intro.) April 9, 2013	Focus Group May 1, 2013	Community Baseline Workshop April 29, 2013
1.	Angella Dennis	F	√		
2.	Anthony Henry	M	√		
3.	Barbara Blair	F	√		√
4.	Carolee Borrell	F	√		√
5.	Charleen Huggins	F	√	√	√
6.	Donald Jordon (Charles)	M	√	√	√
7.	Cherry Turner	F	√	√	√
8.	Claudette Laing	F	√		√
9.	Copeland Huggins	M	√		
10.	Daphne McDonald	F	√		√
11.	Deadre Jordon	F	√		√
12.	Deedan Codrington	M	√		
13.	Delrose Jarrett	F	√	√	√
14.	Demonie Wilkie	M	√		
15.	Denise Hare	F	√		
16.	Desmond Ashman	M	√		√
17.	Desna Morris	F	√	√	√
18.	Donnette Thomas	F	√		
19.	Earnest Hyde	M	√		
20.	Elaine Worrell	F	√		√
21.	Elizabeth/Yvonne Laing	F	√	√	√
22.	Gary Hyde	M	√		√
23.	Glenmore Cobourne	M	√	√	√
24.	Gretel Hare	F	√		
25.	Gertrude Blair	F	√		√
26.	Gertrude Liang	F	√		√
27.	Herminie Laing	F	√		
28.	Hyacinth James	F	√	√	
29.	Icilda Cobourne	F	√		
30.	Icis Cobourne	F	√		
31.	Jadine Hare	M	√		
32.	Jellawnie Hyatt	M	√		
33.	Jennifer Thompson	F	√		√

34.	Jeannette Fisher	F	√		√
35.	Joan Laing	F	√	√	√
36.	Josephine Jordon	F	√		√
37.	Joyce Livingston	F	√		
38.	Kaya Davis	F	√		
39.	Keith Brown	M	√		
40.	Keith McCook (Councillor)	M	√		
41.	Keith Turner	M	√		√
42.	Kenneth Hare	M	√		
43.	Kerrica Edwards	F	√		
44.	Linton Worrell	M	√		√
45.	Lorna Dawkins	F	√		
46.	Lorraine Bennett	F	√		√
47.	Lindsay Blair	M	√		
48.	Magrette Walters (PC)	F	√		
49.	Matilda Parks	F	√		
50.	Melissa Richards	F	√		
51.	Michael Cobourne	M	√		
52.	Mildred Laing	F	√		
53.	Nadine Thomas	F	√	√	√
54.	Natalie Turner	F	√	√	√
55.	Nathalie Harris	F	√	√	√
56.	Negretta Wilson	F	√		√
57.	Neville Rowland	M	√		
58.	Nicola McDonald	F	√		√
59.	Nnekia Powell	F	√		√
60.	Noveletta Welsh	F	√	√	
61.	Orette Wilkie	M	√	√	√
62.	Ovenia Dackett	F	√		
63.	Patrick Laing	M	√		
64.	Paulette Blair (Pastor)	F	√		√
65.	Portia Huggins	F	√	√	
66.	Rupert Fuller	M	√	√	√
67.	Sandra Wilson	F	√	√	√
68.	Stacey-Ann Jordon	F	√		√
69.	Suvenia Williams	F	√		
70.	Sylvena Thomas	F	√	√	
71.	Sylvester Harris	M	√	√	√

72.	Sylvester Laing	M	√	√	√
73.	Sylvia Cobourne	F	√		
74.	Tameka Taylor	F	√		
75.	Thelma Simpson	F	√		
76.	Toney Anthony Gayle	M	√		
77.	Victoria McDonald	F	√	√	
78.	Vincent Herron	M	√	√	√
79.	Vincent Thompson	M	√		
80.	Yvonne Ashman	F	√	√	√
81.	Keisha Walters	F		√	√
82.	Naderia Hyde	F		√	
83.	Simone Halsall	F		√	
84.	Kedesha Laing	F		√	
85.	Howard Laing	M		√	√
86.	Donna Laing	F			√
87.	Elizabeth Worrell	F			√
88.	Trezell Harris	F			√
89.	Cassandra Blair	F			√
90.	Abby gay Worrell	F			√
91.	Delores Brown	F			√
92.	Donna McKenzie	F			√
93.	Shakaya Blair	F			√
94.	Simone Young	F			√
95.	Joan James	F			√
96.	Lennord Bennett	M			√
97.	Denise Donegal	F			√
98.	Claudius Thomas	M			√
99.	Neville Huggins	M			√
100.	Nicholas Blair	M			√
101.	Lisa Worrell	F			√
102.	Shanna-Kay Johnson	F			√
103.	Samantha Francis	F			√
104.	Zodi-Ann Fuller	F			√
105.	Alrick Laing	M			√
106.	Maurice Wilson	M			√
107.	Kadian Thomas	F			√
108.	Doreen Grant	F			√
			80	28	64

4.0 Focus Group Discussion Transcripts

4.1 Women's Focus Group – Princessfield

AILEG 014 EE and RE Project
Princessfield
Women Focus Group

Focus group discussion targeting women was held in the Princessfield community at the Cavalry Holiness church. 18 women attended and participated in the session. Nellie Richards conducted the session

Groups represented:

- Church
- Basic School
- Youth club
- Community Disaster Response Team (CDRT)
- Senior citizen group
- Farmers
- Community residents

Lighting

1 What kind of lighting do you have in your home- inside, outside?

- Incandescent bulbs
- CFL bulbs
- Kerosene Lamps
- Candles

Ii .What are the choices you have for lighting/what option are available?

- Kerosene
- candle
- incandescent bulbs available in the community

- The community shops don't stock CFL bulbs

iii. **What do you consider when choosing lighting?**

- Cost is what influences choice
- "Light bill too high so I have to see how I can save"

2. **What is important to you in terms of types of lighting?**

- The cost is most important to all the women in the study
- "Light bill is too high"
- "I choose to pay light bill first because when they (JPS) turn it off even after you pay they take a long time to reconnect it"
- "You can buy food in parts but if you pay in parts it going to be disconnected"
- "I can't live in the dark so I have to pay light bill first"

ii. Impact on household expenses?

- "Less money to spend on other bills"
- "I have children to go school and some time I have to pay the bill and don't send them to school"

.**I. What information have you heard or read about electricity use or cost of different lighting options?**

- "Utility company usually send some information in the bills but more recent bills are received via text message thus this information in no longer coming.
- "Most people don't really want to steal light but they don't understand"

4 **i. how do CFLs compare to regular incandescent lighting?**

- "CFL are cooler"
- "Last longer"
- "They are more expensive"

ii. Where do you buy lighting?

- "Walk- sales men"
- "Community shop"
- "Wholesales and supermarket
- "Street side vendors"

iii. **Do you feel the options available for lighting are affordable?**

"There is a choice between the cheaper (incandescent) and more expensive (CFL)"
"Kerosene and Candle more expensive than electricity"
"Our counsellor cut a lot of trees along the roadways so my husband drive his cart and pick up wood and store them so we have a lot of wood"
"Wood is free we selected woods in the bushes on and the street side"

IV. **Are there problems with the CFLs bulbs available for purchase?**

"They don't last as long as those received under the Cuban light bulb Program."

5.

i. How important is it to you to save on electricity bills?

- According to the ladies in the study it is extremely important for them to save on electricity bill as this would allow for them to take care of some other things around the home especially the children and grandchildren.
- "If I could save on light bill I would be very glad for I am not working and my little pension can't pay what I get"
- "People don't like thief (steal) light but they just can't afford it"

ii. Is the quality or amount of lighting important to you?

- 'Yes it is because we have a lot of appliance e.g. refrigerator, computer, TV. etc"
- "I have to get Current to run my things (appliances)"

6 i. **When you want to save on electricity, who do you ask for advice?**

- "We no really ask anybody but we talk about it as in group as women for the bill high bad"

<u>TIPS on how to save on Electricity bill</u>

- Iron at night -Off peak Hours
- Do all your ironing at once
- Don't use your Television like radio
- Unplug appliances

<u>Additional information</u>

- There is an area with eighteen dwelling houses and only three household are on the JPS grid legally.
- There are persons that would like to get their homes regularized but a number of factors hinder this process such as land tenure, unemployment and squatting.

Cooking

1.i. What kind of fuel source do you use for cooking?

- Gas, Coal, Wood
- Gas & wood
- Some people use Wood only

ii. What are the choices you have for cooking that are available to you?

- Gas, Coal, Wood
- Gas & wood

iii. What do you consider when choosing fuel sources for cooking?

- The amount of time available
- To conserve
- How clean it is
- Cost
- Flavor
- "I use coal to cook dog food"
- "Wood cook rice & peas nicer than gas but you have to use the right type of wood, like Log wood, Pimento wood, Orange and guava wood."

iv. Can your cookstove use multiple fuels?

No.

2. i. What is important to you in terms of the type of cooking fuel you use?

- How clean it is?
- "Coal and wood black up your pots"
- How easy it is to use
- "When I wake up early in the morning and have children to prepare for school I just want to be able to light my stove and go"
- Efficiency
- "I have to work so the time it takes to light the coal I would finish cook"
- Health concerns
- "I believe the smoke from cooking with wood affect the eyes"
- "The coal and wood affect your asthma and sinus"

ii. How Important are your cost of fuel for cooking in terms of impact on your expenses?

- "I use to put up a little money for rainy day and get a big Light bill and had to pay it so from November 2012 I have been using wood only"
- All the expenses count

3 i. what information have you heard or read about the cost of different cooking fuels?

- The only information you get from the retailers are price increases.
- "Every week gas price rise"

ii. Do you and your neighbors talk about making decision about the cooking fuel you will use?

- "No we don't"
- "I know what they are using but we don't really talk about it"
- "We just do our own thing"

iii. Are there other place you talk about cooking fuel use in your home i.e. church, other?

- No
- "Church is for different things"

4i. How does cooking with wood compare to cooking with LPG gas?

- "Wood produces a lot of smoke but it is free so residents use it to prepare things they consider hard to cook."
- " Cooking with wood also create health issues"
- "Cooking with gas is cleaner"
- "I can't bother with the blackness, Coal and wood dirty up everywhere"
- "Using gas is quicker and cleaner."
- "I teach and have to be at school early so I can't spend time lighting coal or wood, and I would smell of smoke"

ii. Where do you obtain fuel for cooking (LPG, WOOD, and COAL other)?

- "LPG is readily available in the community as there is a shop that sells it".
- "There are also salesmen that do house delivery for an added cost. While some people source coal outside of the community as far as the parish of St. Ann.
- "Coal is more accessible as many person burn it while others sells it for a livelily hood."
- "I burn coal so I don't have to buy "
- "I cut a lot of trees but I plant them back I use fruit trees to replace the ones I cut"
- "I buy coal in St. Ann"
- "I buy in Giblatore community"

iii. Do you feel the options available for cooking fuel are affordable?

- "Coal is more affordable than LPG gas."

- "Wood is free"
- "We have a lot of Wood in this community"

5i. How is cooking with coal different than cooking with LPG gas?

- Some of the ladies in the study believe there is no difference in what you use to cook while others believe it does.
- Wood offer some flavor to the food some participant also thought it cook faster than the gas.

ii. How important is it to you to save money on cooking fuel?

- While the electricity bill is once per month cooking is every day hence, it's important that they find a way to cut the cost.
- "People must eat especially children and older person"
- "You have to save a little gas so if you get sick in the night you can boil a little water"

iii. Is the quality or amount of cooking fuel important to you?

- Quality is important we prefer gas but we cannot afford it
- Wood give off smoke, coal is not clean.

6i. When you want to save money on cooking, who do you ask?

- "We don't ask anybody we just do what we have to do".

ii. Does your LPG retailer have information campaigns? Do you believe their claims? Have you followed any of their advice? If so were the results what was promised or suggested?

- No information is available from retailer.
- "The only thing him tell you is the cost"

7i. Do you find the information at retailers (that sells LPG gas) informative? If not, why not?

- No information

ii. Do you receive information on saving money on cooking when you buy fuel? Is it helpful?

- No information

4.2 Men's Focus Group – Princessfield

AILEG 014 RE and EE Project Princessfield, St. Catherine

Men Focus Group, Princessfield, St. Catherine

Summary

Focus group discussion was held in the Princessfield Community, St. Catherine at the Calvary Holiness Church. Session organized by SACDA staff. Men were targeted and selected based on age, position in the community, residents of the community, representatives of the various institutions in the community, business persons and youth,

Programme Manager, Nellie Richards discussed the purpose of the Focus Group as well as introduced and explained Consent Form to the participants. Participants read and completed the forms prior to the start of the discussion.

The discussion session was led by Community Facilitator Janet Bedasse.. Nineteen men participated in the discussion. Age ranges between 18 and 80 years.

FOCUS GROUP DISCUSSION GUIDE

LIGHTING

1. **What kind of lighting do you have in your home- inside, outside?**

Ans. *Most of the men said they have electric lighting that uses a mixture of florescent and incandescent bulbs*
-Six of the men said they are using Compact Fluorescent Lighting.

-*"My house is big, I use a lot of bulbs, it cost me a lot for light bill. I would use an alternate source today."*

2. **What are the choices you have for lighting/what option are available?**

Ans. *"The choice is between florescent and incandescent bulbs. You do not have much choice in the community."*
-*"The community shops don't stock the florescent bulbs. It is expensive community people cannot afford to buy that type."*
"Whenever you need a bulb you will have to take the incandescent as you can only get the fluorescent to buy in the Town."
"Whenever they have the florescent and it goes bad they replace it with incandescent"
"It is much easier to get the regular (incandescent) bulbs. They sell everywhere and they are cheap."

3. **What do you consider when choosing lighting?**

Ans. *Some participants said they purchased whatever bulb is available while others said they go for the cheaper bulbs.*
"Most time bulbs blow and I just go to the shop and buy the cheap ones."
"Why would I buy one bulb for three hundred dollars when I can get three bulbs for one hundred dollars?"
"I use the energy saving bulbs. I don't mind the cost because I see the savings in my light bill"
"I started using the energy saving bulbs, I bought some and they are not good they blow easily so I would like to know which one is the right one."
"Don't know the inferior
"Don't know the brand
"Buy bulb at Bashco store it is cheaper

4. **What is important to you in terms of types of lighting**

Ans *"I don't mind what type of bulb as long as it shines and gives light"*
"I have to think about the light bill it is killing me."
"The cost for fluorescent is very expensive. I don't have money to buy the expensive bulb and sometimes they don't even work."

5. **Impact on household expenses?**

Ans. *"It impacts household expenses in a very negative way. We spent most of our money on light bill. If we can save on light bill it would lose up funds to use on grocery.*
"It is very tight for us after paying light bill I have just a little to spend on grocery."

"I cut down on all the other expenses for you have to pay the light bill first. Because you can't live in the dark"

6. **What information have you heard or read about electricity use or cost of different lighting options?**

Ans. *"The only time I hear anything like that was while the Cuban project was going on"*
"Most people don't know about other lighting options, what we talk about is the high bills."
-"Don't make any sense JPS still send the bill."
- The TV does a little advertisement about saving energy. JPS don't matter, them a robber them only want your money to thief."

7. ***Do you and your neighbors talk about making decisions about the lighting you use?***

Ans *"We talk about the high bills but not what to use."*
-"Don't make sense to speak to neighbors that can't help the high light bill, whether you use the light or not the bill is coming high every month."

8. **Are there other places you talk about electricity use in your home, i.e. home church, other?**

Ans *"No where only now that we are here talking about it."*

9. **How do CFLs compare to regular incandescent lighting?**

"Fluorescents last longer."
"It is not like the regular bulbs."

10. **Where do you buy lighting?**

-Walk- in sales men
-Community shop
-Wholesales and supermarket in the Town

11. **Do you feel the options available for lighting are affordable?**

Ans. ***"There*** *is a choice between the cheaper and more expensive one"*
"I don't pay light bill I just throw up wire, but if it was more affordable I would get legal light."
"I am squatting on people's land so I cannot take legal light. I don't have any paper to get light. If I did have paper I would take the light and pay light bill."

12. **Are there problems with the CFLs bulbs available for purchase?**

Ans. *"Yes some of them blow easily, they are not good. We do not know the genuine bulbs but the ones from the Cuban program are very good, they last longer"*

13. How important is it to you to save on electricity bills?

Ans "*It allows me to buy more grocery, more money for children lunch money and fare to get them to school. I can take care of other important things around the home"*
"*It's not the most expensive but the one bill you must pay at once because you can't owe even $500.00"*
"My light was disconnected for a balance of $600.00"
"It would be more affordable for me if my bill was less."
"With extra money we could do a lot more things"

14. Is the quality or amount of lighting important to you?

Ans "*Yes it is because we have a lot of appliance e.g. refrigerator, computer, TV. etc.*

When **you want to save on electricity, who do you ask for advice?**

Ans *"Nobody for if you don't use it somebody else will".*
"We don't trust JPS"
"I get a little information from the radio and TV"

B. Discussion Guide – Reducing use of wood for cooking

1. **What kind of fuel source do you use for cooking?**

Ans. *Mixture of Gas, Coal, Wood*
Gas & wood
"Some people use Wood only and coal only"

2. **What are the choices you have for cooking that are available to you?**

Ans *Gas, coal, wood*
Gas & wood

3. **What do you consider when choosing fuel sources for cooking?**
   - *The amount of time available*
   - *Gas is cleaner*
   - *To conserve*
   - *How clean it is – Hygiene purpose*

- *-Cost*
- *"Can't afford to cook dog food on gas it's too expensive"*
- *"The gas is too expensive, I haven't used my gas stove for over two years I only use coal"*
- *"Wood is free*"
- *"Wood give off a lot of smoke and dirty the pots"*
- *"Have separate pots for wood and coal fire"*
- *"Can't stop burning coal I make a living from it. Don't want to thief, I don't love a thief"*
- *"Coal and smoke have a negative environmental impact people get sick from using them"*
- *"Still have to use the because they cannot afford to buy the gas"*

4. Can your cook stove use multiple fuels?

Ans. *No*

5. What is important to you in terms of the type of cooking fuel you use?

- *"How clean it is"*
- *"How easy it is to use"*
- *"How fast it is "*
- *"What I can afford"*
- *"Gas is modern, wood and coal smoke up the place, black the pot and even you are cooking smell of smoke"*

6. How Important are your cost of fuel for cooking in terms of impact on your expenses?

Ans. *"Very important because you must cook and whatever is the cost we will have to cook, however we try to save by using wood and coal and save on the gas"*

"I only use gas for emergency, to cook breakfast in the mornings, if the rain is falling, if I need a cup of tea in the night"

"When we are cooking peas, tough meat or roasting breadfruit we would use coal or wood and save on the gas"

7. What information have you heard or read about the cost of different cooking fuels?

Ans. *The only information you get from the retailers are price increases.*

"Every week gas price rise"

8. Do you and your neighbors talk about making decision about the cooking fuel you will use?

Ans. "No *we don't"*

"Neighbors don't care what you do or what type of fuel you use at your home. They already know what type of fuel you use in your kitchen"

9. Are there other places you talk about cooking fuel use in your home i.e. church, other?

Ans. *"No other place else, we do not talk about it with anyone"*

10. How does cooking with wood compare to cooking with LPG gas?

Ans. *"Wood produces a lot of smoke and affect some people sinus and asthma however because it is free a lot of us use it to prepare food and meat they consider hard to cook. Cooking with wood also create health issues"*

"My wife can't take the smoke from the wood as it irritates her sinus".

Using gas is quicker and cleaner"

"When the children have to go to school early in the morning you can't bother to light coal so you use the gas."

11. Where do you obtain fuel for cooking (LPG, wood, coal other)?

Ans. ***"****LPG is readily available in the community as there is a shop that sells it.*

There are also salesmen that do house delivery for an added cost"

"Coal is more accessible as many persons burn it while others sells it for a livelihood"

"I burn coal so I don't have to buy "

"I cut a lot of trees but I plant them back. I use fruit trees to replace the ones I cut to burn the coal"

12. Do you feel the options available for cooking fuel are affordable?

Ans. "*Coal is more affordable than LPG gas.*

"I can't afford the gas it too expensive so my wife has to use coal to cook the peas and some meat."

13. How is cooking with coal different than cooking with LPG gas?

Ans *"Wood offers some flavor to the food. Some participants also suggested that wood cooks faster than the gas"*

"You see when you use a piece of pimento wood to cook pork and curry goat it taste sweeter than when you use the gas to cook the same meat"

14. How important is it to you to save money on cooking fuel?

Ans. *"Very important to save on cooking fuel as every little we can save make sense. While the other expenses can be spread out over time cooking is a daily activity so they believe saving on cooking"*

"Fuel is of great importance"

"We have to cook every day so the less we spend on what we use to cook the better because"

We must eat to survive"

15. Is the quality or amount of cooking fuel important to you?

Ans The quality is not really important, will use any fuel that is available and what we can afford

16. When you want to save money on cooking, who do you ask?

Ans. *"Participants felt it doesn't make sense to ask for this information as everybody is in the same situation. We do not bother to ask anybody anything. Almost everybody use a mixture of fuel just trying to save the gas"*
"All of us are trying to find a way so it don't even make sense we ask for it is very hard to save"

17. Does your LPG retailer have information campaigns? Do you believe their claims? Have you followed any of their advice? If so were the results what was promised or suggested?

Ans. *"No information is available from the retailer"*
"The only thing him tell you is the cost and that the next time you come to buy gas the price of the gas will increase."
"Him don't know what to tell you"

18. Do you find the information at retailers (that sells LPG gas) informative? If not, why not?

Ans. "No *you do not get any information from them. They only want to know*
That you buy the gas and come back to buy more"

19. Do you receive information on saving money on cooking when you buy fuel? Is it helpful?

Ans. "*We do not receive any information. You are on your own."*

Additional Information

Cost

Coal per bag=$800.00
Coal per tin =$240.00
Coal per paint tin=$100.00
A family that cooks every day using coal would use three bags of coal each month.

LPG gas 30lb =$3000.00
LPG gas 25lb=2250.00
LPG gas 10lb=$10,000.00
A 30lb LPG gas serves a family that cooks everyday for six to eight weeks.
There is a wholesale market for coal in this community as two big businessmen buy the coal from the producers and retail it to the householders.

4.3 Women's Focus Group – Content

Analysis and Investment in Low Emissions Growth (AILEG) 014 Project

Content Community, St. Catherine

Focus Group Discussion – Women

FOCUS GROUP DISCUSSION GUIDE

LIGHTING

Introduction

A Focus group discussion was held in the Content Community at the Content Community Club. The meeting was called to order by Nellie Richards. A Prayer was offered by Elizabeth Laing. Twenty women were in attendance with age ranges between twenty (20) and sixty (60) years. Nellie Richards welcomed participants and introduced Janet Bedasse, Community Facilitator who conducted the focus group discussion.

Prior to the commencement of the discussion all the participants were given a **Consent Form**. Programme Manager explained the consent Form and the participants completed the forms.

Discussion

Ques. **What kind of lighting do you have in your home – inside, outside?**

Ans. "*Electricity There is a few persons in the community who use kerosene oil lamp.*"

Ques. **What if there is no electricity, what do you do? What are your choices of lighting?**

Ans. "*We use candle, kerosene oil and cell phone light and flashlight.*"

Ques. **What do you consider when choosing lighting?**

Ans. '*We just buy a bulb when we want one, we have to buy the regular ones cause it is cheaper, all we need is bulb to get light and be able to see. It is all about how much money you have to spend. We can't buy expensive bulbs. We know that the florescent bulb is better in the long term but we cannot afford it we have to buy the cheaper one.*"

Ques. **What is important to you on the type of lighting you use?**

Ans. "*I don't just buy any bulb anymore; I buy the florescent bulb because I save on energy, and money and it last much longer.*"

-*"Electricity is safer and cheaper than kerosene oil. Bulb is cheaper don't have any alternative don't matter as long as we can get light to look at all the bulbs are the same, I don't see any difference in the bulbs."*

-*"I don't just pick up a bulb. I buy energy saving bulbs; it saves on the light bill it saves energy."*

-*"I don't buy any bulb the bill is more important it cut down on the bill. Length of time the bulb last is important."*

-*"Children study in the night fluorescent is better on the eye, it is a softer light."*

- *"Regular light bulb is red and hard on the eye. Regular bulbs give off a lot of heat."*

Ques**. How important are your electricity bills in terms of impact on your household expenses**?

-"*I have to buy the cheap bulbs and other things because light bill increases every month and when I finish pay the light bill I can hardly buy food or even send the children to school*."

-*"It is very rough on people in this community. Every cent you have gone on light bill. Hardly can buy anything else, It is all about paying light bill. Light bill is a killer"*

"You have to learn to budget these days"

-*"I don't have what to budget from"*

Ques. **What information have you hear or read about electricity use or cost of different lighting options?**

Ans. "*Received information over the radio and on the TV"*

- *"The Cuban Light bulb campaign long time ago"*

-*"Word of mouth"*

Ques**. Do you and your neighbors talk about making decisions about the lighting you will use?**

Ans "No not really, we do not talk about it we take it for granted"

Ques. **Are there other places you talk about electricity use in your home, i.e. church, other?**

Ans. *No*

Ques. **How do CFLs compare to regular incandescent lighting?**

Ans. "*Regular bulbs are cheaper but CFLs are more efficient and safer"*

"The florescent bulb is far more expensive, it is very good for reading, it cuts down on the light bill, the regular bulb is very hot so you have to use the fan and that is another electricity cost"

'From now we have to take advice and look out for results"

Ques. **Where do you buy lighting**?

Ans. *"We buy bulbs at the shops in the community and at the supermarkets in Town, on the street just about anywhere"*

Ques. **Do you feel the options available for lighting are affordable?**

Ans. *"Yes and no, kerosene oil is very expensive. Candle is cheaper. Not affordable but we do not have a choice we have to buy it we can't function in the dark"*

Ques. Are there problems with the CFL bulbs available for purchase?

Ans. "No, not really, we don't know of any problem"

Ques. **How important is it to you to save money on electricity bills?**

Ans. -"It is *very important, as the savings could go to do something else like buy food; pay children school fee, lunch money and transportation. Food is very expensive these days"*

-*"We can't save a cent, so if we can find a way to save it would really help us."*

--*"Anything to save on the light bill"*

B. Discussion Guide – Reducing use of wood for cooking

i. What kind of fuel sources do you use for cooking?

Ans *"Gas, coal and wood, most persons use gas and coal or gas and wood.*

"Some persons use wood only or coal only. It is a mixture of everything."

-smoke affects eye and lungs. It is a hygiene issue; it smells in the hair. "Fire gives bad odor."

"Gas is easier it is faster, it is convenient can cook four pots at the same time."

"At Christmas time we use special wood like pimento for flavour"

ii. What are the choices you have for cooking that are available to you?

"Wood and coal are available. We can buy a little tin of coal for as little as $100 but gas is expensive you cannot buy a little gas."

"Wood is free so we can't call gas a choice. It is very expensive and we cannot afford it every time."

-"Choices are about cost. We have to think about cost in order to purchase any type of fuel."

iii. What do you consider when choosing fuel sources for cooking?

Ans. "The first consideration is the cost and availability."

iv. Can your cook stove use multiple fuels?

Ans "No. We use coal or gas."

v. What is important to you in terms of the type of cooking fuel you use?

"The type of cooking fuel we use affect our health, the smoke from the wood is hard to deal with but we cannot do any better wood is free we can just go in the bushes and get some wood we don't have to pay for it. Wood is always available children help with the collecting of wood."

"Sometimes we get special wood like pimento it burns better. When the wood is green or wet it is hard to work with."

"Gas is faster and better it keep the pot clean. We would prefer to use gas alone but this is not possible."

vi. **How important are your costs of fuel for cooking in terms of impact on your household expenses**?

Ans. "*It matter to us as women.*
"We will have to save on every little thing because everything impact on the household spending. When we pay high light bill we have less to spend on the children lunch money, school fee, food clothes and doctor bill."
"We would love to save but we don't even have what to save from."

vii. What information have you heard or read about the costs of different cooking fuels?

Ans. "We do not get much information sometimes. JPS put out little information on TV and radio. You will get a little paper now and then but it is not constant."

viii. Do you and your neighbors talk about making decisions about the cooking fuel you will use?

Ans "Never talk about it sometimes you don't even want people to know what type of fuel you are using."

"Don't like when people know that I am using wood. Some people feel bad to let people know that they are using wood. I am not ashamed. It is what I can afford."

"When I use wood or coal I don't have any stress over money to pay for gas."

ix. Are there other places you talk about cooking fuel use in your home, i.e. church, other?

Ans. "*We do not talk about these things anywhere. This is the first time that we are talking about fuel and cooking"*

-*"We have never seen this discussion as important."*

x. How does cooking with wood compare to cooking with LPG gas? (See above)

xi. Where do you obtain fuel for cooking (LPG, wood, other)?

Ans "*We get our gas from a retailer in the community*"

-*"A lot of persons sell coal in the community or we buy the gas from the Plant in Bog Walk where it is a little cheaper."*

-*"We help the men to reap the coal and get some for our day's pay. It is like a partner. We talk with the men while we are picking up the coal. It is a type of social."*

"We get the wood from the bushes. You can find wood anywhere"

xii. Do you feel the options available for cooking fuel are affordable?

Ans The options are affordable, wood is free. A number of us burn our own coal."

-*"Sometimes we even borrow coal from our friends in case our own coal finish."*

xiii. How is cooking with wood different than cooking with LPG gas?

Ans "Cooking with wood gives a nice flavor especially if you are using pimento wood."

"The gas cook clean and nice but the flavor and the taste of the wood is different" "Some wood cook faster than the gas. The gas is more convenient."

"Some wood cause the food to taste bitter."

xiv. How important is it to you to save money on cooking fuel?

"It is important to save money on fuel because the saving can do so any things around the home."

"We have so many expenses what we cannot afford.

"I tried to save the gas but because I have so many children they waste the gas."

"We cook tough food on the coal stove just to be able to save on the gas."

xv. Is the quality or amount of cooking fuel important to you?

Ans "We can't talk about the quality since quality is about cost. We have to go with the cheaper fuel."

"The quality of the cooking not even matter sometimes, only want to know that we cook. It would be better to use gas every time but it is not possible."

xvi. **When you want to save money for cooking, who do you ask for advice?**

Ans. *"Never ask for advice"*

"Never think about it"

"Never think it is possible"

xvii. **Does your LPG retailer have information campaigns? Do you believe their claims? Have you followed any of their advice? If so, were the results what was promised or suggested?**

Ans *"No campaign, they do not talk to us they only sell us the gas."*

xviii. **Do you find the information at retailers (that sell LPG gas) informative? If not, why not**?

Ans "There is no information available at retailers." *We do not think they care about the customers to provide them with information***."**

xix. **Do you receive information on saving money on cooking when you buy fuel? Is it helpful**?

xx. Ans *"We have never received such information. We only buy the gas and coal and move on"*

xxi. **Are your neighbors a good source of information on how to save money on your cooking costs**?

Ans "*No we have never seen it that way. We can now start"*

4.4 Men's Focus Group – Content

Analysis and Investment in Low Emissions Growth (AILEG) 014 Project

Content Community, St. Catherine

Focus Group Discussion – Men

Introduction

Men Focus group discussion conducted in the Content Community. The meeting was called to order by Nellie Richards. 8 men were in attendance age ranges between 20 and 79 years old. Nellie Richards welcomed participants and introduced Janet Bedasse, Community Facilitator. Nellie Richards and Janet Bedasse conducted the focus group discussion. Participants were selected from among community leadership, farmers, youth, church businessmen and other community residents.

Prior to the commencement of the discussion all the participants were given a **Consent Form**. Project Officer explained the consent Form and the participants completed the forms.

LIGHTING

1. **What kind of lighting do you have in your home – inside, outside?**

Ans.

- *"Electric light, kerosene lamp and candles"*
- "*Some persons sleep with the bulb burning in the house*"
- "Some sleep with the TV on, while others love to sleep in the dark."

2. **What are the choices you have for lighting/what options are available**?

Ans

- *"Candles and kerosene lamp."*
- *"We hardly use the kerosene lamp because kerosene oil is very expensive and it smells bad."*
- *"Electric"*

3. **What do you consider when choosing lighting**?

Ans.

- "*Electricity because it is safer and modern"*
- **"***Bulb is cheaper don't have any alternative don't matter as long as we can get light to look at.*
- ***"****All the bulbs are the same, I have not seen any difference in the two types of bulbs*
- **"***I don't just pick up a bulb, I buy energy saving bulb, it saves on the light bill and it saves energy.*
- *"I don't buy just about any bulb, the bill is more important; I select the bulb I use the one that cut down on the light bill.*"
- " *The length of time bulb last is important"*
- "*We use the florescent bulb to save energy and cut down on the light bill although it is more expensive. We just tell ourselves that it saves on the energy but we really never check it. The florescent bulb is not available in the community but we can purchase it at the nearby Town."*

4. **Have you seen any information about energy –**

- Ans. "*Get information from TV"*
- *"The Cuban light bulb, that programme was very good"*

5. **What is important to you in terms of the type of lighting you use?**

Ans

- **"***Electricity is important to us. It is modern, the place looks better, it serves a good purpose comparing to kerosene lamp."*
- *"Fluorescent is not hot, it gives ease on the eye. Children study in the night it is easy on the eye"*
- *"We love the electricity because we love to watch the TV, listen to the radio and do the ironing"*
- *"So we just have to sacrifice and pay the bill, it's just as if we can't do* without it."

6. **How important are your electricity bills in terms of impact on your household expense**s?

- Ans *"The light bill is so big and because we don't want it to cut off, we have to eat less just to pay it or pay it in part.*
- *We can't owe JPS them plenty money because they will disconnect it. We pay the bill and put off other spending."*
- *"Buy less food do everything less in order to pay light bill."*

7. **What information have you heard or read about electricity use or costs of different lighting options**?

- Ans. "*No information at all."*

- *"The Television gives some information, we saw ads telling us to conserve on energy"*
- *The light bill is so big and because we don't want it to cut off, we have to eat less just to pay it or pay it in part. We can't owe them plenty money because they will disconnect it."*

8. **How do CFLs compare to regular incandescent lighting?**

Ans *"We could do a test run by using all CFL and watch for difference in the light bill."*

"We have never tried both of them, we can only guess"

9. **Do you and your neighbors talk about making decisions about the lighting you will use**?

- Ans "*No. We don't discuss about these things."*

10. **Are there other places you talk about electricity use in your home, i.e. church, other?**

- Ans *Nowhere else*

11. **How do CFLs compare to regular incandescent lighting?**

- *Ans CFL is better, it last longer, it is softer, carries less heat, it is more expensive*
- *"Options are affordable but they are not convenient, prefer the electricity any day. We don't really have a problem with the CFL bulbs when we buy them."*

12. **Where do you buy lighting?**

Ans. "*Buy lighting at the shop in the community, supermarket, wholesale and on the street in town"*

13. **Do you feel the options available for lighting are affordable?**

Ans Options are affordable but they are not convenient, prefer the electricity any day. We don't really have a problem with the C FL bulbs when we buy them.

14. **How important is it to you to save money on electricity bills?**

- **Ans "***When you save on the bills, the savings will go to other important things such as children lunch money, clothes, Doctor bill and food***."**

15. **Is the quality or amount of lighting important to you, for studying (youth), home based businesses, entertainment?**

- Ans
- *The quality of lighting is very important especially for the children who are studying as the regular bulb is not good for the eyes."*

16. W**hen you want to save electricity, who do you ask for advice?**

- Ans "Never *ask for advice, just do our own thing."*

17. **Does your electric utility have information campaigns? Do you believe their claims? Have you followed any of their advice? If so, were the results what was promised or suggested**?

- *Ans "We do not know of any information campaigns"*

18. **Do you find the information at stores (that sell lighting) informative? If not, why not?**

- **Ans. "***The stores do not provide information. Store Managers likes when you come to his store often, therefore he ensures that you do not get the information."*

19. **Do you receive information on saving electricity with your utility bills? Is it helpful**?

- **Ans. "***When I saw the ads on television it serves as a reminder it is helpful"*
- *"Not much information .We just know to do that since we are the ones paying the bill"*

20. **Are your neighbors a good source of information on how to save money on your utility bills**?

- Ans *"Presently they are not but if there is a programme we can start to work together."*

B. Discussion Guide – Reducing use of wood for cooking

1. **Ques. What kind of fuel sources do you use for cooking?**

   - **Ans "**We use gas, coal and wood"

2. **Ques. What do you consider when choosing fuel sources for cooking?**

   - Ans "*Women look at cost but men look at flavor".*

- *"Although the gas is more expensive, it is much faster and easier to cook the food and the ladies won't have any need to complain that the pots are dirty and hard to scour"*

- *"The gas is very economical especially in the mornings when the children have to go to school and in case of other emergency."*

- *"The coal can be very good too but you have to choose good wood when you are burning the coal. You have to make sure that you don't cut the wood when the moon is young, it is best at least eight (8) days after full moon. You will have persons who cut it anytime but it should not go that way."*

- *"Sometimes the wife waste the coal, they usually put too much coal in the stove and they don't bother to put it out when they are finished."*

3. **Ques. Can your cook stove use multiple fuels?**
   Ans "No"

4. **Ques. How important are your cost of fuel for cooking in terms of impact on your household expenses?**

- Ans *"The cost of a 25 pounds cylinder is $2500.00 and a bag of coal is $600.00.The coal is cheaper but the gas is faster. When you have plenty children, every minute they want to cook and fry so the gas finish very fast so you have to back it up with a bag of coal. The coal is much cheaper and most of us do it ourselves."*
- *"It affects our expenses as it is another cost. We have to get some form of fuel. It is about the family we have to survive."*
- *"Cost us yes but we can't give up"*

5. **Ques. Are there other places you talk about cooking fuel use in your home?**

- Ans "No, only here so."

6. **Ques. How does cooking with wood compare to cooking with LPG gas?**

- Ans "*The wood is cheaper as it is free and is everywhere but it black up the ladies pot and they will quarrel so we have to make sure that them have good coal and /or gas."*

7. **Ques. Where do you obtain fuel for cooking (LPG, wood, other**)?

- Ans. "*There is a gas retailer in the community and there are also others in adjoining communities. There is a plant in the nearby town of Bog Walk, the wood can be found everywhere and most men in the community burn chalk coal"*

8. **Ques. When you want to save money for cooking, who do you ask for advice**?

- Ans *"We have to work out the things ourselves, nobody gives us advice, there is no information campaign, we just have to use our heads. Only thing the dealer would say is "by the time you come again it a go raise you no" All they want is for us to pay for the gas and hurry and come back to buy more gas.*

- *"The family discusses how to save money on fuel, otherwise we don't ask for any advice outside of the family"*
- *"The advice don't help any at all, it is the family that will have to do the savings."*

VOLUME IV: COMMUNITY RENEWABLE ENERGY AND ENERGY EFFICIENCY ACTION PLANS

QUANTITATIVE RESEARCH ANNEX

THE AILEG PROJECT

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Content and Princessfield: Energy Baseline Survey Report

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1. EXECUTIVE SUMMARY

During the period April 24th through to May 24th 2013, Balcostics Limited was contracted by The St. Catherine Community Development Agency (SACDA), to conduct a baseline survey in the communities of Content and Princessfield in St. Catherine Parish. A survey questionnaire instrument was administered to 299 community members to assess their attitude, knowledge and behaviour towards renewable energy and energy efficiency. The survey was administered to 299 community members in Content from April 24 through May 24, 2013, and to 355 community members in Princessfield from May 1-24, 2013. The number of community members surveyed was proportional to the size of the community population.

The specific objectives of the survey were:

1. To provide information on behavior related to energy – which will be used for the design of a social marketing campaign for behavioral change in the way energy is used.
2. To establish a baseline which will provide a platform for action planning as well as provide a starting point from which progress with regards to investment in low emissions technologies and projects can be measured.

Presented below are the **main findings** of both the Content and Princessfield surveys.

<u>Knowledge about energy use</u>

1. Only a small proportion (Content: 10%) (Princessfield 17.8%) of respondents indicated that they were knowledgeable of "renewable energy". The same was true for the proportion of respondents who were knowledgeable about the "types of renewable energy" (Content and Princessfield: 11.4%).
2. The majority of Content residents got information relating to energy efficiency and usage from newspapers while the majority in Princessfield got it from television.

<u>Behaviour relating to cooking practices</u>

1. Most residents used gas as their main fuel source (Content: 51.2%) (Princessfield: 72.4%) followed by those using coal (Content: 46.4%) (Princessfield: 25.9%). Residents from both communities generally bought their fuel for cooking from retailers in the community or some indicated that they made it themselves.
2. The top priority reasons respondents in both communities identified for purchasing gas over coal/ wood was the fact that "cooking with gas is faster than cooking with coal/wood", "cooking with gas is easier than cooking with coal/wood" and that "when cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood".

3. Residents who used coal/wood for cooking highlighted their priority reason as being lower cost (Content: 97.1%) (Princessfield: 97%) and that wood could be found everywhere for free (Content: 67.1%) (Princessfield: 61.4%).

Behaviour relating to lighting practices

1. The majority of community members agreed that energy should be used efficiently (Content: 94.4%) (Princessfield: 97.4%) and that using energy efficiently will reduce energy cost (Content: 92.1%) (Princessfield: 92.2%).
2. Electricity was the main source of lighting for most respondents from both communities followed by those using kerosene lamps. Electric light bulbs expectedly were the main type of lighting (used 81 – 100 per cent of the day) utilized by the majority of respondents from both communities.
3. Respondents' from both communities main source of information on energy came mostly from information on JPS utility bills, radio, neighbors and community leaders. Radio (Content: 75.3%) (Princessfield: 84.8%) was seen as the most trustworthy source of information, followed by neighbors (Content: 61%) (Princessfield: 51.3%) and community leaders (Content: 59.3%) (Princessfield: 61.5%).
4. Most respondents from both communities paid between $3,001- $4,000 and $5,001-$ 6,000 for their electricity charge. This charge could be explained by respondents' use of electricity to power household electronics and provide lighting. Community members were seemingly not satisfied with their current electricity bill as six out of every ten respondent from both communities indicated that the cost of electricity was not affordable.
5. Only about four in every ten respondent in Content had received fluorescent light bulbs in the Cuban light bulb project while half of respondents in Princessfield received them. Among most of those who received fluorescent light bulbs, the view was that it helped to reduce their monthly electricity cost. Approximately seven (68%) out of every ten Content community members and approximately half (50.5%) Princessfield community members however, were not currently using fluorescent light bulbs in their homes.
6. Respondents who were not using CFLs indicated their top priority reasons were because "they are too expensive – I can't afford it" (Content: 82.5%) (Princessfield: 83.9%), "they are not available in the community" (79.8%) (Princessfield: 86.2%) and the fact that "they are available in nearby towns which requires money for transportation" (Content: 50.6%) (Princessfield: 66.7%).
7. On the contrary, persons who did use CFLs indicated that they used them because "CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling" (Content: 83.1%) (Princessfield: 78.6%), "CFLs last longer than incandescent bulbs" (Content: 64.4%) (Princessfield: 77.6%) and because "CFLS are more efficient than incandescent bulbs" (Content: 53.7%) (Princessfield: 44%).

Profile of participants

1. There were marginally more female respondents than male in both communities.
2. The age group of respondents varied with the majority of participants being between "18 - 29 yrs." and "30 – 39 yrs" in Content and between "18 - 29 yrs." and "40 – 49 yrs" in Princessfield.
3. Approximately six (Content: 61%) (Princessfield: 56%) in every ten respondent indicated that they were the head of their household and had between one and five persons living in their home.
4. The highest level of education for the majority of residents was high school (Content: 58%) (Princessfield: 59.5%).

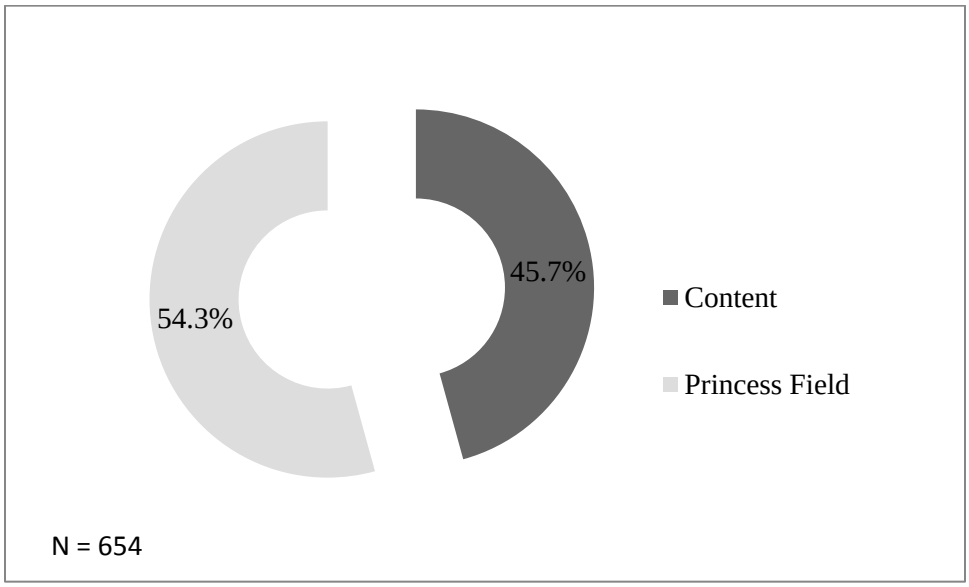
5. Most respondents were either self-employed (Content: 39%) (Princessfield: 33%) or unemployed (Content: 35%) (Princessfield: 37%). Persons, who were employed, earned less than $50,000 per month salary (Content: 92%) salary (Princessfield: 94%).

2. METHODOLOGY

A total sample of 299 and 355 residents from Content and Princessfield respectively were interviewed for this study, representing a margin of error of plus or minus 5%. Interviewers randomly intercepted men, women, the elderly and youth over the age of 18 years. Visits were also made to households throughout the community in order to complete questionnaires. A consent statement and consent forms approved by an Internal Review Board were used to introduce the purpose of the questions and to assure respondents that their identity will be kept confidential.

3. CONTENT MAIN FINDINGS

3.1. FIGURE 1: PLACE OF INTERVIEW



3.2. TABLE 1: LEVEL OF KNOWLEDGE RESPONDENTS HAVE ON EACH TERM

	% knowledgeable
Renewable energy	10.0%
Types of renewable energy	11.4%
Global warming	10.8%
Carbon emissions	7.4%
Climate change	20.1%

*Valid percentages - does not include missing responses

Only a small proportion (10%) of respondents indicated that they were knowledgeable of "renewable energy". The same was true for the proportion of respondents who were knowledgeable about the "Types of renewable energy" (11.4%), "Global warming" (10.8%), "Carbon emissions" (7.4%) and "Climate change" (20.1%).

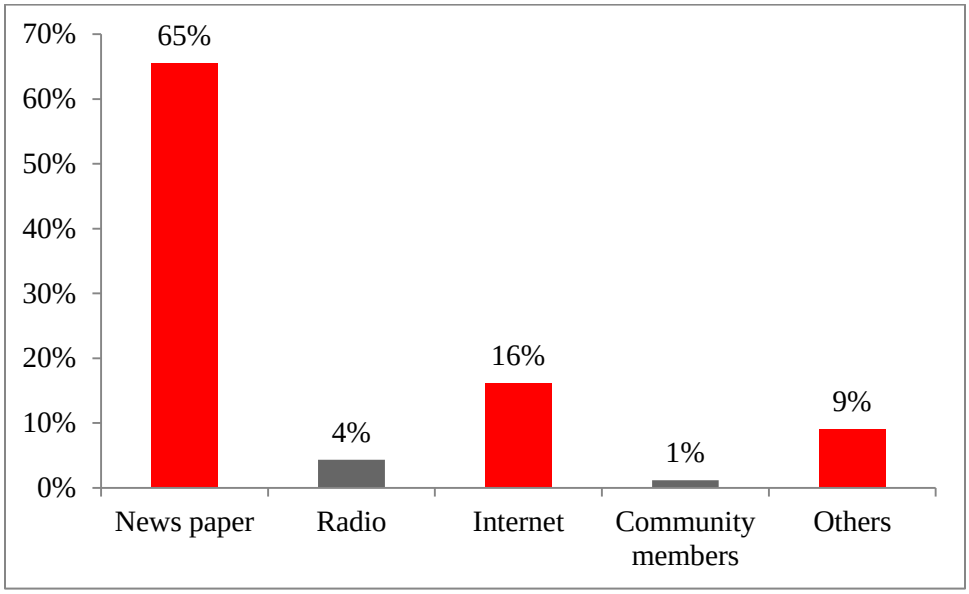
3.3. TABLE 2: LEVEL OF KNOWLEDGE RESPONDENTS HAVE ON TYPES OF RENEWABLE ENERGY

	% knowledgeable
Hydroelectric	12.2%
Solar	31.0%
Wind	30.5%
Biomass	11.2%
Biogas	15.3%

*Valid percentages - does not include missing responses

Approximately three out of every ten respondent was knowledgeable about "wind energy" (30.5%) and "Solar energy" (31.0%). Knowledgeable of "Hydroelectricity" (12.2%), "Biomass" (11.2%) and "Biogas" (15.3%) were much lower among respondents.

3.4. FIGURE 2: THE MAIN SOURCES OF INFORMATION ON RENEWABLE ENERGY



The majority (65%) of respondents' main source of information about renewable energy was "newspaper", followed by the internet (16%).

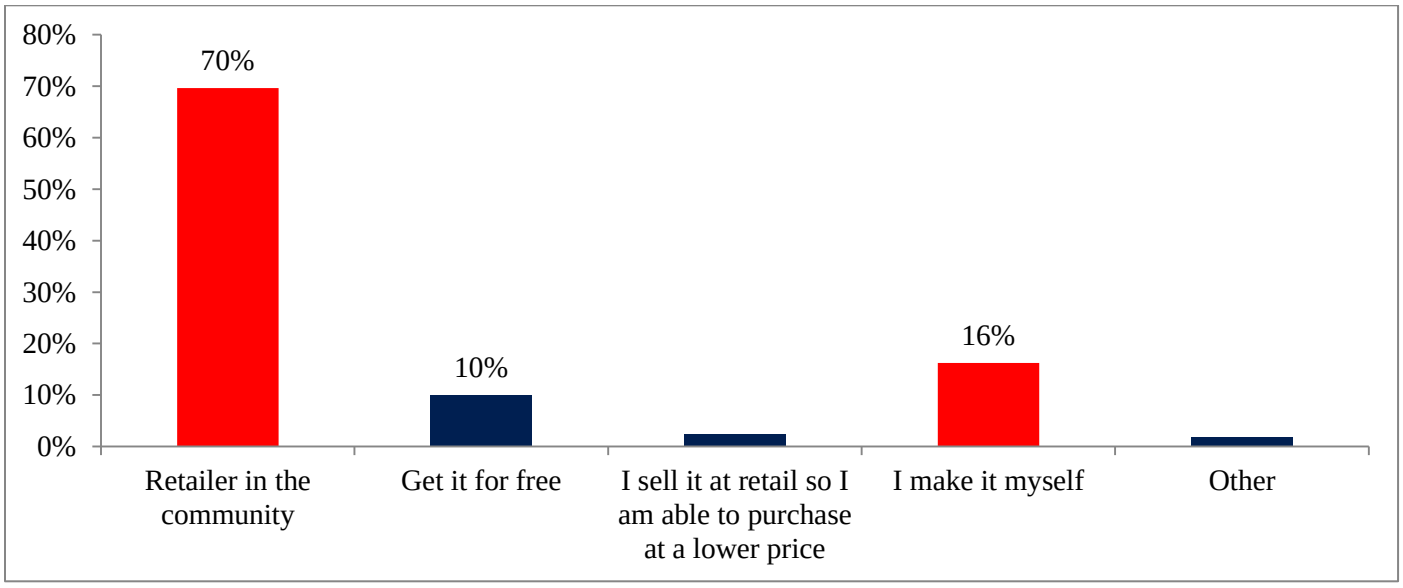
3.5. TABLE 3: MAIN FUEL SOURCES USED IN COOKING

Main fuel source use in cooking	% High Priority (1)*	Frequency (N)
Coal	46.4%	124
Gas	51.2%	132
Wood	39.0%	39

*Valid percentages - does not include missing responses

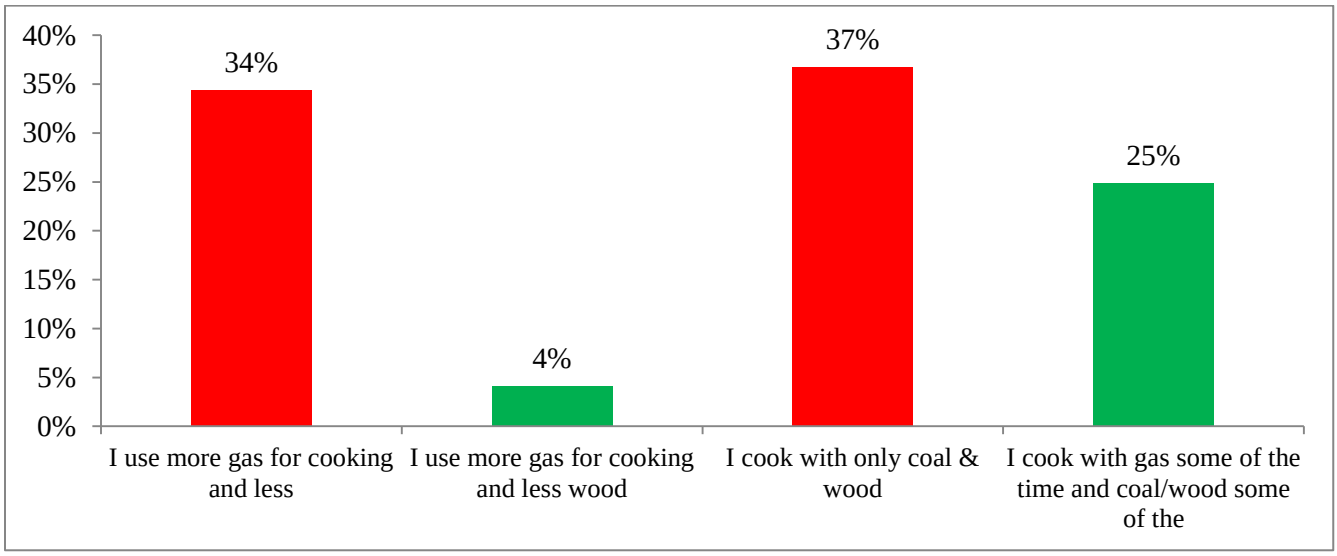
There were marginally more respondents who placed a high priority on 'Gas' (51.2%) compared to 'Coal' (46.4%) and 'Wood' (39.0%).

3.6. FIGURE 3: SOURCES OF FUEL FOR RESPONDENTS



The majority of community members in content sourced fuel from "Retailer in the community" or made it themselves (16%).

3.7. FIGURE 4: RESPONDENTS' METHOD OF COOKING



Approximately four out of every ten respondent indicated that they cook with only "coal & wood" (37%), while almost three out of every ten stated that they "use more gas for cooking and less coal" (34%).

3.8. TABLE 4: RESPONDENTS' REASONS FOR PURCHASING COOKING GAS INSTEAD OF COAL OR WOOD - BASED ON PRIORITY

Reasons for purchasing gas instead of coal or wood (1- highest priority & 8 – lowest priority)	***% High Priority (1 - 3)**	Frequency (N)
Cooking with gas is faster than cooking with coal/wood	88.4%	145
Cooking with gas is easier than cooking with coal/wood	88.2%	82
When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	51.1%	46
The flavour of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	21.4%	16
Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	29.2%	26
Some wood causes the food to taste bitter	17.4%	16
I am ashamed to use wood for cooking	5.4%	5
Smoke from cooking with coal/wood makes a bad odour, especially in a person's hair	22.2%	20

*Valid percentages - does not include missing responses

The top priority reasons respondents' identified for purchasing gas over coal/ wood was the fact that "Cooking with gas is faster than cooking with coal/wood", "Cooking with gas is easier than cooking with coal/wood" and that "When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood".

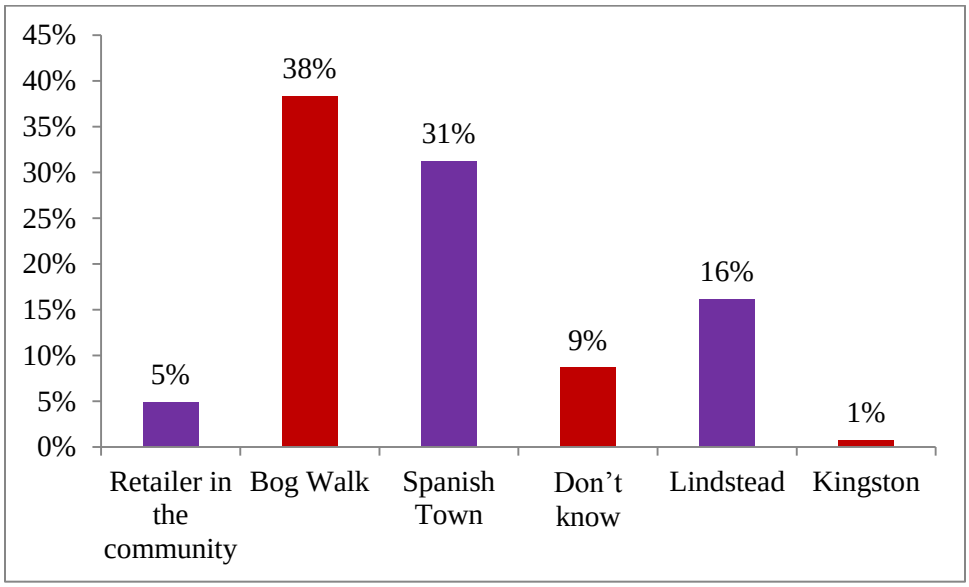
3.9. TABLE 5: REASONS FOR NOT PURCHASING COOKING GAS AND USING LESS COAL AND WOOD - BASED ON PRIORITY

Reasons why you do not cook more with gas and use less coal and wood	% High Priority (1 - 3)*	Frequency (N)
Cooking with coal or wood costs less than cooking with gas	97.1%	136
We are able to get some coal/wood for free in exchange for helping the men collect it	50.6%	43
When purchasing gas, it must be bought in large quantities which we **cannot** afford	42.5%	37
Wood can be found everywhere for free	67.1%	49
The children help us collect wood which saves us time	15.1%	13
Cooking peas and tough meat requires too much gas	19.7%	12
Food cooked with some kinds of wood tastes better than food cooked with gas	19.0%	11
Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	16.2%	11

*Valid percentages - does not include missing responses

Respondents' top priority reasons for cooking more with coal & wood rather than gas was because "Cooking with coal or wood costs less than cooking with gas" (97.1%), "Wood can be found everywhere for free" (67.1%) and they "are able to get some coal/wood for free in exchange for helping the men collect it" (50.6%).

3.10. FIGURE 5: WHERE RESPONDENTS WOULD PURCHASE A NEW STOVE



Respondents would generally purchase a new stove in Bog walk (38%), Spanish Town (31%) or Linstead (16%).

3.11. TABLE 6: LEVEL OF KNOWLEDGE RESPONDENTS HAVE ON ENERGY EFFICIENCY

	% Knowledgeable*
How much energy is used by different appliances in my home	4.2%
Energy efficiency or energy saving methods/ practices	27.8%
Energy saving appliances, electronics and lighting (e.g. florescent light bulbs)	27.6%
How to reduce energy use in my home or business	26.1%
How to reduce energy use in cooking	23.7%

*Valid percentages - does not include missing responses

Around three out of every ten respondents were knowledgeable about "Energy efficiency or energy saving methods/ practices" (27.8%), "Energy saving appliances, electronics and lighting (e.g. florescent

light bulbs)" (27.6%) and "How to reduce energy use in my home or business" (26.1%). Approximately two of every ten persons were also knowledgeable of "How to reduce energy use in cooking" (23.7%).

3.12. TABLE 7: LEVEL OF AGREEMENT WITH STATEMENTS RELATING TO ENERGY EFFICIENCY

	% Agree	Frequency (N)
Energy should be used efficiently	94.4%	272
Using energy efficiently will save money on light bills (reduce energy cost)	88.5%	254
Efficient use of energy is beneficial to the environment	89.1%	254
Efficient use of energy will help **Jamaica** develop	88.4%	252
I encourage friends, families and community members to use energy efficiently	83.6%	239
I welcome new plans/ programmes aimed at using energy more efficiently	89.9%	257
More should be done to promote energy efficiency	90.7%	255
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	71.1%	197
Saving money on electricity bills is very important	92.1%	258
Energy efficiency is **not** related to climate change	23.6%	64

*Valid percentages - does not include missing responses

The significant majority of respondents agreed that "Energy should be used efficiently" (94.4%), "Saving money on electricity bills is very important" (92.1%), "More should be done to promote energy efficiency" (90.7%), "I welcome new plans/ programmes aimed at using energy more efficiently" (89.9%), "Using energy efficiently will save money on light bills (reduce energy cost)" (88.5%) and that "Efficient use of energy will help Jamaica develop" (88.4%).

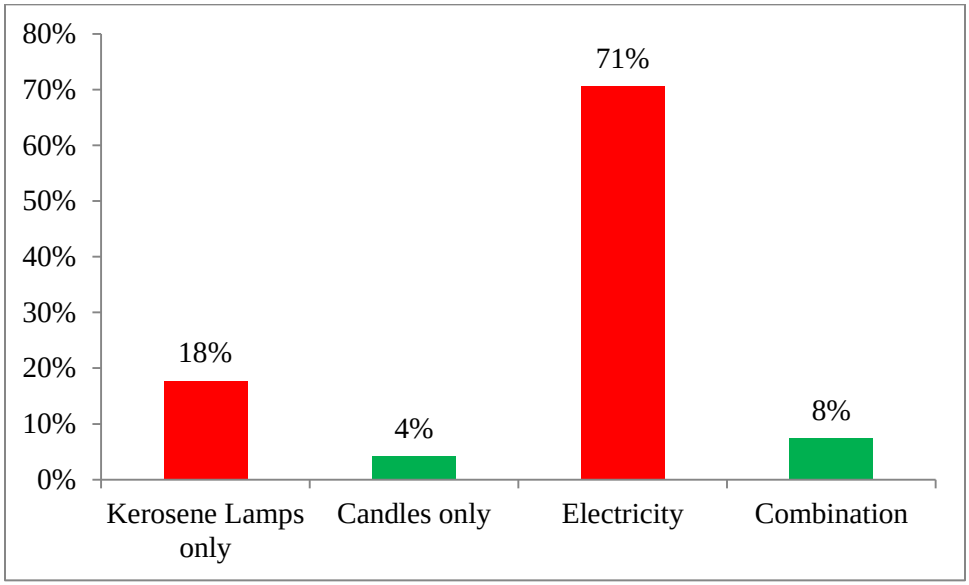
3.13. TABLE 8: PERCENTAGE DEPENDENCY ON EACH SOURCE OF ENERGY FOR LIGHTING

% of Day	**Rely on "Kerosene Lamps"**	**Rely on "Candles"**	**Rely on "Electric light bulbs"**
0 - 10	34.7%	45.6%	3.1%
11 -20	14.0%	21.1%	0.4%
21 - 30	8.0%	9.6%	4.4%
31 - 40	4.0%	1.8%	3.1%
41 - 50	12.0%	6.1%	8.0%
51 - 60	0.7%	4.4%	11.6%
61 - 70	4.0%	3.5%	4.4%
71 - 80	1.3%	0.9%	12.4%
81 - 90	5.3%		17.3%
91 - 100	16.0%	7.0%	35.1%

*Valid percentages - does not include missing responses

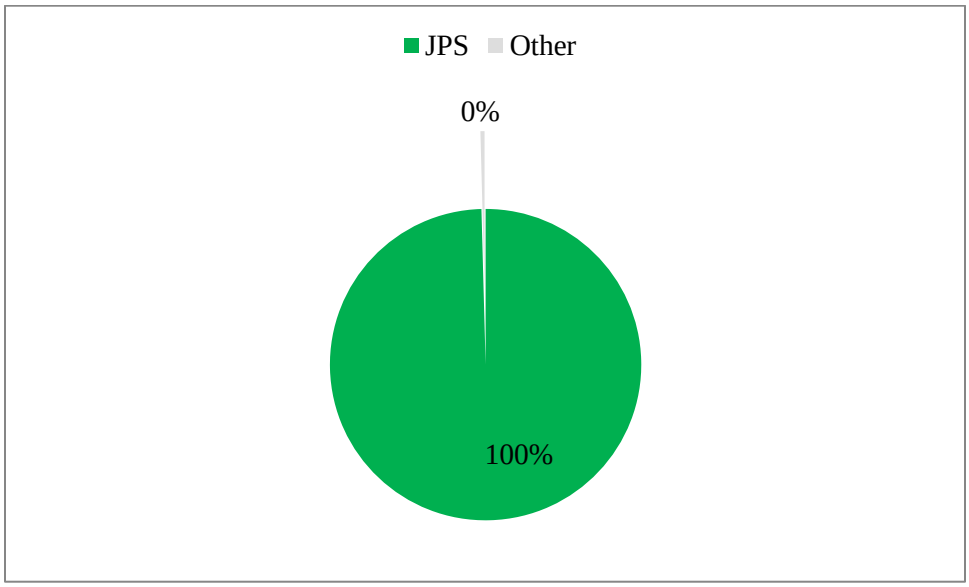
Respondents rely on "Kerosene lamps" and "candles" for lighting between "0 – 20" per cent of their day. "Electric light bulbs" were the main source of lighting and was used between "81 – 100" per cent of the day by the majority of community members.

3.14. FIGURE 6: RESPONDENTS' CURRENT SOURCE OF LIGHTING



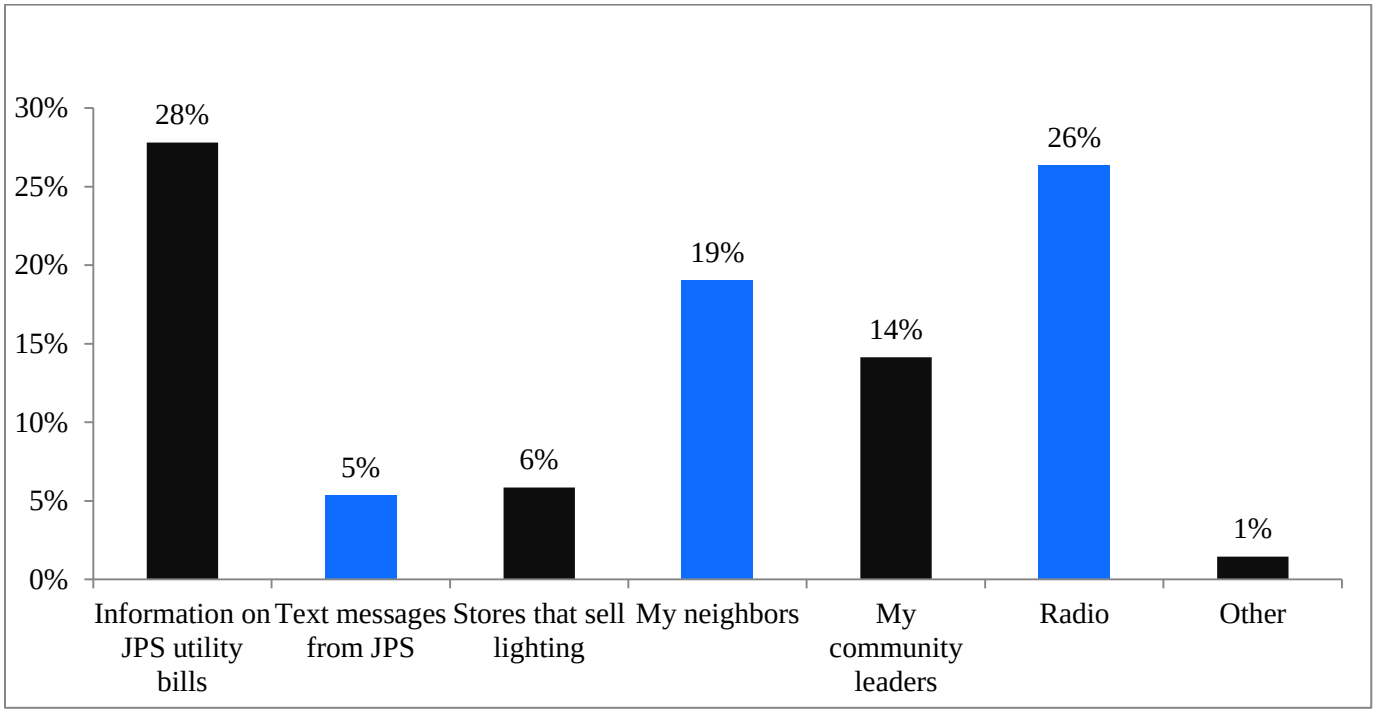
The majority of respondents used "Electricity" (71%) as their current source of lighting, followed by approximately two in every ten respondent who used "Kerosene Lamps only" (18%).

3.15. FIGURE 7: RESPONDENTS' SOURCE OF ELECTRICITY



JPS was the sole source of electricity being used by respondents.

3.16. FIGURE 8: SOURCES OF INFORMATION ON ENERGY EFFICIENT LIGHTING



Respondents' main source of information on energy came mostly from "Information on JPS utility bills" (28%), "Radio" (26%), "neighbours" (19%) and "community leaders" (14%).

3.17. TABLE 9: RATING THE TRUST WORTHINESS OF EACH SOURCE OF INFORMATION ON ENERGY EFFICIENT LIGHTING

Trustworthiness of each source	% High Priority (1 - 3)	Frequency (N)
Information in JPS utility bills	41.80%	69
Text messages from JPS	34.50%	39
Stores that sell lighting	37.10%	49
My neighbours	61.00%	83
My community leaders	59.40%	79
Radio	75.30%	113

*Valid percentages - does not include missing responses

The most trustworthy source of information on energy efficiency as indicated by respondents was the radio (75.3%), followed by "neighbours" (61%) and "community leaders (59.3%).

3.18. TABLE 10: RESPONDENTS' CURRENT USE OF ELECTRICITY

Electricity Needs	**% respondents***	Frequency (N)
Electricity to power household electronics (e.g. Radio, TV, Fan, Fridge etc.)	100.0%	226
Electricity for cooking	14.5%	17
Electricity for lighting	99.5%	220
Electricity for farming	26.2%	17
Electricity for Entertainment (e.g. parties)	64.8%	46
Electricity for running business	74.1%	43

*Valid percentages - does not include missing responses

The significant majority of respondents used electricity "to power household electronics" (100%), "lighting" (99.5%) and "running business" (74.1%).

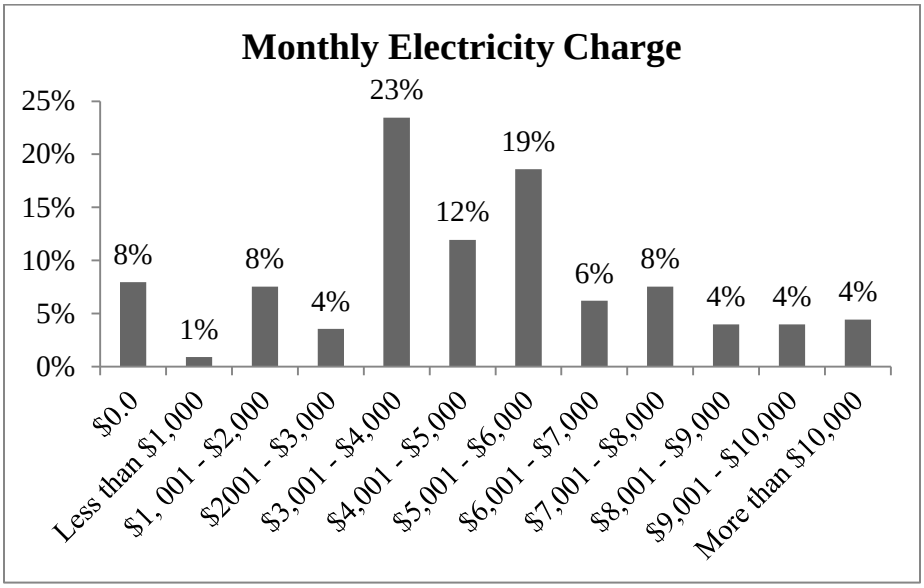
3.19. TABLE 11: RESPONDENTS' USE OF ELECTRONIC APPLIANCES

Electronic appliances	**% respondents***	**Frequency (N)**
Radio	96.5%	218
TV	99.1%	222
Refrigerator	92.7%	190
Desktop Computer	18.0%	20
Laptop Computer	33.1%	39
Mobile Phone	95.2%	199
Fan	91.8%	156
Washing Machine	39.1%	36
Blender	86.4%	114
Microwave	72.2%	57
Freezer	70.6%	36
Electric Stove	22.7%	5

*Valid percentages - does not include missing responses

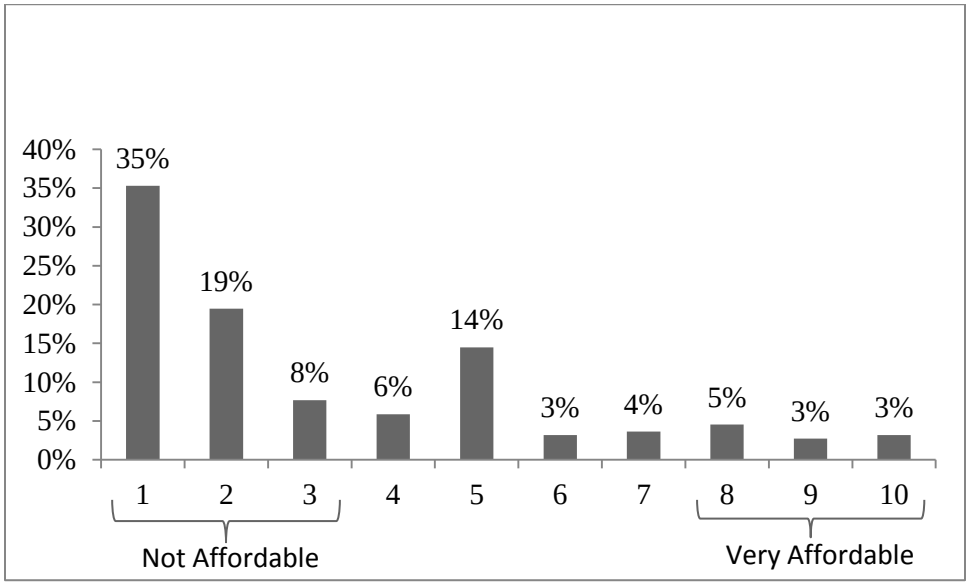
Approximately all respondents had a "TV" (99.1%), Radio (96.5%), Mobile Phone (95.2%) and "Fan" (91.8%)

3.20. FIGURE 9: AVERAGE MONTHLY ELECTRICITY CHARGES INCURRED



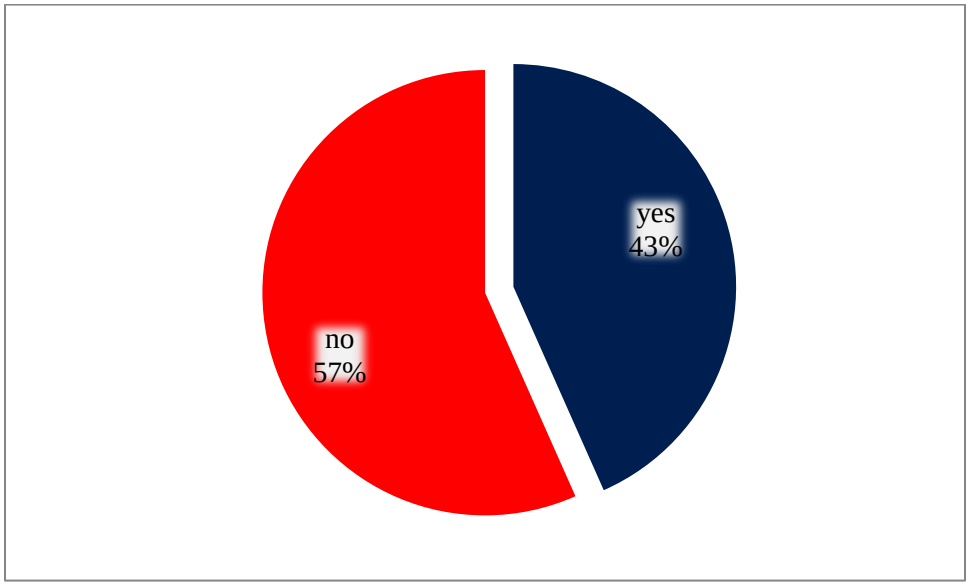
Most respondents had electricity charge between $3,001- $4,000 (23%) and $5,001-$ 6,000 (12%). Approximately one in every ten respondent also paid $4,001-$5,000.

3.21. FIGURE 10: RESPONDENTS RATING OF ELECTRICITY AFFORDABILITY



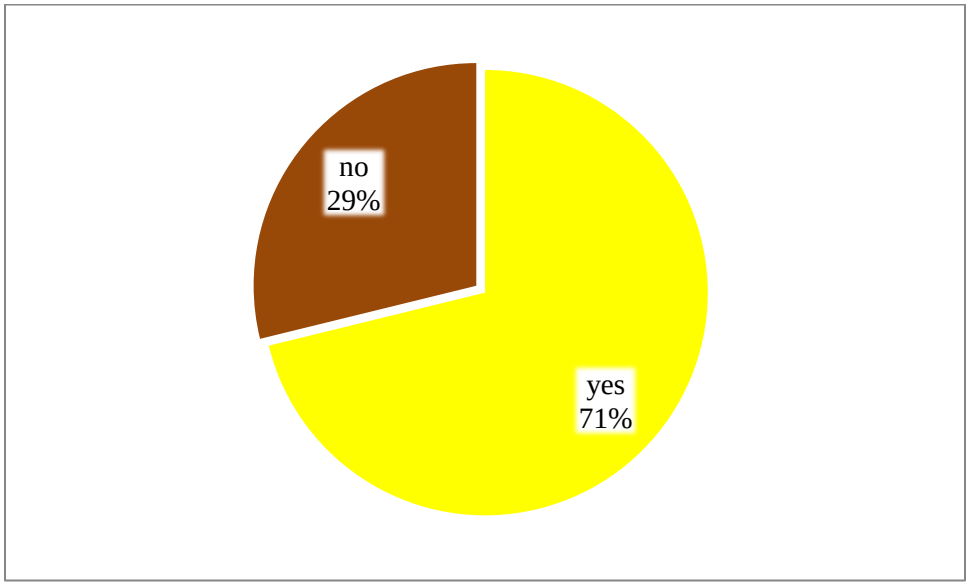
The majority of respondents' indicated that the cost of electricity was not affordable – approximately six out of every ten respondent (62%).

3.22. FIGURE 11: RECEIPT OF FLUORESCENT LIGHT BULBS FROM CUBAN LIGHT BULB PROJECT



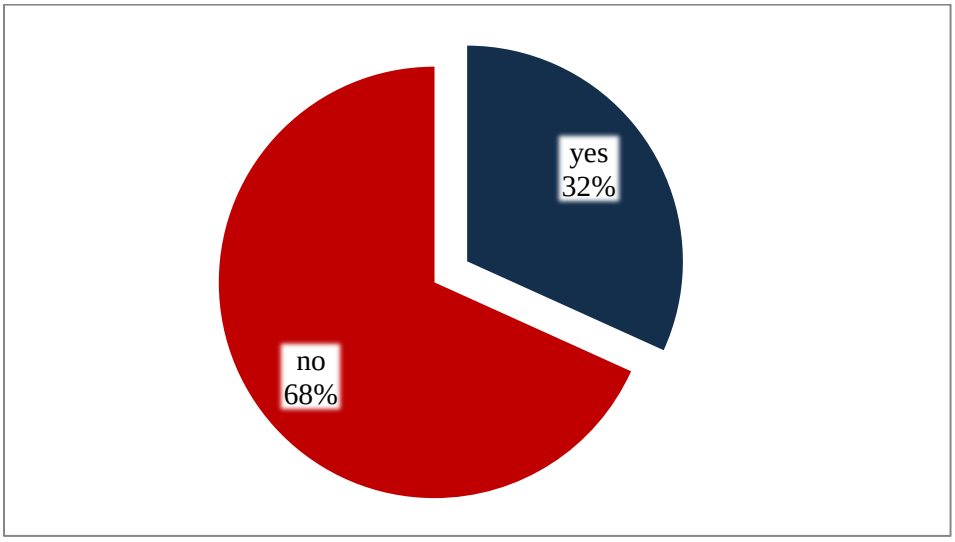
Only about four in every ten (43%) respondent had received fluorescent light bulbs in the Cuban light bulb project.

3.23. FIGURE 12: RESPONDENTS' VIEW ON IF FLUORESCENT LIGHT BULBS HAVE HELPED TO REDUCE MONTHLY ENERGY COST



The majority of respondents (71%) **who received** fluorescent light bulbs indicated that it helped to reduce their monthly cost of electricity.

3.24. FIGURE 13: DISTRIBUTION OF RESPONDENTS CURRENTLY USING FLUORESCENT LIGHT BULBS



Most respondents (68%) were not currently using fluorescent light bulbs in their homes.

3.25. TABLE 11: REASONS FOR PURCHASING CFLS INSTEAD OF INCANDESCENT BULBS

Reasons for purchasing CFLs	% High Priority (1 - 3)	Frequency (N)
CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	83.1%	59
CFLs last longer than incandescent bulbs	64.4%	29
CFLs provide softer light making it easier to read and for children to study at night	34.9%	15
The quality of lighting from CFLs is better than incandescent bulbs	41.0%	16
CFLs are more efficient than incandescent bulbs	53.7%	22
CFLs are safer than incandescent bulbs	25.0%	10
I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	25.0%	11
I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	26.1%	12
I will save on my electricity bill and have more money for transportation, including for children to go to school	12.2%	5

*Valid percentages - does not include missing responses

Respondents who were using CFLs indicated their top priority reasons for purchasing them were because "CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling" (83.1%), "CFLs last longer than incandescent bulbs" (64.4%) and because "CFLS are more efficient than incandescent bulbs" (53.7%).

3.26. TABLE 12: SOURCES WHERE COMMUNITY MEMBERS PURCHASED LIGHT BULBS

% of Light Bulbs purchased	Salesmen	Community Shop	Supermarket	Street side vendors
0 - 20	1	11	5	3
21 - 40		7	6	1
41 - 60	2	28	25	3
61 - 80		9	10	
81 - 100		28	63	3

Most community members purchased the majority of their light bulbs from "Supermarket" followed by those who bought from "Community Shops".

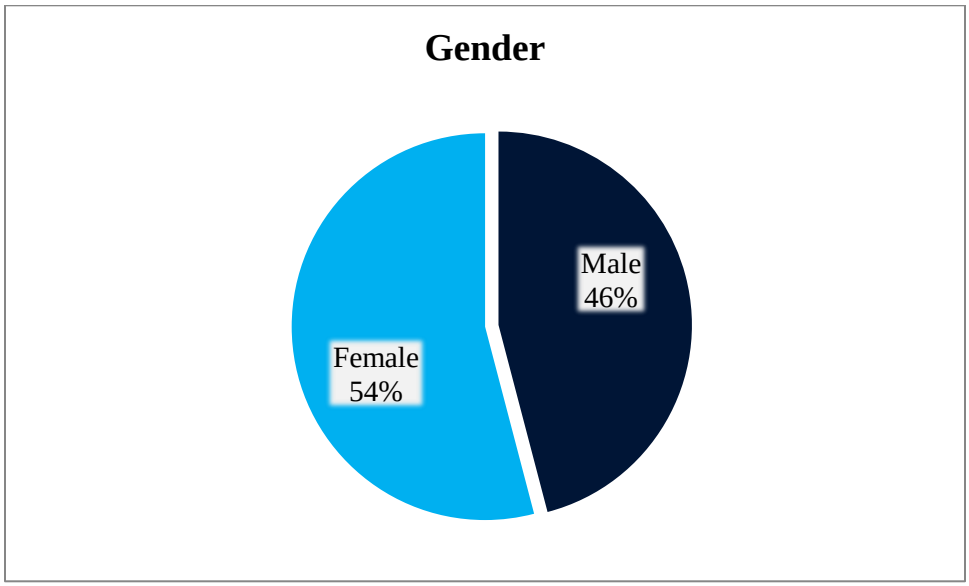
3.27. TABLE 13: MAIN REASONS FOR NOT USING FLUORESCENT LIGHT BULBS – HIGH PRIORITY

Reasons for not using CFLs	**% High Priority (1 - 3)**	**Frequency (N)**
They are too expensive – I can't afford it	82.50%	113
They are not available in the community	79.80%	71
They are available in nearby towns which requires money for transportation	50.60%	39
Some CFL bulbs blow out and are not good quality	31.40%	32
I do not know how to choose the good CFL bulbs	19.50%	17
The CFLs available now are not as good as those from the Cuban light bulb program	8.30%	7
I do not understand why CFLs are better than incandescent bulbs	36.50%	31
I do not know anyone who has saved money on their electricity bill after installing CFLs	31.60%	24

*Valid percentages - does not include missing responses

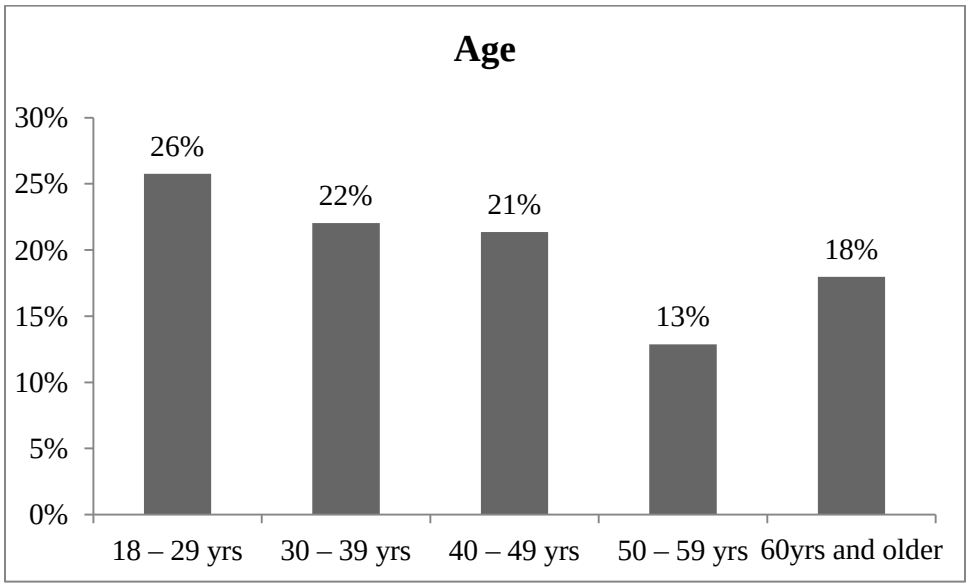
Respondents who were not using CFLs indicated their top priority reasons were because "They are too expensive – I can't afford it" (82.5%), "They are not available in the community" (79.8%) and the fact that "They are available in nearby towns which requires money for transportation" (50.6%).

3.28. FIGURE 14: GENDER OF RESPONDENTS



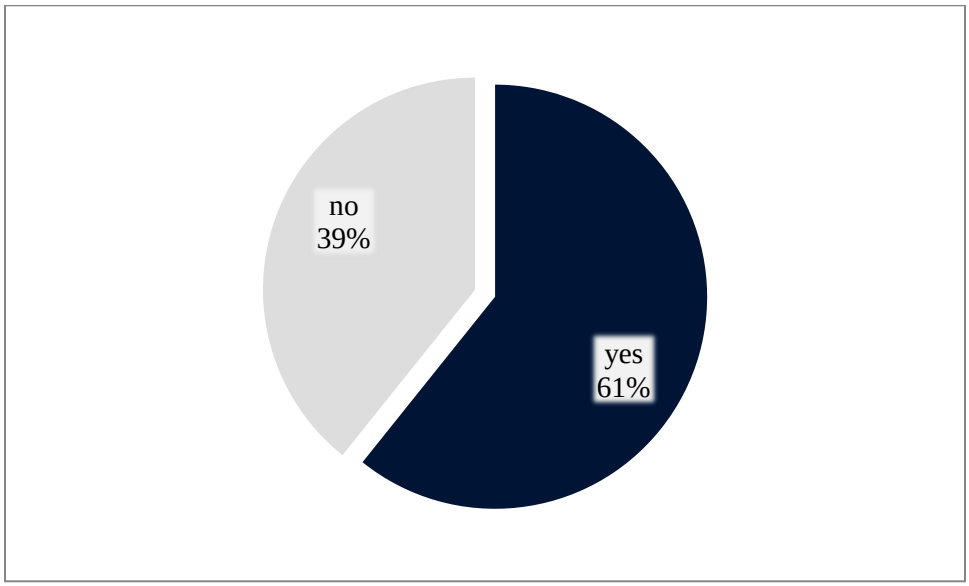
Females (54%) marginally outnumbered males in the sample.

3.29. FIGURE 15: AGE OF RESPONDENTS



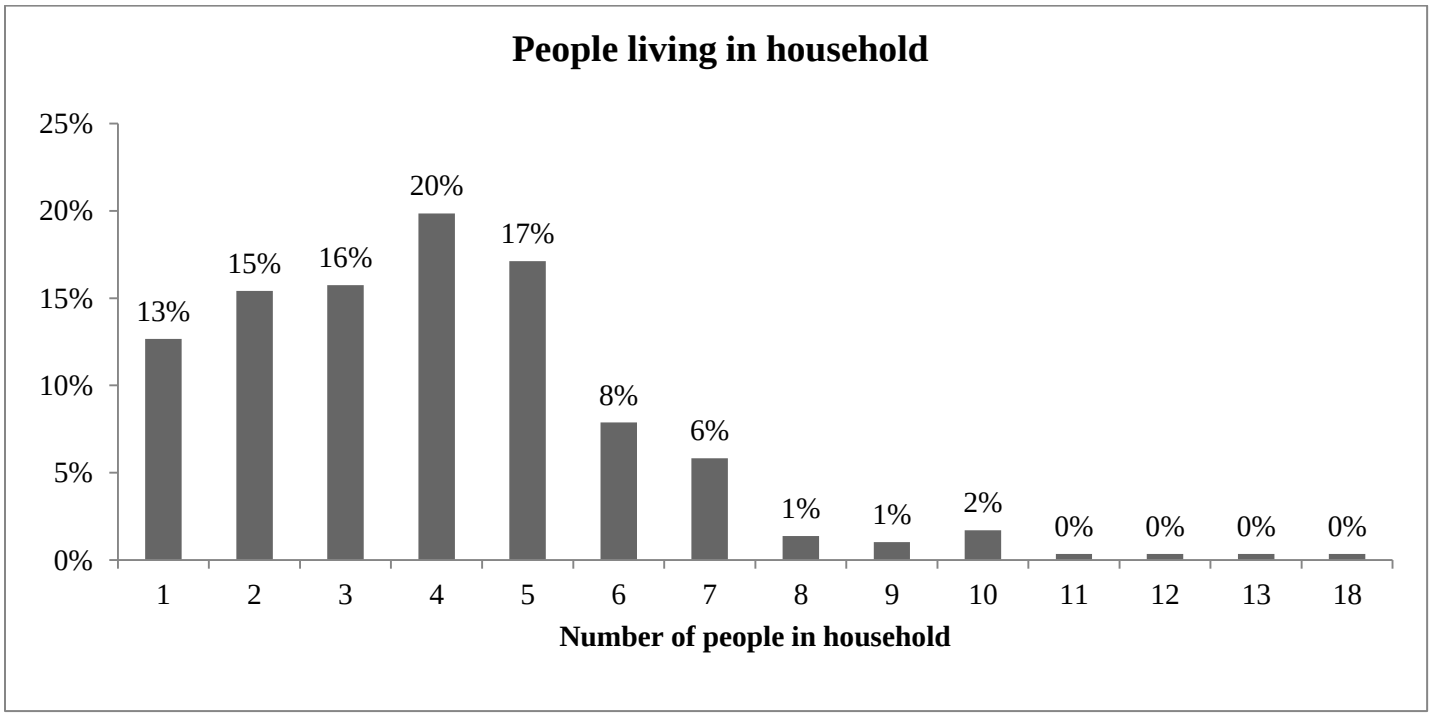
The age of respondents were fairly evenly distributed across different age groupings. Respondents between '18 - 29 yrs.', '30 – 39 yrs.' and '40 – 49 yrs.' represented 26%, 22% and 21% of the total sample respectively. Respondents between '50 – 59 yrs.' (13%) represented the smallest age grouping.

3.30. FIGURE 16: HEAD OF HOUSEHOLD/FAMILY



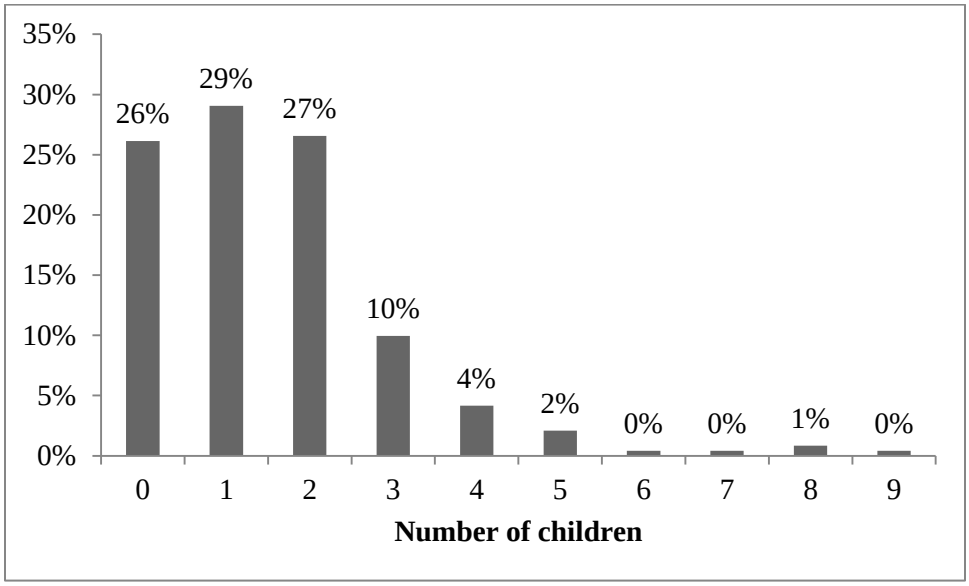
Approximately six (61%) in every ten respondent were the head of their household.

3.31. FIGURE 17: NUMBER OF PERSONS LIVING IN HOUSEHOLD



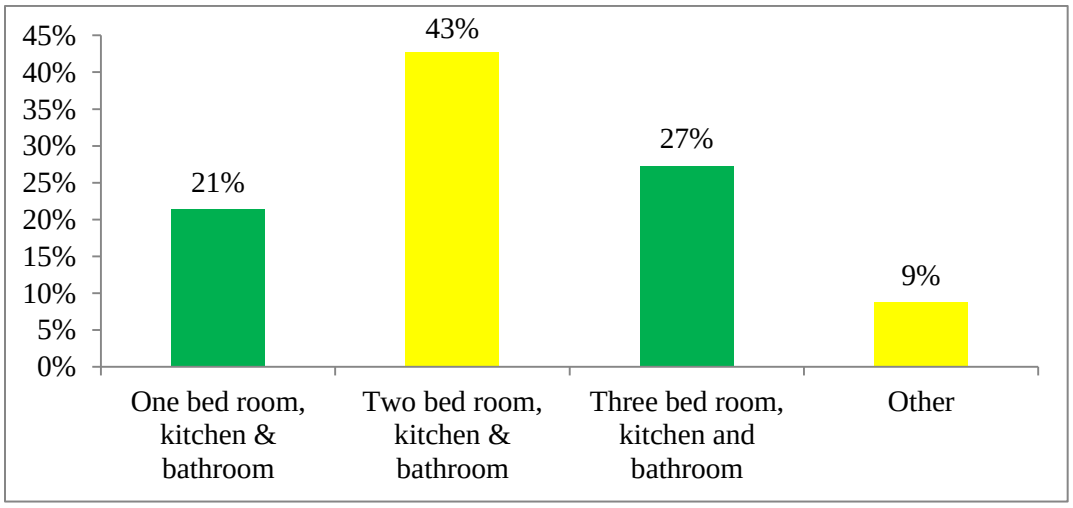
The majority of respondents had between one and five persons living in their household.

3.32. FIGURE 18: NUMBER OF CHILDREN UNDER THE AGE OF 18 LIVING IN HOUSEHOLD



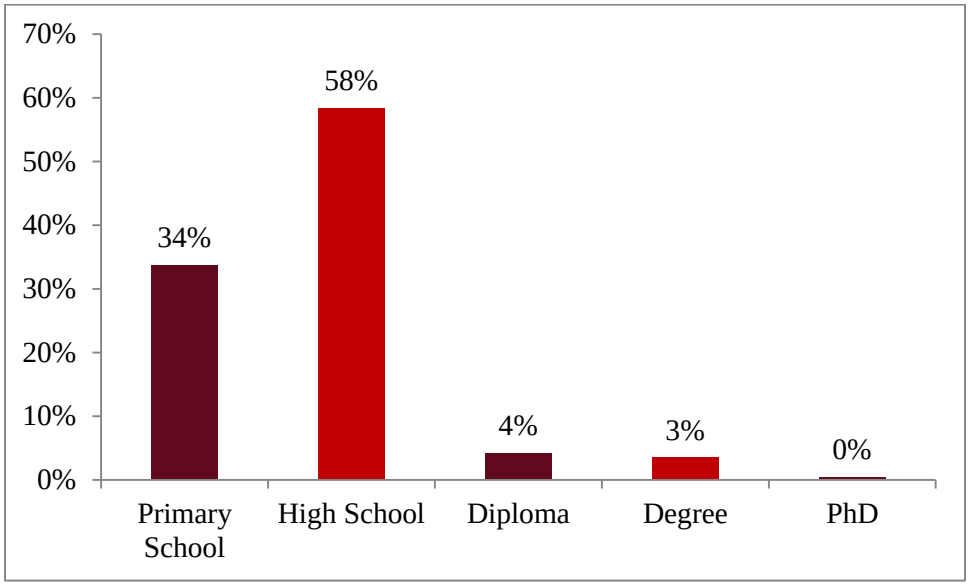
Most respondent had between one and two children (under 18 years) who were living in their household.

3.33. FIGURE 19: SIZE OF HOUSE



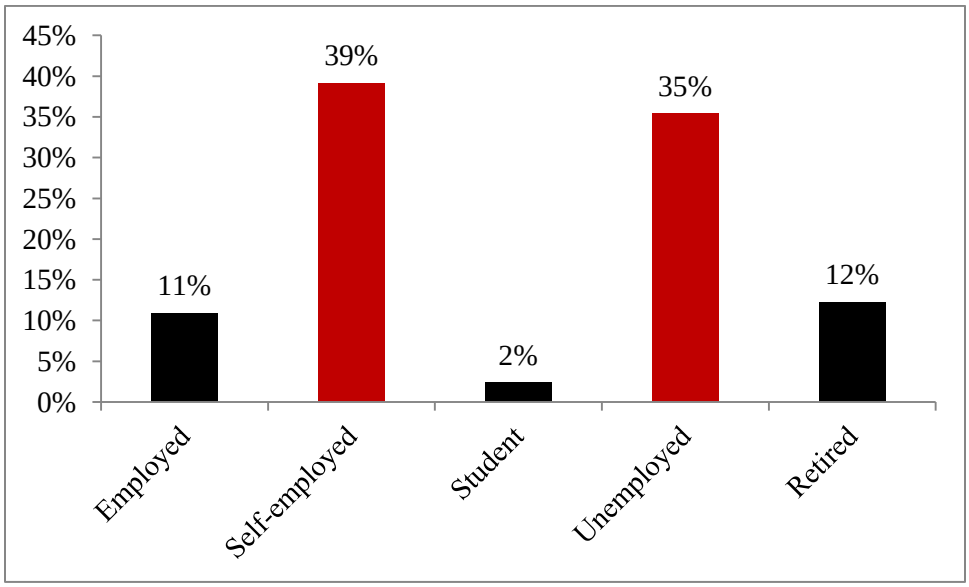
Most respondents had 'two bed room, kitchen & bathroom' (43%), followed by those with 'Three bed room, kitchen & bathroom' (27%) and those with 'one bedroom kitchen & bathroom' (21%).

3.34. FIGURE 20: HIGHEST LEVEL OF FORMAL EDUCATION COMPLETED



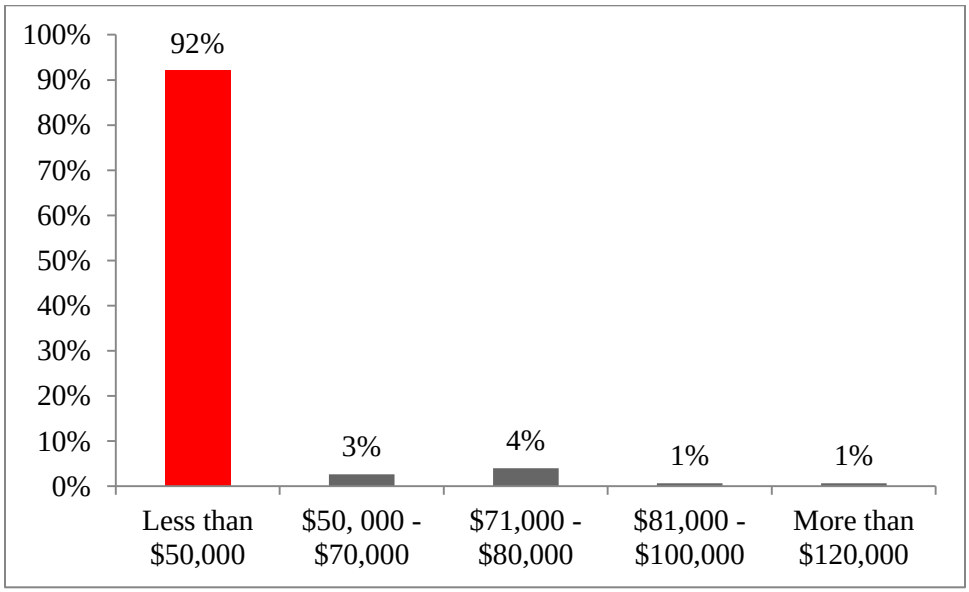
'High School' (58%) was the highest level of education for the majority of respondents followed by those who went to 'Primary School' (34%).

3.35. FIGURE 21: EMPLOYMENT STATUS



Most respondents were either 'Self-employed' (39%) or 'Unemployed' (35%). Approximately one in every ten respondent was either 'Employed' (11%) or 'Retired' (12%).

3.36. FIGURE 22: MONTHLY SALARY/EARNINGS



The significant majority of respondents earned less than $50,000 per month for salary.

4. CONTENT ANALYSIS & TRENDS

The respondents in the community of Content were mostly from the 18-29 and 30-39 age groups but despite their youthfulness, were not knowledgeable about the types of energy. Only three in every ten community members were knowledgeable of the types of renewable energy. It can be reasoned that the fact that the highest level of education for the majority of residents were high (58%) and primary (38%) school, this impacted their knowledge base about energy efficiency and renewable energy. The majority of residents were however aware that energy should be used efficiently (97.4%) and that using energy efficiently will reduce electricity cost. This indicates that residents were receptive to learn about energy use and how to reduce the cost of energy.

Residents were most trusting of information received from the radio (73.3%) and neighbours (61%) and as such we believe that these two sources (radio and community members) would be the most effective medium to target and educate residents about renewable energy and energy efficiency.

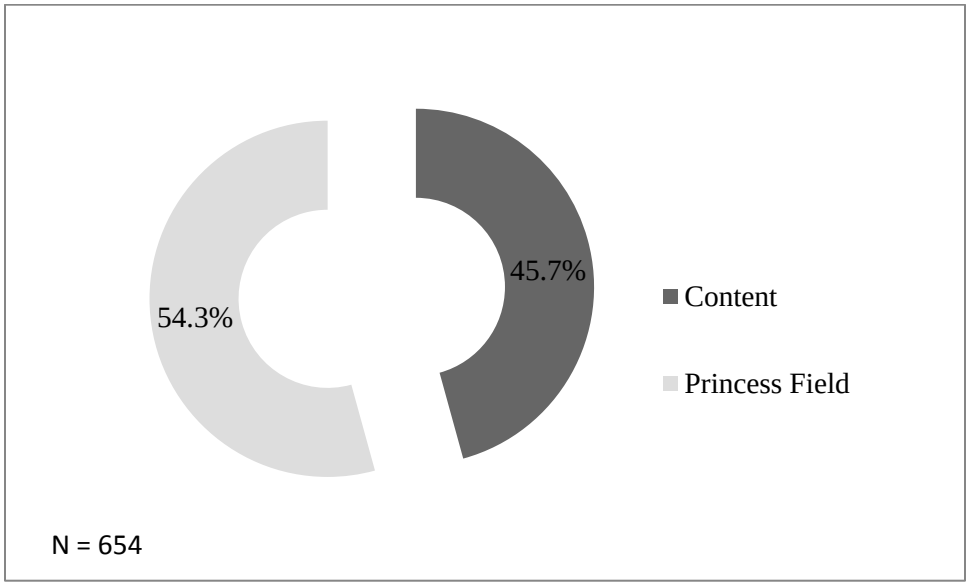
Gas and coal were used equally by community members for cooking and they mostly purchased these commodities from retailers in the community. Those who placed high priority on the use of gas did so

mostly because it was faster and easier than using coal. However, 97.1% of residents preferred coal because it was less expensive – more affordable. This affordability concern is aligned with the fact that most community members were either unemployed or earned less than 50,000 monthly (92%).

Electricity was the main source of lighting in the community and the majority of community members used electric light bulbs for lighting. Of note also was that only four in every ten respondent had received fluorescent light bulbs (CFLs) during Cuban Light Bulb project, and this may have impacted their current views of CFLs. Those who did not use CLFs indicated that they were too expensive, another concern arising out of the high unemployment levels found among community members and the monthly income earnings.

5. PRINCESSFIELD MAIN FINDINGS

5.1. FIGURE 1: PLACE OF INTERVIEW



5.2. TABLE 1: LEVEL OF KNOWLEDGE RESPONDENTS HAVE ON EACH TERM

	% knowledgeable*
Renewable energy	17.8%
Types of renewable energy	17.3%
Global warming	18.5%
Carbon emissions	16.5%
Climate change	23.0%

*Valid percentages - does not include missing responses

Approximately two in every ten (17.8%) respondent indicated that they were knowledgeable of "renewable energy". The same was true for the proportion of respondents who were knowledgeable about the "Types of renewable energy" (17.3%), "Global warming" (18.5%), "Carbon emissions" (16.5%) and "Climate change" (23.0%).

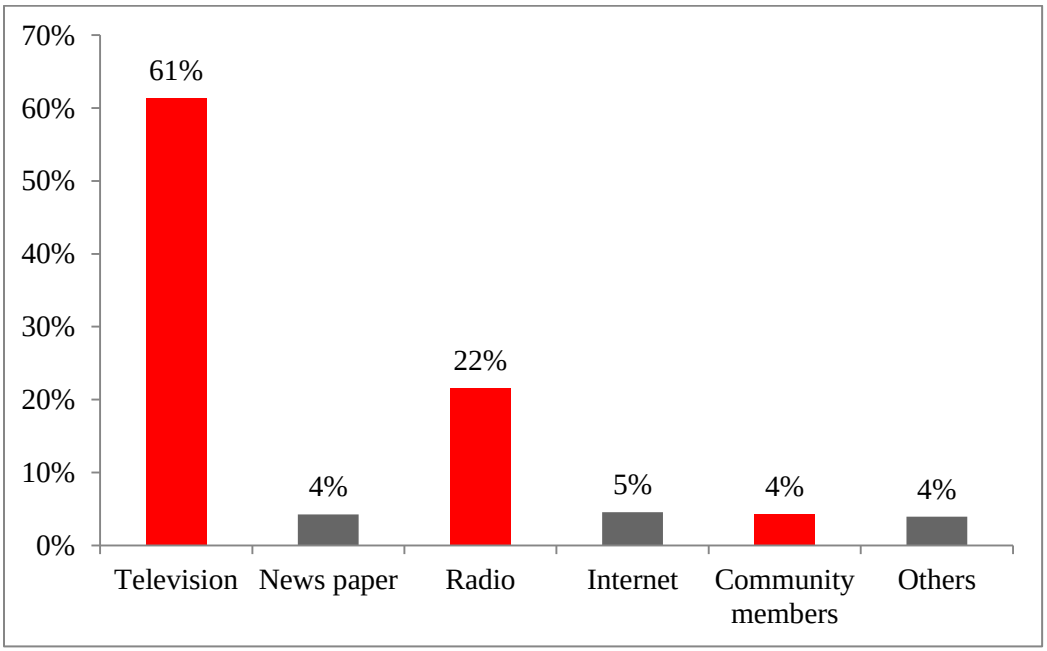
5.3. TABLE 2: LEVEL OF KNOWLEDGE RESPONDENTS HAVE ON TYPES OF RENEWABLE ENERGY

Types of Energy	% knowledgeable*
Hydroelectric	18.5%
Solar	28.1%
Wind	26.9%
Biomass	13.1%
Biogas	18.1%

*Valid percentages - does not include missing responses

Approximately three out of every ten respondent was knowledgeable about "wind energy" (26.9%) and "Solar energy" (28.1%). Knowledgeable of "Hydroelectricity" (18.5%), "Biomass" (13.1%) and "Biogas" (18.1%) were much lower among respondents.

5.4. FIGURE 2: MAIN SOURCES OF INFORMATION ABOUT RENEWABLE ENERGY



The majority (61%) of respondents' main source of information about renewable energy was "television", followed by radio (22%).

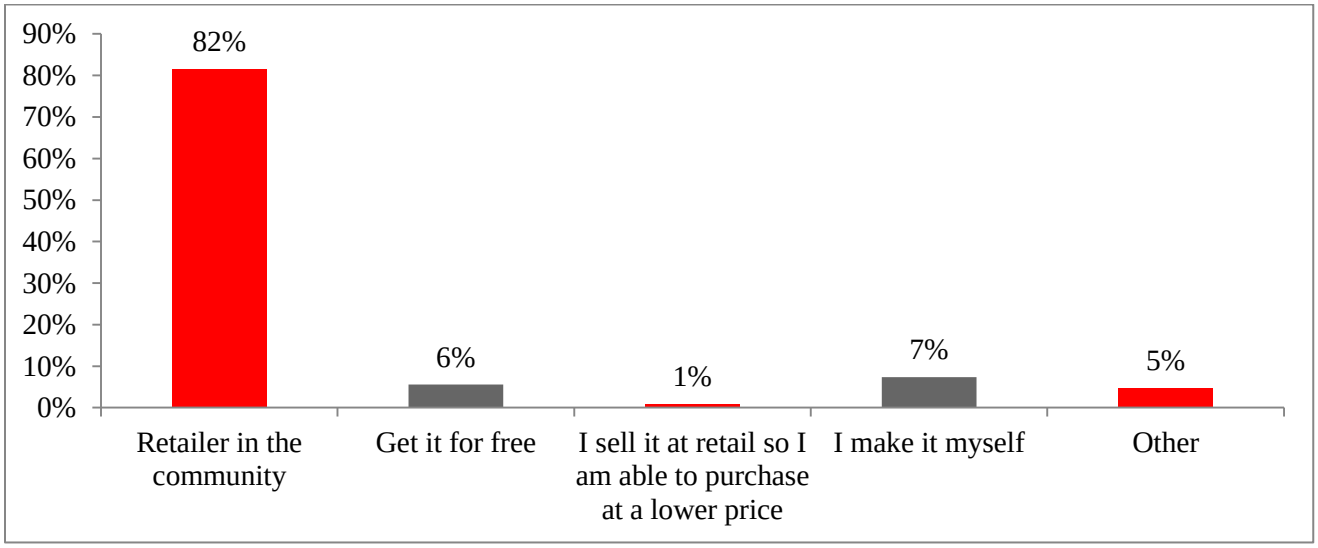
5.5. TABLE 3: MAIN FUEL SOURCES USED IN COOKING

Main fuel source use in cooking	% High Priority (1)*	Frequency (N)
Coal	25.90%	82
Gas	72.40%	239
Wood	7.60%	27

*Valid percentages - does not include missing responses

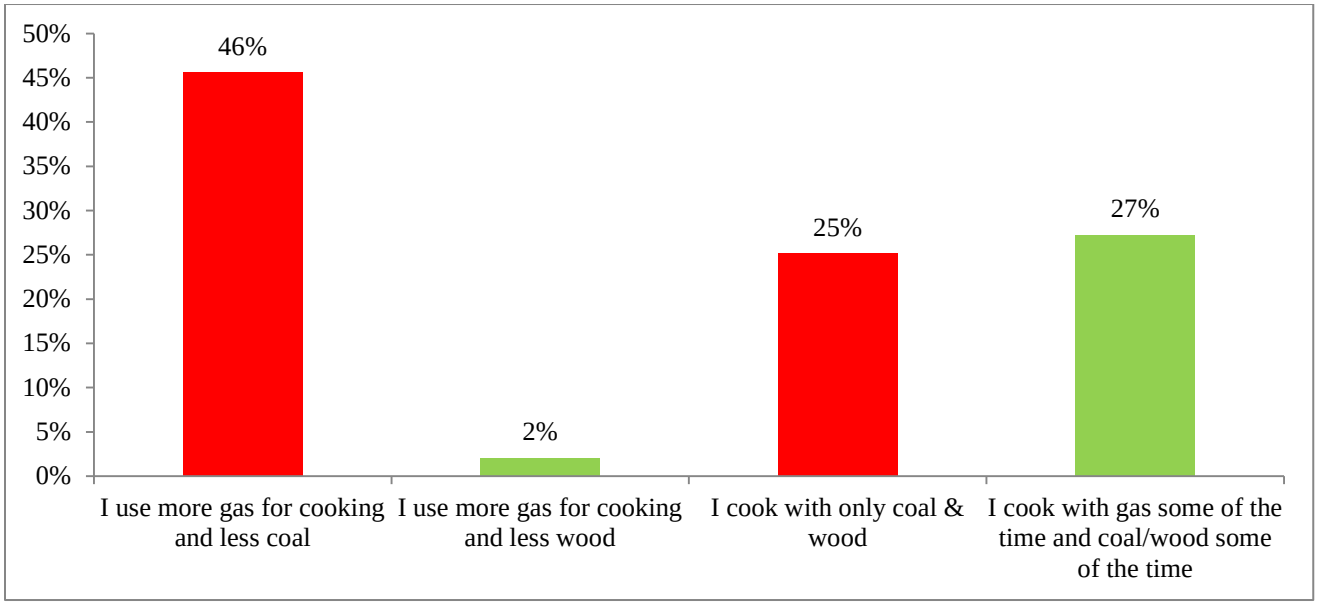
The majority of respondents placed highest priority on the use of 'Gas' (72.4%) as their main source of fuel for cooking.

5.6. FIGURE 3: SOURCES OF FUEL



The majority of community members in Princessfield sourced fuel from "Retailer in the community" (82%) or made it themselves (7%).

5.7. FIGURE 4: RESPONDENTS' METHOD OF COOKING



Approximately five out of every ten respondent indicated that they "use more gas for cooking and less coal" (47%), while almost three out of every ten respondent stated that they "cook with gas some of the time and coal/wood some of the time" (27%). Respondents who "cook with only wood" (25%) also accounted for a quarter of the total sample.

5.8. TABLE 4: RESPONDENTS' REASONS FOR PURCHASING COOKING GAS INSTEAD OF COAL OR WOOD - BASED ON PRIORITY

Reasons for purchasing gas instead of coal or wood (1- highest priority & 8 – lowest priority)	% High Priority (1 - 3)*	Frequency (N)
Cooking with gas is faster than cooking with coal/wood	94.0%	233
Cooking with gas is easier than cooking with coal/wood	96.2%	230
When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	72.4%	268
The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	9.2%	22
Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	17.5%	37
Some wood causes the food to taste bitter	5.5%	28
I am ashamed to use wood for cooking	2.3%	5
Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	7.8%	16

*Valid percentages - does not include missing responses

The top priority reasons respondents' identified for purchasing gas over coal/ wood was the fact that "Cooking with gas is faster than cooking with coal/wood", "Cooking with gas is easier than cooking with coal/wood" and that "When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood

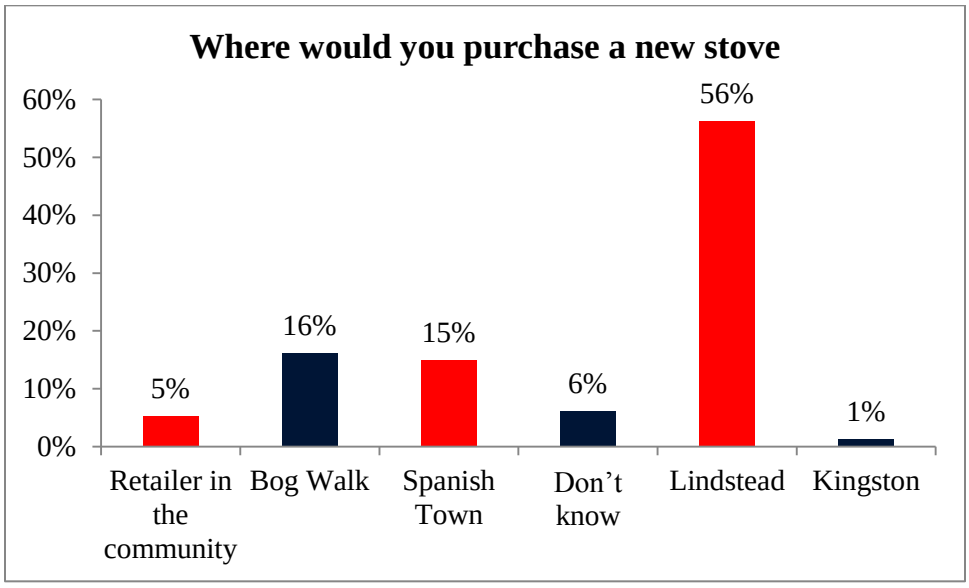
5.9. TABLE 5: REASONS FOR NOT PURCHASING COOKING GAS AND USING LESS COAL AND WOOD - BASED ON PRIORITY

Reasons why you do not cook more with gas and use less coal and wood	% High Priority (1 - 3)	Frequency (N)
Cooking with coal or wood costs less than cooking with gas	97.0%	96
We are able to get some coal/wood for free in exchange for helping the men collect it	50.0%	44
When purchasing gas, it must be bought in large quantities which we **cannot** afford	40.9%	38
Wood can be found everywhere for free	61.4%	54
The children help us collect wood which saves us time	9.1%	8
Cooking peas and tough meat requires too much gas	23.8%	19
Food cooked with some kinds of wood tastes better than food cooked with gas	27.4%	23
Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	6.1%	5

*Valid percentages - does not include missing responses

Respondents' top priority reasons for cooking more with coal & wood rather than gas was because "Cooking with coal or wood costs less than cooking with gas" (97.0%), "Wood can be found everywhere for free" (61.4%) and they "are able to get some coal/wood for free in exchange for helping the men collect it" (50.0%).

5.10. FIGURE 5: WHERE RESPONDENTS WOULD PURCHASE A NEW STOVE



Respondents would generally purchase a new stove in Linstead (56%), Bog walk (16%) or Spanish Town (15%).

5.11. TABLE 6: LEVEL OF KNOWLEDGE RESPONDENTS HAVE ON ENERGY EFFICIENCY

	% Knowledgeable	Frequency (N)
How much energy is used by different appliances in my home	4.0%	14
Energy efficiency or energy saving methods/ practices	29.2%	101
Energy saving appliances, electronics and lighting (e.g. florescent light bulbs)	31.7%	110
How to reduce energy use in my home or business	29.0%	100
How to reduce energy use in cooking	27.2%	94

*Valid percentages - does not include missing responses

Around three out of every ten respondents were knowledgeable about "Energy saving appliances, electronics and lighting (e.g. florescent light bulbs)" (31.7%),"Energy efficiency or energy saving methods/

practices" (29.2 %), "How to reduce energy use in my home or business" (29.0%) and "How to reduce energy use in cooking" (27.2%).

5.12. TABLE 7: LEVEL OF AGREEMENT WITH STATEMENTS RELATING TO ENERGY EFFICIENCY

	% Agree	Frequency (N)
Energy should be used efficiently	97.4%	336
Using energy efficiently will save money on light bills (reduce energy cost)	92.2%	318
Efficient use of energy is beneficial to the environment	89.8%	309
Efficient use of energy will help **Jamaica** develop	88.3%	303
I encourage friends, families and community members to use energy efficiently	86.8%	297
I welcome new plans/ programmes aimed at using energy more efficiently	90.6%	310
More should be done to promote energy efficiency	90.8%	306
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	83.1%	281
Saving money on electricity bills is very important	91.4%	310
Energy efficiency is **not** related to climate change	21.2%	71

*Valid percentages - does not include missing responses

The significant majority of respondents agreed that "Energy should be used efficiently" (97.4%), "Using energy efficiently will save money on light bills (reduce energy cost)" (92.2%),"Saving money on electricity bills is very important" (91.4%), "More should be done to promote energy efficiency" (90.8%), "I welcome new plans/ programmes aimed at using energy more efficiently" (90.6%), and that "Efficient use of energy is beneficial to the environment" (89.8%).

5.13. TABLE 8: PERCENTAGE DEPENDENCY ON EACH SOURCE OF ENERGY FOR LIGHTING

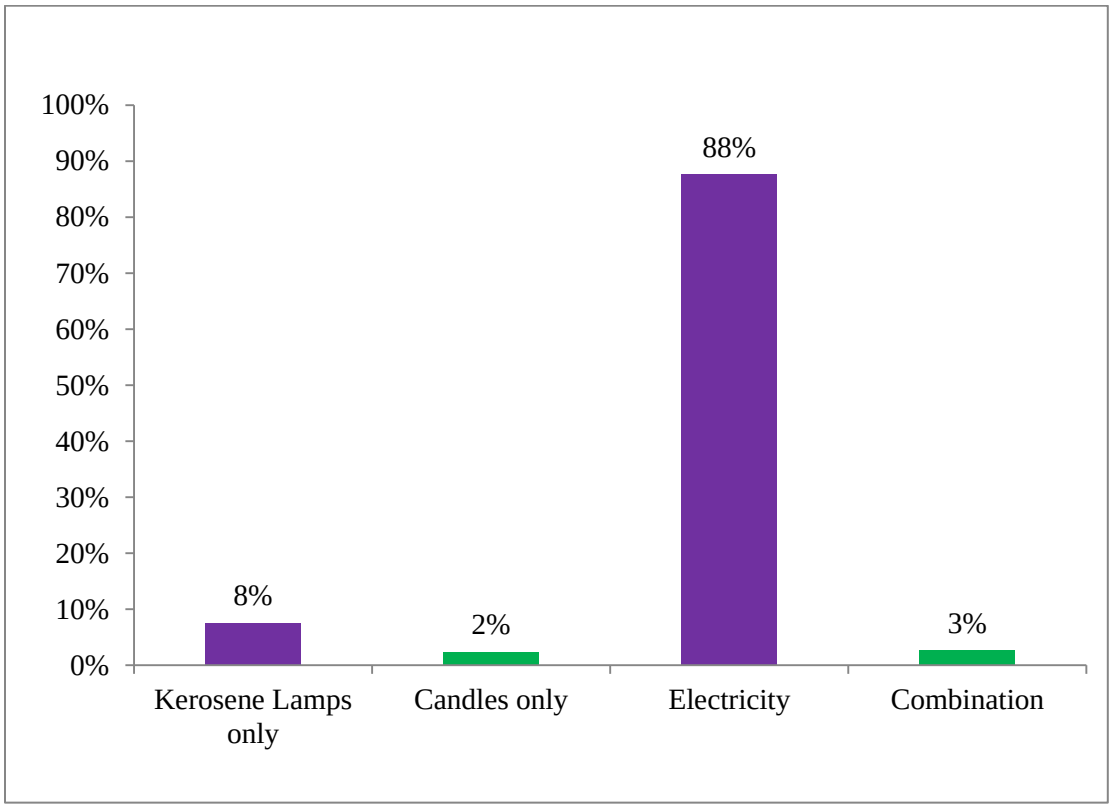
% of Day	Rely on "Kerosene Lamps"	Rely on "Candles"	Rely on "Electric light bulbs"
0 - 10	53%	58.80%	1%
11 -20	17.80%	20.30%	1.60%
21 - 30	3.30%	3.30%	1%
31 - 40	3.90%	4.60%	1.30%

41 - 50	9.40%	4.60%	6.20%
51 - 60	1.10%	1.30%	10.10%
61 - 70	0.60%		3.30%
71 - 80	2.80%	1.30%	21.3%
81 - 90	0.60%	3.90%	18.60%
91 - 100	7.20%	3.30%	34.60%

*Valid percentages - does not include missing responses

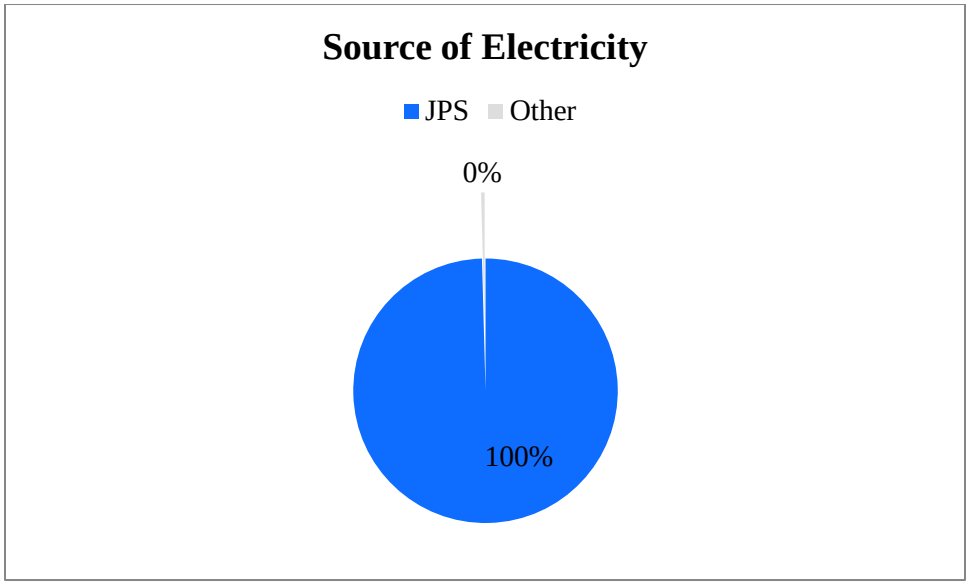
Respondents rely on "Kerosene lamps" and "candles" for lighting between "0 – 20" per cent of their day. "Electric light bulbs" were the main source of lighting and was used between "71 – 100" per cent of the day by the majority of community members.

5.14. FIGURE 6: RESPONDENTS' CURRENT SOURCE OF LIGHTING



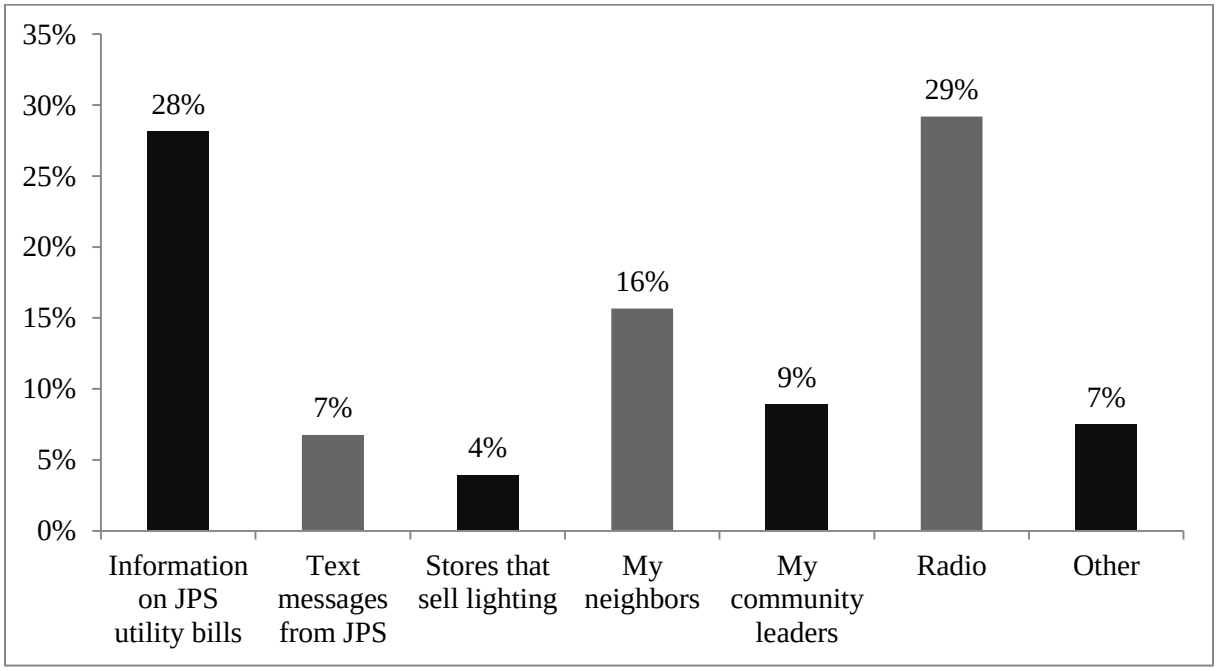
The majority of respondents used "Electricity" (88%) as their current source of lighting, followed by those who use "Kerosene Lamps only" (8%).

5.15. FIGURE 7: SOURCE OF ELECTRICITY



JPS was the sole source of electricity being used by respondents.

5.16. FIGURE 8: SOURCES OF INFORMATION ON ENERGY EFFICIENT LIGHTING



Respondents' main source of information on energy came mostly from "Information on JPS utility bills" (28%), "Radio" (29%) and "neighbours" (16%).

5.17. TABLE 9: RATING TRUST WORTHINESS OF EACH SOURCE OF INFORMATION ON ENERGY EFFICIENT LIGHTING

Trustworthiness of each source	% High Priority (1 - 3)*	Frequency (N)
Information in JPS utility bills	43.90%	97
Text messages from JPS	29.50%	56
Stores that sell lighting	19.50%	37
My neighbours	51.30%	96
My community leaders	61.50%	126
Radio	84.80%	207

*Valid percentages - does not include missing responses

The most trustworthy source of information on energy efficiency as indicated by respondents was the radio (84.8%), followed by community leaders (61.5%).and "neighbours" (51.3%).

5.18. TABLE 10: RESPONDENTS' CURRENT USE OF ELECTRICITY

Electricity Needs	**% respondents***	Frequency (N)
Electricity to power household electronics (e.g. Radio, TV, Fan, Fridge etc.)	99.7%	306
Electricity for cooking	8.9%	20
Electricity for lighting	100.0%	296
Electricity for farming	49.4%	38
Electricity for Entertainment (e.g. parties)	67.3%	33
Electricity for running business	100.0%	27

*Valid percentages - does not include missing responses

The significant majority of respondents used electricity "to power household electronics" (99.7%), "lighting" (100%) and "running business" (100%).

5.19. TABLE 11: RESPONDENTS' USE OF ELECTRONIC APPLIANCES

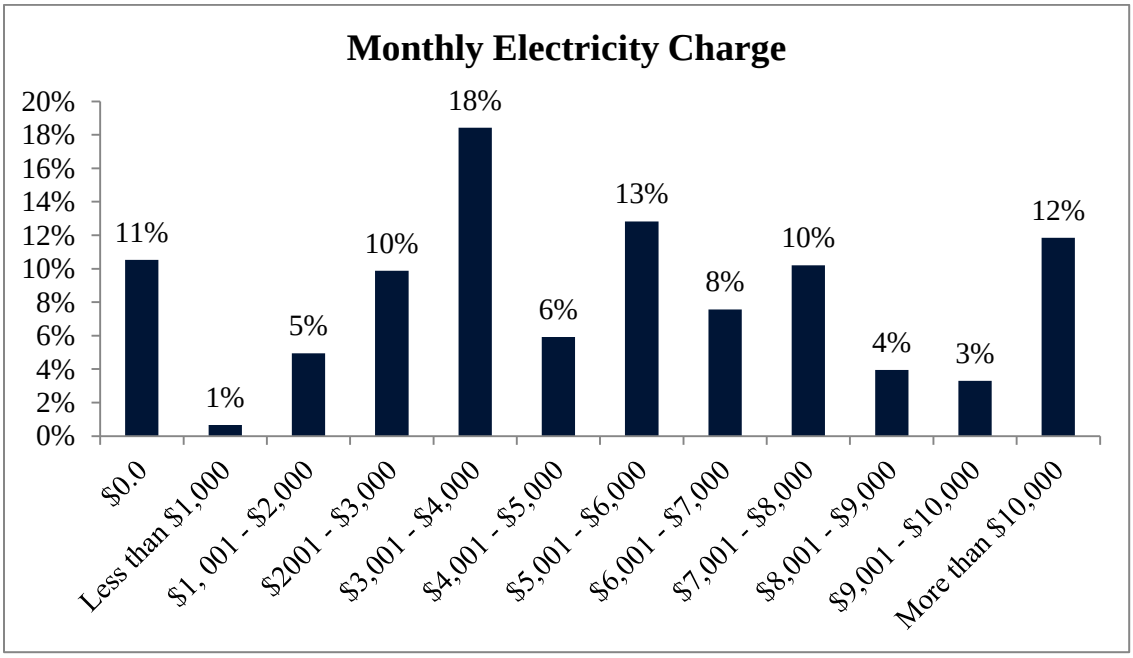
Electronic appliances	**% respondents***	Frequency (N)
Radio	96.3%	288
TV	99.3%	300
Refrigerator	85.3%	243

Desktop Computer	12.1%	27
Laptop Computer	23.9%	56
Mobile Phone	99.0%	293
Fan	95.0%	248
Washing Machine	54.5%	84
Blender	89.8%	150
Microwave	84.4%	92
Freezer	77.5%	31
Electric Stove	71.4%	10

*Valid percentages - does not include missing responses

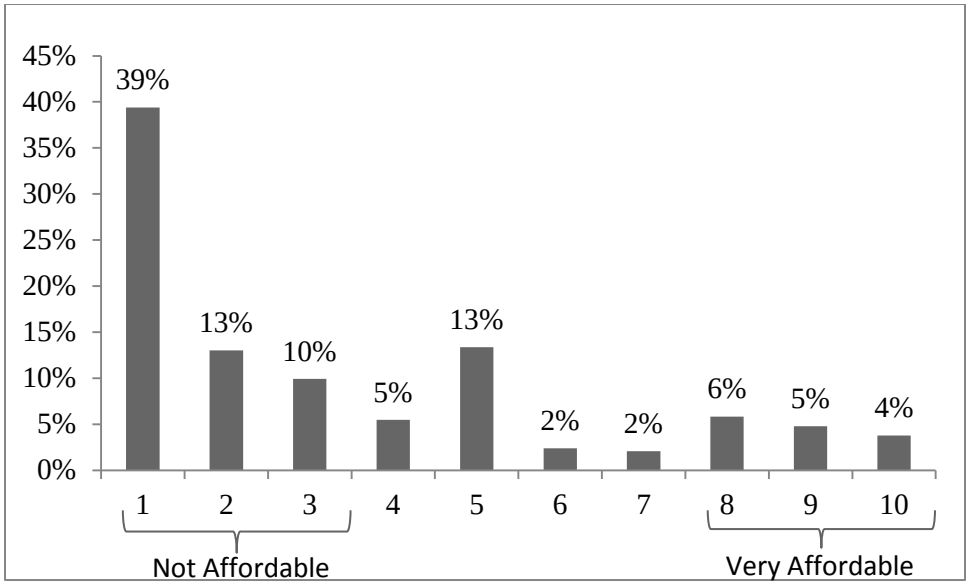
Approximately all respondents had a "TV" (99.3%), "Mobile Phone" (99.0%), "Radio" (96.3%), and "Fan" (95%). Many also had "Blender" (89.8%), "Refrigerator" (85.3%) and "Microwave" (84.4%).

5.20. FIGURE 9: MONTHLY ELECTRICITY CHARGES INCURRED



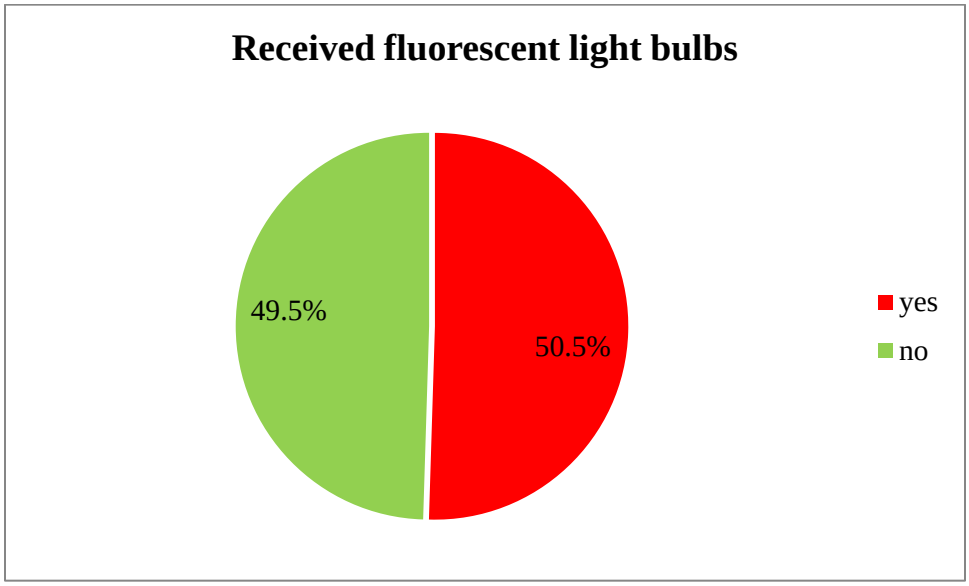
Most respondents had electricity charge between $3,001- $4,000 (18%) and $5,001-$ 6,000 (13%). Approximately one in every ten respondent also paid more than $10,000.

5.21. FIGURE 10: AFFORDABILITY OF ELECTRICITY



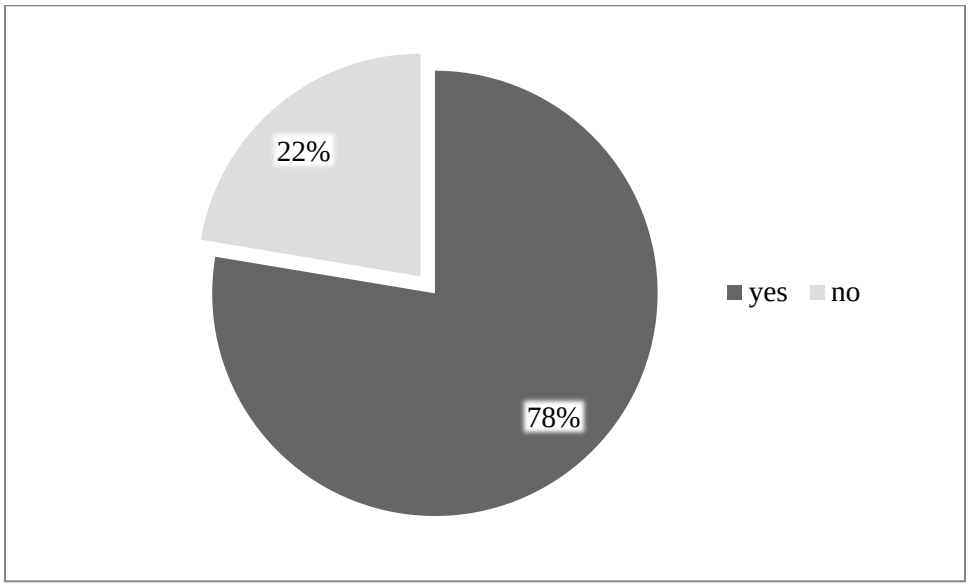
The majority of respondents' indicated that the cost of electricity was not affordable – approximately six out of every ten respondent (62%).

5.22. FIGURE 11: RECEIPT OF FLUORESCENT LIGHT BULBS FROM CUBAN LIGHT BULB PROJECT



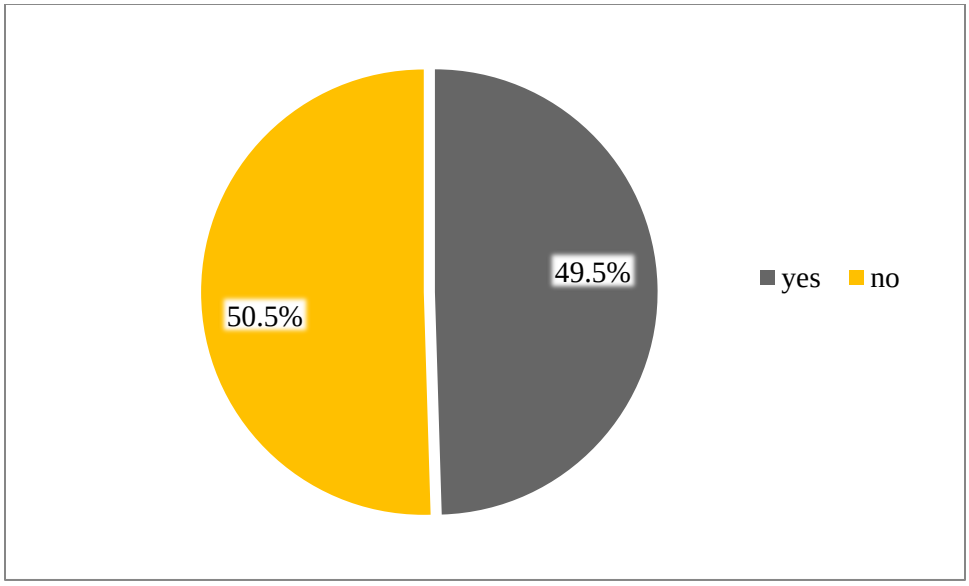
Half of the respondents had received fluorescent light bulbs in the Cuban light bulb project (50.5%)

5.23. FIGURE 12: DID FLUORESCENT LIGHT BULBS HELP REDUCE MONTHLY ENERGY COST



The majority of respondents (78%) who received fluorescent light bulbs indicated that it helped to reduce their monthly cost of electricity.

5.24. FIGURE 13: CURRENTLY USING FLUORESCENT LIGHT BULBS



Approximately half of the respondents were not currently using fluorescent light bulbs in their homes (50.5%)

5.25. TABLE 11: REASONS FOR PURCHASING CFLS INSTEAD OF INCANDESCENT BULBS

Reasons for purchasing CFLs	% High Priority (1 - 3)*	Frequency (N)
CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	78.6%	121
CFLs last longer than incandescent bulbs	77.6%	114
CFLs provide softer light making it easier to read and for children to study at night	38.7%	55
The quality of lighting from CFLs is better than incandescent bulbs	36.5%	50
CFLS are more efficient than incandescent bulbs	44.0%	59
CFLS are safer than incandescent bulbs	11.2%	15
I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	12.9%	18
I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	10.5%	15
I will save on my electricity bill and have more money for transportation, including for children to go to school	10.9%	15

*Valid percentages - does not include missing responses

Respondents who were using CFLs indicated their top priority reasons for purchasing them were because "CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling" (78.6%), "CFLs last longer than incandescent bulbs" (77.6%) and because "CFLS are more efficient than incandescent bulbs" (44%).

5.26. TABLE 12: SOURCES WHERE COMMUNITY MEMBERS PURCHASED LIGHT BULBS

% of Light Bulbs purchased	Salesmen	Community Shop	Supermarket	Street side vendors
0 - 20	25	19	11	12
21 - 40	2	2	5	4
41 - 60	2	29	27	1
61 - 80	1	7	18	
81 - 100	3	61	63	3

Most community members purchased the majority of their light bulbs from "Community Shops" followed by those who bought from "Supermarket".

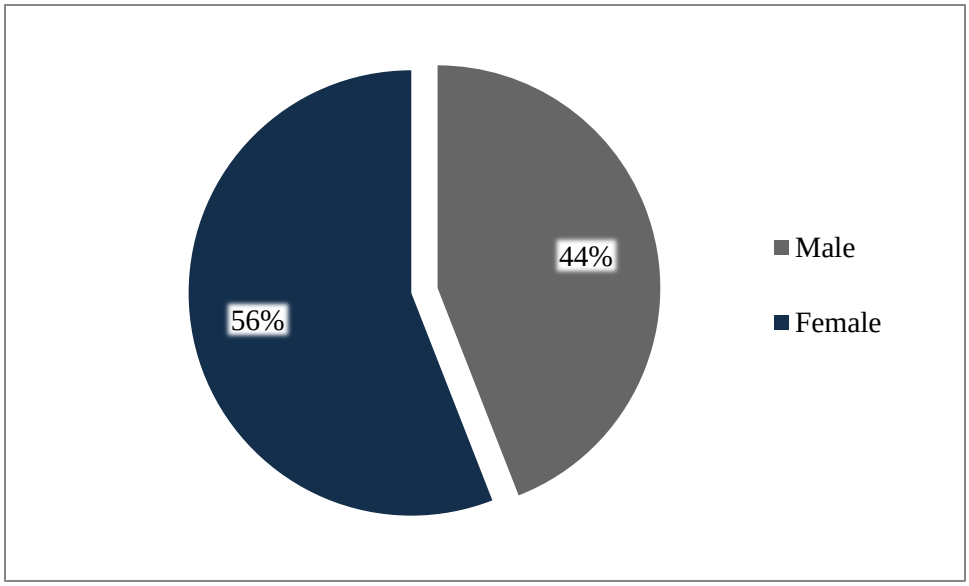
5.27. TABLE 13: MAIN REASONS FOR NOT USING FLUORESCENT LIGHT BULBS – BASED ON PRIORITY

Reasons for not using CFLs	% High Priority (1 - 3)*	Frequency (N)
They are too expensive – I can't afford it	83.90%	115
They are not available in the community	86.20%	112
They are available in nearby towns which requires money for transportation	66.70%	86
Some CFL bulbs blow out and are not good quality	18.20%	22
I do not know how to choose the good CFL bulbs	11.90%	14
The CFLs available now are not as good as those from the Cuban light bulb program	11.50%	14
I do not understand why CFLs are better than incandescent bulbs	10.80%	13
I do not know anyone who has saved money on their electricity bill after installing CFLs	14.90%	18

*Valid percentages - does not include missing responses

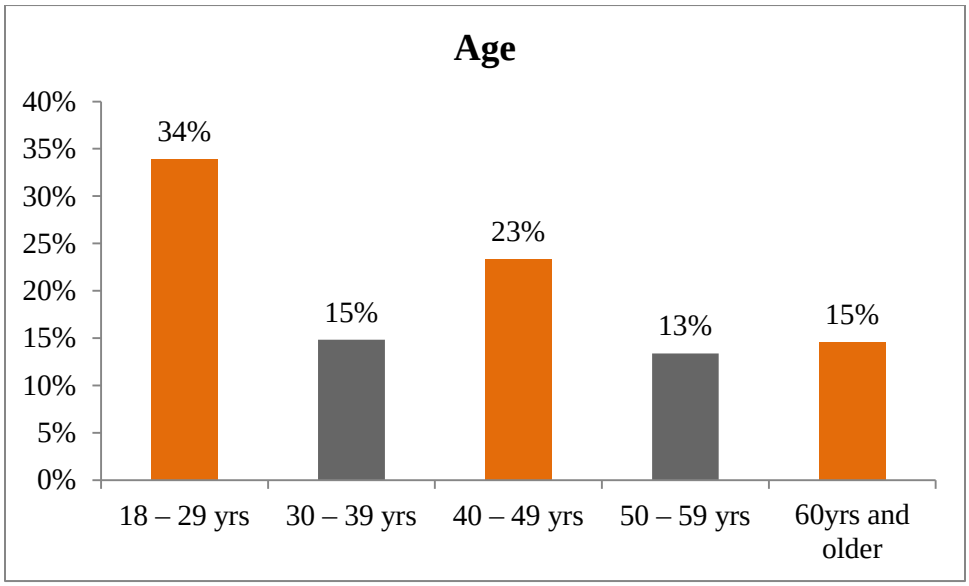
Respondents who were not using CFLs indicated their top priority reasons were because "They are not available in the community" (86.2%) and the fact that "They are too expensive – I can't afford it" (83.9%).

5.28. FIGURE 14: GENDER OF RESPONDENTS



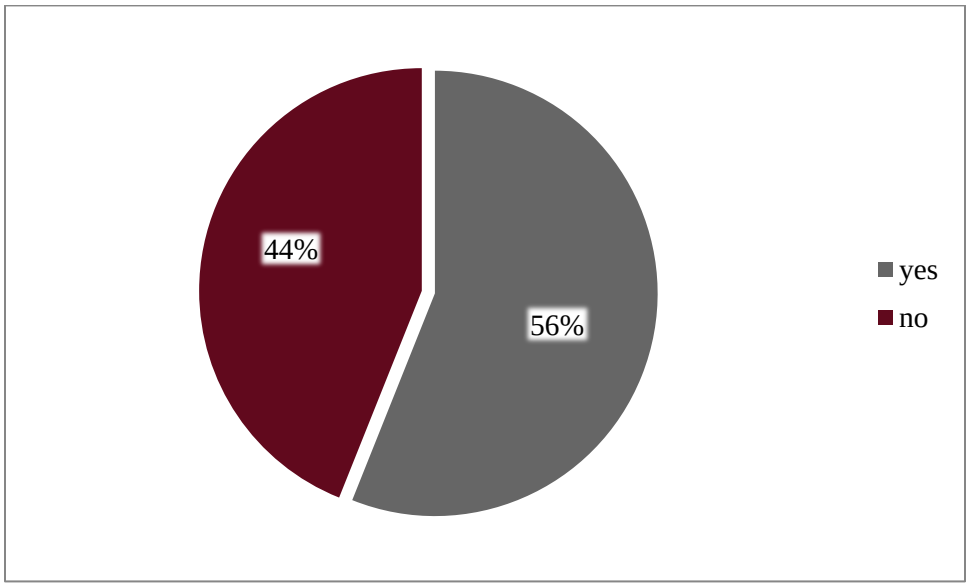
Females (56%) marginally outnumbered males in the sample.

5.29. FIGURE 15: AGE OF RESPONDENTS



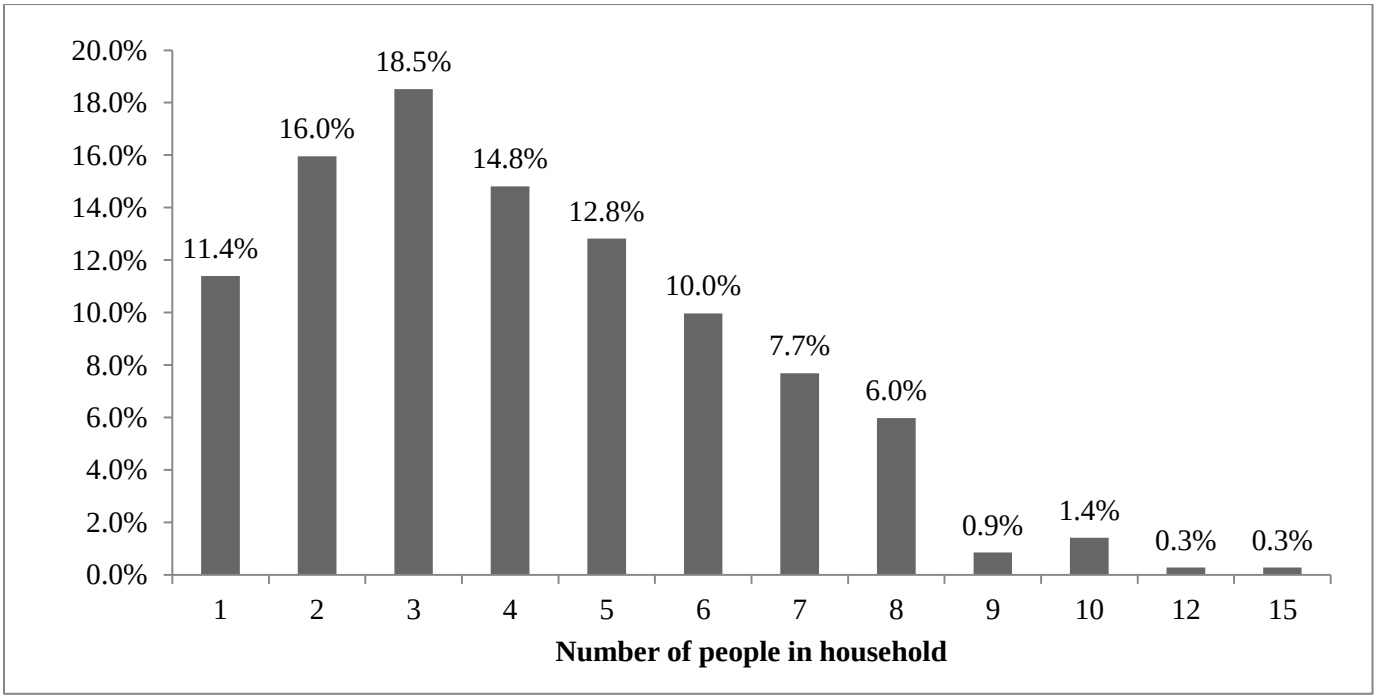
The age of respondents varied with the majority of respondents between '18 - 29 yrs', followed by the '40 – 49 yrs' group, representing 34% and 23% of the total sample respectively. Respondents between '30-39 yrs' (15%) and '50 – 59 yrs' (13%) represented the smallest age groupings.

5.30. FIGURE 16: HEAD OF HOUSEHOLD/FAMILY



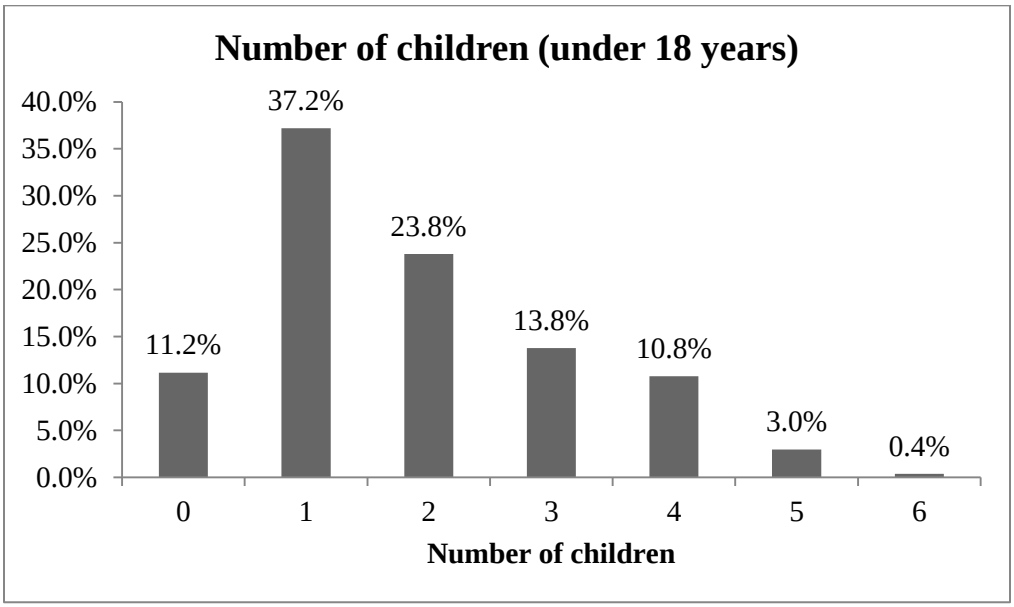
Approximately six (56%) in every ten respondent were the head of their household/ family.

5.31. FIGURE 17: NUMBER OF PERSONS LIVING IN HOUSEHOLD



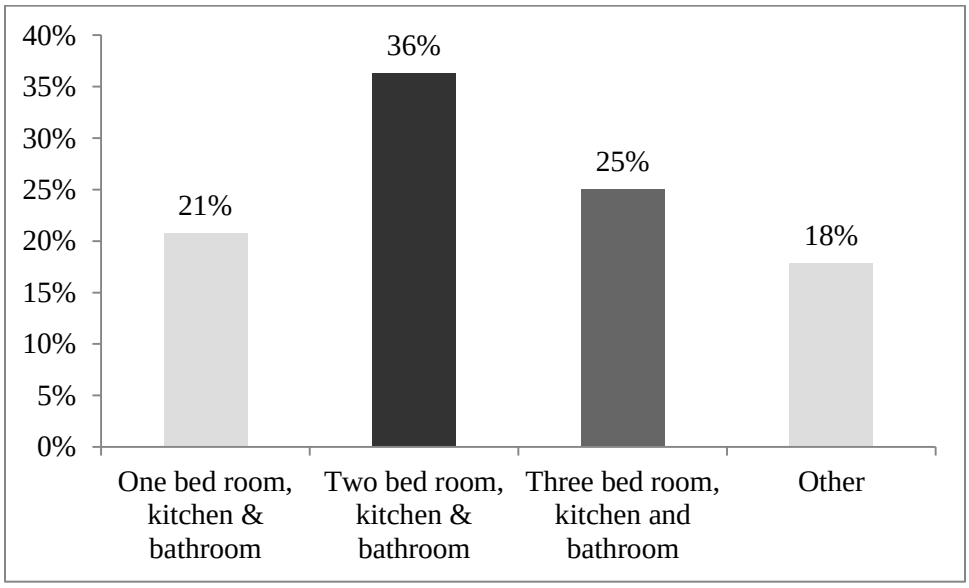
The majority of respondents had between one and five people living in their household (73.5%).

5.32. FIGURE 18: NUMBER OF CHILDREN UNDER THE AGE OF 18 LIVING IN HOUSEHOLD



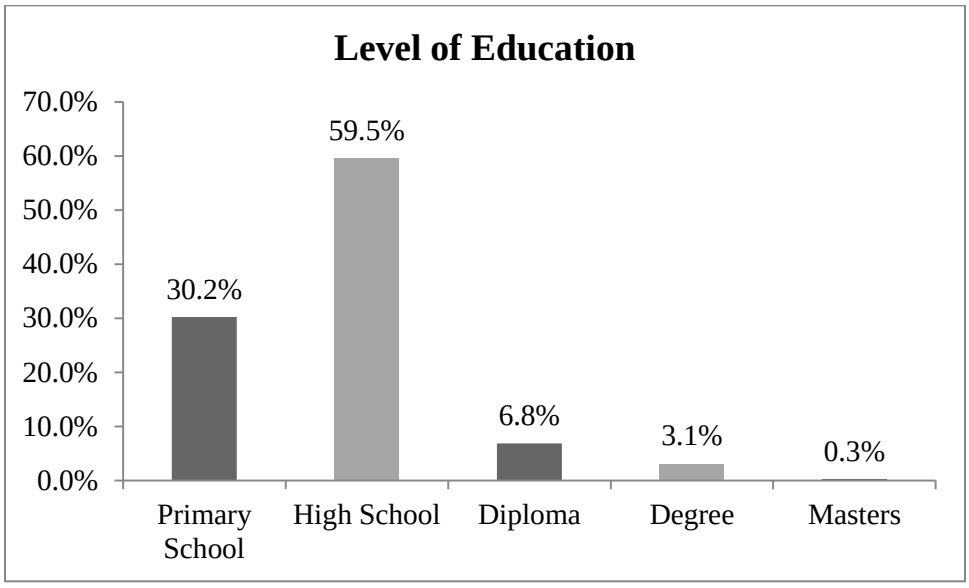
Most respondent had between one and two children (under 18 years) who were living in their household.

5.33. FIGURE 19: SIZE OF RESPONDENTS' HOUSE



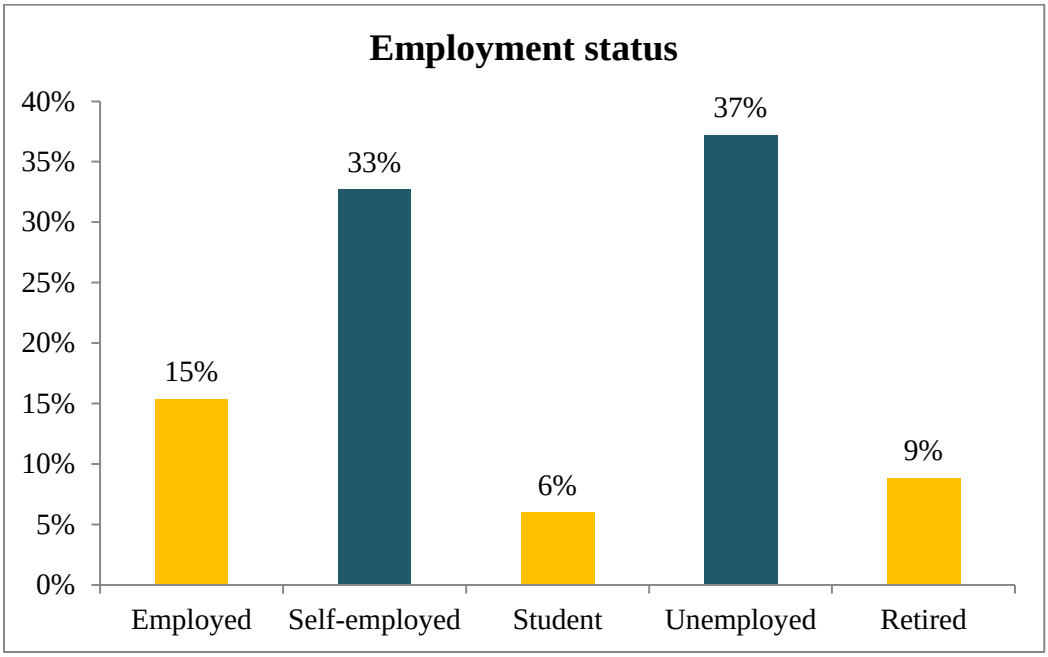
Most respondents had 'two bed room, kitchen & bathroom' (36%), followed by those with 'Three bed room, kitchen & bathroom' (25%) and those with 'one bedroom kitchen & bathroom' (21%).

5.34. FIGURE 20: HIGHEST LEVEL OF FORMAL EDUCATION COMPLETED



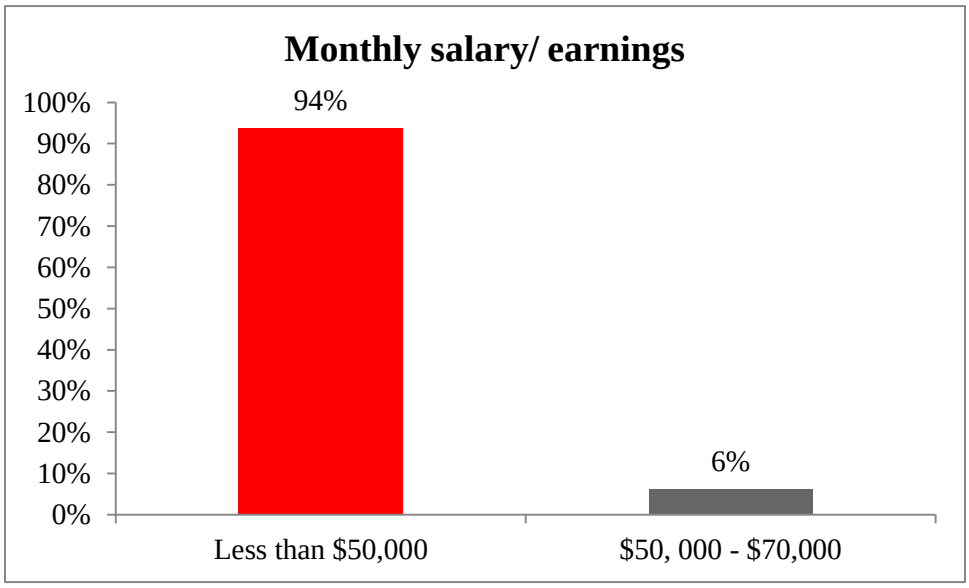
'High School' (59.5%) was the highest level of education for the majority of respondents followed by those who went to 'Primary School' (30.2%).

5.35. FIGURE 21: EMPLOYMENT STATUS



Most respondents were either 'Unemployed' (37%) or 'Self-employed' (33%). 'Approximately one in every ten respondent was either 'Employed' (15%) or 'Retired' (9%).

5.36. FIGURE 22: MONTHLY SALARY/EARNINGS



The significant majority of respondents earned less than $50,000 per month for salary (94%), with the remaining 6% earning between $50,000 and & 70,000 per month.

6. PRINCESSFIELD ANALYSIS & TRENDS

The respondents in the community of Princessfield were mostly from the 18-29 and 30-39 age groups and had a low level of knowledge on the types of energy. Thirteen to eighteen percent of the respondents knew of the various types of renewable energies. It can be reasoned that the fact that the highest level of education for the majority of residents were high (59.5%) and primary (30.2%) school, this impacted their knowledge base about energy efficiency and renewable energy. The majority of residents were however aware that energy should be used efficiently (97.4%) and that using energy efficiently will reduce electricity cost. This indicates that residents were receptive to learn about energy use and how to reduce the cost of energy.

Residents were most trusting of information received from the radio (84.8%), followed by community leaders (61.5%) and as such we believe that these two sources (radio and community members) would be the most effective medium to target and educate residents about renewable energy and energy efficiency.

Residents overwhelmingly used gas (72.4%) followed by coal (25.9%) for cooking and they mostly purchased these commodities from retailers in the community. Those who placed high priority on the use of gas did so mostly because it was easier and faster than using coal. However, 97 % of those residents who preferred coal stated it was less expensive – more affordable. This affordability concern is aligned with the fact that most community members were either unemployed (37%) or earned less than JMD 50,000 monthly (94%).

Electricity was the main source of lighting in the community (88%) and the majority of community members used electric light bulbs for lighting. Of note also was that only five in every ten respondent had received fluorescent light bulbs (CFLs) during Cuban Light Bulb project, and this may have impacted their current views of CFLs. Those who did not use CLFs indicated that they were too expensive and not available within the community (which incurs the additional cost of travel to purchase), another concern arising out of the high unemployment levels found among community members and the monthly income earnings.

Content Cross Tabulations and Segments

7. CONTENT CROSS TABULATIONS: COOKING

7.1. CROSSTAB 1.1: RESPONDENTS' REASONS FOR PURCHASING COOKING GAS INSTEAD OF COAL OR WOOD VERSUS METHOD OF COOKING

		Method for cooking			
		I use more gas for cooking and less goal/wood	I use more gas for cooking and less wood	I cook with only coal & wood	I cook with gas some of the time and coal/wood some of the time
Reasons for purchasing cooking gas instead of coal/wood	Cooking with gas is faster than cooking with coal/wood	91.0%	81.8%	100.0%	85.1%
		91	9	4	40
	Cooking with gas is easier than cooking with coal/wood	93%	100.0%	0.0%	75.0%
		63	3	0	15
	When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	55.6%	50.0%	0.0%	43.5%
		35	1	0	10
	The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	11.9%	12.5%	100.0%	11.1%
		10	1	1	4
	Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	25.4%	0.0%	0.0%	45.5%
		16	0	0	10
	Some wood causes the food to taste bitter	14.9%	0.0%	50.0%	27.8%
		10	0	1	5

	I am ashamed to use wood for cooking	7.4%	0.0%	0.0%	0.0%
		5	0	0	0
	Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	20.3%	66.7%	100.0%	17.0%
		14	2	1	3

7.2. CROSSTAB 1.2: RESPONDENTS' REASONS FOR PURCHASING COOKING GAS INSTEAD OF COAL OR WOOD VERSUS GENDER

		Gender	
		Male	**Female**
Reasons for purchasing cooking gas instead of coal/wood	Cooking with gas is faster than cooking with coal/wood	89.6%	86.9%
		69	73
	Cooking with gas is easier than cooking with coal/wood	90.5%	85.4%
		38	41
	When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	36.6%	63.0%
		15	29
	The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	8.6%	16.2%
		5	11
	Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	30.0%	28.3%
		12	13
	Some wood causes the food to taste bitter	27.0%	11.5%
		10	6
	I am ashamed to use wood for cooking	7.9%	3.9%
		3	2

	Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	21.6%	24.0%
		8	12

7.3. CROSSTAB 1.3: RESPONDENTS' REASONS FOR PURCHASING COOKING GAS INSTEAD OF COAL OR WOOD VERSUS AGE GROUPS

		Age Groups				
		18 – 29 yrs	30 – 39 yrs	40 – 49 yrs	50 – 59 yrs	60yrs and older
High priority reasons for purchasing cooking gas instead of coal/wood	Cooking with gas is faster than cooking with coal/wood	83.7%	90.9%	88.9%	85.7%	93.1%
		41	30	32	12	27
	Cooking with gas is easier than cooking with coal/wood	93.1%	84.2%	89.5%	77.8%	85.7%
		27	16	17	7	12
	When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	59.3%	52.4%	50.0%	28.6%	42.9%
		16	11	9	2	6
	The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	13.9%	20.7%	6.9%	25.0%	4.2%
		5	6	2	2	1
	Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	26.9%	23.8%	42.9%	16.7%	25.0%
		7	5	9	1	3
	Some wood causes the food to taste bitter	7.1%	9.1%	31.3%	28.6%	31.3%
		2	2	5	2	5

	I am ashamed to use wood for cooking	3.6%	9.1%	0.0%	12.5%	6.3%
		1	2	0	1	1
	Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	16.0%	23.8%	16.7%	12.5%	46.7%
		4	5	3	1	7

7.4. CROSSTAB 1.4: RESPONDENTS' REASONS FOR PURCHASING COOKING GAS INSTEAD OF COAL OR WOOD VERSUS HIGHEST EDUCATION LEVEL

		Highest Education Level				
		Primary School	High School	Diploma	Degree	PhD
Reasons for purchasing cooking gas instead of coal/wood	Cooking with gas is faster than cooking with coal/wood	98.1%	87.6%	100.0%	88.9%	
		41	85	8	8	
	Cooking with gas is easier than cooking with coal/wood	75.0%	91.9%	83.3%	80.0%	100.0%
		12	57	5	4	1
	When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	37.5%	55.9%	16.7%	60.0%	1.0%
		6	33	1	3	1
	The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	5.9%	14.1%	28.7%	0.0%	
		2	11	2	1	
	Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	31.3%	26.3%	50.0%	33.3%	0.0%

		5	15	3	2	0
	Some wood causes the food to taste bitter	50.0%	7.4%	0.0%	0.0%	100.0%
		11	4	0	0	1
	I am ashamed to use wood for cooking	5.9%	3.4%	0.0%	28.6%	0.0%
		1	2	0	2	0
	Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	45.0%	16.1%	33.3%	0.0%	0.0%
		9	9	2	0	0

7.5. CROSSTAB 1.5: RESPONDENTS' REASONS FOR PURCHASING COOKING GAS INSTEAD OF COAL OR WOOD VERSUS MONTHLY SALARY

		Monthly Salary / Earnings				
Reasons for purchasing cooking gas instead of coal/wood		Less than $50,000	$50, 000 - $70,000	$71,000 - $80,000	$81,000 - $100,000	More than $120,000
	Cooking with gas is faster than cooking with coal/wood	88.4%	100.0%	50.0%	100.0%	100.0%
		61	4	2	1	1
	Cooking with gas is easier than cooking with coal/wood	85.5%	80.0%	100.0%		
		35	4	1		
	When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	54.8%	0.0%	50.0%	0.0%	
		23	0	2	0	
	The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	9.1%	50.0%	0.0%	0.0%	
		5	1	0	0	
	Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	28.3%	0.0%	50.0%	0.0%	

		13	0	2	0	
	Some wood causes the food to taste bitter	32.1%	0.0%	33.3%	0.0%	
		9	0	1	0	
	I am ashamed to use wood for cooking	0.0%	0.0%	0.0%	100.0%	
		0	0	0	1	
	Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	17.9%	0.0%	0.0%	0.0%	
		7	0	0	0	

7.6. CROSSTAB 1.6: RESPONDENTS' REASONS FOR NOT PURCHASING COOKING GAS AND USING LESS COAL OR WOOD VERSUS METHOD FOR COOKING

		Method for cooking			
Reasons for not purchasing cooking gas & using less coal/wood		I use more gas for cooking and less goal/wood	I use more gas for cooking and less wood	I cook with only coal & wood	I cook with gas some of the time and coal/wood some of the time
	Cooking with coal or wood costs less than cooking with gas	66.7%	100.0%	99.0%	97.1%
		2	2	95	34
	We are able to get some coal/wood for free in exchange for helping the men collect it	66.7%	0.0%	54.1%	38.9%
		2	0	33	7
	When purchasing gas, it must be bought in large quantities which we cannot afford	50.0%	50.0%	41.9%	40.0%
		1	1	26	8
	Wood can be found everywhere for free	100.0%	100.0%	68.6%	57.9%
		1	1	35	11

	The children help us collect wood which saves us time	0.0%	0.0%	16.9%	14.3%
		0	0	10	3
	Cooking peas and tough meat requires too much gas	0.0%	0.0%	9.8%	44.4%
		0	0	4	8
	Food cooked with some kinds of wood tastes better than food cooked with gas	0.0%	0.0%	12.8%	31.3%
		0	0	5	5
	Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	0.0%	0.0%	19.1%	11.8%
		0	0	9	2

7.7. CROSSTAB 1.7: RESPONDENTS' REASONS FOR NOT PURCHASING COOKING GAS AND USING LESS COAL OR WOOD VERSUS GENDER

		Gender	
		Male	**Female**
Reasons for not purchasing cooking gas & using less coal/wood	Cooking with coal or wood costs less than cooking with gas	96.8%	97.4%
		60	74
	We are able to get some coal/wood for free in exchange for helping the men collect it	37.1%	61.2%
		13	30
	When purchasing gas, it must be bought in large quantities which we cannot afford	42.4%	42.6%
		14	23

	Wood can be found everywhere for free	62.5%	70.0%
		20	29
	The children help us collect wood which saves us time	17.5%	13.0%
		7	6
	Cooking peas and tough meat requires too much gas	22.2%	17.6%
		6	6
	Food cooked with some kinds of wood tastes better than food cooked with gas	16.7%	20.6%
		4	7
	Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	16.7%	15.8%
		6	6

7.8. CROSSTAB 1.8: RESPONDENTS' REASONS FOR NOT PURCHASING COOKING GAS AND USING LESS COAL OR WOOD VERSUS AGE GROUP

		Age Group				
Reasons for not purchasing cooking gas & using less coal/wood		18 – 29 yrs	30 – 39 yrs	40 – 49 yrs	50 – 59 yrs	60yrs and older
	Cooking with coal or wood costs less than cooking with gas	96.4%	94.6%	96.4%	100.0%	100.0%
		27	33	27	23	25

	We are able to get some coal/wood for free in exchange for helping the men collect it	50.0%	40.9%	50.0%	69.2%	50.0%
		8	9	10	9	7
	When purchasing gas, it must be bought in large quantities which we cannot afford	33.3%	45.5%	52.4%	30.8%	46.2%
		6	10	11	4	6
	Wood can be found everywhere for free	50.0%	77.8%	81.3%	71.4%	44.4%
		8	14	13	10	4
	The children help us collect wood which saves us time	15.0%	10.5%	23.8%	15.4%	7.7%
		3	2	5	2	1
	Cooking peas and tough meat requires too much gas	41.2%	14.3%	0.0%	22.2%	11.1%
		7	2	0	2	1
	Food cooked with some kinds of wood tastes better than food cooked with gas	31.3%	8.3%	7.1%	14.3%	33.3%
		5	1	1	1	3
	Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	6.3%	40.0%	10.5%	22.2%	0.0%
		1	6	2	2	0

7.9. CROSSTAB 1.9: RESPONDENTS' REASONS FOR NOT PURCHASING COOKING GAS AND USING LESS COAL OR WOOD VERSUS EDUCATION LEVEL

	Education Level					
sing cookin g gas &		Primary	High	Diploma	Degree	PHD

	Cooking with coal or wood costs less than cooking with gas	96.4%	97.3%	100.0%		
		54	73	5		
	We are able to get some coal/wood for free in exchange for helping the men collect it	54.3%	43.9%	60.0%		
		19	18	3		
	When purchasing gas, it must be bought in large quantities which we cannot afford	42.4%	42.2%	40.0%		
		14	19	2		
	Wood can be found everywhere for free	59.3%	73.7%	60.0%		
		16	28	3		
	The children help us collect wood which saves us time	14.7%	17.8%	0.0%		
		5	8	0		
	Cooking peas and tough meat requires too much gas	4.8%	28.6%	25.0%		
		1	10	1		
	Food cooked with some kinds of wood tastes better than food cooked with gas	22.7%	16.1%	25.0%		
		5	5	1		
	Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	15.4%	18.9%	0.0%		
		4	7	0		

7.10. CROSSTAB 1.10: RESPONDENTS' REASONS FOR NOT PURCHASING COOKING GAS AND USING LESS COAL OR WOOD VERSUS MONTHLY SALARY

		Monthly Salary				
		Less than $50,000	**$50, 000 - $70,000**	**$71,000 - $80,000**		
Reasons for not purchasing cooking gas & using less coal/wood	Cooking with coal or wood costs less than cooking with gas	97.3%	100.0%			
		73	1			
	We are able to get some coal/wood for free in exchange for helping the men collect it	48.9%				
		23				
	When purchasing gas, it must be bought in large quantities which we cannot afford	52.3%	0.0%			
		23	0			
	Wood can be found everywhere for free	66.7%				
		24				
	The children help us collect wood which saves us time	16.0%	100.0%			
		8	1			
	Cooking peas and tough meat requires too much gas	20.0%				
		7				
	Food cooked with some kinds of wood tastes better than food cooked with gas	10.3%				
		3				

	Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	15.8%				
		6				

7.11. CROSSTAB 1.11: METHOD OF COOKING BY EMPLOYMENT STATUS

			What is your employment status				
			Employed	Self employed	Student	Unemployed	Retired
Which of the following best represents your method for cooking	I use more gas for cooking and less coal	Count	18	32	4	31	13
		% within What is your employment status	56.3%	28.1%	57.1%	31.0%	36.1%
	I use more gas for cooking and less wood	Count	1	2	0	5	4
		% within What is your employment status	3.1%	1.8%	0.0%	5.0%	11.1%
	I cook with only coal & wood	Count	4	49	1	38	14
		% within What is your employment status	12.5%	43.0%	14.3%	38.0%	38.9%
	I cook with gas some of the time and coal/wood some of the time	Count	9	31	2	26	5
		% within What is your employment status	28.1%	27.2%	28.6%	26.0%	13.9%
Total		Count	32	114	7	100	36
		% within What is your employment	100.0%	100.0%	100.0%	100.0%	100.0%

	status					

7.12. CROSSTAB 1.12: WHERE TO PURCHASE FUEL BY EMPLOYMENT STATUS

			What is your employment status				
			Employed	Self employed	Student	Unemployed	Retired
Where do you usually purchase the above fuel source	Retailer in the community	Count	28	71	4	70	25
		% within What is your employment status	90.3%	62.8%	66.7%	69.3%	73.5%
	Get it for free	Count	1	12	0	11	4
		% within What is your employment status	3.2%	10.6%	0.0%	10.9%	11.8%
	I sell it at retail so I am able to purchase at a lower price	Count	0	3	0	3	1
		% within What is your employment status	0.0%	2.7%	0.0%	3.0%	2.9%
	I make it myself	Count	2	26	1	15	3
		% within What is your employment status	6.5%	23.0%	16.7%	14.9%	8.8%
	Other	Count	0	1	1	2	1
		% within What is your employment status	0.0%	0.9%	16.7%	2.0%	2.9%
Total		Count	31	113	6	101	34
		% within What is your employment status	100.0%	100.0%	100.0%	100.0%	100.0%

7.13. CROSSTAB 1.13: METHOD OF COOKING BY CURRENT SOURCE OF LIGHTING

			Which of the following best represents your method for cooking				Total
			I use more gas for cooking and less coal	I use more gas for cooking and less wood	I cook with only coal & wood	I cook with gas some of the time and coal/wood some of the time	
What is your current source of lighting	Kerosene Lamps only	Count	8	1	34	9	52
		% within Which of the following best represents your method for cooking	7.9%	8.3%	33.3%	12.3%	18.1%
	Candles only	Count	1	0	11	0	12
		% within Which of the following best represents your method for cooking	1.0%	0.0%	10.8%	0.0%	4.2%
	Electricity	Count	85	11	48	58	202
		% within Which of the following best represents your method for cooking	84.2%	91.7%	47.1%	79.5%	70.1%
	Combination	Count	7	0	9	6	22
		% within Which of the following best represents your method for cooking	6.9%	0.0%	8.8%	8.2%	7.6%
Total		Count	101	12	102	73	288
		% within Which of the following best represents your method for cooking	100.0%	100.0%	100.0%	100.0%	100.0%

8. CONTENT CROSS TABULATIONS: LIGHTING

8.1. CROSSTAB 2.1: THE AVERAGE MONTHLY ELECTRICITY CHARGE VERSUS WHETHER RESPONDENTS RECEIVED FLUORESCENT LIGHT BULBS IN THE CUBAN LIGHT BULB PROJECT

11.2		Did you receive fluorescent light bulbs in the Cuban Light Bulb project	
		Yes	No
Average monthly electricity charge	$0.00	4%	10%
		4	13
	Less than $1,000	1%	1%
		1	1
	$1, 001 - $2,000	5%	10%
		5	12
	$2001 - $3,000	4%	3%
		4	4
	$3,001 - $4,000	22%	24%
		22	30
	$4,001 - $5,000	13%	11%
		13	14
	$5,001 - $6,000	21%	17%
		21	21
	$6,001 - $7,000	4%	8%
		4	10
	$7,001 - $8,000	9%	6%
		9	8
	$8,001 - $9,000	5%	3%
		5	4
	$9,001 - $10,000	7%	2%
		7	2
	More than $10,000	3%	6%

		3	7

8.2. CROSSTAB 2.2: THE RESPONDENTS' VIEW ON IF FLUORESCENT LIGHT BULBS HAVE HELPED TO REDUCE MONTHLY ENERGY COSTS VERSUS MONTHLY SALARY

12.5		Monthly Salary/ Earnings				
In your opinion, did these fluorescent light bulbs help in reducing your monthly energy cost		**Less than $50,000**	**$50, 000 - $70,000**	**$71,000 - $80,000**	**$81,000 - $100,000**	**More than $120,000**
	Yes	71.4%	100.0%	100.0%	0.0%	100.0%
		40	2	3	0	1
	No	28.6%	0.0%	0.0%	100.0%	0.0%
		16	0	0	1	0

8.3. CROSSTAB 2.3: WHETHER RESPONDENTS CURRENTLY USED FLUORESCENT LIGHT BULBS VERSUS RECEIVING FLUORESCENT LIGHT BULBS IN THE CUBAN LIGHT BULB PROJECT

12.6		Did you receive fluorescent light bulbs in the Cuban Light Bulb project	
Do you currently use fluorescent light bulbs		**Yes**	**No**
	Yes	38.60%	26.70%
		39	35
	No	61.40%	73.30%

		62	96

8.4. CROSSTAB 2.4: WHETHER RESPONDENTS CURRENTLY USED FLUORESCENT LIGHT BULBS VERSUS HIGHEST LEVEL OF FORMAL EDUCATION

12.7		What is your highest level of formal education completed				
Do you currently use fluorescent light bulbs		**Primary School**	**High School**	**Diploma**	**Degree**	**PhD**
	Yes	31.7%	31.3%	27.3%	40.0%	100.0%
		19	46	3	4	1
	No	68.3%	68.7%	72.7%	60.0%	0.0%
		41	101	8	6	0

8.5. CROSSTAB 2.5: WHETHER RESPONDENTS CURRENTLY USED FLUORESCENT LIGHT BULBS VERSUS AGE RANGE

		Age Range				
Do you currently use fluorescent light bulbs		**18 – 29 yrs.**	**30 – 39 yrs.**	**40 – 49 yrs.**	**50 – 59 yrs.**	**60yrs and older**
	Yes	32.4%	21.6%	20.3%	12.2%	13.5%
	No	29.9%	22.9%	22.3%	10.8%	14.0%

8.6. CROSSTAB 2.6: RESPONDENTS' REASONS FOR PURCHASING CFLS INSTEAD OF INCANDESCENT BULBS VERSUS WHETHER THEY RECEIVED FLUORESCENT LIGHT BULBS IN THE CUBAN LIGHT BULB PROJECT

	12.11	Did you receive fluorescent light bulbs in the Cuban Light Bulb project	
	Reasons	**Yes**	**No**
% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	85.0%	80.0%
		34	25
	CFLs last longer than incandescent bulbs	56.5%	72.7%
		13	16
	CFLs provide softer light making it easier to read and for children to study at night	28.6%	40.9%
		6	9
	The quality of lighting from CFLs is better than incandescent bulbs	50.0%	33.3%
		9	7
	CFLs are more efficient than incandescent bulbs	63.2%	45.5%
		12	10
	CFLs are safer than incandescent bulbs	27.8%	22.7%
		5	5
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	36.4%	13.6%
		8	3
	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	36.0%	14.3%
		9	3
	I will save on my electricity bill and have more money for transportation, including for children to go to school	10.5%	13.6%
		2	3

8.7. CROSSTAB 2.7: RESPONDENTS' REASONS FOR PURCHASING CFLS INSTEAD OF INCANDESCENT BULBS VERSUS HIGHEST LEVEL OF FORMAL EDUCATION

13.13		Education Level				
	Reasons For	Primary School	High School	Diploma	Degree	PhD
% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	93.8%	76.1%	100.0%	100.0%	100.0%
		15	35	3	4	1
	CFLs last longer than incandescent bulbs	77.8%	60.0%	100.0%	50.0%	100.0%
		7	18	2	1	1
	CFLs provide softer light making it easier to read and for children to study at night	28.6%	27.6%	100.0%	50.0%	100.0%
		2	8	3	1	1
	The quality of lighting from CFLs is better than incandescent bulbs	33.3%	44.4%	0.0%	0.0%	100.0%
		2	12	0	0	1
	CFLs are more efficient than incandescent bulbs	66.7%	50.0%	33.3%	50.0%	100.0%
		4	14	1	1	1
	CFLs are safer than incandescent bulbs	40.0%	25.0%	0.0%	0.0%	100.0%
		2	7	0	0	1
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	25.0%	23.3%	0.0%	50.0%	100.0%
		2	7	0	1	1
	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	40.0%	23.3%	0.0%	0.0%	100.0%
		4	7	0	0	1
	I will save on my electricity bill and have more money for transportation, including for children to go to school	0.0%	13.8%	0.0%	0.0%	100.0%
		0	4	0	0	1

8.8. CROSSTAB 2.8: RESPONDENTS' REASONS FOR PURCHASING CFLS INSTEAD OF INCANDESCENT BULBS VERSUS AGE GROUP

14.14		Age Group				
	Reasons For	**18 – 29 yrs**	**30 – 39 yrs**	**40 – 49 yrs**	**50 – 59 yrs**	**60yrs and older**
% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	66.7%	87.5%	88.2%	100.0%	100.0%
		16	14	15	6	8
	CFLs last longer than incandescent bulbs	62.5%	66.7%	61.5%	100.0%	60.0%
		10	6	8	2	3
	CFLs provide softer light making it easier to read and for children to study at night	50.0%	50.0%	27.3%	0.0%	0.0%
		8	4	3	0	0
	The quality of lighting from CFLs is better than incandescent bulbs	28.6%	50.0%	44.4%	66.7%	40.0%
		4	4	4	2	2
	CFLs are more efficient than incandescent bulbs	43.8%	50.0%	60.0%	66.7%	75.0%
		7	4	6	2	3
	CFLs are safer than incandescent bulbs	29.4%	11.1%	37.5%	0.0%	25.0%
		5	1	3	0	1
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	26.7%	12.5%	16.7%	50.0%	40.0%
		4	1	2	2	2
	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	26.7%	11.1%	27.3%	50.0%	28.6%
		4	1	3	2	2
	I will save on my electricity bill and have more money for transportation, including for children to go to school	14.3%	10.0%	10.0%	33.3%	0.0%

		2	1	1	1	0

8.9. CROSSTAB 2.9: RESPONDENTS' REASONS FOR NOT USING FLUORESCENT LIGHT BULBS VERSUS GENDER

13.1		Gender	
% High Priority (1 - 3)	**Reasons For not using CFLs**	**Male**	**Female**
	They are too expensive – I can't afford it	83.3%	81.7%
		45	67
	They are not available in the community	81.1%	78.4%
		30	40
	They are available in nearby towns which requires money for transportation	53.3%	47.8%
		16	22
	Some CFL bulbs blow out and are not good quality	26.2%	35.6%
		11	21
	I do not know how to choose the good CFL bulbs	21.4%	19.0%
		6	11
	The CFLs available now are not as good as those from the Cuban light bulb program	3.6%	10.9%
		1	6
	I do not understand why CFLs are better than incandescent bulbs	41.4%	34.5%
		12	19
	I do not know anyone who has saved money on their electricity bill after installing CFLs	32.0%	32.0%
		8	16

8.10. CROSSTAB 2.10: RESPONDENTS' REASONS FOR NOT USING FLUORESCENT LIGHT BULBS VERSUS AGE GROUP

13.3		Age Group				
Priority (1 -	**Reasons For not using CFLs**	**18 – 29 yrs**	**30 – 39 yrs**	**40 – 49 yrs**	**50 – 59 yrs**	**60yrs and older**

	They are too expensive – I can't afford it	79.5%	91.2%	86.1%	71.4%	69.2%
		31	31	31	10	9
	They are not available in the community	88.5%	78.3%	72.7%	87.5%	66.7%
		23	18	16	7	6
	They are available in nearby towns which requires money for transportation	42.9%	47.6%	50.0%	62.5%	66.7%
		9	10	10	5	4
	Some CFL bulbs blow out and are not good quality	23.1%	38.5%	35.5%	11.1%	44.4%
		6	10	11	1	4
	I do not know how to choose the good CFL bulbs	12.5%	9.1%	22.7%	44.4%	33.3%
		3	2	5	4	3
	The CFLs available now are not as good as those from the Cuban light bulb program	0.0%	16.7%	13.0%	0.0%	0.0%
		0	4	3	0	0
	I do not understand why CFLs are better than incandescent bulbs	43.5%	31.8%	30.0%	14.3%	58.3%
		10	7	6	1	7
	I do not know anyone who has saved money on their electricity bill after installing CFLs	54.5%	26.3%	21.1%	25.0%	14.3%
		12	5	4	2	1

8.11. CROSSTAB 2.11: AFFORDABILITY OF ELECTRICITY BY PARTICIPATION IN THE CUBAN LIGHT BULB PROGRAMME

			Did you receive fluorescent light bulbs in the Cuban Light Bulb project		Total
			yes	no	
On a scale of 1 to 10 how affordable is electricity to you	1	Count	32	46	78
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	33.0%	37.4%	35.5%

	2	Count	13	30	43
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	13.4%	24.4%	19.5%
	3	Count	9	8	17
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	9.3%	6.5%	7.7%
	4	Count	7	5	12
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	7.2%	4.1%	5.5%
	5	Count	17	15	32
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	17.5%	12.2%	14.5%
	6	Count	5	2	7
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	5.2%	1.6%	3.2%
	7	Count	5	3	8
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	5.2%	2.4%	3.6%
	8	Count	6	4	10
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	6.2%	3.3%	4.5%
	9	Count	2	4	6
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	2.1%	3.3%	2.7%
	10	Count	1	6	7

		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	1.0%	4.9%	3.2%
Total		Count	97	123	220
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	100.0%	100.0%	100.0%

8.12. CROSSTAB 2.12: SOURCE OF ENERGY EFFICIENCY INFORMATION BY GENDER

		Gender	
		Male	Female
"Information in JPS utility bills"	Count	27	40
	% within Gender	39.7%	43.0%
"Text messages from JPS"	Count	16	22
	% within Gender	34.8%	34.4%
"Stores that sell lighting	Count	26	22
	% within Gender	46.4%	30.6%
"My neighbours"	Count	42	40
	% within Gender	68.9%	55.6%
My community leaders	Count	29	48
	% within Gender	55.8%	61.5%

"Radio"	Count	44	66
	% within Gender	72.1%	77.6%

9. CONTENT SEGMENT: COOKING

9.1. SEGMENT 1: MEN WHO USE MORE GAS AND LESS COAL/WOOD (QUESTION #6, PEOPLE WHO ANSWER EITHER "I USE MORE GAS FOR COOKING AND LESS COAL" OR "I USE MORE GAS FOR COOKING AND LESS WOOD")

9.1.1. Segment Table 1.1: Knowledge of RE

	% knowledgeable	#
Hydroelectric	16.0	8
Solar	44.0	22
Wind	38.0	19
Biomass	18.0	9
Biogas	20.4	10

9.1.2. Segment Table 1.2: Main fuel sources

	%high priority	#
coal	2.50%	1
gas	98.00%	49
wood	0.00%	0

9.1.3. Segment Table 1.3: Where purchase fuels

		Frequency	%
Valid	Retailer in the community	40	80.0
	Get it for free	1	2.0
	I sell it at retail so I am able to purchase at a lower price	2	4.0
	Other	2	4.0
	Total	45	90.0

Missing	System	5	10.0
Total		50	100.0

9.1.4. Segment Table 1.4: Reasons for cooking with more gas and less coal/wood

Reasons for purchasing gas instead of coal or wood (1- highest priority & 8 – lowest priority)	% High Priority	#
Cooking with gas is faster than cooking with coal/wood	91.8%	45
Cooking with gas is easier than cooking with coal/wood	96.7%	29
When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	32.0%	8
The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	5.0%	2
Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	28.6%	8
Some wood causes the food to taste bitter	23.1%	6
I am ashamed to use wood for cooking	11.1%	3
Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	22.2%	6

9.1.5. Segment Table 1.5: Reasons for not cooking with more gas and less coal/wood

	%	#
Cooking with coal or wood costs less than cooking with gas	66.70%	2
We are able to get some coal/wood for free in exchange for helping the men collect it	50.00%	1
When purchasing gas, it must be bought in large quantities which we cannot afford	50.00%	1
Wood can be found everywhere for free	100.00 %	1
The children help us collect wood which saves us time	0.00%	0
Cooking peas and tough meat requires too much gas	0.00%	0
Food cooked with some kinds of wood tastes better than food cooked with gas	0.00%	0
Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	0.00%	0

9.1.6. Segment Table 1.6: Where to purchase a new stove

		Frequency	%
Valid	Retailer in the community	3	6.0
	Bog Walk	18	36.0
	Spanish Town	17	34.0
	Don't know	4	8.0
	Lindstead	4	8.0
	Total	46	92.0
Missing	System	4	8.0
Total		50	100.0

9.1.7. Segment Table 1.7: Knowledge of EE

	%	#
How knowledgeable are you about How much energy is used by different appliances in my home	4.30%	2
How knowledgeable are you about Energy efficiency or energy saving methods/ practices	27.10%	13
How knowledgeable are you about Energy saving appliances, electronics and lighting (e.g. florescent light bulbs)	37.50%	18
How knowledgeable are you about How to reduce energy use in my home or business	31.30%	15
How knowledgeable are you about How to reduce energy use in cooking	22.90%	11

9.1.8. Segment Table 1.8: Agreement with statements

	% Agree	#
Energy should be used efficiently	87.8	43
Using energy efficiently will save money on light bills	91.7	44

Efficient use of energy is beneficial to the environment	89.4	42
Efficient use of energy will help Jamaica develop	87.5	42
I encourage friends, families and community members to use energy efficiently	83.3	40
I welcome new plans/ programmes aimed at using energy more efficiently	89.6	43
More should be done to promote energy efficiency	91.7	44
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	83.3	40
Saving money on electricity bills is very important	95.8	46
Energy efficiency is not related to climate change	31.3	15

9.1.9. Segment Table 1.9: Age

		Frequency	%
Valid	18 – 29 yrs	17	34.0
	30 – 39 yrs	8	16.0
	40 – 49 yrs	12	24.0
	50 – 59 yrs	2	4.0
	60yrs and older	11	22.0
	Total	50	100.0

9.1.10. Segment Table 1.10: Number of people in the home

		Frequency	%
Valid	1	9	18.0
	2	9	18.0
	3	3	6.0
	4	12	24.0
	5	9	18.0

	6	2	4.0
	7	2	4.0
	10	2	4.0
	11	1	2.0
	18	1	2.0
	Total	50	100.0

9.1.11. Segment Table 1.11: Number of children in the home

		Frequency	%
Valid	0	9	18.0
	1	15	30.0
	2	10	20.0
	4	2	4.0
	5	1	2.0
	9	1	2.0
	Total	38	76.0
Missing	System	12	24.0
Total		50	100.0

9.1.12. Segment Table 1.12: Education level

		Frequency	%
Valid	Primary School	12	24.0

	High School	34	68.0
	Degree	2	4.0
	Total	48	96.0
Missing	System	2	4.0
Total		50	100.0

9.1.13. Segment Table 1.13: Employment

		Frequency	Percent
Valid	Employed	10	20.0
	Self-employed	16	32.0
	Student	2	4.0
	Unemployed	12	24.0
	Retired	8	16.0
	Total	48	96.0
Missing	System	2	4.0
Total		50	100.0

9.1.14. Segment Table 1.14: Monthly salary/earnings

		Frequency	%
Valid	Less than $50,000	21	42.0
	$50, 000 - $70,000	2	4.0
	$71,000 - $80,000	2	4.0

	$81,000 - $100,000	1	2.0
	More than $120,000	1	2.0
	Total	27	54.0
Missing	System	23	46.0
Total		50	100.0

9.2. SEGMENT 2: WOMEN WHO USE MORE GAS AND LESS COAL/WOOD (QUESTION #6, PEOPLE WHO ANSWER EITHER "I USE MORE GAS FOR COOKING AND LESS COAL" OR "I USE MORE GAS FOR COOKING AND LESS WOOD")

9.2.1. Segment Table 2.1: Knowledge of RE

	% knowledgeable	#
Hydroelectric	8.3%	5
Solar	36.7%	22
Wind	33.3%	20
Biomass	11.7%	7
Biogas	16.7%	10

9.2.2. Segment Table 2.2: Main fuel sources

	%high priority	#
coal	9.4%	5
gas	96.5%	55
wood	0%	0

9.2.3. Segment Table 2.3: Where purchase fuels

		Frequency	%
Valid	Retailer in the community	56	93.3
	Other	3	5.0
	Total	59	98.3
Missing	System	1	1.7
Total		60	100.0

9.2.4. Segment Table 2.4: Reasons for cooking with more gas and less coal/wood

Reasons for purchasing gas instead of coal or wood (1- highest priority & 8 – lowest priority)	% High Priority	#
Cooking with gas is faster than cooking with coal/wood	88.1%	52
Cooking with gas is easier than cooking with coal/wood	89.5%	34
When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	70.3%	26
The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	18.4%	9
Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	21.2%	7
Some wood causes the food to taste bitter	9.5%	4
I am ashamed to use wood for cooking	4.9%	2
Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	23.8%	10

9.2.5. Segment Table 2.5: Reasons for not cooking with more gas and less coal/wood

	%	#
Cooking with coal or wood costs less than cooking with gas	100.0%	2
We are able to get some coal/wood for free in exchange for helping the men collect it	50.0%	1
When purchasing gas, it must be bought in large quantities which we cannot afford	50.0%	1

Wood can be found everywhere for free	100.0%	1
The children help us collect wood which saves us time	0%	0
Cooking peas and tough meat requires too much gas	0%	0
Food cooked with some kinds of wood tastes better than food cooked with gas	0%	0
Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	0%	0

9.2.6. Segment Table 2.6: Where to purchase a new stove

		Frequency	%
Valid	Retailer in the community	4	6.7
	Bog Walk	18	30.0
	Spanish Town	18	30.0
	Don't know	2	3.3
	Lindstead	11	18.3
	Kingston	1	1.7
	Total	54	90.0
Missing	System	6	10.0
Total		60	100.0

9.2.7. Segment Table 2.7: Knowledge of EE

	%	#
How knowledgeable are you about How much energy is used by different appliances in my home	6.7%	4
How knowledgeable are you about Energy efficiency or energy saving methods/ practices	28.8%	17
How knowledgeable are you about Energy saving appliances, electronics and lighting (e.g. florescent light bulbs)	30.5%	18
How knowledgeable are you about How to reduce energy use in my home or business	32.2%	19

How knowledgeable are you about How to reduce energy use in cooking	27.1%	16

9.2.8. Segment Table 2.8: Agreement with statements

	% Agree	#
Energy should be used efficiently	94.9%	56
Using energy efficiently will save money on light bills	91.5%	54
Efficient use of energy is beneficial to the environment	87.9%	51
Efficient use of energy will help Jamaica develop	84.5%	49
I encourage friends, families and community members to use energy efficiently	79.7%	47
I welcome new plans/ programmes aimed at using energy more efficiently	93.2%	55
More should be done to promote energy efficiency	94.7%	54
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	78.0%	46
Saving money on electricity bills is very important	94.9%	56
Energy efficiency is not related to climate change	17.9%	10

9.2.9. Segment Table 2.9: Age

		Frequency	%
Valid	18 – 29 yrs	18	30.0
	30 – 39 yrs	15	25.0
	40 – 49 yrs	11	18.3
	50 – 59 yrs	6	10.0
	60yrs and older	10	16.7
	Total	60	100.0

9.2.10. Segment Table 2.10: Number of people in the home

		Frequency	%
Valid	1	4	6.7

	2	11	18.3
	3	7	11.7
	4	12	20.0
	5	14	23.3
	6	7	11.7
	7	4	6.7
	8	1	1.7
	Total	60	100.0

9.2.11. Segment Table 2.11: Number of children in the home

		Frequency	%
Valid	0	10	16.7
	1	14	23.3
	2	16	26.7
	3	6	10.0
	4	3	5.0
	Total	49	81.7
Missing	System	11	18.3
Total		60	100.0

9.2.12. Segment Table 2.12: Education level

		Frequency	%
Valid	Primary School	15	25.0
	High School	34	56.7
	Diploma	7	11.7
	Degree	4	6.7
	Total	60	100.0

9.2.13. Segment Table 2.13: Employment

		Frequency	%
Valid	Employed	7	11.7
	Self-employed	18	30.0
	Student	2	3.3
	Unemployed	24	40.0
	Retired	9	15.0
	Total	60	100.0

9.2.14. Segment Table 2.14: Monthly salary/earnings

		Frequency	%
Valid	Less than $50,000	23	38.3
	$50, 000 - $70,000	1	1.7
	Total	24	40.0

Missing	System	36	60.0
Total		60	100.0

9.3. SEGMENT 3: MEN WHO USE SOME GAS AND SOME COAL/WOOD (QUESTION #6, PEOPLE WHO ANSWERED THAT THEY "COOK WITH GAS SOME OF THE TIME AND COAL/WOOD SOME OF THE TIME")

9.3.1. Segment Table 3.1: Knowledge of RE

	% knowledgeable	#
Hydroelectric	15.2	5
Solar	29.4	10
Wind	35.3	12
Biomass	23.5	8
Biogas	29.4	10

9.3.2. Segment Table 3.2: Main fuel sources

	%high priority	#
coal	52.9%	18
gas	32.4%	11
wood	14.7%	5

9.3.3. Segment Table 3.3: Where purchase fuels

		Frequency	%
Valid	Retailer in the community	29	82.9

	Get it for free	2	5.7
	I make it myself	3	8.6
	Total	34	97.1
Missing	System	1	2.9
Total		35	100.0

9.3.4. Segment Table 3.4: Reasons for cooking with more gas and less coal/wood

Reasons for purchasing gas instead of coal or wood (1- highest priority & 8 – lowest priority)	% High Priority	#
Cooking with gas is faster than cooking with coal/wood	84.0%	21
Cooking with gas is easier than cooking with coal/wood	75.0%	9
When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	46.7%	7
The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	11.8%	2
Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	33.3%	4
Some wood causes the food to taste bitter	40.0%	4
I am ashamed to use wood for cooking	0%	0
Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	20.0%	2

9.3.5. Segment Table 3.5: Reasons for not cooking with more gas and less coal/wood

	%	#
Cooking with coal or wood costs less than cooking with gas	100.0%	15
We are able to get some coal/wood for free in exchange for helping the men collect it	100.0%	8
When purchasing gas, it must be bought in large quantities which we cannot afford	25.5%	2
Wood can be found everywhere for free	66.7%	6
The children help us collect wood which saves us time	20.0%	2
Cooking peas and tough meat requires too much gas	55.6%	2

Food cooked with some kinds of wood tastes better than food cooked with gas	37.5%	3
Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	0%	0

9.3.6. Segment Table 3.6: Where to purchase a new stove

		Frequency	%
Valid	Bog Walk	12	34.3
	Spanish Town	10	28.6
	Don't know	1	2.9
	Lindstead	9	25.7
	Total	32	91.4
Missing	System	3	8.6
Total		35	100.0

9.3.7. Segment Table 3.7: Knowledge of EE

	%	#
How knowledgeable are you about How much energy is used by different appliances in my home	8.8%	3
How knowledgeable are you about Energy efficiency or energy saving methods/ practices	28.6%	10
How knowledgeable are you about Energy saving appliances, electronics and lighting (e.g. florescent light bulbs)	29.4%	10
How knowledgeable are you about How to reduce energy use in my home or business	26.5%	9
How knowledgeable are you about How to reduce energy use in cooking	32.4%	11

9.3.8. Segment Table 3.8: Agreement with statements

	% Agree	#
Energy should be used efficiently	94.3%	33

Using energy efficiently will save money on light bills	94.3%	33
Efficient use of energy is beneficial to the environment	91.4%	32
Efficient use of energy will help Jamaica develop	94.3%	33
I encourage friends, families and community members to use energy efficiently	82.9%	29
I welcome new plans/ programmes aimed at using energy more efficiently	85.7%	30
More should be done to promote energy efficiency	88.6%	31
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	71.4%	25
Saving money on electricity bills is very important	93.9%	31
Energy efficiency is not related to climate change	24.2%	8

9.3.9. Segment Table 3.9: Age

		Frequency	%
Valid	18 – 29 yrs	10	28.6
	30 – 39 yrs	5	14.3
	40 – 49 yrs	10	28.6
	50 – 59 yrs	5	14.3
	60yrs and older	5	14.3
	Total	35	100.0

9.3.10. Segment Table 3.10: Number of people in the home

		Frequency	%
Valid	1	4	11.4
	2	7	20.0
	3	6	17.1
	4	3	8.6

	5	7	20.0
	6	4	11.4
	7	3	8.6
	12	1	2.9
	Total	35	100.0

9.3.11. Segment Table 3.11: Number of children in the home

		Frequency	%
Valid	0	11	31.4
	1	7	20.0
	2	7	20.0
	3	1	2.9
	4	1	2.9
	5	1	2.9
	6	1	2.9
	Total	29	82.9
Missing	System	6	17.1
Total		35	100.0

9.3.12. Segment Table 3.12: Education level

		Frequency	%
Valid	Primary School	13	37.1
	High School	20	57.1

	Degree	1	2.9
	PhD	1	2.9
	Total	35	100.0

9.3.13. Segment Table 3.13: Employment

		Frequency	%
Valid	Employed	5	14.3
	Self-employed	17	48.6
	Unemployed	10	28.6
	Retired	3	8.6
	Total	35	100.0

9.3.14. Segment Table 3.14: Monthly salary/earnings

		Frequency	%
Valid	Less than $50,000	15	42.9
	$50, 000 - $70,000	1	2.9
	$71,000 - $80,000	3	8.6
	Total	19	54.3
Missing	System	16	45.7
Total		35	100.0

9.4. SEGMENT 4: WOMEN WHO USE SOME GAS AND SOME COAL/WOOD (QUESTION #6, PEOPLE WHO ANSWERED THAT THEY "COOK WITH GAS SOME OF THE TIME AND COAL/WOOD SOME OF THE TIME")

9.4.1. Segment Table 4.1: Knowledge of RE

	% knowledgeable	#
Hydroelectric	5.4%	2
Solar	23.7%	9
Wind	21.6%	8
Biomass	2.7%	1
Biogas	13.5%	5

9.4.2. Segment Table 4.2: Main fuel sources

	%high priority	#
coal	63.9%	23
gas	32.4%	12
wood	6.3%	2

9.4.3. Segment Table 4.3: Where purchase fuels

		Frequency	%
Valid	Retailer in the community	27	71.1
	Get it for free	3	7.9
	I sell it at retail so I am able to purchase at a lower price	1	2.6
	I make it myself	7	18.4
	Total	38	100.0

9.4.4. Segment Table 4.4: Reasons for cooking with more gas and less coal/wood

Reasons for purchasing gas instead of coal or wood (1- highest priority & 8 – lowest priority)	% High Priority	#
Cooking with gas is faster than cooking with coal/wood	86.4%	19
Cooking with gas is easier than cooking with coal/wood	75.0%	6
When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	37.5%	3
The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	10.5%	2
Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	60.0%	6
Some wood causes the food to taste bitter	12. 5%	1
I am ashamed to use wood for cooking	0%	0
Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	14.3%	1

9.4.5. Segment Table 4.5: Reasons for not cooking with more gas and less coal/wood

	%	#
Cooking with coal or wood costs less than cooking with gas	95.0%	19
We are able to get some coal/wood for free in exchange for helping the men collect it	70.0%	7
When purchasing gas, it must be bought in large quantities which we cannot afford	50.0%	6
Wood can be found everywhere for free	50.0%	5
The children help us collect wood which saves us time	9.1%	1
Cooking peas and tough meat requires too much gas	33.3%	3
Food cooked with some kinds of wood tastes better than food cooked with gas	25.0%	2
Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	22.2%	2

9.4.6. Segment Table 4.6: Where to purchase a new stove

		Frequency	%
Valid	Retailer in the community	3	7.9
	Bog Walk	19	50.0

	Spanish Town	7	18.4
	Don't know	1	2.6
	Lindstead	5	13.2
	Kingston	1	2.6
	Total	36	94.7
Missing	System	2	5.3
Total		38	100.0

9.4.7. Segment Table 4.7: Knowledge of EE

	%	#
How knowledgeable are you about How much energy is used by different appliances in my home	2.7%	1
How knowledgeable are you about Energy efficiency or energy saving methods/ practices	27.0%	10
How knowledgeable are you about Energy saving appliances, electronics and lighting (e.g. florescent light bulbs)	29.7%	11
How knowledgeable are you about How to reduce energy use in my home or business	21.6%	8
How knowledgeable are you about How to reduce energy use in cooking	24.3%	9

9.4.8. Segment Table 4.8: Agreement with statements

	% Agree	#
Energy should be used efficiently	100.0%	37
Using energy efficiently will save money on light bills	91.9%	34
Efficient use of energy is beneficial to the environment	91.9%	34
Efficient use of energy will help Jamaica develop	94.6%	35
I encourage friends, families and community members to use energy efficiently	100.0%	37
I welcome new plans/ programmes aimed at using energy more efficiently	86.5%	32

More should be done to promote energy efficiency	97.2%	35
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	66.7%	24
Saving money on electricity bills is very important	86.5%	32
Energy efficiency is not related to climate change	9.1%	3

9.4.9. Segment Table 4.9: Age

		Frequency	%
Valid	18 – 29 yrs	13	34.2
	30 – 39 yrs	11	28.9
	40 – 49 yrs	6	15.8
	50 – 59 yrs	4	10.5
	60yrs and older	4	10.5
	Total	38	100.0

9.4.10. Segment Table 4.10: Number of people in the home

		Frequency	%
Valid	1	1	2.6
	2	6	15.8
	3	8	21.1
	4	11	28.9
	5	2	5.3
	6	1	2.6
	7	3	7.9

	8	1	2.6
	9	3	7.9
	10	1	2.6
	13	1	2.6
	Total	38	100.0

9.4.11. Segment Table 4.11: Number of children in the home

		Frequency	%
Valid	0	8	21.1
	1	6	15.8
	2	7	18.4
	3	6	15.8
	5	3	7.9
	7	1	2.6
	Total	31	81.6
Missing	System	7	18.4
Total		38	100.0

9.4.12. Segment Table 4.12: Education level

		Frequency	%
Valid	Primary School	11	28.9
	High School	23	60.5

	Diploma	2	5.3
	Degree	2	5.3
	Total	38	100.0

9.4.13. Segment Table 4.13: Employment

		Frequency	%
Valid	Employed	4	10.5
	Self-employed	14	36.8
	Student	2	5.3
	Unemployed	16	42.1
	Retired	2	5.3
	Total	38	100.0

9.4.14. Segment Table 4.14: Monthly salary/earnings

		Frequency	%
Valid	Less than $50,000	19	50.0
Missing	System	19	50.0
Total		38	100.0

10. CONTENT SEGMENT: LIGHTING

10.1. SEGMENT 5: MEN WHO USE ELECTRICITY FOR LIGHTING MORE THAN 70% OF THE TIME (QUESTION #12) AND DO NOT CURRENTLY USE CFLS (QUESTION #23)

10.1.1. Segment Table 5.1: Knowledge of RE

	% knowledgeable	#
Hydroelectric	24.3%	19
Solar	35.1%	10
Wind	32.4	13
Biomass	13.5	18
Biogas	16.2	16

10.1.2. Segment Table 5.2: Knowledge of EE

	% knowledgeable	#
Knowledge about different appliances	2.9%	1
Knowledge about energy efficiency	30.6%	11
Knowledge about energy saving appliances	34.3%	12
Knowledge about energy used in home or business	30.6%	11
Knowledge about how to reduce energy used in cooking	25.0%	9

10.1.3. Segment Table 5.3: Agreement with statements

	% Agree	#
Energy should be used efficiently	97.2%	35
Using energy efficiently will save money on light bills	86.1%	31
Efficient use of energy is beneficial to the environment	91.7%	33
Efficient use of energy will help Jamaica develop	86.1%	31
I encourage friends, families and community members to use energy efficiently	80.6%	29
I welcome new plans/ programmes aimed at using energy more	97.2%	35

efficiently		
More should be done to promote energy efficiency	88.9%	32
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	75.0%	27
Saving money on electricity bills is very important	94.6%	35
Energy efficiency is not related to climate change	31.4%	11

10.1.4. Segment Table 5.4: Current source of lighting

		Frequency	%
Valid	Electricity	34	91.9
	Combination	3	8.1
	Total	37	100.0

10.1.5. Segment Table 5.5: Sources of information on lighting

		Frequency	%
Valid	Information on JPS utility bills	9	24.3
	My neighbours	9	24.3
	My community leaders	3	8.1
	Radio	8	21.6
	Other	1	2.7
	Total	30	81.1
Missing	System	7	18.9
Total		37	100.0

10.1.6. Segment Table 5.6: Trustworthiness of information sources on lighting

	% High Priority	#
Information in JPS utility bills	44.0%	11
Text messages from JPS	25.0%	4
Stores that sell lighting	57.9%	11
My neighbours	76.2%	16
My community leaders	44.4%	8
Radio	82.6%	19

10.1.7. Segment Table 5.7: Electricity needs

Electricity Needs	%	#
Electricity to power household electronics Radio, TV, Fan, Fridge etc.)	100.0%	37
Electricity for cooking	12.50%	3
Electricity for lighting	100%	35
Electricity for farming	22.20%	2
Electricity for Entertainment (e.g. parties)	84.6	11
Electricity for running business	85.7	6

10.1.8. Segment Table 5.8: Electric appliances

	%	#
Radio	94.40%	34
TV	100.00%	36
Refrigerator	91.40%	32
Desktop Computer	21.70%	5
Laptop Computer	25.00%	6
Mobile Phone	97.10%	34
Fan	89.30%	25
Washing Machine	50.00%	9
Blender	85.70%	18
Microwave	100.00%	15
Freezer	100.00%	6
Electric Stove	0.00%	0

10.1.9. Segment Table 5.9: Affordability of electricity

		Frequency	Percent
Valid	Not Affordable	22	59.5
	Somewhat affordable	8	21.6
	Very Affordable	6	16.2
	Total	36	97.3
Missing	System	1	2.7
Total		37	100.0

10.1.10. Segment Table 5.10: Participation in Cuban Light Bulb Program

		Frequency	%
Valid	yes	17	45.9
	no	20	54.1
	Total	37	100.0

10.1.11. Segment Table 5.11: If received Cuban light bulb, do they believe the CFLs reduced electricity costs?

		Frequency	%
Valid	yes	13	35.1
	no	4	10.8
	Total	17	45.9
Missing	System	20	54.1
Total		37	100.0

10.1.12. Segment Table 5.12: Reason for purchasing CFLs

	%	#
CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	0.0%	0
CFLs last longer than incandescent bulbs	100.0%	1
CFLs provide softer light making it easier to read and for children to study at nigh	0.0%	0
The quality of lighting from CFLs is better than incandescent bulbs	0.0%	0
CFLS are more efficient than incandescent bulbs	100.0%	1
CFLS are safer than incandescent bulbs	100.0%	1
I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	50.0%	1
I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	0.0%	0
I will save on my electricity bill and have more money for transportation, including for children to go to school	0.0%	0

10.1.13. Segment Table 5.13: Percentage bulbs purchased from different sources

% of Light Bulbs purchased	Salesmen	Community Shop	Supermarket	Street side vendors
0 - 20	0	2	1	2
21 - 40	0	7	2	0
41 - 60	0	7	7	0
61 - 80	0	3	3	0
81 - 100	0	6	5	0

10.1.14. Segment Table 5.14: Reason for NOT purchasing CFLs

	%	#
They are too expensive – I can't afford it	84.4%	27
They are not available in the community	85.7%	18
They are available in nearby towns which requires money for transportation	50.0%	10

Some CFL bulbs blow out and are not good quality	26.9%	7
I do not know how to choose the good CFL bulbs	17.6%	3
The CFLs available now are not as good as those from the Cuban light bulb program	5.0%	1
I do not understand why CFLs are better than incandescent bulbs	36.8%	7
I do not understand why CFLs are better than incandescent bulbs	18.8%	3

10.1.15. Segment Table 5.15: Age

		Frequency	Percent
Valid	18 – 29 yrs	12	32.4
	30 – 39 yrs	6	16.2
	40 – 49 yrs	9	24.3
	50 – 59 yrs	3	8.1
	60yrs and older	7	18.9
	Total	37	100.0

10.1.16. Segment Table 5.16: Number of people in the home

		Frequency	Percent
Valid	1	4	10.8
	2	6	16.2
	3	4	10.8
	4	6	16.2

	5	10	27.0
	6	3	8.1
	7	1	2.7
	10	1	2.7
	11	1	2.7
	12	1	2.7
	Total	37	100.0

10.1.17. Segment Table 5.17: Number of children in the home

		Frequency	Percent
Valid	0	7	18.9
	1	10	27.0
	2	7	18.9
	3	2	5.4
	4	1	2.7
	5	1	2.7
	6	1	2.7
	8	1	2.7
	Total	30	81.1
Missing	System	7	18.9
Total		37	100.0

10.1.18. Segment Table 5.18: Education level

		Frequency	Percent
Valid	Primary School	10	27.0
	High School	23	62.2
	Diploma	1	2.7
	Degree	1	2.7
	Total	35	94.6
Missing	System	2	5.4
Total		37	100.0

10.1.19. Segment Table 5.19: Employment

		Frequency	Percent
Valid	Employed	7	18.9
	Self-employed	11	29.7
	Student	1	2.7
	Unemployed	12	32.4
	Retired	5	13.5
	Total	36	97.3
Missing	System	1	2.7
Total		37	100.0

10.1.20. Segment Table 5.20: Monthly salary/earnings

		Frequency	Percent
Valid	Less than $50,000	18	48.6
	$50, 000 - $70,000	1	2.7
	$71,000 - $80,000	2	5.4
	Total	21	56.8
Missing	System	16	43.2
Total		37	100.0

10.2. SEGMENT 6: WOMEN WHO USE ELECTRICITY FOR LIGHTING MORE THAN 70% OF THE TIME (QUESTION #12) AND DO NOT CURRENTLY USE CFLS (QUESTION #23)

10.2.1. Segment Table 6.1: Knowledge of RE

	% knowledgeable	#
Hydroelectric	15.1%	8
Solar	35.8%	19
Wind	32.1%	17
Biomass	9.4%	5
Biogas	18.9%	10

10.2.2. Segment Table 6.2: Knowledge of EE

	% knowledgeable	#
Knowledge about different appliances	5.7%	3
Knowledge about energy efficiency	32.1%	17

Knowledge about energy saving appliances	26.4%	14
Knowledge about energy used in home or business	30.2%	16
Knowledge about how to reduce energy used in cooking	24.5%	13

10.2.3. Segment Table 6.3: Agreement with statements

	% Agree	#
Energy should be used efficiently	94.3%	50
Using energy efficiently will save money on light bills	88.7%	47
Efficient use of energy is beneficial to the environment	84.9%	45
Efficient use of energy will help Jamaica develop	86.8%	46
I encourage friends, families and community members to use energy efficiently	77.4%	41
I welcome new plans/ programmes aimed at using energy more efficiently	88.5%	46
More should be done to promote energy efficiency	96.1%	49
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	66.0%	33
Saving money on electricity bills is very important	88.5%	46
Energy efficiency is not related to climate change	90.6%	48

10.2.4. Segment Table 6.4: Current source of lighting

		Frequency	%
Valid	Kerosene Lamps only	1	1.9
	Electricity	50	94.3
	Combination	1	1.9
	Total	52	98.1
Missing	System	1	1.9
Total		53	100.0

10.2.5. Segment Table 6.5: Sources of information on lighting

		Frequency	%
Valid	Information on JPS utility bills	8	15.1
	Text messages from JPS	3	5.7
	Stores that sell lighting	5	9.4
	My neighbors	7	13.2
	My community leaders	12	22.6
	Radio	11	20.8
	Other	2	3.8
	Total	48	90.6
Missing	System	5	9.4
Total		53	100.0

10.2.6. Segment Table 6.6: Trustworthiness of information sources on lighting

	% High Priority	#
Information in JPS utility bills	47.1%	16
Text messages from JPS	30.8%	8
Stores that sell lighting	34.6%	9
My neighbours	60.0%	15
My community leaders	60.0%	18
Radio	80.6%	29

10.2.7. Segment Table 6.7: Electricity needs

Electricity Needs	%	#
Electricity to power household electronics Radio, TV, Fan, Fridge etc.)	100%	52
Electricity for cooking	9.4%	3
Electricity for lighting	100%	53
Electricity for farming	28.6%	4
Electricity for Entertainment (e.g. parties)	64.3%	9
Electricity for running business	60.0%	6

10.2.8. Segment Table 6.8: Electric appliances

	%	#
Radio	98.1%	52
TV	100%	53
Refrigerator	94.0%	47
Desktop Computer	12.9%	4
Laptop Computer	25.0%	8
Mobile Phone	96.1%	49
Fan	81.6%	31
Washing Machine	26.1%	6
Blender	87.9%	29
Microwave	58.8%	10
Freezer	66.7%	8
Electric Stove	0.0%	0

10.2.9. Segment Table 6.9: Affordability of electricity

		Frequency	%
Valid	Not Affordable	31	58.5
	Somewhat affordable	11	20.8
	Very Affordable	8	15.1

	Total	50	94.3
Missing	System	3	5.7
Total		53	100.0

10.2.10. Segment Table 6.10: Participation in Cuban Light Bulb Program

		Frequency	%
Valid	yes	14	26.4
	no	39	73.6
	Total	53	100.0

10.2.11. Segment Table 6.11: If received Cuban light bulb, do they believe the CFLs reduced electricity costs?

		Frequency	%
Valid	yes	8	15.1
	no	8	15.1
	Total	16	30.2
Missing	System	37	69.8
Total		53	100.0

10.2.12. Segment Table 6.12: Reason for purchasing CFLs

	%	#
CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	100.0%	1
CFLs last longer than incandescent bulbs	0	0

CFLs provide softer light making it easier to read and for children to study at nigh	0	0
The quality of lighting from CFLs is better than incandescent bulbs	0	0
CFLS are more efficient than incandescent bulbs	0	0
CFLS are safer than incandescent bulbs	0	0
I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	100.0%	1
I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	0	0
I will save on my electricity bill and have more money for transportation, including for children to go to school	0	0

10.2.13. Segment Table 6.13: Percentage bulbs purchased from different sources

% of Light Bulbs purchased	Salesmen	Community Shop	Supermarket	Street side vendors
0 - 20		4	1	
21 - 40		4	1	1
41 - 60		5	5	1
61 - 80		1	2	
81 - 100		7	14	

10.2.14. Segment Table 6.14: Reason for NOT purchasing CFLs

	%	#
They are too expensive – I can't afford it	76.2%	32
They are not available in the community	72.4%	21
They are available in nearby towns which requires money for transportation	56.7%	17
Some CFL bulbs blow out and are not good quality	26.7%	8
I do not know how to choose the good CFL bulbs	19.4%	6
The CFLs available now are not as good as those from the Cuban light bulb program	3.3%	1
I do not understand why CFLs are better than incandescent bulbs	40.0%	12
I do not understand why CFLs are better than incandescent bulbs	41.9%	13

10.2.15. Segment Table 6.15: Age

		Frequency	%
Valid	18 – 29 yrs	18	34.0
	30 – 39 yrs	12	22.6
	40 – 49 yrs	8	15.1
	50 – 59 yrs	8	15.1
	60yrs and older	7	13.2
	Total	53	100.0

10.2.16. Segment Table 6.16: Number of people in the home

		Frequency	%
Valid	1	2	3.8
	2	6	11.3
	3	6	11.3
	4	16	30.2
	5	7	13.2
	6	6	11.3
	7	5	9.4
	8	2	3.8
	9	1	1.9
	10	1	1.9
	Total	52	98.1

Missing	System	1	1.9
Total		53	100.0

10.2.17. Segment Table 6.17: Number of children in the home

		Frequency	%
Valid	0	11	20.8
	1	6	11.3
	2	16	30.2
	3	5	9.4
	4	4	7.5
	5	2	3.8
	Total	44	83.0
Missing	System	9	17.0
Total		53	100.0

10.2.18. Segment Table 6.18: Education level

		Frequency	%
Valid	Primary School	9	17.0
	High School	37	69.8
	Diploma	3	5.7
	Degree	4	7.5
	Total	53	100.0

10.2.19. Segment Table 6.19: Employment

		Frequency	%
Valid	Employed	4	7.5
	Self-employed	14	26.4
	Student	2	3.8
	Unemployed	26	49.1
	Retired	6	11.3
	Total	52	98.1
Missing	System	1	1.9
Total		53	100.0

10.2.20. Segment Table 6.20: Monthly salary/earnings

		Frequency	%
Valid	Less than $50,000	20	37.7
Missing	System	33	62.3
Total		53	100.0

10.3. SEGMENT 7: RESPONDENTS WHO RELY ON LIGHT BULBS LESS THAN 50% OF THE DAY

10.3.1. Segment Table 7.1: Prioritization of reasons for purchasing CFLs by gender

	Reasons for purchasing CFLs	Gender			
		Male		Female	
*% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	3	100%	3	60%
	CFLs last longer than incandescent bulbs	3	100%	0	0%
	CFLs provide softer light making it easier to read and for children to study at night	1	33.3%	1	25%
	The quality of lighting from CFLs is better than incandescent bulbs	2	66.7%	1	25%
	CFLs are more efficient than incandescent bulbs	1	33.3%	5	83.3%
	CFLs are safer than incandescent bulbs	2	66.7%	3	60%
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	1	33.3%	2	66.7%
	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	1	33.3%	1	25%
	I will save on my electricity bill and have more money for transportation, including for children to go to school	1	33.3%	0	0%
		15		16	

10.3.2. Segment Table 7.2: Prioritization of reasons for not purchasing CFLs by gender

	Reasons for not using CFLs	Gender			
		Male		Female	
High Priority (1 -	They are too expensive – I can't afford it	7	87.5%	9	81.8%
	They are not available in the community	4	66.7%	7	100%

	They are available in nearby towns which requires money for transportation	2	40%	2	50%
	Some CFL bulbs blow out and are not good quality	2	25%	1	20%
	I do not know how to choose the good CFL bulbs	2	28.6%	2	22.2%
	The CFLs available now are not as good as those from the Cuban light bulb program	0	0%	0	0%
	I do not understand why CFLs are better than incandescent bulbs	3	37.5%	4	57.1%
	I do not know anyone who has saved money on their electricity bill after installing CFLs	2	33.3%	2	33.3%
		22		27	

10.3.3. Segment Table 7.3: Prioritization of reasons for purchasing CFLs by age

	Reasons for purchasing CFLs	Age Range									
		18 – 29 yrs.		30 – 39 yrs.		40 – 49 yrs.		50 – 59 yrs.		60yrs and older	
*% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	4	66.7	2	100%	1	100%	0		0	
	CFLs last longer than incandescent bulbs	2	40%			1	100%	0		0	
	CFLs provide softer light making it easier to read and for children to study at night	1	20%	1	100%	0		0		0	
	The quality of lighting from CFLs is better than incandescent bulbs	2	33.3%	0		1	100%	0		0	
	CFLs are more efficient than incandescent bulbs	4	66.7%	1	100%	0		1	100%	0	

	CFLs are safer than incandescent bulbs	5	83.3%	0		0		0		0	
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	3	60%	0		0		0		0	
	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	2	33.3%	0		0		0		0	
	I will save on my electricity bill and have more money for transportation, including for children to go to school	1		0		0		0		0	
		24		4		3		1		0	

10.3.4. Segment Table 7.4: Prioritization of reasons for not purchasing CFLs by age

	Reasons for not purchasing CFLs	Age Range									
		18 – 29 yrs.		30 – 39 yrs.		40 – 49 yrs.		50 – 59 yrs.		60yrs and older	
*% High Priority (1 - 3)	They are too expensive – I can't afford it	3	75%	4	100%	4	80%	3	100%	2	66.7%
	They are not available in the community	4	100%	2	66.7%	2	66.7%	1	100%	2	100%
	They are available in nearby towns which requires money for transportation	1	33.3%	0		2	66.7%	1	100%	0	
	Some CFL bulbs blow out and are not good quality	0		1	50%	1	25%	0		1	50%

	I do not know how to choose the good CFL bulbs	2	50%	1	33.3%	1	25%	0		0	
	The CFLs available now are not as good as those from the Cuban light bulb program	0		0		0		0		0	
	I do not understand why CFLs are better than incandescent bulbs	3	50%	3	75%	1	50%	0		0	
	I do not know anyone who has saved money on their electricity bill after installing CFLs	1	25%	2	66.7%	1	100%	0		0	
		14		13		12		5		5	

10.4. SEGMENT 8: RESPONDENTS WHO USE LIGHT BULBS 71-100% OF THE DAY

10.4.1. Segment Table 8.1: Prioritization of reasons for purchasing CFLs by gender

	Reasons for purchasing CFLs	Gender			
		Male		Female	
*% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	25	80.6%	16	80%
	CFLs last longer than incandescent bulbs	11	64.7%	11	73.2%
	CFLs provide softer light making it easier to read and for children to study at night	5	31.3%	6	42.9%
	The quality of lighting from CFLs is better than incandescent bulbs	5	35.7%	5	35.5%
	CFLs are more efficient than incandescent bulbs	9	60.0%	6	46.2%

	CFLs are safer than incandescent bulbs	3	21.4%	1	8.3%
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	4	23.5%	3	21.4%
	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	5	29.4%	3	20%
	I will save on my electricity bill and have more money for transportation, including for children to go to school	1	6.7%	2	13.3%
		68		53	

10.4.2. Segment Table 8.2: Prioritization of reasons for not purchasing CFLs by gender

	Reasons for not purchasing CFLs	Gender			
		Male		Female	
*% High Priority (1 - 3)	They are too expensive – I can't afford it	28	80.0%	34	75.6%
	They are not available in the community	20	87.0%	24	75.0%
	They are available in nearby towns which requires money for transportation	10	47.6%	17	54.8%
	Some CFL bulbs blow out and are not good quality	7	25%	9	28.1%
	I do not know how to choose the good CFL bulbs	3	17.6%	6	18.2%
	The CFLs available now are not as good as those from the Cuban light bulb program	1	4.8%	1	3%
	I do not understand why CFLs are better than incandescent bulbs	7	36.8%	12	38.7%
	I do not know anyone who has saved money on their electricity bill after installing CFLs	4	23.5%	13	39.4%

		80		116	

10.4.3. Segment Table 8.3: Prioritization of reasons for purchasing CFLs by age

	Reasons for purchasing CFLs	Age Range									
		18 – 29 yrs.		30 – 39 yrs.		40 – 49 yrs.		50 – 59 yrs.		60yrs and older	
*% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	9	60%	10	83.3%	10	83.3%	5	100%	7	100%
	CFLs last longer than incandescent bulbs	7	77.8%	5	62.5%	6	66.7%	2	100%	2	50%
	CFLs provide softer light making it easier to read and for children to study at night	6	66.7%	3	50%	2	25%	0		0	
	The quality of lighting from CFLs is better than incandescent bulbs	2	28.6%	3	50%	2	28.6%	2	66.7%	1	25%
	CFLs are more efficient than incandescent bulbs	3	37.5%	3	50%	5	62.5%	1	50%	3	75%
	CFLs are safer than incandescent bulbs	0		1	14.3%	2	40%	0		1	25%
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	1	12.5%	1	14.3%	1	12.5%	2	50%	2	50%
	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	1	14.3%	1	14.3	2	25%	2	50%	2	50%

	I will save on my electricity bill and have more money for transportation, including for children to go to school	0		1	12.5%	1	12.5%	1	33.3%	0	
		29		28		31		15		18	

10.4.4. Segment Table 8.4: Prioritization of reasons for not purchasing CFLs by age

	Reasons for not purchasing CFLs	Age Range									
		18 – 29 yrs.		30 – 39 yrs.		40 – 49 yrs.		50 – 59 yrs.		60yrs and older	
*% High Priority (1 - 3)	They are too expensive – I can't afford it	21	75%	15	83.3%	15	88.2%	6	66.7%	5	62.5%
	They are not available in the community	14	82.4%	10	76.9%	11	84.6%	5	83.3%	4	66.7%
	They are available in nearby towns which requires money for transportation	7	50%	7	53.8%	7	50%	3	50%	3	60%
	Some CFL bulbs blow out and are not good quality	3	15.8%	7	50%	4	25%	0		2	33.3%
	I do not know how to choose the good CFL bulbs	1	7.1%	0		2	16.7%	3	50%	3	50%
	The CFLs available now are not as good as those from the Cuban light bulb program	0		2	13.3%	0		0		0	
	I do not understand why CFLs are better than incandescent bulbs	6	46.2%	2	18.2%	3	25%	1	25%	7	70%
	I do not know anyone who has saved money on their electricity bill after installing CFLs	9	60%	3	23.1%	2	16.7%	2	40%	1	20%

		61		46		44		20		25	

10.4.5. Segment Table 8.5: Receipt of CFLs from the Cuban Light Bulb Programme?

		Frequency	Percent
Valid	yes	101	33.8
	no	132	44.1
	Total	233	77.9
Missing	System	66	22.1
Total		299	100.0

10.4.6. Segment Table 8.6: Current usage of CFLs

		Frequency	Percent
Valid	yes	74	24.7
	no	159	53.2
	Total	233	77.9
Missing	System	66	22.1
Total		299	100.0

10.4.7. Segment Table 8.7: Trustworthiness rating of sources of information on energy efficient lighting

	Frequency	Percent

	Information in JPS utility bills	69	41.8
	Text messages from JPS	39	34.5
	Stores that sell lighting	49	37.1
	My neighbours	83	61.0
	My community leaders	79	59.4
	Radio	113	75.3

Princessfield Cross Tabulations and Segments

11. PRINCESSFIELD CROSS TABULATIONS: COOKING

11.1. CROSSTAB 1.1: RESPONDENTS' REASONS FOR PURCHASING COOKING GAS INSTEAD OF COAL OR WOOD VERSUS METHOD OF COOKING

	Method for cooking				
Reasons for purchasing cooking gas instead of coal/wood		I use more gas for cooking and less goal/wood	I use more gas for cooking and less wood	I cook with only coal & wood	I cook with gas some of the time and coal/wood some of the time
	Cooking with gas is faster than cooking with coal/wood	96.1%	100.0%	100.0%	88.5%
		146	7	3	69
	Cooking with gas is easier than cooking with coal/wood	97.3%	85.7%	66.7%	96.1%
		142	6	2	73
	When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	70.9%	42.9%	50.0%	77.3%
		100	3	1	58
	The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not	6.8%	0.0%	0.0%	15.8%

	made using good wood	10	0	0	12
	Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	21.6%	50.0%	0.0%	6.3%
		30	3	0	4
	Some wood causes the food to taste bitter	2.2%	16.7%	0.0%	11.4%
		3	1	0	8
	I am ashamed to use wood for cooking	0.7%	0.0%	50.0%	3.0%
		1	0	1	2
	Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	8.3%	20.0%	50.0%	4.8%
		11	1	1	3

11.2. CROSSTAB 1.2: RESPONDENTS' REASONS FOR PURCHASING COOKING GAS INSTEAD OF COAL OR WOOD VERSUS GENDER

		Gender	
		Male	**Female**
purchasing cooking gas instead of	Cooking with gas is faster than cooking with coal/wood	93.8%	94.0%
		106	127
	Cooking with gas is easier than cooking with coal/wood	94.4%	97.7%
		102	128

	When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	73.6%	71.4%
		78	90
	The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	7.4%	10.6%
		8	14
	Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	16.1%	18.5%
		15	22
	Some wood causes the food to taste bitter	7.9%	3.4%
		8	4
	I am ashamed to use wood for cooking	4.1%	0.9%
		4	1
	Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	6.6%	8.7%
		6	10

11.3. CROSSTAB 1.3: RESPONDENTS' REASONS FOR PURCHASING COOKING GAS INSTEAD OF COAL OR WOOD VERSUS AGE GROUPS

		Age Groups				
High priority reasons for :		18 – 29 yrs	30 – 39 yrs	40 – 49 yrs	50 – 59 yrs	60yrs and older
	Cooking with gas is faster than cooking with	91.3%	97.4%	89.1%	100.0%	100.0%

	coal/wood	84	37	49	29	30
	Cooking with gas is easier than cooking with coal/wood	94.3%	100.0%	98.2%	92.6%	96.7%
		82	37	54	25	29
	When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	75.0%	72.2%	73.1%	71.4%	71.4%
		63	26	38	20	20
	The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	11.4%	5.4%	13.0%	3.4%	7.1%
		10	2	7	1	2
	Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	15.0%	25.0%	18.4%	25.0%	8.3%
		12	8	9	6	2
	Some wood causes the food to taste bitter	6.0%	0.0%	8.2%	3.8%	7.7%
		5	0	4	1	2
	I am ashamed to use wood for cooking	5.1%	0.0%	0.0%	0.0%	3.7%
		4	0	0	0	1
	Smoke from cooking with coal/wood makes a bad	7.8%	6.7%	2.1%	12.5%	8.0%

	odor, especially in a person's hair	6	2	1	3	2

11.4. CROSSTAB 1.4: RESPONDENTS' REASONS FOR PURCHASING COOKING GAS INSTEAD OF COAL OR WOOD VERSUS HIGHEST EDUCATION LEVEL

	Highest Education Level					
Reasons for purchasing cooking gas instead of coal/wood		Primary School	High School	Diploma	Degree	PhD
	Cooking with gas is faster than cooking with coal/wood	98.3%	92.2%	100.0%	81.8%	
		57	142	21	9	
	Cooking with gas is easier than cooking with coal/wood	96.4%	96.6%	100.0%	90.9%	
		54	143	21	10	
	When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	70.9%	73.9%	71.4%	72.7%	
		39	105	15	8	
	The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	8.9%	10.0%	0.0%	20.0%	

		5	15	0	2	
	Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	13.0%	17.9%	25.0%	11.1%	
		6	24	5	1	
	Some wood causes the food to taste bitter	4.0%	6.5%	0.0%	0.0%	
		2	9	0	0	
	I am ashamed to use wood for cooking	0.0%	2.3%	0.0%	11.1%	
		0	3	0	1	
	Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	10.6%	6.2%	5.8%	11.1%	
		5	8	1	1	

11.5. CROSSTAB 1.5: RESPONDENTS' REASONS FOR PURCHASING COOKING GAS INSTEAD OF COAL OR WOOD VERSUS MONTHLY SALARY

		Monthly Salary / Earnings				
purchasing cooking gas instead of		Less than $50,000	$50, 000 - $70,000	$71,000 - $80,000	$81,000 - $100,000	More than $120,000
	Cooking with gas is faster than cooking with coal/wood	92.7%	100.0%			
		102	10			
	Cooking with gas is easier than cooking with coal/wood	96.2%	100.0%			

		100	10			
	When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	79.0%	70.0%			
		79	7			
	The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	93.5%	100.0%			
		101	10			
	Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	19.8%	20.0%			
		18	2			
	Some wood causes the food to taste bitter	5.2%	0.0%			
		5	0			
	I am ashamed to use wood for cooking	3.2%	0.0%			
		3	0			
	Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	7.1%	11.1%			
		7	1			

11.6. CROSSTAB 1.6: RESPONDENTS' REASONS FOR NOT PURCHASING COOKING GAS AND USING LESS COAL OR WOOD VERSUS METHOD FOR COOKING

	Method for cooking

		I use more gas for cooking and less goal/wood	I use more gas for cooking and less wood	I cook with only coal & wood	I cook with gas some of the time and coal/wood some of the time
Reasons for not purchasing cooking gas & using less coal/wood	Cooking with coal or wood costs less than cooking with gas	100.0%	97.5%	93.3%	
		1	77	14	
	We are able to get some coal/wood for free in exchange for helping the men collect it			43.2%	90.9%
				32	10
	When purchasing gas, it must be bought in large quantities which we cannot afford			40.0%	50.0%
				30	7
	Wood can be found everywhere for free			64.4%	45.5%
				47	5
	The children help us collect wood which saves us time			6.8%	8.3%
				5	1
	Cooking peas and tough meat requires too much gas			25.0%	18.2%
				17	2

	Food cooked with some kinds of wood tastes better than food cooked with gas			28.6%	27.3%
				20	3
	Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk		0.0%	4.0%	10.0%
			0	5.7	1

11.7. CROSSTAB 1.7: RESPONDENTS' REASONS FOR NOT PURCHASING COOKING GAS AND USING LESS COAL OR WOOD VERSUS GENDER

		Gender	
		Male	**Female**
Reasons for not purchasing cooking gas & using less coal/wood	Cooking with coal or wood costs less than cooking with gas	95.0%	98.0%
		38	58
	We are able to get some coal/wood for free in exchange for helping the men collect it	51.4%	49.1%
		18	26
	When purchasing gas, it must be bought in large quantities which we cannot afford	40.0%	50.0%
		30	7
	Wood can be found everywhere for free	58.3%	63.5%

		21	33
	The children help us collect wood which saves us time	2.9%	13.0%
		1	7
	Cooking peas and tough meat requires too much gas	23.5%	23.9%
		8	11
	Food cooked with some kinds of wood tastes better than food cooked with gas	34.3%	22.4%
		12	11
	Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	8.6%	4.3%
		3	2

11.8. CROSSTAB 1.8: RESPONDENTS' REASONS FOR NOT PURCHASING COOKING GAS AND USING LESS COAL OR WOOD VERSUS AGE GROUP

		Age Group				
purchasing cooking gas & using less		18 – 29 yrs	30 – 39 yrs	40 – 49 yrs	50 – 59 yrs	60yrs and older
	Cooking with coal or wood costs less than cooking with gas	96.4%	100.0%	90.9%	100.0%	100.0%

		27	13	20	16	20
	We are able to get some coal/wood for free in exchange for helping the men collect it	40.9%	58.3%	60.0%	43.8%	50.0%
		9	7	12	7	9
	When purchasing gas, it must be bought in large quantities which we cannot afford	41.7%	7.7%	52.4%	60.0%	35.0%
		10	1	11	9	7
	Wood can be found everywhere for free	56.0%	63.6%	61.1%	75.0%	55.6%
		14	7	11	12	10
	The children help us collect wood which saves us time	8.3%	20.0%	10.0%	6.7%	5.3%
		2	2	2	1	1
	Cooking peas and tough meat requires too much gas	33.3%	44.4%	10.5%	14.3%	23.5%
		7	4	2	2	4
	Food cooked with some kinds of wood tastes better than food cooked with gas	34.8%	27.3%	26.3%	7.1%	35.3%
		8	3	5	1	6
	Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	10.0%	9.1%	5.3%	0.0%	5.3%
		2	1	1	0	1

11.9. CROSSTAB 1.9: RESPONDENTS' REASONS FOR NOT PURCHASING COOKING GAS AND USING LESS COAL OR WOOD VERSUS EDUCATION LEVEL

		Education Level				
		Primary	**High**	**Diploma**	**Degree**	**PHD**
Reasons for not purchasing cooking gas & using less coal/wood	Cooking with coal or wood costs less than cooking with gas	95.7%	98.0%	100.0%	100.0%	
		44	48	2	1	
	We are able to get some coal/wood for free in exchange for helping the men collect it	61.9%	38.6%	100.0%		
		26	17	1		
	When purchasing gas, it must be bought in large quantities which we cannot afford	42.9%	37.5%	50.0%		
		18	18	1		
	Wood can be found everywhere for free	57.1%	66.7%	33.3%		
		24	28	1		
	The children help us collect wood which saves us time	7.1%	11.4%	0.0%		
		3	5	0		
	Cooking peas and tough meat requires too much gas	15.8%	32.5%	0.0%		
		6	13	0		
	Food cooked with some kinds of wood tastes better than food cooked with gas	25.0%	31.7%	0.0%		
		10	13	0		

	Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	7.3%	5.3%	0.0%	0.0%	
		2	2	0	0	

11.10. CROSSTAB 1.10: RESPONDENTS' REASONS FOR NOT PURCHASING COOKING GAS AND USING LESS COAL OR WOOD VERSUS MONTHLY SALARY

		Monthly Salary				
		Less than $50,000	**$50, 000 - $70,000**	**$71,000 - $80,000**		
Reasons for not purchasing cooking gas & using less coal/wood	Cooking with coal or wood costs less than cooking with gas	97.4%				
		37				
	We are able to get some coal/wood for free in exchange for helping the men collect it	54.3%				
		19				
	When purchasing gas, it must be bought in large quantities which we cannot afford	21.1%				
		8				
	Wood can be found everywhere for free	62.5%				
		20				
	The children help us collect wood which saves us time	8.8%				
		3				

	Cooking peas and tough meat requires too much gas	26.7%					
		8					
	Food cooked with some kinds of wood tastes better than food cooked with gas	40.6%					
		13					
	Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	6.2%					
		2					

11.11. CROSSTAB 1.11: METHOD OF COOKING BY EMPLOYMENT STATUS

			What is your employment status				
			Employed	Self-employed	Student	Unemployed	Retired
Which of the following best represents your method for cooking	I use more gas for cooking and less	Count	33	55	7	44	13
		% within What is your employment status	63.5%	50.5%	35.0%	35.2%	44.8%
	I use more gas for cooking and less wood	Count	0	3	0	3	1
		% within What is your employment status	0.0%	2.8%	0.0%	2.4%	3.4%
	I cook with only coal & wood	Count	7	28	6	36	8
		% within What is your employment status	13.5%	25.7%	30.0%	28.8%	27.6%
	I cook with gas	Count	12	23	7	42	7

	some of the time and coal/wood some of the	% within What is your employment status	23.1%	21.1%	35.0%	33.6%	24.1%
Total		Count	52	109	20	125	29
		% within What is your employment status	100.0%	100.0%	100.0%	100.0%	100.0%

11.12. CROSSTAB 1.13: WHERE TO PURCHASE FUEL BY EMPLOYMENT STATUS

			What is your employment status				
			Employed	Self-employed	Student	Unemployed	Retired
Where do you usually purchase the above fuel source	Retailer in the community	Count	46	92	16	100	21
		% within What is your employment status	86.8%	81.4%	80.0%	81.3%	72.4%
	Get it for free	Count	0	3	1	11	4
		% within What is your employment status	0.0%	2.7%	5.0%	8.9%	13.8%
	I sell it at retail so I am able to purchase at a lower price	Count	0	1	0	2	0
		% within What is your employment status	0.0%	0.9%	0.0%	1.6%	0.0%
	I make it myself	Count	5	10	3	6	1
		% within What is your employment status	9.4%	8.8%	15.0%	4.9%	3.4%
	Other	Count	2	7	0	4	3

		% within What is your employment status	3.8%	6.2%	0.0%	3.3%	10.3%
Total		Count	53	113	20	123	29
		% within What is your employment status	100.0%	100.0%	100.0%	100.0%	100.0%

11.13. CROSSTAB 1.14: METHOD OF COOKING BY CURRENT SOURCE OF LIGHTING

			Which of the following best represents your method for cooking			
			I use more gas for cooking and less	I use more gas for cooking and less wood	I cook with only coal & wood	I cook with gas some of the time and coal/wood some of the
What is your current source of lighting	Kerosene Lamps only	Count	3	0	17	5
		% within Which of the following best represents your method for cooking	2.0%	0.0%	21.0%	5.5%
	Candles only	Count	2	0	4	2
		% within Which of the following best represents your method for cooking	1.3%	0.0%	4.9%	2.2%
	Electricity	Count	145	7	54	83
		% within Which of the following best	96.0%	100.0%	66.7%	91.2%

		represents your method for cooking				
	Combination	Count	1	0	6	1
		% within Which of the following best represents your method for cooking	0.7%	0.0%	7.4%	1.1%
Total		Count	151	7	81	91
		% within Which of the following best represents your method for cooking	100.0%	100.0%	100.0%	100.0%

12. PRINCESSFIELD CROSS TABULATIONS: LIGHTING

12.1. CROSSTAB 2.1: THE AVERAGE MONTHLY ELECTRICITY CHARGE VERSUS WHETHER RESPONDENTS RECEIVED FLUORESCENT LIGHT BULBS IN THE CUBAN LIGHT BULB PROJECT

11.2		Did you receive fluorescent light bulbs in the Cuban Light Bulb project	
		Yes	No
Average monthly electricity charge	$0.00	8.6%	12.2%
		13	18
	Less than $1,000	0%	1.4%
		0	2
	$1, 001 - $2,000	5.3%	4.8%
		8	7
	$2001 - $3,000	11.3%	8.2%
		17	12
	$3,001 - $4,000	19.9%	15.6%
		30	23
	$4,001 - $5,000	6.6%	5.4%
		10	8
	$5,001 - $6,000	12.6%	13.6%
		19	20
	$6,001 - $7,000	6.0%	8.8%
		9	13
	$7,001 - $8,000	9.9%	10.9%
		15	16
	$8,001 - $9,000	4.0%	4.1%
		6	6
	$9,001 - $10,000	3.3%	3.4%
		5	5
	More than $10,000	12.6%	11.6%
		19	17

12.2. CROSSTAB 2.2: THE RESPONDENTS' VIEW ON IF FLUORESCENT LIGHT BULBS HAVE HELPED TO REDUCE MONTHLY ENERGY COSTS VERSUS MONTHLY SALARY

12.5		Monthly Salary/ Earnings				
In your opinion, did these fluorescent light bulbs help in reducing your monthly energy cost		**Less than $50,000**	**$50, 000 - $70,000**	**$71,000 - $80,000**	**$81,000 - $100,000**	**More than $120,000**
	Yes	77.5%	25.0%	0.0%	0.0%	0.0%
		55	1	0	0	0
	No	22.5%	75.0%	0.0%	0.0%	0.0%
		16	3	0	0	0

12.3. CROSSTAB 2.3: WHETHER RESPONDENTS CURRENTLY USED FLUORESCENT LIGHT BULBS VERSUS RECEIVING FLUORESCENT LIGHT BULBS IN THE CUBAN LIGHT BULB PROJECT

12.6		Did you receive fluorescent light bulbs in the Cuban Light Bulb project	
Do you currently use fluorescent light bulbs		**Yes**	**No**
	Yes	59.5%	40.3%
		91	60

	No	40.5%	59.7%
		62	89

12.4. CROSSTAB 2.4: WHETHER RESPONDENTS CURRENTLY USED FLUORESCENT LIGHT BULBS VERSUS HIGHEST LEVEL OF FORMAL EDUCATION

12.8		What is your highest level of formal education completed				
Do you currently use fluorescent light bulbs		**Primary School**	**High School**	**Diploma**	**Degree**	**Masters**
	Yes	51.2%	47.4%	57.1%	45.5%	100.0%
		42	90	12	5	1
	No	48.8%	52.6%	42.9%	54.5%	0.0%
		40	100	9	6	0

12.5. CROSSTAB 2.5: WHETHER RESPONDENTS CURRENTLY USED FLUORESCENT LIGHT BULBS VERSUS MONTHLY SALARY

12.10		Monthly salary/ earnings				
Do you currently use fluorescent light bulbs		**Less than $50,000**	**$50, 000 - $70,000**	**$71,000 - $80,000**	**$81,000 - $100,000**	**More than $120,000**
	Yes	58.1%	50.0%	0.0%	0.0%	0.0%
		79	5	0	0	0
	No	41.9%	50.0%	0.0%	0.0%	0.0%

		57	2	0	0	0

12.6. CROSSTAB 2.6: RESPONDENTS' REASONS FOR PURCHASING CFLS INSTEAD OF INCANDESCENT BULBS VERSUS WHETHER THEY RECEIVED FLUORESCENT LIGHT BULBS IN THE CUBAN LIGHT BULB PROJECT

		Did you receive fluorescent light bulbs in the Cuban Light Bulb project	
	Reasons	**Yes**	**No**
% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	74.7%	86.4%
		68	51
	CFLs last longer than incandescent bulbs	75.3%	81.0%
		64	47
	CFLs provide softer light making it easier to read and for children to study at night	38.1%	38.9%
		32	21
	The quality of lighting from CFLs is better than incandescent bulbs	35.8%	40.4%
		29	21
	CFLs are more efficient than incandescent bulbs	50.6%	34.0%
		39	18
	CFLs are safer than incandescent bulbs	12.8%	9.6%
		10	5
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	13.6%	13.0%
		11	7

	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	10.6%	9.3%
		9	5
	I will save on my electricity bill and have more money for transportation, including for children to go to school	9.9%	9.6%
		8	5

12.7. CROSSTAB 2.7: RESPONDENTS' REASONS FOR PURCHASING CFLS INSTEAD OF INCANDESCENT BULBS VERSUS HIGHEST LEVEL OF FORMAL EDUCATION

13.13		Education Level				
	Reasons For	Primary School	High School	Diploma	Degree	Masters
% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	77.8%	77.3%	75.0%	100.0%	100.0%
		35	68	9	6	1
	CFLs last longer than incandescent bulbs	75.6%	77.9%	66.7%	100%	0.0%
		31	67	8	6	0
	CFLs provide softer light making it easier to read and for children to study at night	48.8%	33.8%	18.2%	60.0%	100.0%
		21	27	2	3	1
	The quality of lighting from CFLs is better than incandescent bulbs	35.7%	39.2%	30.0%	20.0%	0.0%
		15	31	3	1	0
	CFLs are more efficient than incandescent bulbs	44.4%	43.2%	60.0%	33.3%	0.0%
		16	35	6	2	0
	CFLs are safer than incandescent bulbs	13.2%	8.9%	27.3%	0.0%	0.0%
		5	7	3	0	0
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	14.3%	11.2%	18.2%	0.0%	0.0%

		6	9	2	0	0
	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	4.9%	14.3%	9.1%	0.0%	0.0%
		2	12	1	0	0
	I will save on my electricity bill and have more money for transportation, including for children to go to school	7.3%	14.1%	9.1%	0.0%	0.0%
		3	11	1	0	0

12.8. CROSSTAB 2.8: RESPONDENTS' REASONS FOR PURCHASING CFLS INSTEAD OF INCANDESCENT BULBS VERSUS AGE GROUP

14.14		Age Group				
	Reasons For	**18 – 29 yrs**	**30 – 39 yrs**	**40 – 49 yrs**	**50 – 59 yrs**	**60yrs and older**
% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	74.5%	79.2%	80.6%	76.5%	81.5%
		35	19	29	13	22
	CFLs last longer than incandescent bulbs	80.0%	78.3%	72.2%	82.4%	73.9%
		36	18	26	14	17
	CFLs provide softer light making it easier to read and for children to study at night	28.6%	45.0%	34.3%	46.7%	51.9%
		12	9	12	7	14
	The quality of lighting from CFLs is better than incandescent bulbs	46.3%	33.3%	33.3%	40.0%	25.0%
		19	7	11	6	6
	CFLs are more efficient than incandescent bulbs	41.5%	45.5%	44.1%	27.3%	56.5%
		17	10	15	3	13

	CFLs are safer than incandescent bulbs	14.3%	0.0%	9.1%	9.1%	20.0%
		6	0	3	1	5
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	7.5%	17.4%	18.2%	26.7%	4.0%
		3	4	6	4	1
	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	9.5%	9.1%	17.1%	20.0%	0.0%
		4	2	6	3	0
	I will save on my electricity bill and have more money for transportation, including for children to go to school	10.0%	14.3%	14.3%	7.7%	7.4%
		4	3	5	1	2

12.9. CROSSTAB 2.9: RESPONDENTS' REASONS FOR NOT USING FLUORESCENT LIGHT BULBS VERSUS GENDER

13.1		Gender	
	Reasons For not using CFLs	**Male**	**Female**
% High Priority (1 - 3)	They are too expensive – I can't afford it	83.7%	83.9%
		41	73
	They are not available in the community	83.3%	88.9%
		40	72
	They are available in nearby towns which requires money for transportation	68.8%	66.2%
		33	53
	Some CFL bulbs blow out and are not good quality	14.0%	19.5%
		6	15
	I do not know how to choose the good CFL bulbs	14.3%	10.5%
		6	8

	The CFLs available now are not as good as those from the Cuban light bulb program	15.2%	8.0%
		7	6
	I do not understand why CFLs are better than incandescent bulbs	13.6%	9.3%
		6	7
	I do not know anyone who has saved money on their electricity bill after installing CFLs	15.2%	14.9%
		7	11

12.10. CROSSTAB 3.10: RESPONDENTS' REASONS FOR NOT USING FLUORESCENT LIGHT BULBS VERSUS AGE GROUP

13.3		Age Group				
	Reasons For not using CFLs	**18 – 29 yrs**	**30 – 39 yrs**	**40 – 49 yrs**	**50 – 59 yrs**	**60yrs and older**
% High Priority (1 - 3)	They are too expensive – I can't afford it	79.2%	86.4%	88.2%	88.2%	80.0%
		38	19	30	15	12
	They are not available in the community	87.5%	85.0%	87.9%	86.7%	84.6%
		42	17	29	13	11
	They are available in nearby towns which requires money for transportation	66.7%	71.4%	65.5%	68.8%	64.3%
		32	15	19	11	9
	Some CFL bulbs blow out and are not good quality	17.0%	11.1%	20.7%	23.1%	23.1%
		8	2	6	3	3
	I do not know how to choose the good CFL bulbs	11.4%	11.1%	10.7%	14.3%	15.4%
		5	2	3	2	2
	The CFLs available now are not as good as those from the Cuban light bulb program	10.9%	25.0%	6.9%	7.7%	7.7%
		5	5	2	1	1

	I do not understand why CFLs are better than incandescent bulbs	13.3%	10.5%	7.1%	0.0%	16.7%
		6	2	2	0	2
	I do not know anyone who has saved money on their electricity bill after installing CFLs	19.6%	5.9%	6.7%	6.7%	33.3%
		9	1	2	1	4

12.11. CROSSTAB 2.11: AFFORDABILITY OF ELECTRICITY BY PARTICIPATION IN THE CUBAN LIGHT BULB PROGRAMME

			Did you receive fluorescent light bulbs in the Cuban Light Bulb project	
			yes	no
On a scale of 1 to 10 how affordable is electricity to you	1	Count	54	60
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	37.2%	42.3%
	2	Count	23	13
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	15.9%	9.2%
	3	Count	14	15
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	9.7%	10.6%
	4	Count	9	7
		% within Did you receive fluorescent	6.2%	4.9%

		light bulbs in the Cuban Light Bulb project		
	5	Count	21	17
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	14.5%	12.0%
	6	Count	4	2
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	2.8%	1.4%
	7	Count	1	5
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	0.7%	3.5%
	8	Count	7	10
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	4.8%	7.0%
	9	Count	7	7
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	4.8%	4.9%
	10	Count	5	6
		% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	3.4%	4.2%

Total	Count	145	142
	% within Did you receive fluorescent light bulbs in the Cuban Light Bulb project	100.0%	100.0%

12.12. CROSSTAB 2.12: SOURCE OF ENERGY EFFICIENCY INFORMATION BY GENDER

			Gender	
			Male	Female
"Stores that sell lighting"	"Information in JPS utility bills"	Count	46	50
		% within Gender	48.9%	39.7%
	"Text messages from JPS"	Count	26	29
		% within Gender	31.7%	27.1%
	"Stores that sell lighting	Count	16	21
		% within Gender	19.5%	19.6%
	"My neighbours"	Count	40	56
		% within Gender	48.8%	53.8%
	My community leaders	Count	48	77
		% within Gender	53.9%	67.0%

	"Radio"	Count	89	118
		% within Gender	80.9%	88.7%

13. PRINCESSFIELD SEGMENT: COOKING

13.1. SEGMENT 1: MEN WHO USE MORE GAS AND LESS COAL/WOOD (QUESTION #6, PEOPLE WHO ANSWER EITHER "I USE MORE GAS FOR COOKING AND LESS COAL" OR "I USE MORE GAS FOR COOKING AND LESS WOOD")

13.1.1. Segment Table 1.1: Knowledge of RE

	% knowledgeable	#
Hydroelectric	28.4%	19
Solar	38.2%	26
Wind	37.7%	26
Biomass	26.1%	18
Biogas	29%	20

13.1.2. Segment Table 1.2: Main fuel sources

	%high priority	#
Coal	1.6	1
Gas	97.1%	67
Wood	0%	0

13.1.3. Segment Table 1.3: Where purchase fuels

		Frequency	%
Valid	Retailer in the community	67	97.1
	Other	2	2.9

	Total	69	100.0

13.1.4. Segment Table 1.4: Reasons for purchasing gas instead of coal/wood

Reasons for purchasing gas instead of coal or wood (1- highest priority & 8 – lowest priority)	% High Priority	#
Cooking with gas is faster than cooking with coal/wood	97.1%	66
Cooking with gas is easier than cooking with coal/wood	95.4%	62
When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	70.3%	45
The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	7.6%	5
Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	21%	13
Some wood causes the food to taste bitter	4.8%	3
I am ashamed to use wood for cooking	1.6%	1
Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	5.1%	3

13.1.5. Segment Table 1.5: Reasons for not cooking with more gas and less coal/wood

	%	#
Cooking with coal or wood costs less than cooking with gas	1.4%	1
We are able to get some coal/wood for free in exchange for helping the men collect it	0%	0
When purchasing gas, it must be bought in large quantities which we cannot afford	0%	0
Wood can be found everywhere for free	0%	0
The children help us collect wood which saves us time	0%	0
Cooking peas and tough meat requires too much gas	0%	0
Food cooked with some kinds of wood tastes better than food cooked with gas	0%	0
Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	1.4%	1

13.1.6. Segment Table 1.6: Where to purchase a new stove

		Frequency	%
Valid	Retailer in the community	6	8.7
	Bog Walk	8	11.6
	Spanish Town	14	20.3
	Don't know	4	5.8
	Lindstead	30	43.5
	Kingston	2	2.9
	Total	64	92.8
Missing	System	5	7.2
Total		69	100.0

13.1.7. Segment Table 1.7: Knowledge of EE

	%	#
How knowledgeable are you about How much energy is used by different appliances in my home	4.5%	3
How knowledgeable are you about Energy efficiency or energy saving methods/ practices	43.1%	28
How knowledgeable are you about Energy saving appliances, electronics and lighting (e.g. florescent light bulbs)	50.7%	34
How knowledgeable are you about How to reduce energy use in my home or business	46.2%	30
How knowledgeable are you about How to reduce energy use in cooking	46.2%	30

13.1.8. Segment Table 1.8: Agreement with statements

	% Agree	#
Energy should be used efficiently	97	65
Using energy efficiently will save money on light bills	95.5	64
Efficient use of energy is beneficial to the environment	97	64
Efficient use of energy will help Jamaica develop	89.2	58
I encourage friends, families and community members to use energy efficiently	89.4	59
I welcome new plans/ programmes aimed at using energy more efficiently	90.9	60
More should be done to promote energy efficiency	95.5	63
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	86.4	57
Saving money on electricity bills is very important	95.5	63
Energy efficiency is not related to climate change	10.6	7

13.1.9. Segment Table 1.9: Age

		Frequency	%
Valid	18 – 29 yrs	29	42.0
	30 – 39 yrs	9	13.0
	40 – 49 yrs	16	23.2
	50 – 59 yrs	4	5.8
	60yrs and older	9	13.0
	Total	67	97.1
Missing	System	2	2.9
Total		69	100.0

13.1.10. Segment Table 1.10: Number of people in the home

		Frequency	Percent
Valid	1	9	13.0
	2	8	11.6
	3	10	14.5
	4	10	14.5
	5	10	14.5
	6	11	15.9
	7	3	4.3
	8	4	5.8
	9	1	1.4
	12	1	1.4
	15	1	1.4
	Total	68	98.6
Missing	System	1	1.4
Total		69	100.0

13.1.11. Segment Table 1.11: Number of children in the home

		Frequency	Percent
Valid	0	5	7.2

	1	16	23.2
	2	15	21.7
	3	6	8.7
	4	3	4.3
	5	2	2.9
	Total	47	68.1
Missing	System	22	31.9
Total		69	100.0

13.1.12. Segment Table 1.12: Education level

		Frequency	Percent
Valid	Primary School	14	20.3
	High School	47	68.1
	Diploma	2	2.9
	Degree	4	5.8
	Masters	1	1.4
	Total	68	98.6
Missing	System	1	1.4
Total		69	100.0

13.1.13. Segment Table 1.13: Employment

		Frequency	%
Valid	Employed	19	27.5
	Self-employed	24	34.8
	Student	3	4.3
	Unemployed	16	23.2
	Retired	6	8.7
	Total	68	98.6
Missing	System	1	1.4
Total		69	100.0

13.1.14. Segment Table 1.14: Monthly salary/earnings

		Frequency	%
Valid	Less than $50,000	35	50.7
	$50, 000 - $70,000	7	10.1
	Total	42	60.9
Missing	System	27	39.1
Total		69	100.0

13.2. SEGMENT 2: WOMEN WHO USE MORE GAS AND LESS COAL/WOOD (QUESTION #6, PEOPLE WHO ANSWER EITHER "I USE MORE GAS FOR COOKING AND LESS COAL" OR "I USE MORE GAS FOR COOKING AND LESS WOOD")

13.2.1. Segment Table 2.1: Knowledge of RE

	% knowledgeable	#
Hydroelectric	27.7%	18
Solar	49.2%	32
Wind	46.2%	30
Biomass	15.4%	10
Biogas	29.2%	19

13.2.2. Segment Table 2.2: Main fuel sources

	%high priority	#
Coal	0%	0
Gas	100%	65
Wood	0%	0

13.2.3. Segment Table 2.3: Where purchase fuels

		Frequency	%
Valid	Retailer in the community	57	87.7
	I sell it at retail so I am able to purchase at a lower price	2	3.1
	Other	6	9.2
	Total	65	100.0

13.2.4. Segment Table 2.4: Reasons for purchasing gas instead of coal or wood

Reasons for purchasing gas instead of coal or wood (1- highest priority & 8 – lowest priority)	% High Priority	#
Cooking with gas is faster than cooking with coal/wood	98.4%	63
Cooking with gas is easier than cooking with coal/wood	100%	61
When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	67.8%	40
The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	0%	0
Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	29.8%	17
Some wood causes the food to taste bitter	0%	0
I am ashamed to use wood for cooking	0%	0
Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	10.9%	6

13.2.5. Segment Table 2.5: Reasons for not cooking with more gas and less coal/wood

	%	#
Cooking with coal or wood costs less than cooking with gas	0%	0
We are able to get some coal/wood for free in exchange for helping the men collect it	0%	0
When purchasing gas, it must be bought in large quantities which we cannot afford	0%	0
Wood can be found everywhere for free	0%	0
The children help us collect wood which saves us time	0%	0
Cooking peas and tough meat requires too much gas	0%	0
Food cooked with some kinds of wood tastes better than food cooked with gas	0%	0
Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	0%	0

13.2.6. Segment Table 2.6: Where to purchase a new stove

		Frequency	%
Valid	Retailer in the community	1	1.5

	Bog Walk	8	12.3
	Spanish Town	11	16.9
	Don't know	3	4.6
	Lindstead	40	61.5
	Total	63	96.9
Missing	System	2	3.1
Total		65	100.0

13.2.7. Segment Table 2.7: Knowledge of EE

	%	#
How knowledgeable are you about How much energy is used by different appliances in my home	6.2%	4
How knowledgeable are you about Energy efficiency or energy saving methods/ practices	46.2%	30
How knowledgeable are you about Energy saving appliances, electronics and lighting (e.g. florescent light bulbs)	38.5%	25
How knowledgeable are you about How to reduce energy use in my home or business	42.9%	27
How knowledgeable are you about How to reduce energy use in cooking	39.1%	25

13.2.8. Segment Table 2.8: Agreement with statements

	% Agree	#
Energy should be used efficiently	98.5	64
Using energy efficiently will save money on light bills	93.8	61
Efficient use of energy is beneficial to the environment	96.9	63
Efficient use of energy will help Jamaica develop	95.4	62

I encourage friends, families and community members to use energy efficiently	89.2%	58
I welcome new plans/ programmes aimed at using energy more efficiently	96.9%	63
More should be done to promote energy efficiency	96.9%	63
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	89.1%	57
Saving money on electricity bills is very important	98.4%	63
Energy efficiency is not related to climate change	10.9%	7

13.2.9. Segment Table 2.9: Age

		Frequency	%
Valid	18 – 29 yrs	20	30.8
	30 – 39 yrs	17	26.2
	40 – 49 yrs	12	18.5
	50 – 59 yrs	9	13.8
	60yrs and older	6	9.2
	Total	64	98.5
Missing	System	1	1.5
Total		65	100.0

13.2.10. Segment Table 2.10: Number of people in the home

		Frequency	Percent
Valid	1	4	6.2
	2	8	12.3

	3	11	16.9
	4	13	20.0
	5	11	16.9
	6	6	9.2
	7	3	4.6
	8	5	7.7
	9	1	1.5
	10	3	4.6
	Total	65	100.0

13.2.11. Segment Table 2.11: Number of children in the home

		Frequency	Percent
Valid	0	2	3.1
	1	18	27.7
	2	18	27.7
	3	7	10.8
	4	8	12.3
	5	2	3.1
	Total	55	84.6
Missing	System	10	15.4

Total	65	100.0

13.2.12. Segment Table 2.12: Education level

		Frequency	Percent
Valid	Primary School	15	23.1
	High School	38	58.5
	Diploma	10	15.4
	Degree	2	3.1
	Total	65	100.0

13.2.13. Segment Table 2.13: Employment

		Frequency	Percent
Valid	Employed	13	20.0
	Self-employed	25	38.5
	Student	1	1.5
	Unemployed	19	29.2
	Retired	6	9.2
	Total	64	98.5
Missing	System	1	1.5
Total		65	100.0

13.2.14. Segment Table 2.14: Monthly salary/earnings

		Frequency	Percent
Valid	Less than $50,000	34	52.3
	$50, 000 - $70,000	3	4.6
	Total	37	56.9
Missing	System	28	43.1
Total		65	100.0

13.3. SEGMENT 3: MEN WHO USE SOME GAS AND SOME COAL/WOOD (QUESTION #6, PEOPLE WHO ANSWERED THAT THEY "COOK WITH GAS SOME OF THE TIME AND COAL/WOOD SOME OF THE TIME")

13.3.1. Segment Table 3.1: Knowledge of RE

	% knowledgeable	#
Hydroelectric	5%	2
Solar	10%	4
Wind	10%	4
Biomass	0%	0
Biogas	5%	2

13.3.2. Segment Table 3.2: Main fuel sources

	%high priority	#
Coal	15.8%	6
Gas	82.5%	33
Wood	3.3%	1

13.3.3. Segment Table 3.3: Where purchase fuels

		Frequency	%
Valid	Retailer in the community	32	80.0
	I make it myself	2	5.0
	Other	2	5.0
	Total	36	90.0
Missing	System	4	10.0
Total		40	100.0

13.3.4. Segment Table 3.4: Reasons for purchasing gas instead of coal or wood

Reasons for purchasing gas instead of coal or wood (1- highest priority & 8 – lowest priority)	**% High Priority**	#
Cooking with gas is faster than cooking with coal/wood	86.1%	31
Cooking with gas is easier than cooking with coal/wood	94.3%	33
When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	80%	28
The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	8.6%	3
Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	7.1%	1
Some wood causes the food to taste bitter	15.6%	5

I am ashamed to use wood for cooking	3.2%	1
Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	7.1%	2

13.3.5. Segment Table 3.5: Reasons for not cooking with more gas and less coal/wood

	%	#
Cooking with coal or wood costs less than cooking with gas	100%	6
We are able to get some coal/wood for free in exchange for helping the men collect it	100%	4
When purchasing gas, it must be bought in large quantities which we cannot afford	100%	6
Wood can be found everywhere for free	50%	3
The children help us collect wood which saves us time	0%	0
Cooking peas and tough meat requires too much gas	0%	0
Food cooked with some kinds of wood tastes better than food cooked with gas	33.3%	2
Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	0%	0

13.3.6. Segment Table 3.6: Where to purchase a new stove

		Frequency	%
Valid	Retailer in the community	4	10.0
	Bog Walk	3	7.5
	Spanish Town	2	5.0
	Don't know	1	2.5
	Lindstead	24	60.0
	Kingston	1	2.5
	Total	35	87.5
Missing	System	5	12.5

Total	40	100.0

13.3.7. Segment Table 3.7: Knowledge of EE

	%	#
How knowledgeable are you about How much energy is used by different appliances in my home	10%	4
How knowledgeable are you about Energy efficiency or energy saving methods/ practices	15%	6
How knowledgeable are you about Energy saving appliances, electronics and lighting (e.g. florescent light bulbs)	15%	6
How knowledgeable are you about How to reduce energy use in my home or business	15%	6
How knowledgeable are you about How to reduce energy use in cooking	12.5%	5

13.3.8. Segment Table 3.8: Agreement with statements

	% Agree	#
Energy should be used efficiently	97.5	39
Using energy efficiently will save money on light bills	89.7	35
Efficient use of energy is beneficial to the environment	87.2	34
Efficient use of energy will help Jamaica develop	89.7	35
I encourage friends, families and community members to use energy efficiently	86.8	33
I welcome new plans/ programmes aimed at using energy more efficiently	92.3	36
More should be done to promote energy efficiency	69.2	27
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	15.4	6
Saving money on electricity bills is very important	74.4	29
Energy efficiency is not related to climate change	30.8	12

13.3.9. Segment Table 3.9: Age

		Frequency	%
Valid	18 – 29 yrs	15	37.5
	30 – 39 yrs	4	10.0
	40 – 49 yrs	7	17.5
	50 – 59 yrs	3	7.5
	60yrs and older	11	27.5
	Total	40	100.0

13.3.10. Segment Table 3.10: Number of people in the home

		Frequency	%
Valid	1	7	17.5
	2	12	30.0
	3	7	17.5
	4	8	20.0
	5	3	7.5
	6	1	2.5
	7	1	2.5
	8	1	2.5
	Total	40	100.0

13.3.11. Segment Table 3.11: Number of children in the home

		Frequency	Percent
Valid	0	4	10.0
	1	10	25.0
	2	6	15.0
	3	3	7.5
	Total	23	57.5
Missing	System	17	42.5
Total		40	100.0

13.3.12. Segment Table 3.12: Education level

		Frequency	%
Valid	Primary School	16	40.0
	High School	18	45.0
	Diploma	5	12.5
	Total	39	97.5
Missing	System	1	2.5
Total		40	100.0

13.3.13. Segment Table 3.13: Employment

	Frequency	%

Valid	Employed	4	10.0
	Self-employed	13	32.5
	Student	2	5.0
	Unemployed	17	42.5
	Retired	4	10.0
	Total	40	100.0

13.3.14. Segment Table 3.14: Monthly salary/earnings

		Frequency	%
Valid	Less than $50,000	18	45.0
Missing	System	22	55.0
Total		40	100.0

13.4. SEGMENT 4: WOMEN WHO USE SOME GAS AND SOME COAL/WOOD (QUESTION #6, PEOPLE WHO ANSWERED THAT THEY "COOK WITH GAS SOME OF THE TIME AND COAL/WOOD SOME OF THE TIME")

13.4.1. Segment Table 4.1: Knowledge of RE

	% knowledgeable	#
Hydroelectric	6.6%	6
Solar	11%	10

Wind	9.9%	9
Biomass	4.4%	4
Biogas	5.5%	5

13.4.2. Segment Table 4.2: Main fuel sources

	%high priority	#
Coal	15.9%	14
Gas	82.6%	76
Wood	2.6%	2

13.4.3. Segment Table 4.3: Where purchase fuels

		Frequency	%
Valid	Retailer in the community	76	82.6
	Get it for free	1	1.1
	I sell it at retail so I am able to purchase at a lower price	1	1.1
	I make it myself	4	4.3
	Other	3	3.3
	Total	85	92.4
Missing	System	7	7.6
Total		92	100.0

13.4.4. Segment Table 4.4: Reasons for purchasing gas instead of coal or wood

Reasons for purchasing gas instead of coal or wood (1- highest priority & 8 – lowest priority)	% High Priority	#
Cooking with gas is faster than cooking with coal/wood	88.5%	69
Cooking with gas is easier than cooking with coal/wood	96.1%	73
When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	77.3%	58
The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	15.8%	12
Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	6.3%	4
Some wood causes the food to taste bitter	11.4%	8
I am ashamed to use wood for cooking	3%	2
Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	4.8%	3

13.4.5. Segment Table 4.5: Reasons for not cooking with more gas and less coal/wood

	%	#
Cooking with coal or wood costs less than cooking with gas	93.3%	14
We are able to get some coal/wood for free in exchange for helping the men collect it	90.9%	10
When purchasing gas, it must be bought in large quantities which we cannot afford	50%	7
Wood can be found everywhere for free	45.5%	5
The children help us collect wood which saves us time	8.3%	1
Cooking peas and tough meat requires too much gas	18.2%	2
Food cooked with some kinds of wood tastes better than food cooked with gas	27.3%	3
Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	10%	1

13.4.6. Segment Table 4.6: Where to purchase a new stove

		Frequency	%
Valid	Retailer in the community	6	6.5

	Bog Walk	12	13.0
	Spanish Town	4	4.3
	Don't know	3	3.3
	Lindstead	57	62.0
	Kingston	2	2.2
	Total	84	91.3
Missing	System	8	8.7
Total		92	100.0

13.4.7. Segment Table 4.7: Knowledge of EE

	%	#
How knowledgeable are you about How much energy is used by different appliances in my home	4.4%	4
How knowledgeable are you about Energy efficiency or energy saving methods/ practices	13%	12
How knowledgeable are you about Energy saving appliances, electronics and lighting (e.g. florescent light bulbs)	16.7%	15
How knowledgeable are you about How to reduce energy use in my home or business	15.2%	14
How knowledgeable are you about How to reduce energy use in cooking	13%	12

13.4.8. Segment Table 4.8: Agreement with statements

	% Agree	#
Energy should be used efficiently	96.6	86
Using energy efficiently will save money on light bills	88.6	78

Efficient use of energy is beneficial to the environment	85.2	75
Efficient use of energy will help Jamaica develop	84.1	74
I encourage friends, families and community members to use energy efficiently	85.1	74
I welcome new plans/ programmes aimed at using energy more efficiently	85.1	74
More should be done to promote energy efficiency	80	68
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	73.6	64
Saving money on electricity bills is very important	80.5	70
Energy efficiency is not related to climate change	40	34

13.4.9. Segment Table 4.9: Age

		Frequency	%
Valid	18 – 29 yrs	38	41.3
	30 – 39 yrs	8	8.7
	40 – 49 yrs	23	25.0
	50 – 59 yrs	7	7.6
	60yrs and older	16	17.4
	Total	92	100.0

13.4.10. Segment Table 4.10: Number of people in the home

		Frequency	%
Valid	1	10	10.9
	2	22	23.9
	3	21	22.8

	4	14	15.2
	5	8	8.7
	6	6	6.5
	7	8	8.7
	8	2	2.2
	9	1	1.1
	Total	92	100.0

13.4.11. Segment Table 4.11: Number of children in the home

		Frequency	%
Valid	0	7	7.6
	1	31	33.7
	2	11	12.0
	3	13	14.1
	4	5	5.4
	Total	67	72.8
Missing	System	25	27.2
Total		92	100.0

13.4.12. Segment Table 4.12: Education level

	Frequency	%

Valid	Primary School	24	26.1
	High School	56	60.9
	Diploma	9	9.8
	Degree	2	2.2
	Total	91	98.9
Missing	System	1	1.1
Total		92	100.0

13.4.13. Segment Table 4.13: Employment

		Frequency	%
Valid	Employed	12	13.0
	Self-employed	23	25.0
	Student	7	7.6
	Unemployed	42	45.7
	Retired	7	7.6
	Total	91	98.9
Missing	System	1	1.1
Total		92	100.0

13.4.14. Segment Table 4.14: Monthly salary/earnings

		Frequency	%
Valid	Less than $50,000	36	39.1
Missing	System	56	60.9
Total		92	100.0

14. PRINCESSFIELD SEGMENT: LIGHTING

14.1. SEGMENT 5: MEN WHO USE ELECTRICITY FOR LIGHTING MORE THAN 70% OF THE TIME (QUESTION #12) AND DO NOT CURRENTLY USE CFLS (QUESTION #23)

14.1.1. Segment Table 5.1: Knowledge of RE

	% knowledgeable	#
Hydroelectric	11.4%	5
Solar	20.5%	9
Wind	20%	9
Biomass	6.7%	3
Biogas	6.7%	3

14.1.2. Segment Table 5.2: Knowledge of EE

	% knowledgeable	#
Knowledge about different appliances	4.4%	2
Knowledge about energy efficiency	13.6%	6
Knowledge about energy saving appliances	13.3%	6
Knowledge about energy used in home or business	20.5%	9
Knowledge about how to reduce energy used in cooking	20.5%	9

14.1.3. Segment Table 5.3: Agreement with statements

	% Agree	#
Energy should be used efficiently	93.2%	41
Using energy efficiently will save money on light bills	93.2%	41
Efficient use of energy is beneficial to the environment	84.1%	37
Efficient use of energy will help Jamaica develop	84.1%	37

I encourage friends, families and community members to use energy efficiently	84.1%	35
I welcome new plans/ programmes aimed at using energy more efficiently	86.4%	38
More should be done to promote energy efficiency	86%	37
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	71.4%	30
Saving money on electricity bills is very important	88.4%	38
Energy efficiency is not related to climate change	24.4%	10

14.1.4. Segment Table 5.4: Current source of lighting

		Frequency	%
Valid	Electricity	43	95.6
	Combination	2	4.4
	Total	45	100.0

14.1.5. Segment Table 5.5: Sources of information on lighting

		Frequency	%
Valid	Information on JPS utility bills	4	8.9
	Text messages from JPS	4	8.9
	Stores that sell lighting	1	2.2
	My neighbors	6	13.3
	My community leaders	4	8.9
	Radio	11	24.4
	Other	5	11.1
	Total	35	77.8
Missing	System	10	22.2
Total		45	100.0

14.1.6. Segment Table 5.6: Trustworthiness of information sources on lighting

	% High Priority	#
Information in JPS utility bills	56.5%	13
Text messages from JPS	23.5%	4
Stores that sell lighting	17.6%	3
My neighbours	55.6%	10
My community leaders	59.1%	13
Radio	80%	24

14.1.7. Segment Table 5.7: Electricity needs

Electricity Needs	%	#
Electricity to power household electronics Radio, TV, Fan, Fridge etc.)	100%	45
Electricity for cooking	6.5%	2
Electricity for lighting	100%	42
Electricity for farming	45.5%	5
Electricity for Entertainment (e.g. parties)	88.9%	8
Electricity for running business	100%	2

14.1.8. Segment Table 5.8: Electric appliances

	%	#
Radio	97.7%	43
TV	97.7%	43
Refrigerator	80%	32
Desktop Computer	3.2%	1
Laptop Computer	12.5%	4
Mobile Phone	97.7%	42
Fan	89.2%	33
Washing Machine	54.5%	12
Blender	82.1%	23
Microwave	64.7%	11

Freezer	57.1%	4
Electric Stove	66.7%	2

14.1.9. Segment Table 5.9: Affordability of electricity

		Frequency	Percent
Valid	Not Affordable	24	53.3
	Somewhat affordable	8	17.8
	Very Affordable	7	15.6
	Total	39	86.7
Missing	System	6	13.3
Total		45	100.0

14.1.10. Segment Table 5.10: Participation in Cuban Light Bulb Program

		Frequency	Percent
Valid	yes	19	42.2
	no	24	53.3
	Total	43	95.6
Missing	System	2	4.4
Total		45	100.0

14.1.11. Segment Table 5.11: If received Cuban light bulb, do they believe the CFLs reduced electricity costs?

		Frequency	Percent
Valid	yes	13	28.9
	no	4	8.9
	Total	17	37.8
Missing	System	28	62.2
Total		45	100.0

14.1.12. Segment Table 5.12: Reason for purchasing CFLs

	%	#
CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	100%	3
CFLs last longer than incandescent bulbs	100%	1
CFLs provide softer light making it easier to read and for children to study at night	66.7%	2
The quality of lighting from CFLs is better than incandescent bulbs	50%	1
CFLS are more efficient than incandescent bulbs	100%	2
CFLS are safer than incandescent bulbs	100%	3
I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	100%	3
I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	100%	3
I will save on my electricity bill and have more money for transportation, including for children to go to school	100%	3

14.1.13. Segment Table 5.13: Percentage bulbs purchased from different sources

% of Light Bulbs purchased	Salesmen	Community Shop	Supermarket	Street side vendors
0 - 20	1	0	1	0
21 - 40	0	0	2	0
41 - 60	0	5	2	0
61 - 80	0	1	0	0
81 - 100	0	16	6	1

14.1.14. Segment Table 5.14: Reason for NOT purchasing CFLs

	%	#
They are too expensive – I can't afford it	87.9%	29
They are not available in the community	81.3%	26

They are available in nearby towns which requires money for transportation	68.8%	22
Some CFL bulbs blow out and are not good quality	13.8%	4
I do not know how to choose the good CFL bulbs	7.4%	2
The CFLs available now are not as good as those from the Cuban light bulb program	16.1%	5
I do not understand why CFLs are better than incandescent bulbs	13.8%	4
I do not understand why CFLs are better than incandescent bulbs	19.4%	6

14.1.15. Segment Table 5.15: Age

		Frequency	%
Valid	18 – 29 yrs	22	48.9
	30 – 39 yrs	7	15.6
	40 – 49 yrs	5	11.1
	50 – 59 yrs	4	8.9
	60yrs and older	7	15.6
	Total	45	100.0

14.1.16. Segment Table 5.16: Number of people in the home

		Frequency	%
Valid	1	7	15.6
	2	7	15.6
	3	7	15.6
	4	4	8.9
	5	7	15.6
	6	5	11.1
	7	2	4.4
	8	4	8.9
	15	1	2.2
	Total	44	97.8
Missing	System	1	2.2
Total		45	100.0

14.1.17. Segment Table 5.17: Number of children in the home

		Frequency	%
Valid	0	2	4.4
	1	12	26.7
	2	9	20.0
	3	3	6.7
	4	1	2.2
	5	2	4.4
	Total	29	64.4
Missing	System	16	35.6
Total		45	100.0

14.1.18. Segment Table 5.18: Education level

		Frequency	%
Valid	Primary School	16	35.6
	High School	27	60.0
	Diploma	1	2.2
	Degree	1	2.2
	Total	45	100.0

14.1.19. Segment Table 5.19: Employment

		Frequency	%
Valid	Employed	7	15.6
	Self-employed	14	31.1
	Unemployed	18	40.0
	Retired	6	13.3
	Total	45	100.0

14.1.20. Segment Table 5.20: Monthly salary/earnings

		Frequency	%
Valid	Less than $50,000	18	40.0
	$50, 000 - $70,000	2	4.4
	Total	20	44.4
Missing	System	25	55.6
	Total	45	100.0

14.2. SEGMENT 6: WOMEN WHO USE ELECTRICITY FOR LIGHTING MORE THAN 70% OF THE TIME (QUESTION #12) AND DO NOT CURRENTLY USE CFLS (QUESTION #23)

14.2.1. Segment Table 6.1: Knowledge of RE

	% knowledgeable	#
Hydroelectric	17.5%	11
Solar	30.2%	19
Wind	27%	17
Biomass	11.1%	7
Biogas	20.6%	13

14.2.2. Segment Table 6.2: Knowledge of EE

	% knowledgeable	#
Knowledge about different appliances	3.2%	2
Knowledge about energy efficiency	30.6%	19
Knowledge about energy saving appliances	25.8%	16
Knowledge about energy used in home or business	28.3%	17

Knowledge about how to reduce energy used in cooking	26.2%	16

14.2.3. Segment Table 6.3: Agreement with statements

	% Agree	#
Energy should be used efficiently	95.1%	58
Using energy efficiently will save money on light bills	86.9%	53
Efficient use of energy is beneficial to the environment	90.2%	55
Efficient use of energy will help Jamaica develop	88.5%	54
I encourage friends, families and community members to use energy efficiently	83.6%	51
I welcome new plans/ programmes aimed at using energy more efficiently	88.5%	54
More should be done to promote energy efficiency	91.8%	56
Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	73.3%	44
Saving money on electricity bills is very important	94.9%	56
Energy efficiency is not related to climate change	28.8%	17

14.2.4. Segment Table 6.4: Current source of lighting

		Frequency	%
Valid	Electricity	60	95.2
	Combination	1	1.6
	Total	61	96.8
Missing	System	2	3.2
Total		63	100.0

14.2.5. Segment Table 6.5: Sources of information on lighting

		Frequency	Percent
Valid	Information on JPS utility bills	16	25.4
	Text messages from JPS	3	4.8

	My neighbors	9	14.3
	My community leaders	4	6.3
	Radio	15	23.8
	Other	6	9.5
	Total	53	84.1
Missing	System	10	15.9
Total		63	100.0

14.2.6. Segment Table 6.6: Trustworthiness of information sources on lighting

	% High Priority	#
Information in JPS utility bills	45.2%	19
Text messages from JPS	28.1%	9
Stores that sell lighting	19.4%	6
My neighbours	62.5%	20
My community leaders	68.4%	26
Radio	93.3%	42

14.2.7. Segment Table 6.7: Electricity needs

Electricity Needs	%	#
Electricity to power household electronics Radio, TV, Fan, Fridge etc.)	100%	62
Electricity for cooking	100%	44
Electricity for lighting	100%	59
Electricity for farming	75%	6
Electricity for Entertainment (e.g. parties)	50%	1
Electricity for running business	100%	1

14.2.8. Segment Table 6.8: Electric appliances

	%	#
Radio	91.7%	55

TV	100%	60
Refrigerator	70.9%	39
Desktop Computer	14.9%	7
Laptop Computer	10.6%	5
Mobile Phone	98.3%	59
Fan	92.2%	47
Washing Machine	36.7%	11
Blender	91.4%	32
Microwave	86.4%	19
Freezer	100%	2
Electric Stove	100%	2

14.2.9. Segment Table 6.9: Affordability of electricity

		Frequency	%
Valid	Not Affordable	35	55.6
	Somewhat affordable	12	19.0
	Very Affordable	9	14.3
	Total	56	88.9
Missing	System	7	11.1
Total		63	100.0

14.2.10. Segment Table 6.10: Participation in Cuban Light Bulb Program

		Frequency	%
Valid	yes	20	31.7
	no	41	65.1
	Total	61	96.8
Missing	System	2	3.2
Total		63	100.0

14.2.11. Segment Table 6.11: If received Cuban light bulb, do they believe the CFLs reduced electricity costs?

		Frequency	%
Valid	yes	12	19.0
	no	8	12.7
	Total	20	31.7
Missing	System	43	68.3
Total		63	100.0

14.2.12. Segment Table 6.12: Reason for purchasing CFLs

	%	#
CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	100%	4
CFLs last longer than incandescent bulbs	100%	3
CFLs provide softer light making it easier to read and for children to study at nigh	66.7%	2
The quality of lighting from CFLs is better than incandescent bulbs	66.7%	2
CFLS are more efficient than incandescent bulbs	33.3%	1
CFLS are safer than incandescent bulbs	100%	4
I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	100%	3
I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	100%	4
I will save on my electricity bill and have more money for transportation, including for children to go to school	100%	4

14.2.13. Segment Table 6.13: Percentage bulbs purchased from different sources

% of Light Bulbs purchased	Salesmen	Community Shop	Supermarket	Street side vendors
0 - 20	1	0	0	0
21 - 40	0	0	0	2

41 - 60	0	3	3	1
61 - 80	0	1	0	0
81 - 100	0	21	7	1

14.2.14. Segment Table 6.14: Reason for NOT purchasing CFLs

	%	#
They are too expensive – I can't afford it	81.5%	44
They are not available in the community	88%	44
They are available in nearby towns which requires money for transportation	68%	34
Some CFL bulbs blow out and are not good quality	16.3%	8
I do not know how to choose the good CFL bulbs	6.3%	3
The CFLs available now are not as good as those from the Cuban light bulb program	10.6%	5
I do not understand why CFLs are better than incandescent bulbs	10.9%	5
I do not understand why CFLs are better than incandescent bulbs	13%	6

14.2.15. Segment Table 6.15: Age

		Frequency	%
Valid	18 – 29 yrs	24	38.1
	30 – 39 yrs	13	20.6
	40 – 49 yrs	14	22.2
	50 – 59 yrs	5	7.9
	60yrs and older	6	9.5
	Total	62	98.4
Missing	System	1	1.6
Total		63	100.0

14.2.16. Segment Table 6.16: Number of people in the home

		Frequency	%
Valid	1	2	3.2

	2	9	14.3
	3	13	20.6
	4	10	15.9
	5	12	19.0
	6	5	7.9
	7	4	6.3
	8	4	6.3
	9	2	3.2
	10	2	3.2
	Total	63	100.0

14.2.17. Segment Table 6.17: Number of children in the home

		Frequency	%
Valid	0	2	3.2
	1	20	31.7
	2	13	20.6
	3	11	17.5
	4	9	14.3
	5	1	1.6
	Total	56	88.9
Missing	System	7	11.1
Total		63	100.0

14.2.18. Segment Table 6.18: Education level

		Frequency	%
Valid	Primary School	14	22.2
	High School	38	60.3
	Diploma	8	12.7
	Degree	3	4.8

Total	63	100.0

14.2.19. Segment Table 6.19: Employment

		Frequency	%
Valid	Employed	7	11.1
	Self-employed	19	30.2
	Student	3	4.8
	Unemployed	29	46.0
	Retired	5	7.9
	Total	63	100.0

14.2.20. Segment Table 6.20: Monthly salary/earnings

		Frequency	%
Valid	Less than $50,000	24	38.1
	$50, 000 - $70,000	2	3.2
	Total	26	41.3
Missing	System	37	58.7
Total		63	100.0

14.3. SEGMENT 7: RESPONDENTS WHO RELY ON LIGHT BULBS LESS THAN 50% OF THE DAY

14.3.1. Segment Table 7.1: Prioritization of reasons for purchasing CFLs by gender

	Reasons for purchasing CFLs	Gender	
		Male	Female

*% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	11	100%	4	60%
	CFLs last longer than incandescent bulbs	8	72.7%	4	100%
	CFLs provide softer light making it easier to read and for children to study at night	5	50%	1	25%
	The quality of lighting from CFLs is better than incandescent bulbs	3	33.3%	1	25%
	CFLs are more efficient than incandescent bulbs	1	11.1%	0	0%
	CFLs are safer than incandescent bulbs	3	30%	0	0%
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	0	0%	1	25%
	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	1	10%	1	25%
		15		16	

*% wont sum to 100 since respondents could select more than one response

14.3.2. Segment Table 7.2: Prioritization of reasons for not purchasing CFLs by gender

	Reasons for not using CFLs	Gender			
		Male		Female	
*% High Priority (1 - 3)	They are too expensive – I can't afford it	4	66.7%	8	88.9%
	They are not available in the community	5	83.3%	8	88.9%
	They are available in nearby towns which requires money for transportation	4	66.7%	5	62.5%
	Some CFL bulbs blow out and are not good quality	2	33.3%	3	42.9%
	I do not know how to choose the good CFL bulbs	1	16.7%	1	14.3%

	The CFLs available now are not as good as those from the Cuban light bulb program	1	16.7%	0	0%
	I do not know anyone who has saved money on their electricity bill after installing CFLs	1	16.7%	1	16.7%
		18		26	

*% wont sum to 100 since respondents could select more than one response

14.3.3. Segment Table 7.3: Prioritization of reasons for purchasing CFLs by age

	Reasons for purchasing CFLs	Age Range									
		18 – 29 yrs.		30 – 39 yrs.		40 – 49 yrs.		50 – 59 yrs.		60yrs and older	
*% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	3	100%	3	100%	6	100%	0		3	100%
	CFLs last longer than incandescent bulbs	2	66.7%	3	100%	5	83.3%	0		2	
	CFLs provide softer light making it easier to read and for children to study at night	0	0%	2	66.7%	2	40%	0	0%	2	66.7%
	The quality of lighting from CFLs is better than incandescent bulbs	0	0%	1	33.3%	2	40%	0	0%	1	33.3%
	CFLs are more efficient than incandescent bulbs	1	50%	0	0%	0	0%	0	0%	0	0%
	CFLs are safer than incandescent bulbs	2	66.7%	0	0%	0	0%	0	0%	1	33.3%
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	0	0%	0	0%	1	20%	0	0%	0	0%

	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	0	0%	0	0%	2	33.3%	0	0%	0	0%
	I will save on my electricity bill and have more money for transportation, including for children to go to school	2	100%	3	100%	5	100%	0	0%	3	100%
		10		12		23		0		12	

14.3.4. Segment Table 7.4: Prioritization of reasons for not purchasing CFLs by age

	Reasons for not using CFLs	Age Range									
		18 – 29 yrs.		30 – 39 yrs.		40 – 49 yrs.		50 – 59 yrs.		60yrs and older	
*% High Priority (1 - 3)	They are too expensive – I can't afford it	5	100%	1	100%	2	66.7%	3	75%	1	50%
	They are not available in the community	5	100%	1	100%	2	66.7%	4	100%	1	50%
	They are available in nearby towns which requires money for transportation	2	40%	1	100%	1	50%	3	75%	2	100%
	Some CFL bulbs blow out and are not good quality	1	25%	0	0%	2	100%	1	25%	1	50%
	I do not know how to choose the good CFL bulbs	0	0%	0	0%	1	50%	0	0%	1	50%
	The CFLs available now are not as good as those from the Cuban light bulb program	0	0%	0	0%	0	0%	1	25%	0	0%

	I do not understand why CFLs are better than incandescent bulbs	5	100%	1	100%	2	100%	4	100%	2	100%
	I do not know anyone who has saved money on their electricity bill after installing CFLs	2	50%	0	0%	0	0%	0	0%	0	0%
		20		4		10		16		8	

14.4. SEGMENT 8: RESPONDENTS WHO USE LIGHT BULBS 71-100% OF THE DAY

14.4.1. Segment Table 8.1: Prioritization of reasons for purchasing CFLs by gender

	Reasons for purchasing CFLs	Gender			
		Male		Female	
*% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	41	71.9%	46	73%
	CFLs last longer than incandescent bulbs	37	72.5%	48	78.7%
	CFLs provide softer light making it easier to read and for children to study at night	18	35.3%	22	38.6%
	The quality of lighting from CFLs is better than incandescent bulbs	16	34%	22	39.3%
	CFLs are more efficient than incandescent bulbs	27	56.3%	25	45.5%

	CFLs are safer than incandescent bulbs	6	13%	4	7.1%
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	9	18.4%	7	12.3%
	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	6	12%	7	11.5%
	I will save on my electricity bill and have more money for transportation, including for children to go to school	8	17%	7	11.9%
		168		188	

14.4.2. Segment Table 8.2: Prioritization of reasons for not purchasing CFLs by gender

	Reasons for not using CFLs	Gender			
		Male		Female	
*% High Priority (1 - 3)	They are too expensive – I can't afford it	29	87.9%	50	82%
	They are not available in the community	26	81.3%	50	87.7%
	They are available in nearby towns which requires money for transportation	22	68.8%	38	67.9%
	Some CFL bulbs blow out and are not good quality	4	13.8%	8	14.8%
	I do not know how to choose the good CFL bulbs	2	7.4%	4	7.4%
	The CFLs available now are not as good as those from the Cuban light bulb program	5	16.1%	5	9.4%
	I do not understand why CFLs are better than incandescent bulbs	4	13.8%	5	9.6%

	I do not know anyone who has saved money on their electricity bill after installing CFLs	6	19.4%	7	13.2%
		98		167	

14.4.3. Segment Table 8.3: Prioritization of reasons for purchasing CFLs by age

	Reasons for purchasing CFLs	Age Range									
		18 – 29 yrs.		30 – 39 yrs.		40 – 49 yrs.		50 – 59 yrs.		60yrs and older	
*% High Priority (1 - 3)	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	29	70.7%	13	72.2%	19	73.1%	9	69.2%	15	75%
	CFLs last longer than incandescent bulbs	31	79.5%	12	70.6%	16	64%	11	84.6%	13	81.3%
	The quality of lighting from CFLs is better than incandescent bulbs	17	47.2%	5	33.3%	7	31.8%	4	36.4%	4	23.5%
	CFLs are more efficient than incandescent bulbs	15	41.7%	9	56.3%	13	52%	3	37.5%	11	68.8%
	CFLs are safer than incandescent bulbs	4	11.1%	0	0%	2	8.3%	1	12.5%	3	16.7%
	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	3	8.6%	4	23.5%	4	18.2%	4	33.3%	1	5.6%
	I will save on my electricity bill and have more money for transportation, including for children to go to school	4	11.4%	3	18.8%	5	20%	1	10%	2	10%
		29		28		31		15		18	

14.4.4. Segment Table 8.4: Prioritization of reasons for not purchasing CFLs by age

	Reasons for not using CFLs	Age Range									
		18 – 29 yrs.		30 – 39 yrs.		40 – 49 yrs.		50 – 59 yrs.		60yrs and older	
*% High Priority (1 - 3)	They are too expensive – I can't afford it	29	82.9%	15	83.3%	18	85.7%	9	90%	8	80%
	They are not available in the community	29	82.9%	14	82.4%	18	90%	7	87.5%	8	88.8%
	They are available in nearby towns which requires money for transportation	23	65.7%	12	70.6%	13	72.2%	8	88.9%	4	44.4%
	Some CFL bulbs blow out and are not good quality	5	14.3%	2	13.3%	4	22.2%	0	0%	2	22.2%
	I do not know how to choose the good CFL bulbs	3	9.4%	2	13.3%	0	0%	0	0%	1	11.1%
	The CFLs available now are not as good as those from the Cuban light bulb program	5	14.7%	4	23.5%	1	5.6%	0	0%	1	11.1%
	I do not understand why CFLs are better than incandescent bulbs	4	12.5%	2	13.3%	0	0%	0	0%	2	22.2%
	I do not know anyone who has saved money on their electricity bill after installing CFLs	6	18.2%	1	6.7%	1	5.3%	1	12.5%	3	33.3%

		104		52		55		25		29	

14.4.5. Segment Table 8.5: Receipt of CFLs from the Cuban Light Bulb Programme?

		Frequency	Percent
Valid	yes	154	43.4
	no	151	42.5
	Total	305	85.9
Missing	System	50	14.1
Total		355	100.0

14.4.6. Segment Table 8.6: Current usage of CFLs

		Frequency	Percent
Valid	yes	152	42.8
	no	155	43.7
	Total	307	86.5
Missing	System	48	13.5
Total		355	100.0

14.4.7. Segment Table 8.7: Trustworthiness rating of sources of information on energy efficient lighting

		Frequency	Valid Percent
	Information in JPS utility bills	97	43.9
	Text messages from JPS	56	29.5
	Stores that sell lighting	37	19.5
	My neighbours	96	51.3
	My community leaders	126	61.5
	Radio	207	84.8

15. SURVEY INSTRUMENT TEMPLATE

Place of Interview: ☐ Content ☐ Princessfield

Name of Interviewer:

Fossil fuels, Renewable Energy and Alternative Fuels: Knowledge, Attitudes & Practices

1. On a scale of 1 to 3 (1 – no knowledge & 3 – knowledgeable), how knowledgeable are you about the following: (*Circle the appropriate number)*

		No knowledge	Somewhat knowledgeable	Knowledgeable
a.	Renewable energy	1	2	3
b.	Types of renewable energy	1	2	3
c.	Global warming	1	2	3
d.	Carbon emissions	1	2	3
e.	Climate change	1	2	3

2. On a scale of 1 to 3 (1 –no knowledge & 3 –knowledgeable), how knowledgeable are you about the **types of renewable energy**?

	Types of Renewable Energy	No knowledge	Somewhat knowledgeable	Knowledgeable
A	Hydroelectric	1	2	3
B	Solar	1	2	3
C	Wind	1	2	3
F	Biomass	1	2	3
G	Biogas	1	2	3

3. Which of the following would you consider your main source of information about renewable energy?

☐ Television ☐ News paper ☐ Radio ☐ The internet
☐ Community members ☐ Other (please state):_____

4. On a scale of 1-3 (1- highest priority & 3– lowest priority), prioritize the main fuel sources you use in cooking?

☐ Coal ☐ Gas ☐ Wood

5. Where do you usually purchase the above (***from Q4***) fuel source? (tick all that apply)

☐ Retailer in the community ☐ Get it for free

☐ I sell it at retail so I am able to purchase at a lower price

☐ I make it myself Other (*please state*):_____

6. Which of the following best represents your method for cooking (select one)?

- ☐ I use more gas for cooking and less coal (*move to Q7*)
- ☐ I use more gas for cooking and less wood (*move to Q7)*
- ☐ I cook with only coal & wood (*move to Q8*)
- ☐ I cook with gas some of the time and coal/wood some of the time (*move to Q7*)

7. On a scale of 1-8 (1- highest priority & 8 – lowest priority), prioritize the following as reasons for cooking with gas instead of coal or wood

	Reasons for purchasing gas instead of coal or wood	**Enter Priority**
a.	Cooking with gas is faster than cooking with coal/wood	
b.	Cooking with gas is easier than cooking with coal/wood	
c.	When cooking with gas, the pots and pans are easier to clean than when cooking with coal/wood	
d.	The flavor of food cooked with gas is better than food cooked with coal because the coal is usually not made using good wood	
e.	Smoke from cooking with coal and wood is bad for your health because it affects the eyes, nose and lungs, causing asthma and sinus infections	
f.	Some wood causes the food to taste bitter	
g.	I am ashamed to use wood for cooking	
h.	Smoke from cooking with coal/wood makes a bad odor, especially in a person's hair	

8. On a scale of 1-8 (1- highest priority & 8 – lowest priority), prioritize the reasons why you **do not** cook more with gas and use less coal and wood.

	Reasons why you do not cook more with gas and use less coal and wood	**Enter Priority**
a.	Cooking with coal or wood costs less than cooking with gas	
b.	We are able to get some coal/wood for free in exchange for helping the men collect it	
c.	When purchasing gas, it must be bought in large quantities which we **cannot** afford	
d.	Wood can be found everywhere for free	
e.	The children help us collect wood which saves us time	
f.	Cooking peas and tough meat requires too much gas	
g.	Food cooked with some kinds of wood tastes better than food cooked with gas	
h.	Gas is used up too fast, requiring another trip to the gas retailer or the plant in Bog Walk	

9. If you wanted to replace your stove with a new one that is more efficient, where would you purchase it?

- ☐ Retailer in the community
- ☐ Bog Walk
- ☐ Spanish Town
- ☐ Don't know

Energy Efficiency: Knowledge, Attitude & Practice

10. On a scale of 1 to 3 (1 – no knowledge & 3– knowledgeable), how knowledgeable are you about the following? (*Circle the appropriate number)*

		No knowledge	Somewhat knowledgeable	Knowledgeable
a.	How much energy is used by different appliances in my home	1	2	3
b.	Energy efficiency or energy saving methods/ practices	1	2	3
c.	Energy saving appliances, electronics and lighting (e.g. florescent light bulbs)	1	2	3
d.	How to reduce energy use in my home or business	1	2	3
e.	How to reduce energy use in cooking	1	2	3

11. Please rate your level of agreement with the following statements relating to energy efficiency attitudes:

		Disagree	Neutral	Agree
a	Energy should be used efficiently	1	2	3
b	Using energy efficiently will save money on light bills (reduce energy cost)	1	2	3
c	Efficient use of energy is beneficial to the environment	1	2	3
d	Efficient use of energy will help **Jamaica** develop	1	2	3
f	I encourage friends, families and community members to use energy efficiently	1	2	3
g	I welcome new plans/ programmes aimed at using energy more efficiently	1	2	3
i	More should be done to promote energy efficiency	1	2	3
j	Compact florescent lights(CFLs) are more energy efficient than regular incandescent lights	1	2	3
k	Saving money on electricity bills is very important	1	2	3
l	Energy efficiency is **not** related to climate change	1	2	3

12. Please indicate the percentage of the day that you rely on these sources of energy for lighting:

☐ Kerosene Lamps_____% ☐ Candles_____%
☐ Electric light bulbs_____% ☐ Other _____ %

13. What is your current source of lighting?

☐ Kerosene Lamps only (*move to question 27)* ☐ Candles only (*move to question 27*)
☐ Electricity (*move to question 14*) ☐ Combination (move to question 14)

14. What is your current source of electricity?

☐ JPS ☐ Solar panels
☐ A combination of JPS and solar panels
Other (*please state*): _____

15. What sources of information are available on energy efficiency lighting, including fluorescent lighting?

☐ Information on JPS utility bills ☐ Text messages from JPS

☐ Stores that sell lighting ☐ My neighbors

☐ My community leaders ☐ Radio

Other (*please state*): _____

16. On a scale of 1-7 (1- highest priority & 7 – lowest priority), prioritize the trustworthiness of each of these sources above (***Q15***) to provide accurate information that is useful to you:

	Trustworthiness of each source	**Enter Priority**
a.	Information in JPS utility bills	
b.	Text messages from JPS	
c.	Stores that sell lighting	
d.	My neighbours	
e.	My community leaders	
f.	Radio	
g.	Other_____	

17. Which of the following indicates your current electricity use? *(tick all that apply)*

	Electricity Needs	**Tick all**
a.	Electricity to power household electronics (e.g. Radio, TV, Fan, Fridge etc.)	
b.	Electricity for cooking	
c.	Electricity for lighting	
d.	Electricity for farming	
e.	Electricity for Entertainment (e.g. parties)	
f.	Electricity for running business	
g.	Other electricity use (please state):_____	

18. Please select the current electronic appliances you currently use *(tick all that apply)*:

	Electronic appliances	**Tick all**
a.	Radio	
b.	TV	
c.	Refrigerator	
d.	Desktop Computer	
e.	Laptop Computer	
f.	Mobile Phone	
g.	Fan	
h.	Washing Machine	

i.	Blender	
j.	Microwave	
f.	Freezer	
g	Electric Stove	
	Other (Please state)_____	

19. What is your average monthly electricity charge?

☐ $0.0	☐ Less than $1,000
☐ $1, 001 - $2,000	☐ $2001 - $3,000
☐ $3,001 - $4,000	☐ $4,001 - $5,000
☐ $5,001 - $6,000	☐ $6,001 - $7,000
☐ $7,001 - $8,000	☐ $8,001 - $9,000
☐ $9,001 - $10,000	☐ More than $10,000

20. On a scale of 1 to 10 (1- not affordable and 10 – very affordable), how affordable is **electricity** to you? *Circle the appropriate number*

1 2 3 4 5 6 7 8 9 10

21. Did you receive fluorescent light bulbs in the Cuban Light Bulb project?

☐ Yes (move to Q22) ☐ No (Move to Q23)

22. In your opinion, did these fluorescent light bulbs help in reducing your monthly energy cost?

☐ Yes ☐ No

23. Do you currently use fluorescent light bulbs?

☐ Yes ☐ No

24. On a scale of 1-9 (1- highest priority & 9 – lowest priority), prioritize the following as reasons for purchasing CFLs instead of incandescent bulbs

	Reasons for purchasing CFLs	**Enter Priority**
a.	CFL are cooler than incandescent bulbs and reduce the need for using a fan for cooling	
b.	CFLs last longer than incandescent bulbs	
c.	CFLs provide softer light making it easier to read and for children to study at night	
d.	The quality of lighting from CFLs is better than incandescent bulbs	
e.	CFLS are more efficient than incandescent bulbs	
f.	CFLS are safer than incandescent bulbs	
g.	I will save on my electricity bill and have more money to spend on other bills, especially groceries and food	
h.	I will save on my electricity bill and have money to pay for children to attend school, including transportation and lunch money	
i.	I will save on my electricity bill and have more money for transportation, including for children to go to school	

25. What % of your light bulbs are purchased from the following sources?

☐ Salesmen who walk into the community "walk-ins" _____ %
☐ "Community shop" _____%
☐ Supermarket _____%
☐ "Street side vendors" _____%
☐ Other_____%

26. On a scale of 1-8 (1- highest priority & 8 – lowest priority), prioritize the **main** reasons why you **do not** use fluorescent light bulbs.

	Reasons for not using CFLs	**Enter Priority**
a.	They are too expensive – I can't afford it	
b.	They are not available in the community	
c.	They are available in nearby towns which requires money for transportation	
d.	Some CFL bulbs blow out and are not good quality	
e.	I do not know how to choose the good CFL bulbs	
f.	The CFLs available now are not as good as those from the Cuban light bulb program	
g.	I do not understand why CFLs are better than incandescent bulbs	
h.	I do not know anyone who has saved money on their electricity bill after installing CFLs	

Demographics

27. Gender :

☐ Male ☐ Female

28. Which range best represents your current age?

☐ 18 – 29 yrs ☐ 30 – 39 yrs ☐ 40 – 49 yrs ☐ 50 – 59 yrs ☐ 60yrs and older

29. Are you the head of your household/family?

☐ Yes ☐ No

30. How many people currently live in your household? (Please state):_____

31. Number of children (under 18 years) living in household? (Please state)_____

32. What is the size of your house?

☐ One bed room, kitchen & bathroom ☐ Two bed room, kitchen & bathroom
☐ Three bed room, kitchen and bathroom ☐ Other Please state):_____

33. What is your highest level of formal education completed (tick one)?

☐ Primary School	☐ High School	☐ Diploma
☐ Degree	☐ Masters	☐ PhD

34. What is your employment status?

☐ Employed (move to Q 35)	☐ Self-employed (move to Q 35)	
☐ Student *(End interview)*	☐ Unemployed *(End interview)*	☐ Retired *(End interview)*

35. Which range best represents your monthly salary/ earnings?

☐ Less than $50,000	☐ $50, 000 - $70,000
☐ $71,000 - $80,000	☐ $81,000 - $100,000
☐ $101,000 - $120,000	☐ More than $120,000

Thanks for your participation.

We really appreciate you taking the time to answer our questions.

Have a wonderful day.

VOLUME V.A: COMMUNITY RENEWABLE ENERGY AND ENERGY EFFICIENCY ACTION PLANS

COMMUNITY-BASED SOCIAL MARKETING CAMPAIGN ANNEX

THE AILEG PROJECT

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1. INTRODUCTION

Community behavior and engagement alters the effectiveness of energy efficiency (EE) projects worldwide. Influencing local stakeholders is key to achieving results. However, traditional "awareness" programs rarely make an impact. When members of a community use resources wisely, a community moves towards sustainability. As mentioned above, most initiatives to foster sustainable behaviour rely upon large-scale information campaigns that utilize education and/or advertising to encourage behaviour change. While these can be effective in creating public awareness and in changing attitudes, numerous studies show that behaviour change rarely occurs as a result of simply providing information.

Community-Based Social Marketing (CBSM), which applies the methodology of social science research to fostering, maintaining and evaluating behavior change, can significantly influence behavior to achieve greater impact for energy efficiency programs. CBSM campaigns are especially effective because they are based on qualitative and quantitative research that identifies barriers and benefits of targeted groups to adopting targeted behaviors.[1] The CBSM methodology was applied to the community action planning component of AILEG Jamaica to enhance and increase the sustainability of the low emission development strategies (LEDS) the communities of Content and Princessfield identified.

The first step in developing a CBSM campaign is to determine which categories of energy use are most important. Through the literature search, the transect walk and the baseline workshops, lighting and cooking were identified as the most important categories of energy use in Content and Princessfield. Identification of energy use categories is next followed by creating a list of behaviors to address. Each behavior should be guided by two criteria: 1. no behaviour should be *divisible* and 2. each behavior should be end-state. Because barriers are often behavior-specific, it is critical to begin with a list of non-divisible behaviors. End-state refers to the behavior that actually produces the desired environmental outcome. [2]

The next task is normally to compare these behaviors to determine which are worth promoting by analysing the following three characteristics of each behaviour: 1. How *impactful* is the behaviour?, 2. How *probable* is it that my target audience will engage in the behaviour? and 3. What level of *penetration* has the behaviour already obtained with my target audience? [3] Because the funds were not available to conduct two surveys, one to answer these questions to finalize the target behaviors and one to assess the situation relative to the selected behaviors, the target behaviors, e.g. use of CFLs and fuel switching from coal/wood to gas, were selected based on the qualitative research only, as described in the "Targeted Behaviors" section below. However, information that could be used to determine the

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[1] Fostering Sustainable Behavior: Community-Based Social Marketing, the book, Introduction: Fostering Sustainable Behavior http://www.cbsm.com/pages/guide/fostering-sustainable-behavior/

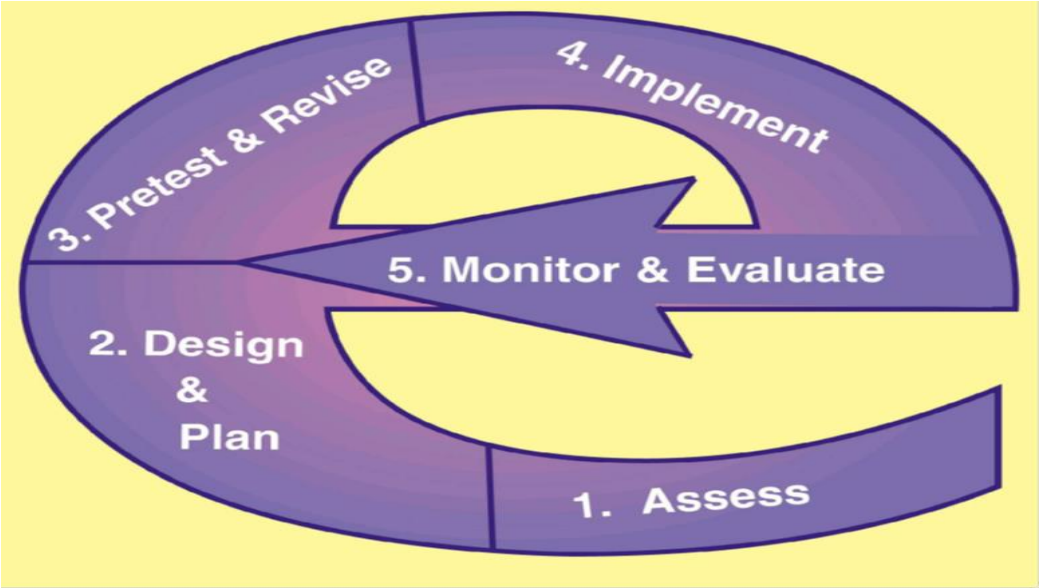
[2] Ibid, Selecting Behaviors http://www.cbsm.com/pages/guide/step-1:-selecting-behaviors/

[3] Ibid, Selecting Behaviors http://www.cbsm.com/pages/guide/step-1:-selecting-behaviors/

potential impact and current penetration of CFL lighting and of fuel switching from wood to coal was included in the quantitative research survey, which was conducted after the behaviors were chosen.

As shown in Figure 1, CBSM involves five steps: 1. The assessment phase: identifying the barriers and benefits to adopting a behaviour change, 2. Design and plan: Developing a strategy that utilizes "tools" that have been shown to be effective in changing behaviour, 3. Pre-test and revise: Piloting the strategy, 4. Implement: Implementing the full program and 5. Monitor & Evaluate: Evaluating the strategy once it has been implemented across a community.

Figure 1: The 5 steps of CBSM



Research indicates that each form of sustainable behaviour has its own set of barriers and benefits. These barriers may be internal to an individual, such as a lack of knowledge, unsupportive attitudes, or an absence of motivation. They may also reside outside the individual, as in changes that need to be made for the behaviour to be more convenient or affordable. Uncovering barriers and benefits consists of three steps: 1. Reviewing the literature (relevant articles and reports), 2. Obtain qualitative information through focus groups and observation to explore attitudes and behaviour, and 3. Conduct a survey with a random sample of residents. [4]

The assessment phase for the Content and Princessfield social marketing campaigns was completed through the literature review, qualitative research (Transect Walk, community mapping, baseline data workshop, focus groups) and the quantitative research survey. The findings on barriers and benefits of targeted groups for the specific behaviors mentioned above, i.e. use of CFLs and fuel-switching from wood/coal to gas, were used in community workshops to design the social marketing campaigns.

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[4] Fostering Sustainable Behavior: Community-Based Social Marketing, the book . Identifying Barriers and Benefits http://www.cbsm.com/pages/guide/step-2:-identifying-barriers-and-benefits/

2. TARGET BEHAVIORS

The first step in developing a CBSM campaign is to determine which categories of energy use are most important. Through the literature search, the transect walk and the baseline workshops, lighting and cooking were identified as the most important categories of energy use in Content and Princessfield. Identification of energy use categories is next followed by creating a list of behaviors to address. Each behavior should be guided by two criteria: 1. no behaviour should be *divisible* and 2. each behavior should be end-state. Because barriers are often behavior-specific, it is critical to begin with a list of non-divisible behaviors. For example, the AILEG team initially identified the strategy of promoting more use of gas for cooking. However, accomplishing this strategy consists of many possible different actions or behaviors, including fuel-switching of all or part of the fuels used for cooking, putting a lid on pots when boiling water to reduce use of fuel, using new technologies to reduce fuel usage, e.g. a pressure cooker, reducing fuel use through completing the cooking process by using an insulated box, etc. End-state refers to the behavior that actually produces the desired environmental outcome. If individuals need to engage in another behavior before the desired environmental outcome is achieved, one has *not* selected an "end-state" behavior. [5] For example, the purchase of compact fluorescent light bulbs is not an end state behavior; the principal interest is not in having homeowners *purchase* compact fluorescent light bulbs, but rather in having them *installed*.

Based on the baseline research mentioned above as well as the focus groups, the targeted behaviors initially identified for Content and Princessfield were installation of compact fluorescent bulbs and promoting full or partial fuel-switching from wood and charcoal to bottled gas. However, the quantitative research demonstrated that those already using mostly gas are a significant proportion of the populations in both Content (51%) and Princessfield. Approximately 52% of Content residents, and 72% in Princessfield, use gas as their main fuel source.[6] In Content, 36% of respondents use gas more for cooking and do less cooking with wood and coal, with 48% using the same cooking methods in Princessfield. [7]This finding led us late in the process to add another behavior to target, promoting more efficient use of gas. To ensure the behavior was both non-divisible and end-state, the target behaviour was determined to be the use of pressure cookers for cooking (with gas and possibly other fuels). This is discussed in more detail below in section on designing the social marketing campaign.

The next task is normally to compare these behaviors to determine which are worth promoting by analysing the following three characteristics of each behaviour: 1. How *impactful* is the behaviour? 2. How *probable* is it that my target audience will engage in the behaviour? and 3. What level of *penetration* has the behaviour already obtained with my target audience? The impact can be estimated through collecting information directly or through estimating the impact based on existing information. The probability can be estimated through looking at past program effectiveness and/or surveying the target audience and asking them to rate the probability that they would engage in a variety of behaviors. As with impact and probability, two methods exist for determining penetration. If the behavior is observable, direct observations of the behavior can be used to determine the percentage of a target

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[5] Fostering Sustainable Behavior: Community-Based Social Marketing, the book, Selecting Behaviors http://www.cbsm.com/pages/guide/step-1:-selecting-behaviors/ Accessed 10-23-13

[6] Volume IV: Community Quantitative Survey Results Annex, page 1

[7] Ibid., pages 6, Figure 4 (Content) and 26, Figure 4 (Princessfield)

audience that have adopted the behaviour. The second option is to survey the target audience to determine participation. One can combine the surveys investigating probabilities and penetration. Behaviors are selected that have the best combination of impact, probability and penetration.[8] Because there were not ample funds to conduct two surveys, one to answer these questions to finalize the target behaviors and another to assess the situation relative to the selected behaviors, the target behaviors of installing CFLs and fuel switching from coal/wood to gas were selected based on the qualitative research only, as described below. However, information that could be used to determine the potential impact and current penetration of CFL lighting installations and of current fuel usage was included in the quantitative research survey, which was conducted after the behaviors were chosen.

3. TARGET GROUPS: BARRIERS AND BENEFITS TO CHANGING THE BEHAVIORS

Research indicates that each form of sustainable behaviour has its own set of barriers and benefits. These barriers may be internal to an individual, such as a lack of knowledge, unsupportive attitudes, or an absence of motivation. They may also reside outside the individual, as in changes that need to be made for the behaviour to be more convenient or affordable. Uncovering barriers and benefits consists of three steps: 1. Reviewing the literature (relevant articles and reports), 2. Obtain qualitative information through focus groups and observation to explore attitudes and behaviour, and 3. Conduct a survey with a random sample of residents. [9]

A literature review will assist in identifying issues to be further explored with residents of the community through focus groups, observation and surveys. Observational studies of specific behaviors helps to more easily identify skill deficits, sequences and incentives that are already at work to reward existing behaviors, and helps reduce the problems of self-report data, getting the researcher much close to the community and the behavior. The community transect walk and community mapping were the methods of observation used. Focus groups begin with a set of clearly defined questions informed by the literature review. They are useful in obtaining in-depth information but are limited by the small number of participants and influence the group itself has upon what each member feels comfortable saying. Quantitative surveys overcome these two limitations.

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[8] Fostering Sustainable Behavior: Community-Based Social Marketing, the book, Selecting Behaviors http://www.cbsm.com/pages/guide/step-1:-selecting-behaviors accessed 10-23-13

[9] Fostering Sustainable Behavior: Community-Based Social Marketing, the book . Identifying Barriers and Benefits http://www.cbsm.com/pages/guide/step-2:-identifying-barriers-and-benefits/

Volume III: Qualitative Research annex includes detailed information from the literature review, transect walks, community mapping, historical datelines, the baseline workshop and other community meetings. These activities helped develop a general picture of the energy profile of each community. They helped community members to identify two behaviors that would help reduce energy demand: using CFLs and using more gas for cooking. These became the two main subjects to further identify the specific target behaviors and groups.

Qualitative Research – Focus Groups

Focus group discussions (FGDs) in the two communities were held to qualitatively identify their knowledge, attitudes, and current practices towards EE lighting and cooking fuel. They also helped identify barriers and benefits to adopting these behaviors, as well as trusted information sources and media outlets. Focus groups were divided between men and women in both communities, as the AILEG team determined there were likely to be differences in attitudes, knowledge, barriers, benefits and trusted sources of information between men and women and to allow for a free flow of ideas. The focus group discussions (FGDs), conducted by AILEG Community Facilitator Janet Bedasse and Ms. Nellie Richards, SACDA Executive Director in Content, and by Ms. Richards in Princessfield, were designed to find initial answers to seven key questions:

- Why do they do what they do?
- How many groups must change their behavior?
- What groups have influence over their behavior?
- What are the perceived barriers?
- What are the perceived benefits?
- Who do they trust for this information?
- Where do they look for information?

The Content women's focus group included twenty women ranging from twenty to sixty years in age. For these women, the benefits of compact fluorescent bulbs identified include that CFLs are better in the long term, are good for reading, and reduce light bills and the need for cooling with fans. Barriers to adopting and using compact fluorescents identified by the women included affordability. Benefits of switching all or some of coal/wood use for cooking to gas for cooking include reducing smoke from wood (which affects health and aesthetics), and gas burns cleanly and quickly and allows cooking multiple items at one time. The main barriers identified for using more gas included cost and the better flavor of some wood fuels.

The men of Content had a focus group that included eight men ranging from twenty to seventy-nine years of age. Some men identified that they select bulbs based on the potential for reducing electricity bills, the bulb life, and the quality of light for children to study because they are "easier on the eye". Barriers included the lack of availability of CFLs in the community. Barriers to adopting and using compact fluorescents identified by the women included affordability. Benefits of switching all or some of coal/wood use for cooking to gas for cooking include that gas cooks faster and easier, and reduces women's complaints that pots are dirty and hard to scour, and it is economical for quick cooking as the women sometimes waste coal. The main barrier is that the gas does not last long enough and must be supplemented with coal. Flavor was important to men, whether the fuel of choice is gas or coal/wood.

In the Princessfield community, the Women's focus group included eighteen women. These women identified the benefits of CFLS as being cooler and lasting longer, but noted that a barrier is that they are expensive and that current CFLS do not last as long as those received under the Cuban Light Bulb Program. Benefits of switching all or some of coal/wood use for cooking to gas for cooking include that gas cooks faster and easier, which is especially important in mornings when preparing f or school, it is

easier to use, it is cleaner and reduces smoke from cooking that affects health, and it reduces the need to scour pots and pans. The main barrier is that the coal is less expensive than gas and wood is free and that some wood improves the flavor of food.

The men's focus group in Princessfield included nineteen men between the ages of 18 and 80 years. These men identified the benefits of CFLS is that they last longer and reduce electricity bills. However, they noted several barriers, including that they are not available in the community and that those that are available are not good quality, and burn out quickly so that once they burn out, people go back to using regular incandescent bulbs. Cost of CFLs is a barrier and, importantly, some participants mentioned that they do not have the information to determine the inferior bulbs from the good bulbs or do not know where to find them. Benefits of switching all or some of coal/wood use for cooking to gas for cooking include that gas is cleaner and reduces smoke (some participants mentioned specific health impacts such as sinus irritation and asthma) and blackening of pots and pans, as well as being easy to use and faster for cooking food. Some mentioned that "gas is modern" for these reasons. The main barrier is that gas is expensive, especially compared to wood, which is free and wood sometimes offers good flavor to the food (especially pimiento wood, also mentioned by both men and women in both communities). More detail is available in Volume III: Qualitative Research Annex, Focus Group Report.

Quantitative Research – Surveys

The quantitative surveys in CBSM were designed to verify the target groups (i.e. segments) and their features based on the questions above, as well as ensuring that the groups consist of at least 100 individuals, the minimum number of a target audience for social marketing campaigns to be cost-effective. There is one segment for every audience of 100 or more people that have a different perceived benefits and barriers and that respond to unique messages through unique channels. In order to improve the likelihood of finding unique target groups, the initial community or target audience should consist of at least 300 people. If one or more segments with at least 100 individuals cannot be identified and engaged directly, then a more general awareness campaign can be implemented. However, even in a social marketing campaign one always engages the entire community.

Conducting a survey consists of seven steps, including clarifying the objectives of the survey, listing the items to be measured, writing the survey, piloting the survey, selecting the sample, conducting the survey and analysing the data. The objectives and items to be measured were developed by the AILEG team, including SACDA, in consultation with the communities. Balcostics, Ltd. developed the survey which was approved by the team. Balcostics then piloted the survey, selected the sample, conducted the survey and analysed the data.

Though the quantitative survey was pre-tested in both Content and Princessfield, the small sample sizes meant that the researchers were not able to use clustering to determine the target segments. Therefore, cross-tabulations were used to understand what lenses were most appropriate to identify unique target groups. The target groups are the primary audience of the CBSM methodology; the other two audiences include the influencers (people who influence the behaviour of the primary audience) and the rest of the community who have the ability to support the behaviour change or a shift in social norms.

Based on this analysis, two target groups were identified for promoting use of CFLs (men and women) and two target groups were identified for promoting fuel switching from coal/wood to gas (men and women):

1. The target for promoting use of CFLs is men and women who use electricity for lighting at least 70% of the time and who do not currently use CFLs. Approximately 68% of

respondents in Content and 50.5% of respondents in Princessfield do not currently use CFLs[10]

2. The target for fuel-switching from coal/wood to more use of gas is men and women who cook sometimes with gas and sometimes with wood/coal.

After review of the analysis, it was clear that the community members already using gas for a significant amount of cooking needs comprised a significant percentage of the population, as described in the introduction. Therefore, two additional groups were identified for promoting efficient use of pressure cookers, even though research questions about barriers and benefits were not included in the survey. Therefore, the knowledge of barriers and benefits as they relate to this behavior can only be inferred from the comments about the barriers and benefits generally identified in the survey.

To promote use of pressure-cookers to use gas more efficiently, two target groups (men and women) were identified (in addition, community members who participated in the social marketing campaign design workshops decided that pressure cookers are a good option to save fuel no matter what fuel people use for cooking). The target groups are:

1. For using pressure cookers in cooking to save fuel
2. Men and Women who cook with gas most of the time and less with wood or coal.

The general findings of the quantitative survey, cross-tabulations of data and the survey instrument are found in Volume IV: Quantitative Research Annex.

Perceived benefits and barriers to adopting the selected behaviors for these target groups are listed below in Tables 1-3. Bolded text means that these benefits and barriers had the highest % of respondents choosing this answer when asked to prioritize the main reasons for choosing or not choosing to adopt the behavior. The italicized text indicates those answers that were different for men and women. An asterisk indicates that very few respondents answered the question. This was the case for most of the questions related to benefits. This suggests that while respondents could easily answer the questions about barriers to adopting the behavior, the questions related to perceived benefits of adopting the behavior were not clear to the respondents. Though the survey was pre-tested, the compressed time frame for implementing the survey may have contributed to inadequate time being devoted to pre-testing and ensuring respondents understood how to answer the questions.

[10] Volume IV: Quantitative Research Annex, page. 2

TABLE 1: People who use electricity for lighting >70% and do not use CFLs

Attributes	Content		Princessfield	
	Men	Women	Men	Women
Attitudes	**Energy should be used efficiently**, ***EE helps the environment***, EE helps Jamaica develop	**Energy should be used efficiently**, ***EE saves on light bills***, EE helps Jamaica develop	**Energy should be used efficiently**, EE can save light bills	**Energy should be used efficiently**, EE saves the environment
Sources of Info	**JPS**, ***neighbours***, radio	***Community Leaders***, radio	**Radio**, neighbors	**JPS bills, radio**
Trusted sources	**Radio, neighbours**	**Radio, neighbors**, *Comm. Leaders*	**Community leaders, neighbors**	**Community leaders, neighbors**
Reasons to purchase CFLs	**Last longer, more efficient***	**CFLs are cooler, less need for fans; CFLS save $, more $ for food, school, transport***	**Cooler (less fans), last longer**, more efficient, safer, save $ for food, school fees, transport	**Cooler (less fans), last longer**, safer, save $ for food, school fees, transport
Reasons not to purchase CFLs	**Too expensive, not available in Content**	**too expensive, not available in Content**	**Cannot afford, not available locally**	**Cannot afford, not available locally**
Current place to purchase light bulbs	Mostly in community shops and supermarket	Mostly in community shops and supermarket	Mostly in **community shops**	Mostly in **community shops**
Perceived Benefits*	EE improves the environment CFLs last longer and are more efficient	EE saves $ on electric bills CFLs are cooler so can use less fans CFLs save $ that can be used	**Cooler, less fan use** **Last longer** More efficient	

		for food, school and transportation	Safer Save $ for food, school fees, transport

* Very few people answered the question

TABLE 2: People who cook with more gas than coal/wood

Attributes	Content		Princessfield	
	Men	Women	Men	Women
Attitudes	**EE saves money on (light) bills**; *EE benefits the environment*	***Energy should be used efficiently***; EE saves money on (light) bills	**Energy should be used efficiently**, *EE benefits environment*, EE saves on (light) bills	**Energy should be used efficiently**, *EE helps Jamaica develop*, EE saves on (light) bills
Reasons to use more gas	**Cooking with gas is faster and easier**	**Cooking with gas is faster and easier**	**Gas is faster, easier**, and pots are cleaner	**Gas is easier, faster** and pots are cleaner
Reasons not to use more gas	**Cooking with coal or wood costs less**; wood is free (and sometimes coal/help men collect), **gas requires large quantities**	**Cooking with coal or wood costs less**; wood is free (and sometimes coal/help men collect), **gas requires large quantities**	Respondents did not answer question!	Respondents did not answer question!
Current place to purchase cooking fuel	Mostly at community retailer	Mostly at community retailer	**Retailer in community**	**Retailer in community**
Current place to purchase stoves and pressure cookers	Bogwalk and SpanishTown/Linstead	Bogwalk and SpanishTown/Linstead	**Linstead**/Spanish Town	**Bogwalk**/Spanish Town
Perceived Benefits	Gas is faster and easier	Gas is faster and easier, cooking with coal/wood is	**Gas easier to use, faster**, cleaner pots	

		bad for health	

* Very few people answered the question

TABLE 3: People who cook with gas sometimes and coal/wood sometimes

Attributes	Content		Princessfield	
	Men	Women	Men	Women
Attitudes	EE saves money on (light) bills, EE helps environment (same)	Energy should be used efficiently; EE saves money on (light) bills (same)	**Energy should be used efficiently**, EE saves on (light) bills, *EE helps Jamaica develop*	**Energy should be used efficiently,** EE saves on (light) bills
Reasons to use more gas	Gas is faster and easier (same)	Gas is faster and easier, **cooking with coal/wood is bad for health**	**Gas is easier to use, faster** cooking (*do not mention pots cleaner*)	**Gas is easier to use, faster** cooking
Reasons not to use more gas	Coal/wood costs less and is often free (same), **other reasons not provided**	Coal costs less and is often free; wood is free; gas must be purchased in large quantities (same)	**Coal/wood costs less or is free** when helping collect it; gas must be purchased in large quantities (other no answer)	**Coal/wood costs less or is free** when helping collect it; gas must be purchased in large quantities (other no answer)
Current place to purchase cooking fuel	Mostly at retailer in community	Mostly at retailer in community, **many** (18%) **make it themselves**	**Retailer in community**	**Retailer in community**
Current place to purchase stoves and pressure cookers	Bogwalk, Spanish Town/Linstead (same)	Bogwalk and Spanish Town/Linstead (same)	**Linstead**	**Linstead** and Bogwalk
Perceived benefits	N/A		**Gas easier to use, faster**	

* Very few people answered the question

4. DESIGNING THE CAMPAIGN, OVERCOMING BARRIERS, AND PROMOTING BENEFITS

Developing a community-based social marketing strategy involves addressing two behaviors simultaneously: 1) the behavior to be encouraged; and 2) the behavior to be discouraged. We want to reduce barriers and increase benefits for the behavior to be encouraged, while doing the reverse for the opposing behavior. Too frequently, environmental program planners focus solely on the behavior they wish to encourage without giving adequate thought to the opposing behavior. By also addressing the behavior to be discouraged, we can make the desired action more attractive in contrast.[11]

CBSM tools for promoting adoption of sustainable behaviors

CBSM draws upon social sciences research, particularly in psychology, that has identified a variety of effective "tools" for promoting behavior change. These tools are often most effective when used in combination with one another. The tools include:

1. Commitment: Good Intentions to Action
2. Creating Social Norms: Building Community Support
3. Social Diffusion: Speeding Adoption
4. Prompts: Remembering to Act
5. Communication: Creating effective messages
6. Incentives: Enhancing motivation to Act
7. Convenience: Making it Easy to Act

Tools should be selected based on, and tailored to, the barriers and benefits identified and then scrutinized with focus groups prior to piloting the strategy. If the strategy receives positive reviews, the program is ready to be piloted. If not, further refinements are made. These tools are described in more detail below.

1. Commitment: Good Intentions to Action
   When individuals agree to a small request, it often alters the way they perceive themselves. That is, when they sign a petition favoring something, the act of signing subtly alters their attitudes on the topic and they come to view themselves as the type of person who supports initiatives related to the subject of the petition. When asked later to comply with a larger request, such as giving a donation, there is strong internal pressure to behave "consistently". Human beings'

[11] Fostering Sustainable Behavior: Community-Based Social Marketing, the book, Developing Strategies http://www.cbsm.com/pages/guide/step-3:-developing-strategies/ accessed on 10-23-13

need to behave consistently is supported by psychological research. Commitment has been used to promote such sustainable behaviors as bus ridership, installation of low flow showerheads, and installation of weather-stripping on doors and windows. A variety of studies have clarified when commitments are likely to be most effective, including written commitments, rather than verbal ones, making commitments public, commitments in groups (if well-established groups in which individuals care how they are viewed by other group members), involving the person directly, and using community "block leaders" It is important not to use coercion, i.e. commitments must be freely volunteered, and useful to combine them with other behavior change techniques. [12]

2. Creating Social Norms: Building Community Support

Research on conformity shows that people look to the behavior of those around them to determine how they will respond. Several studies have documented the impact that social norms can have on individuals engaging in sustainable behavior. There are two types of norms: injunctive and descriptive. Injunctive norms provide information on what behaviors are approved or disapproved of, while descriptive norms indicate which behaviors are normally engaged in. Campaign designers need to construct norms to avoid inadvertently encouraging a behavior they wish to discourage, and descriptive information can sometimes decrease the desirable behavior among some people. For norms to be effective, people need to view the behavior that the norm prescribes as how they should behave. To make the norm noticeable, the norm should be present at the time the targeted behavior should occur. Also, norms should be used to encourage people to engage in positive behaviors, rather than avoiding harmful actions. If the undesirable behavior is common, the norm should be combined with descriptive information and praise when someone is performing the sustainable behavior better than the average person. [13]

3. Social Diffusion: Speeding Adoption

Decisions of our lives are strongly affected by a process known as social diffusion, or diffusion of innovations. For example, those who install programmable thermostats have been found to influence the likelihood of friends, family and coworkers installing them, but not their neighbors. The media often plays an important role in beginning the diffusion process by facilitating the adoption of a new behavior by a small minority of people. Research suggests that once this minority has adopted a new behavior, personal conversations play the pivotal role in the behavior being adopted more broadly. Commitments can be combined with social diffusion to influence the rapid adoption of a new behavior. It is important to ensure that the behavior one is promoting is visible and commitments sought from early adopters to speak to others about the behavior. Careful identification of early adopters is key to success.[14]

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[12] Fostering Sustainable Behavior: Community-Based Social Marketing, the book, Commitment - Good Intentions to Action http://www.cbsm.com/pages/guide/commitment:-good-intentions-to-action/ accessed on 10-24-13

[13] Fostering Sustainable Behavior: Community-Based Social Marketing, the book, Norms – Building Community Support http://www.cbsm.com/pages/guide/social-norms:-building-community-support/ accessed on 10-24-13

[14] Fostering Sustainable Behavior: Community-Based Social Marketing, the book , Social Diffusion – speeding adoption http://www.cbsm.com/pages/guide/social-diffusion:-speeding-adoption/ accessed on 10-24-13

4. Prompts: Remembering to Act

Numerous actions that promote sustainability are susceptible to forgetting, including, for example, turning off computer equipment and checking air pressure in tires. Prompts are visual or auditory aids which remind people to carry out an activity that they might otherwise forget. They do not change attitudes or increase motivation, but simply remind people to engage in an action they are already predisposed to do. To be effective in encouraging either one-time or repetitive behaviors, they should be noticeable, self-explanatory, be presented as close in time and space as possible to the targeted behavior, and be used to encourage people to engage in positive behaviors rather than avoid environmentally harmful actions. [15]

5. Communication: Creating effective messages

All persuasion begins with capturing attention, and one of the most effective ways to do that is to present information that is vivid, concrete and personalized. Vivid information increases the likelihood that a message will be attended to initially, called encoding, and to be recalled later. Once a method of gaining peoples' attention has been found, the attitudes, beliefs and behavior of the intended audience must be considered. The messages will be tailored to the different segments of that audience you are trying to reach. It is important to know how receptive people are to the message, which can be done through a phone survey or focus groups. We are trying to find a message or messages that will have moderate support in the various target segments. Messages that are just slightly more extreme than the beliefs of the target audience are likely to be embraced by those audiences. How you present, or "frame", a behavior change is very important.

Who presents your message can also have a dramatic impact on how it is received. The more credible the person or organization is in delivering the message, the more influence there will be upon the audience. The audience can be surveyed about the credibility of different spokespersons or organizations or one can search for organizations or individuals who are well known for their expertise in the area and that have the public's trust; perceived credibility appears to be based primarily on these two attributes. Having credible individuals endorse your initiative may also be valuable. Interestingly, messages which emphasize losses that occur from inaction are often more persuasive than messages that emphasize savings as a result of taking action. If the communication is with an audience that has little comprehension of the issue, presenting one side of the issue will be most persuasive. However, if the audience is aware of both sides of an issue, both sides must be presented to be perceived as credible. Also, presenting the opposite viewpoint, and providing counter arguments, can lessen the influence of alternative views. Instructions on action to be taken should be clear and straightforward so that they are more likely to be understood and followed. Integrating personal or community goals is also effective. Also, modeling, or demonstrating, the behavior in person or on the internet enhances knowledge. Where possible, personal contact should be used to deliver the message. Lastly, feedback to individuals and the community on the impact of the behavior is useful to enhance social diffusion, by increasing the likelihood that people will discuss it with others. [16]

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[15] Fostering Sustainable Behavior: Community-Based Social Marketing, the book, Prompts – remembering to act http://www.cbsm.com/pages/guide/prompts:-remembering-to-act/ accessed on 10-24-13

[16] Fostering Sustainable Behavior: Community-Based Social Marketing, the book, communication – creating effective messages http://www.cbsm.com/pages/guide/communication:-creating-effective-messages/ accessed on 10-24-13

6. Incentives: Enhancing motivation to Ac

Financial incentives can provide the motivation for individuals to perform an activity that they already engage in more effectively, or begin an activity that they otherwise would not perform. Research underscores the importance of using incentives to reward behavior we would like people to engage in. Used most extensively to promote waste reduction, they have had a large impact. Incentives can be especially useful when motivation to engage in a behavior is low. They need to be large enough to be taken seriously. However, past a certain point they may have diminishing returns. Also, once in place, it is difficult to remove them. Studying the impacts of incentives on other communities or programs can help in determining the size of the incentive to use. They are usually most effective when presented at the time the behavior is to occur, and when visible, in order to draw attention to the incentive. [17]

7. Convenience: Making it Easy to Act

Evaluating the role of convenience begins with identifying which are the external barriers to adopting the new behavior, and seeking information from other communities or programs as to how they have dealt with those barriers. This also provides an opportunity to understand what resources were required to understand the external barriers. In order to improve or enhance the convenience of adopting the new behavior, one wants to make the desired behavior more convenient and less expensive than the alternative, which increases motivation to adopt the behavior. Incentives often help to make the desired behavior less costly. Since convenience is to some extent a matter of perception, it is helpful to provide people the opportunity to experience the behavior, often resulting in their perception changing to see the new behavior as more convenient than they first thought. If the desired behavior is only somewhat inconvenient, it can be addressed through commitments and norms. If it is perceived to be very inconvenient, other measures may be required. [18]

In developing the social marketing campaign, the workshop with the communities focused on understanding the audiences and effective communications (messages, trusted sources, etc.). Though there was insufficient time to present these CBSM tools to the communities, their discussion of the target audiences and messaging led to discussions of how to build community support, the need for incentives and for making the new behavior convenient to adopt. The AILEG team then developed the draft social marketing campaign plan (below) to include these messages and who would deliver them, the incentives and the programs designed to enhance the convenience of adopting the behavior, and also outlined suggested commitments, use of norms and prompts, and opportunities for social diffusion through use of the media and creating opportunities for personal conversations

Developing the Social Marketing campaigns

The AILEG team reviewed the research findings with the communities on knowledge and attitudes about energy efficiency and renewable energy, as well as the identified barriers and benefits of the target groups towards adopting the target behaviors. They then facilitated group discussions to develop

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[17] Fostering Sustainable Behavior: Community-Based Social Marketing, the book, incentives – enhancing motivation to act http://www.cbsm.com/pages/guide/incentives:-enhancing-motivation-to-act/ Accessed 10-24-13

[18] Fostering Sustainable Behavior: Community-Based Social Marketing, the book, convenience – making it easy to act http://www.cbsm.com/pages/guide/convenience:-making-it-easy-to-act/ Accessed 10-24-13

potential messages and channels, and considered the need for incentives, increasing convenience of adopting the behaviors, and to some extent, use of the media and creating opportunities for person-to-person communication to promote social diffusion. The AILEG team then supplemented this by considering additional opportunities to create social diffusion, as well as the need and opportunity for using commitments, creating social norms, and using prompts. A social marketing campaign plan was developed based on this work.

On July 15, 2013, AILEG held workshops in Princessfield in the morning and Content in the afternoon to: 1) review the research about the target groups (Tables 1-3); 2) choose messages to address barriers and benefits; and 3) to plan communications methods based on sources of information and where products related to the behaviors (i.e. CFLs, bottled gas and pressure cookers) are purchased. We originally planned to cover both lighting and cooking in each community; however, due to a lack of time the lighting exercise was conducted in Princessfield and the cooking exercise was conducted in Content. The results from each community were shared with the other. Though the barriers and benefits, as well as trusted sources of information, are slightly different for each community, this strategy was acceptable to the communities.

Based on the perceived barriers revealed from the research, the workshops first addressed the two most prevalent perceived barriers for lighting and cooking, respectively. Participants were asked the questions below, in association with the perceived barriers, to prompt brainstorming on potential messages and communications methods:

- CFLs cost too much
  - How can your program reduce the cost of CFLs or educate people about the savings?
- CFLs are not available in the community
  - How can you make CFLs available in your community?
- Gas is expensive
  - What cooking efficiency measures can be taken to reduce the overall amount of cooking fuel needed?
- Gas must be purchased in large quantities to be cost-effective
  - What cost-sharing or purchasing schemes could be developed?

Additional information was provided to the communities on the actual costs and savings from using CFLs versus incandescent bulbs, and the costs and savings from using a pressure cooker in order to help address two of the four perceived barriers of using more gas. Below is a summary of the information presented in association with the perceived barriers addressed:

Perceived barrier: CFLs cost too much

- Monthly savings 34-78 kwh/month (assuming two 40w bulbs used 4 hours per day, each replaced by a 15 w CFL)
- 34 JMD if use < 100 kwh/month
- 78 JMD if use > 100 kwh/month
- Difference in Cost* 524 JMD
- 300 JMD per CFL * 2 = 600 JMD
- 33 JMD per Inc * 2 = 66 JMD
- Recover cost of CFL in 6 months at higher rate and 1.5 years at the lower rate

Perceived barrier: Gas is expensive

- Cost of pressure cooker 3,495 JMD
- Reduce gas costs – reduce costs by 60%
  - 1/2 30 lb canisters for 4 weeks = JMD 1,500

        - With pressure cooker use JMD 515
    - Recover cost of pressure cooker in 3 months

After reviewing the research, the participants were split into small groups of 4-5, each with a note-taker and either an AILEG or SACDA facilitator for two short discussions sessions (approximately 10 minutes each). The first discussion session focused on choosing the messages, and the second focused on planning the communication channels, based on the information gleaned from the survey research on trusted sources of information and media outlets. After each discussion, the groups spent 2-5 minutes presenting their ideas to the whole workshop.

4.1. CHOOSING THE MESSAGES

In choosing the message for a lighting and cooking campaign, participants were asked to: i) select a target group, ii) identify messages that overcome the group's perceived barriers to adopting the behavior change, and iii) think of methods to disseminate the message through the group's current and trusted information sources. In developing the message the participants were to think broadly on the major themes for addressing perceived benefits and barriers, convincing evidence to include, and what would the target audience want to know or do?

Lighting Message (Princessfield)

The lighting workshop focused on identifying messages for one behavior change – promoting installation of CFLs in place of incandescent bulbs. Across the four workshop groups in Princessfield, there was consensus that the message to promote installation of CFLs should focus on CFLs reducing the electricity bill through energy efficiency with returns also evident through the longer lifespan of the bulbs. This addresses the barrier of the up-front costs being higher than incandescent bulbs. The methods to disseminate the message were also similar across workshop groups where all mentioned Facebook, flyers, local TV stations and text messaging. At the end of the workshop, an AILEG team member provided a quick sketch of an example flyer that could be used as part of the communication plan to illustrate the types of information that could be provided (See photos of sample flyers below).

TABLE 4: Promoting CFL Installation - Target Audience with Associated Message and Communication Channels by Group

Group	Target Group	Message	Method
1	n/a	· Information on where to purchase CFLs (i.e. the community center) · CFLs last longer, save on your bills, make your house cooler, gives brighter lighting	· Facebook · Local TV station · Text messages · Slogan: "CFLs are the best way to go"
2	Women	· CFLs keep you cooler, last longer, make your pocket stronger, lower your light bill today, and help save the environment – "use CFLs!!!"	· Monthly meetings (include testimonials) · Weekly church announcements · Daily local cable ads
3	Men	· CFLs last longer, are cooler, and save more money	· Flyers · Text messages · Community groups

			· Loud speaker · Local TV station · Schools, churches, youth groups
4	Women	· CFLs are cheaper, cooler, brighter, better for the environment · Can get CFLs at shops, community distribution, and wholesale	· Flyers · Word of mouth by individuals, community meetings, church meetings · Facebook · Text messages

Cooking Message (Content)

While the lighting workshop centered on one behavior change (installing CFLs in place of incandescent bulbs), the cooking workshop identified three behaviors requiring messages to be developed: use more gas; use a pressure cooker; and use other, non-technology energy efficiency solutions. While workshop Group 1 focused on messages for pressure cookers, the other groups also included messages for using more gas (fuel-switching for part or all of peoples' cooking needs) and the non-technology solutions such as when boiling water, not keeping the gas on longer than necessary or boiling more water than needed. Dissemination methods focused on flyers, promotional events, and text messaging helpful hints and testimonials. Since the Content workshop was held after the Princessfield workshop, the Content workshop participants had the benefit of viewing the example flyer drafted at the Princessfield workshop, and were able to illustrate examples of their own (see photos of messages below).

TABLE 5: Promoting Fuel-switching to Gas and Use of Pressure Cookers - Target Audience with Associated Message and Communication Channel by Group

Group	Target Group	Messages	Methods
1	Women	Messages for pressure cookers: · Saves money for both gas and coal · Saves time · Food is healthier/nutritious · Provide options on ways to purchase that are affordable · If used properly, not dangerous · Give contact information for more help	· Flyers · Promotional event such as information fair with a cooking contest – can bring local shopkeepers to sell pressure cookers · Education events on pressure cooker operations, where to buy · Establishment of a community partner/savings plan to purchase pressure cookers · Text messaging with helpful hints such as don't boil more water than you need · Testimonials · Promotion of program to buy gas in bulk

2	Men and Women	Messages for using gas, pressure cookers and other efficiency measures: · Pressure cookers use less gas and save time (must read manual properly) · Gas is cleaner, less dirty pots, better for your health, safer, less allergies with smoke, and less doctor bills · Cook less, don't over cook your food, don't over boil water; don't turn up the stove too high; prepare food before lighting stove	· Public awareness campaign on the benefits and proper usage of pressure cookers · Community bulk purchasing of gas will reduce its price · Flyer: "Save time, save money using gas. Bigger, Better Savings!!!"
3	n/a	· Message for using gas instead of coal/wood: smoke clogs your lungs, irritates your throat and burns your eyes. · Pressure cookers can be safely used if secure the lid firmly and used properly, food is more nutritious, saves gas · Use an electric stove	· Monthly meetings · Daily text messages · Slogan: "Gas, the way to go"
4	Men and Women	Messages for using gas, pressure cookers and other efficiency measures: · Gas is easier, faster, cleaner, and better for your health · Pressure cooker saves gas, time · Don't waste gas while cooking – don't overcook or over boil water	· Purchase gas in bulk – organize group and one person do the purchasing · Purchase pressure cooker in bulk to reduce the cost – pool funds · Slogan: "Why waste gas when you can use less, save gas, save time!"

4.2. PLAN COMMUNICATION CHANNELS

For the second breakout session, workshop groups were asked to delve deeper into constructing a communication plan based upon the dissemination methods identified in the previous session, particularly identifying the frequency that each dissemination method would occur.

Lighting Plan (Princessfield)

Although requested, participants during this break-out session did not identify the frequency with which the activities in the communication plan would occur. Below are the activities identified by each break-out group to disseminate the messages on using CFLs. In addition to education and social marketing activities, there was a big focus on bulk purchasing, either to then sell CFLs through the community center or through the local shops. An interesting point of discussion was whether the community should have an initial campaign to distribute CFLs for free in exchange for old incandescent bulbs, and would the behavior change be sustained after free bulbs were no longer available. No consensus was reached.

<u>Group 1</u>

- Disseminate information through a Public Education Programme at community meetings, churches, youth clubs, word of mouth, and farmer/senior groups
- Train persons in the community to give talks on using CFL bulbs
- Make CFLs available at the community center and begin an exchange program for people bring in their incandescent bulbs

Group 2

- Reduce costs of CFLs through: establishment of an Energy Partner group, fundraising, funding from donors
- Disseminate information through testimonials on energy savings in light bills; encouragement to use lights less, e.g. two hours instead of four hours; include community shops in the effort to disseminate information

Group 3

- Start a public education programme to tell people about the use of the CFL bulbs
- Use a working group to target different areas of the community and do house-to-house visits
- Work with shop owner to stock CFL bulbs
- Print fliers explaining CFL bulbs, [include on the flyer a] meeting date and time
- Show people different sample of bulbs, e.g. CFL and incandescent
- Fundraise to give people free CFLs
- Do a trial run of using CFLs for a month to see if there is a change in their light bill
- Have a proper disposal system for the old incandescent bulb

Group 4

- Educate the people on benefits of CFLs such as they are long lasting at community meetings and generally around the community
- Start wholesaling CFLs and have the community shops sell them
- Fundraising to buy CFL to distribute for free

Cooking Plan (Content)

Content had an ambitious plan for daily communications with text message and Facebook updates and weekly community meetings. They identified a mix of formal and informal activities ranging from a large-scale information fair to simply word of mouth and town crier.

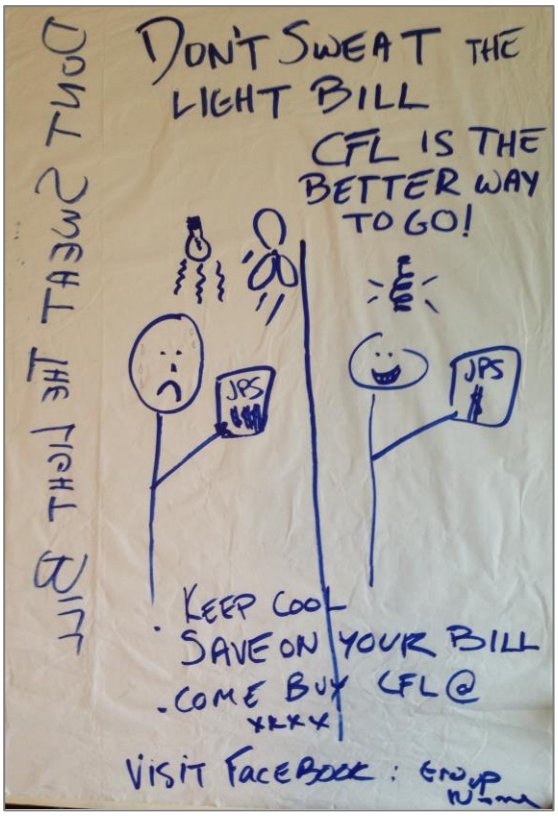
TABLE 6: Communication Channels and Frequency for Promoting Switching to more Gas Use and Using Pressure Cookers

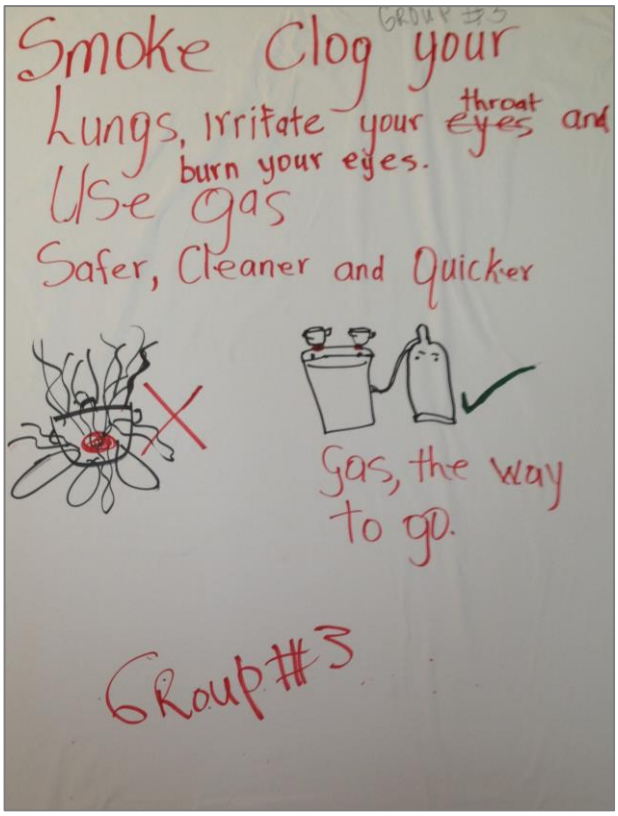
Group	Communication Method	Frequency
1	Text message	Weekly
	Information fair	Twice per year
	Posters in shops, church, light post, community center (Poster contest?)	Twice per year
	General sharing through testimonials and feedback at community meetings	Weekly
2	Posters put up in the community	n/a
	Town crier	n/a
	Word of mouth	n/a
	Text messages	Daily
	Group meetings	Weekly
3	Community meetings	Monthly

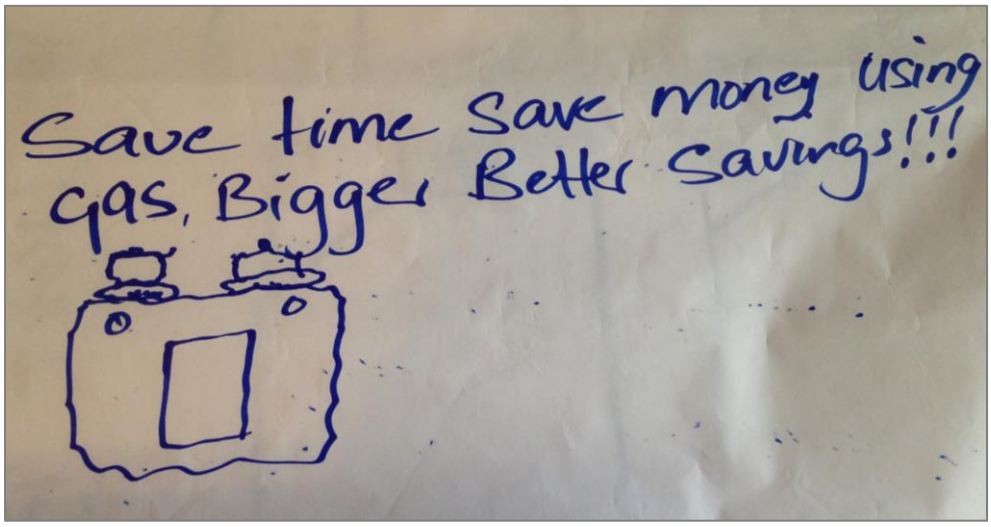
	Text messages	Daily
4	Flyers	Monthly
	Text messages	Daily
	Internet/Facebook	Daily
	Notice board	Every three months

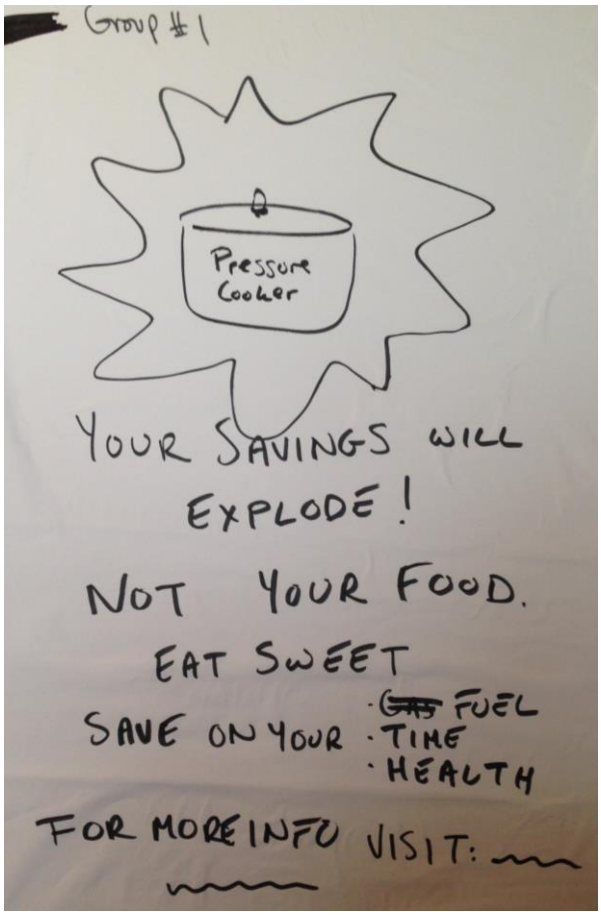
On the next page are screen shots of the flyer messages developed at the Content (lighting) and Princessfield) cooking workshops.

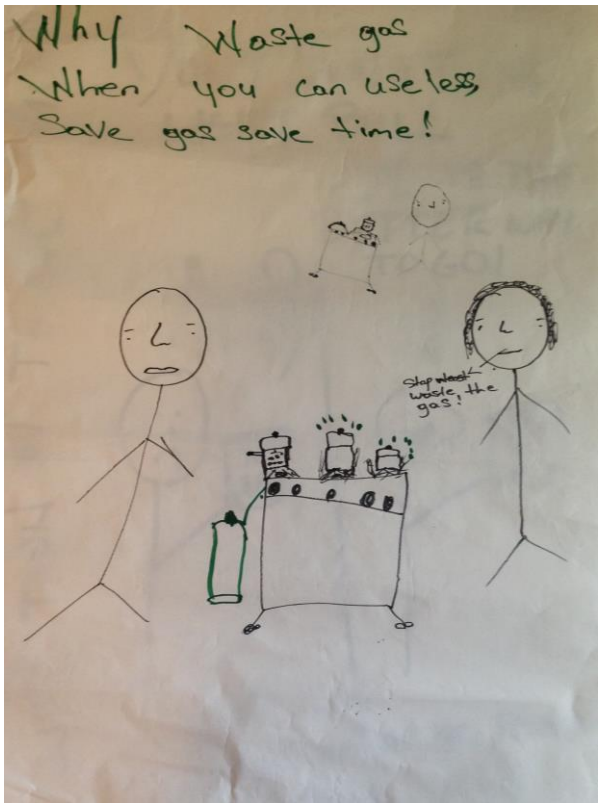
CONTENT AND PRINCESSFIELD EXAMPLE FLYER MESSAGES








[redacted] Group #1
Pressure Cooker
YOUR SAVINGS WILL EXPLODE!
NOT YOUR FOOD.
EAT SWEET
SAVE ON YOUR
· ~~GAS~~ FUEL
· TIME
· HEALTH
FOR MORE INFO VISIT:


Why Waste gas
When you can useless
Save gas save time!
Stop wasting the gas!

5. SOCIAL MARKETING CAMPAIGN PLANS FOR CONTENT AND PRINCESS FIELD

Social Marketing Campaign for Lighting - Promote Installation of CFLs

1. Commitments

Written or Verbal	Group	Block Leaders?	Commitment requested	How involve individual
Written	None	Work through the zone representatives who assisted with recruiting people for AILEG project to carry the message to people in their zones	Sign a pledge, committing to purchasing x # of CFLS (based on # in house) and installing them (this can be part of the CFL installation challenge under Norms below or a separate commitment)	of good quality, to address the barrier of people not knowing how to judge whether the bulb is good quality of not and to overcome resistance if they previously purchased and installed one of inferior quality. Install one (whether at community event or in the home) and have them observe any positive

2. Constructing Norms

Undesirable Behavior	Positive Norm to Construct	Making the Norm noticeable	Descriptive Information	than average
Continual purchase and installation of incandescent bulbs	Everyone in the community is replacing incandescent bulbs and installing CFLs	Photos of trusted community leaders installing a CFL bulb in a community building, in their home or at a community event. Advertisements on free television showing a trusted source installing a CFL. Demonstrations or booths at community events focused on the CFL promotion program.	Provide information on the benefits of CFLs vs. incandescents and how to choose a quality bulb	community members to complete a "CFL Installation Challenge" where they record the # of CFLS they have installed now and the # they commit to installing. Provide a map showing the # of CFLs installed by those who have taken the challenge already. The map will include statistics on the average # of CFLs in community members' homes and the community members are shown how the # of CFLs they have installed compares to the average (based on survey data from the community survey or data collected at the event on event participants). Use this challenge as an opportunity to do a mini survey to gather information about their lighting usage including number of incandescent and CFL bulbs currently in their homes, where they are located (living room, kitchen, etc.), how many hours per

3. Social Diffusion

Method of identifying early adopters	Use of media to reach early adopters	Method(s) of creating opportunities for personal conversations	Helping early adopters make their behavior is visible to others	How to Gain commitment of early adopters to speak to others
Those who previously participated in the Cuban Light Bulb program, even if they are no longer using CFLs (note: many said the quality of bulbs available now is not as high as those provided under that program)	Develop TV (if free) and radio ads reminding people of that program and how the lights are available again, with same or better quality.	Sponsor community events where early adopters (i.e. those who have installed a lot of CFLs either on their own prior to the program, or since the new program began, to talk with attendees about the benefits they have received from installing/using CFLs in their homes.	Write articles for the local newspaper or other publication and include photos of the early adopters' homes and their installed CFLs.	When they purchase CFLs/additional CFLs through the program, ask them for a verbal or written pledge that they will tell at least a certain number of people about how beneficial CFLs are and why they have decided to install so many.

4. Prompts

Type of Prompt	Method for presenting it close in time and space to the targeted behavior	Making it noticeable and self-explanatory
Sign to prompt people to purchase CFLs	Install the signage at locations where CFLs are sold, either at local shops or at the community center if bulbs are bulk purchased by the community group	Include signs or banners at the front of shops and right next to the bulbs on the shelves. If CFLs are sold by the community group, put the sign on the outside of the building. To make it self-explanatory, include a photo of the CFL bulb, that they should not only be purchased but installed, and what are the benefits of doing so. Include information on any incentives provided.
Message reminding people to install CFLs	Decal that people can attach to the windows at home, in a place that they see every day	Remind them of their commitment made to the CFL challenge to install CFL bulbs in place of incandescents and what are the benefits

5. Communication

Vivid message - noticed and recalled later and appropriate for target audience	Spokespersons or Organizations to carry the message to the audience	One-sided or Two-sided message	Community or Individual Goals to incorporate	Feedback to Provide
"Don't sweat the light bill" - keep cool, CFLs are the way to go. Use a visual to communicate that incandescents make the house uncomfortable by giving off heat (see sample flyer in report)	Church announcements, Testimonials from trusted individuals	Two-sided - people are familiar enough with CFLS because of the Cuban Light Bulb program that they know they are supposed to reduce energy usage but they also know they cost more than incandescent bulbs up front. Therefore, the higher initial cost must be compared to the lifetime savings, and other benefits stressed	Incorporate the community mitigation goal, as well as individual goals from the CFL savings challenge	Provide feedback to the community on progress on mid-level goals (i.e. increased sales/purchases of CFLS) and in increased #s of CFL installations. The latter will require a random survey or, to reduce self-reporting exaggerations, an audit of those who made commitments to see if the bulbs were installed.

6. Incentives

Type	Size	Available at time of CFL purchase
Subsidy if a community CFL purchase		

Social Marketing Campaign for Cooking - Promote Fuel Switching (part or all coal or wood use to bottled gas)

1. Commitments

Written or Verbal	Group	Block Leaders?	Commitment requested	How involve individual
Written	Church Groups, where members can reinforce fulfilling the commitment	N/A	Pledge to increase gas usage and reduce coal or wood by a percentage	Demonstrations of the benefits of gas cooking at church and community events and fairs

2. Constructing Norms

Undesirable Behavior	Construct	Making the Norm noticeable	Descriptive Information	Method of Praise for Behavior better than average
Continued use of coal or wood (esp wood in open fires)	Gas is modern and all community members are using clean gas instead of dirtier fuels for cooking	Videos on TV and at events of community leaders demonstrating the benefits of cooking with gas; demonstrations at community events.	Include statistics about the health impacts of smoke from cooking fires, visual presentations of dirty and clean pots.	One option is to work with bottle gas retailers to provide data on gas sales of individuals. Reports could then be provided to those who have made commitments to use more gas, showing how they compare to the average community member in terms of % of cooking that is done with gas

3. Social Diffusion

Method of identifying early adopters	Use of media to reach early adopters	Method(s) of creating opportunities for personal conversations	Helping early adopters make their behavior visible to others	How to Gain commitment of early adopters to speak to others
identify individuals who are changing their behavior in terms of gas purchases	advertisements on cooking shows, or special reporting at	community events and provide time for them to speak individually with the audience members.	Tours of the "modern home" where mostly gas is used for cooking.	Ask retailers of gas to have customers sign a commitment pledge to share with others the benefits of cooking with gas

4. Prompts

Type of Prompt	close in time and space to the targeted behavior	Making it noticeable and self-explanatory
Sign or decal "I could have used gas.." , similar to the US advertising campaign for V8 juice where the person realizes he or she could have had a V8 juice instead of something else for a drink or snack. This	provided, again by retailers of gas, as well as at community events (cooking demonstrations), to be attached behind the stove or on the stove at	to be seen immediately and often. It should be clear that it is promoting cooking with gas as often as possible based on the benefits important to the target audience (e.g. better health, cleaner pots, etc.) that they will

5. Communication

later and appropriate for target audience	Organizations to carry the message to the	One-sided or Two-sided message	Community or Individual Goals to incorporate	Feedback to Provide
most vivid message developed for fuel switching by the community groups was "Smoke clogs your lungs, irritates your throat and burns your eyes. Use gas - Safer, Cleaner and	Trusted leaders, including potentially health and environmental experts	understand both sides of the message, e.g. they know the benefits of using gas but the cost is the main barrier. Therefore, the message should address both the benefits of using gas more, and	Incorporate the community mitigation goal. Also incorporate individual goals when/if target group members make commitments to reduce cooking with coal and wood	Feedback should be provided on the changes in the amount of gas sold, as well as impacts on health and the environment if data is available.

6. Incentives

Type	Size	Available at time of Fuel purchase
Bulk purchasing of gas was mentioned	should research similar programs	subsidizing fuel costs but to reduce its cost through bulk

7. Convenience

External Barrier to Overcome	more convenient	Use of Commitments and Norms
Gas must be purchased in large quantities, which the target groups can not afford.	in smaller quantities or to have cooperative purchasing (as opposed to the	members to make a commitment to form and participate in a cooperative to purchase gas from the retailer.

Social Marketing Campaign for Cooking - Promote use of pressure cookers for cooking

1. Commitments

Written or Verbal	Group	Block Leaders?	Commitment requested	How involve individual
Written	Church Groups, where members can reinforce fulfilling the commitment	N/A	Pledge to purchase and use a pressure cooker for cooking	Demonstrations of the benefits of pressure cookers at church and community events and fairs

2. Constructing Norms

Undesirable Behavior	Positive Norm to Construct	Making the Norm noticeable	Descriptive Information	Method of Praise for Behavior better than average
Using too much of a precious commodity - gas	Gas is modern and also precious and it is the right thing to do to use it efficiently for cooking	Videos on TV and at events of community leaders demonstrating the benefits of cooking with gas and of using a pressure cooker to reduce gas use; demonstrations at community events.	Include statistics about the health impacts of smoke from cooking fires, visual presentations of dirty and clean pots, as well as information on the benefits of pressure cookers (reducing fuel use is one, but nutrition and others may be important to the target audience as well)	One option is to work with retailers who sell cookstoves to collect information on purchasers of pressure cookers. Reports could then be provided to those who have made commitments to use pressure cookers, showing how they compare in terms of gas usage to the average member of that t arget group in terms of amount of gas used for cooking

3. Social Diffusion

Method of identifying early adopters	Use of media to reach early adopters	Method(s) of creating opportunities for personal conversations	Helping early adopters make their behavior visible to others	How to Gain commitment of early adopters to speak to others
Work with stove and pressure cooker retailers to identify individuals who are changing their behavior in terms of purchasing pressure cookers	TV or radio advertisements on cooking shows, or special reporting at events that may include cooking demonstrations	Include early adopters at community events and provide time for them to speak individually with the audience members.	Tours of the "modern home" where mostly gas is used for cooking and a pressure cooker is used.	Ask pressure cooker retailers of to have customers sign a commitment pledge to share with others the benefits of using a pressure cooker (regardless of fuel type)

4. Prompts

Type of Prompt	Method for presenting it close in time and space to the targeted behavior	Making it noticeable and self-explanatory
Sign or decal to remind the cook to use the pressure cooker for appropriate types of food.	Decal could be provided by pressure cooker retailers, as well as at community events (cooking demonstrations), to be attached to the stove at home.	The decal should be large enough to be seen immediately and often. It should be clear that it is promoting use of p ressure cookers whenever appropriate, with the benefit being spending less money on fuel and other benefits important to the target audience (e.g. nutrition)

5. Communication

Vivid message - noticed and recalled later and appropriate for target audience	Spokespersons or Organizations to carry the message to the audience	One-sided or Two-sided message	Community or Individual Goals to incorporate	Feedback to Provide
Your Savings Will Explode - Not Your Food! - Save on your fuel, time, and health. This is the message developed by the workshop participants, and it will definitely be noticed and recalled later. It goes to the heart of the main barrier to adopting pressure cookers, peoples' fear that they are unsafe. Another option mentioned may not be as vivid and concrete as the one above, i.e. "Why waste gas when you can use less, save gas, save time!"	Trusted leaders, including truested experts on food and nutrition	It is believed that people have been exposed to the benefits of pressure cookers but many do not know how to use them or believe they are unsafe. Further research/testing of messages is needed hear to determine if this should be a one-sided or two-sided message. By addressing the fear that pressure cookers will not explode, this message could have a negative impact on use of pressure cookers, even though it suggests there will be large savings.	Incorporate the community mitigation goal. Also incorporate individual goals when/if target group members make commitments to cooking with a pressure cooker	Feedback should be provided on the number of people purchasing and, more importantly, using pressure cookers (though that would have to be self-reported on a survey)

6. Incentives

Type	Size	Available at time of Fuel purchase

6. MONITORING AND EVALUATION

Monitoring and Evaluation M&E) for CBSM programs is similar to M&E for other development programs. Indicators and targets are developed to measure achievement of outputs, outcomes and impacts. The overall impact of the CBSM campaigns in these two communities is to contribute towards achieving the communities' five-year goals, along with the other projects in the Strategic Action Plans. The outcomes desired are the changed behaviors, i.e. installation of CFLs, fuel switching from coal/wood to bottled gas for cooking, and using pressure cookers to cook with gas (and other fuels) more efficiently. Though the community workshop participants also plan to address other efficient cooking behaviors, these will be part of the general awareness campaign, though not part of the CBSM campaign. Outputs include steps leading to the final behavior change such as numbers of people attending community events, signing pledges to take action, purchasing CFLs and pressure cookers, etc. It will be important to develop a final list of indicators to support implementation of the final campaign, and to develop targets for the following suggested output and outcome indicators based on information collected in the baseline survey and any additional surveys conducted during implementation of the campaigns. Methods of data collection will also need to be established.

Illustrative Indicators:

Output Indicators -

1. Number of people signing a pledge to purchase and install CFLs within a specific period of time
2. Number of early adopters of CFL installations signing a pledge to hold a personal conversation with other target group members about CFL installation
3. Number of people signing a pledge to switch a certain % of their cooking fuel from coal/wood to bottled gas within a specific period of time
4. Number of early adopters of fuel-switching for cooking fuel signing a pledge to hold a personal conversation with other target group members about using more gas for cooking
5. Number of people signing a pledge to purchase and/or use a pressure cooker for all appropriate uses in cooking
6. Number of early adopters of pressure cookers for cooking signing a pledge to hold a personal conversation with other target group members about using a pressure cooker for all appropriate cooking uses
7. Number of people visited by the Zone Coordinators to share information about the CFL installation campaign
8. Number of people who purchase CFLs from local shops and/or from the community group
9. Number of people who increase their purchase of gas by a certain percentage from local retailers and/or through the bulk buying program of the community
10. Number of people who purchase pressure cookers from local retailers

Outcome Indicators –

1. Number of incandescent bulbs replaced with CFLs in the target groups within a specific period of time
2. Net increase in gas sales in the 2 communities within a specific period of time
3. Percentage of cooking hours that are appropriate for using a pressure cooker, when a pressure cooker is used, in the target population
4. Net decrease in all fuels used for cooking in the communities

After two full years of implementation, a follow-up survey should be conducted using the same questions included in the previous surveys, in order to measure changes attributable to the CBSM campaigns.

7. NEXT STEPS

An important note is that if a CBSM campaign is not implemented within three months, experts recommend resurveying the community, to ensure that barriers and benefits are still the same. Also, since respondents had difficulty answering the questions about perceived benefits of the targeted behavior changes, the authors recommend that the communities work with a CBSM expert and a survey research firm to revise the survey, and pre-test and implement a revised survey to verify these segments. In addition, specific questions related to barriers and benefits of using pressure cookers should be added, to strengthen that campaign. Lastly, missing data that is needed to understand the baseline saturation and potential penetration of the target behaviors should be included in the survey.

The CBSM campaign designs above are draft plans. They should be finalized after an updated survey, and testing of messages with focus groups. Pre-testing the final strategies is critical, followed by full implementation.

8. REFERENCES

McKenzie-Mohr, D. Fostering Sustainable Behavior. (2011) British Columbia, Canada. New Society Publishers. Also available online at http://www.cbsm.com/pages/guide/

VOLUME V.B: COMMUNITY RENEWABLE ENERGY AND ENERGY EFFICIENCY ACTION PLANS

COMMUNITY-BASED SOCIAL MARKETING CAMPAIGN ANNEX

THE AILEG PROJECTPR

CONTRACT NO.:EEM-I-00-07-00004-00
TASK ORDER: AID-OAA-TO-11-00041

October 2013

This publication was produced for review by the United States Agency for International Development. It was prepared by Abt Associates Inc. under the AILEG Project.

AILEG JAMAICA – DESIGNING COMMUNITY SOCIAL MARKETING CAMPAIGN - CONTENT

July 15, 2013
Content, Jamaica

Presented by: Dana Kenney
AILEG Jamaica Country Manager

A I L E G

SOCIAL MARKETING

Focuses on changing the behavior of individuals by understanding

- the target group's perceived benefits of adopting the new behavior
- the target group's perceived barriers to adopting the new behavior

FINALIZING THE GROUPS

TYPES OF GROUPS

Audiences include:

- Primary audience
- Influencers
- The rest of the community – ability to support the behavior change or a shift in social norms

If < 100, deal with the group directly, not through a mass campaign; ALWAYS engage the entire community

DETERMINING PRIMARY AUDIENCES AND INFLUENCERS

Differentiators	Yes	No
Do they have different behaviors or use different tools?	One segment for every audience of 100+ people	Not a segment
Respond to different messages or different barriers/benefits?	One segment for every audience of 100+ people	Not a segment

Question	Large Group?	Small Group?
Significant influence or provide support	If more than 100, include as a "support group"	If less than 100, engage the group in the campaign, but not through social marketing

AGENDA

- Review what is social marketing
- Lighting
  - Review research about target audiences
  - Choose messages to address barriers and benefits
  - Plan communications methods based on sources of information and where CFLs are purchased
- Cooking
  - Review research about target audiences
  - Choose messages to address barriers and benefits
  - Plan communications methods based on where fuel, pressure cookers and stoves are purchased

TARGET BEHAVIORS AND QUESTIONS

TARGET BEHAVIORS AND GROUPS

- Buy CFLs instead of incandescent bulbs
  - People who use electricity for lighting at least 70% of the time
  - People who do not currently use CFLs
- Use more gas for cooking and less coal/wood
  - People who use more gas and less coal/wood (34%)
  - People who cook with gas some of the time and coal/wood some of the time (25%)

results

QUESTIONS TO ASK

- Why do people do what they do?
- How many groups must change their behavior?
- What groups have influence over their behavior?
- What are the perceived barriers?
- What are the perceived benefits?
- Who do people trust for this information?
- Where do people look for information?

Questions

LIGHTING

LIGHTING: TARGET GROUP CHARACTERISTICS

MEN WHO USE ELECTRICITY FOR LIGHTING > 70% (65%) AND DON'T USE CFLS (32%)

- Attitudes: **Energy should be used efficiently**, ***EE helps the environment***, EE helps Jamaica develop
- Sources of info: ***JPS, neighbors***, radio
- Trusted sources: **Radio, neighbors**
- Reasons to purchase CFLs: **last longer, more efficient***
- Reasons not to purchase: **too expensive, not available in Content**
- Buy mostly in community shops and supermarket

* Very few people answered the question

WOMEN WHO USE ELECTRICITY FOR LIGHTING > 70% (65%) AND DON'T USE CFLS (32%)

- Attitudes: **Energy should be used efficiently**, ***EE saves on light bills***, EE helps Jamaica develop
- Sources of info: ***Comm. Leaders***, radio
- Trusted sources: **Radio, neighbors**, *comm. Leaders*
- Reasons to purchase CFLs: **CFLs are cooler, less need for fans; CFLS save $, more $ for food, school, transport***
- Reasons not to purchase: **too expensive, not available in Content**
- Buy mostly in community shops and supermarket

OVERCOMING BARRIERS – PURCHASING CFLS

Small Groups of 4-5

Choose facilitator and note-taker

Discuss for 10 minutes

Present to others – 2 minutes each

LIGHTING: OVERCOMING THE BARRIERS

CFLS COST TOO MUCH

- Monthly savings 34-78 kwh/month*
  - 34 JMD if use < 100 kwh/month
  - 78 JMD if use > 100 kwh/month
- Difference in Cost* 524 JMD
  - 300 JMD per CFL * 2 = 600 JMD
  - 33 JMD per Inc * 2 = 66 JMD
- Recover cost of CFL in 6 months at higher rate and 1.5 years at the lower rate

* 2 40 w bulbs used 4 hours per day, each replaced by a 15 w CFL

CFL AVAILABILITY

- How can your program reduce the cost of CFLs or educate people about the savings?
- How can you make CFLs available in your community?
- Other ideas or concerns?

DEVELOPING MESSAGES - CFLS

Small Groups of 4-5

Choose facilitator and note-taker

Discuss for 10 minutes

Present to others – 2 minutes each

LIGHTING: DESIGN THE CAMPAIGN MESSAGES

PERCEIVED BENEFITS*

- Content Men > 70%, no CFLs
  - EE improves the environment
  - CFLs last longer and are more efficient
- Content Women > 70%, no CFLs
  - EE saves $ on electric bills
  - CFLs are cooler so can use less fans
  - CFLs save $ that can be used for food, school and transportation

* Few people answered this question

DEVELOPING MESSAGES

- What could be the major themes (address benefits and barriers)
- Convincing evidence to include?
- What do they want to know or do?

PLAN COMMUNICATION CHANNELS- CFLS

Small Groups of 4-5

Choose facilitator and note-taker

Discuss for 10 minutes

Present to others – 2 minutes each

LIGHTING: FORMAT, CHANNELS AND DISSEMINATION METHODS

QUESTIONS TO CONSIDER

- How should the messages be presented?
- What channels to use – TV (expensive), radio, point of sale, mobile phone texts, other?
- How often should the messages be communicated through each method?

APPROACHES FOR TARGET AUDIENCES?

- Men
  - Sources of information: JPS, radio
  - Trusted influencers: neighbors
  - Purchase lighting in community shops and supermarkets
- Women
  - Sources of information: Radio
  - Trusted influencers: Community leaders, neighbors
  - Purchase lighting in community shops and supermarkets

COOKING

COOKING: TARGET GROUP CHARACTERISTICS

MEN WHO COOK WITH GAS MORE THAN COAL/WOOD

- Attitudes: **EE saves money on (light) bills**; *EE benefits the environment*
- Reasons to use more gas: **Cooking with gas is faster and easier**
- Reasons not to use more gas: **Cooking with coal or wood costs less;** wood is free (and sometimes coal/help men collect), **gas requires large quantities**
- Buy fuel mostly at community retailer
- Buy stoves and pressure cookers – Bogwalk and SpanishTown/Linstead

WOMEN WHO COOK WITH GAS MORE THAN COAL/WOOD

- Attitudes: ***Energy should be used efficiently***; EE saves money on (light) bills
- Reasons to use more gas: **Cooking with gas is faster and easier**
- Reasons not to use more gas: **Cooking with coal or wood costs less;** wood is free (and sometimes coal/help men collect), **gas requires large quantities**
- Buy fuel mostly at community retailer
- Buy stoves and pressure cookers – Bogwalk and SpanishTown/Linstead

* Very few people answered the question

COOKING: TARGET GROUP CHARACTERISTICS

MEN WHO COOK WITH GAS SOMETIMES AND SOMETIMES COAL/WOOD

- Attitudes: EE saves money on (light) bills, EE helps environment (same)
- Reasons to use more gas: Gas is faster and easier (same)
- Reasons not to use more gas: Coal/wood costs less and is often free (same), **other reasons not provided**
- Buy fuel mostly at retailer in community
- Buy stoves and pressure cookers in Bogwalk, Spanish Town/Linstead (same)

* Very few people answered the question

WOMEN WHO COOK WITH GAS SOMETIMES AND SOMETIMES COAL/WOOD

- Attitudes: Energy should be used efficiently; EE saves money on (light) bills (same)
- Reasons to use more gas: Gas is faster and easier, **cooking with coal/wood is bad for health**
- Reasons not to use more gas: Coal costs less and is often free; wood is free; gas must be purchased in large quantities (same)
- Buy fuel mostly at retailer in community, **many make it themselves**
- Buy stoves and pressure cookers in Bogwalk and Spanish Town/Linstead (same)

OVERCOMING BARRIERS – USING MORE GAS

Small Groups of 4-5

Choose facilitator and note-taker

Discuss for 10 minutes

Present to others – 2 minutes each

COOKING: OVERCOMING THE BARRIERS

GAS IS EXPENSIVE

- Reduce gas costs
  - Cost of pressure cooker 3495 JMD
  - Reduce gas costs – reduce costs by 60%
    - 1/2 30 lb canisters for 4 weeks = JMD 1,500
    - With pressure cooker use JMD 515
  - Recover cost of pressure cooker in 3 months

GAS MUST BE PURCHASED IN LARGE QUANTITIES

- Ideas for programs
  - Stoves usually purchased in Bogwalk or Spanish Town but pressure cookers available in Linstead
  - Biogas program planned – cash for trash?
  - Promote pressure cookers

DEVELOPING MESSAGES – COOKING WITH MORE GAS

Small Groups of 4-5

Choose facilitator and note-taker

Discuss for 10 minutes

Present to others – 2 minutes each

COOKING: DESIGN THE CAMPAIGN MESSAGES

PERCEIVED BENEFITS*

- Content Men
  - Gas is faster and easier
- Content Women
  - Gas is faster and easier, cooking with coal/wood is bad for health

* Few people answered this question

DEVELOPING MESSAGES

- What could be the major themes (address benefits and barriers)
- Convincing evidence to include?
- What do they want to know or do?

PLAN COMMUNICATION CHANNELS- COOKING MORE WITH GAS

Small Groups of 4-5

Choose facilitator and note-taker

Discuss for 10 minutes

Present to others – 2 minutes each

COOKING: FORMAT, CHANNELS, DISSEMINATION METHODS

QUESTIONS TO CONSIDER

- How should the messages be presented?
- What channels to use – TV (expensive), radio, point of sale, text messages, other?
- How often should the messages be communicated through each method?

APPROACHES FOR TARGET AUDIENCES?

- Men and Women
  - Fuel bought at community retailers
- Women who sometimes use gas and sometimes coal/wood
  - In addition, 18% make it themselves
  - Stoves and pressure cookers bought in Bogwalk and Spanish Town/Linstead

AILEG JAMAICA – DESIGNING COMMUNITY SOCIAL MARKETING CAMPAIGN - PRINCESSFIELD

July 15, 2013
Princessfield, Jamaica

Presented by: Dana Kenney
AILEG Jamaica Country Manager

A I L E G

SOCIAL MARKETING

Focuses on changing the behavior of individuals by understanding

- the target group's perceived benefits of adopting the new behavior
- the target group's perceived barriers to adopting the new behavior

FINALIZING THE GROUPS

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- Primary audience
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DETERMINING PRIMARY AUDIENCES AND INFLUENCERS

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- Cooking
  - Review research about target audiences
  - Choose messages to address barriers and benefits
  - Plan communications methods based on where fuel, pressure cookers and stoves are purchased

TARGET BEHAVIORS AND QUESTIONS

TARGET BEHAVIORS AND GROUPS

- Buy CFLs instead of incandescent bulbs
  - People who use electricity for lighting at least 70% of the time
  - People who do not currently use CFLs
- Use more gas for cooking and less coal/wood
  - People who use more gas and less coal/wood (34%)
  - People who cook with gas some of the time and coal/wood some of the time (25%)

results

QUESTIONS TO ASK

- Why do people do what they do?
- How many groups must change their behavior?
- What groups have influence over their behavior?
- What are the perceived barriers?
- What are the perceived benefits?
- Who do people trust for this information?
- Where do people look for information?

Questions

LIGHTING

LIGHTING: TARGET GROUP CHARACTERISTICS

MEN WHO USE ELECTRICITY FOR LIGHTING > 70% (65%) AND DON'T USE CFLS (32%)

- Attitudes: **Energy should be used efficiently**, EE can save light bills
- Sources of info: **Radio**, neighbors
- Trusted sources: **Comm leaders, neighbors**
- Reasons to purchase CFLs: **Cooler (less fans), last longer**, more efficient, safer, save $ for food, school fees, transport
- Reasons not to purchase: **Can not afford, not available locally**
- Buy lighting mostly in **community shops**

WOMEN WHO USE ELECTRICITY FOR LIGHTING > 70% (65%) AND DON'T USE CFLS (32%)

- Attitudes: **Energy should be used efficiently**, EE saves the environment
- Sources of info: **JPS bills, radio**
- Trusted sources: **Comm leaders, neighbors**
- Reasons to purchase CFLs: **Cooler (less fans), last longer**, safer, save $ for food, school fees, transport
- Reasons not to purchase: **Can not afford, not available locally**
- Buy lighting mostly in **community shops**

* Very few people answered the question

OVERCOMING BARRIERS – PURCHASING CFLS

Small Groups of 4-5

Choose facilitator and note-taker

Discuss for 5 minutes

Present to others – 2 minutes each

LIGHTING: OVERCOMING THE BARRIERS

CFLS COST TOO MUCH

- Monthly savings 34-78 kwh/month*
  - 34 JMD if use < 100 kwh/month
  - 78 JMD if use > 100 kwh/month
- Difference in Cost* 524 JMD
  - 300 JMD per CFL * 2 = 600 JMD
  - 33 JMD per Inc * 2 = 66 JMD
- Recover cost of CFL in 6 months at higher rate and 1.5 years at the lower rate

* 2 40 w bulbs used 4 hours per day, each replaced by a 15 w CFL

CFL AVAILABILITY

- How can your program reduce the cost of CFLs or educate people about the savings?
- How can you make CFLs available in your community?
- Other ideas or concerns?

DESIGNING MESSAGES – PURCHASING CFLS

Small Groups of 4-5

Choose facilitator and note-taker

Discuss for 10 minutes

Present to others – 2 minutes each

LIGHTING: DESIGN THE CAMPAIGN MESSAGES

PERCEIVED BENEFITS*

- Princessfield Men and Women > 70%, no CFLs
  - **Cooler, less fan use**
  - **last longer**
  - more efficient
  - Safer
  - Save $ for food, school fees, transport

* Few people answered this question

DEVELOPING MESSAGES

- What could be the major themes (address benefits and barriers)
- Convincing evidence to include?
- What do they want to know or do?

COMMUNICATIONS PLAN– PURCHASING CFLS

Small Groups of 4-5

Choose facilitator and note-taker

Discuss for 10 minutes

Present to others – 2 minutes each

LIGHTING: FORMAT, CHANNELS AND DISSEMINATION METHODS

QUESTIONS TO CONSIDER

- How should the messages be presented?
- What channels to use – TV (expensive), radio, point of sale, mobile phone texts, other?
- How often should the messages be communicated through each method?

APPROACHES FOR TARGET AUDIENCES?

- Men
  - Sources of information: **Radio**, neighbors
  - Trusted influencers: **Community leaders, neighbors**
  - Purchase lighting in **Community shops**
- Women
  - Sources of information: **JPS bills, radio**
  - Trusted influencers: **Community leaders, neighbors**
  - Purchase lighting in **community shops**

COOKING

COOKING: TARGET GROUP CHARACTERISTICS

MEN WHO USE MOSTLY GAS AND LESS COAL/WOOD

- Attitudes: **Energy should be used efficiently,** *EE benefits environment*, EE saves on (light) bills
- Reasons to use more gas: **Gas is faster, easier**, and pots are cleaner
- Reasons not to use more gas: Respondents did not answer question!
- Buy fuel from **retailer in community**
- Buy stoves and pressure cookers in **Linstead**/Spanish Town

WOMEN WHO USE MOSTLY GAS AND LESS COAL/WOOD

- Attitudes: **Energy should be used efficiently,** *EE helps Jamaica develop*, EE saves on (light) bills
- Reasons to use more gas: **Gas is easier, faster** and pots are cleaner
- Reasons not to use more gas: Respondents did not answer question!
- Buy fuel from **retailer in community**
- Buy stoves and pressure cookers in **Bogwalk**/Spanish Town

* Very few people answered the question

COOKING: TARGET GROUP CHARACTERISTICS

MEN WHO USE GAS SOMETIMES AND COAL/WOOD SOMETIMES

- Attitudes: **Energy should be used efficiently**, EE saves on (light) bills, *EE helps Jamaica develop*
- Reasons to use more gas: **Gas is easier to use, faster** cooking (*do not mention pots cleaner)*
- Reasons not to use more gas: **Coal/wood costs less or is free** when helping collect it; gas must be purchased in large quantities (other no answer)
- Buy fuel from **retailer in community**
- Buy stoves/pressure cookers in **Linstead**

* Very few people answered the question

WOMEN WHO USE GAS SOMETIMES AND COAL/WOOD SOMETIMES

- Attitudes: **Energy should be used efficiently,** EE saves on (light) bills
- Reasons to use more gas: **Gas is easier to use, faster** cooking
- Reasons not to use more gas: **Coal/wood costs less or is free** when helping collect it; gas must be purchased in large quantities (other no answer)
- Buy fuel from **retailer in community**
- Buy stoves and pressure cookers in **Linstead** and Bogwalk

OVERCOMING BARRIERS –

BUYING A PRESSURE COOKER

Small Groups of 4-5

Choose facilitator and note-taker

Discuss for 10 minutes

Present to others – 2 minutes each

COOKING: OVERCOMING THE BARRIERS

GAS IS EXPENSIVE

- Reduce gas costs
  - Cost of pressure cooker 3495 JMD
  - Reduce gas costs by 60%
    - 1/5 30 lb canisters for 4 weeks = JMD 1,500
    - With pressure cooker use JMD 515
  - Recover cost of pressure cooker in 3 months

GAS MUST BE PURCHASED IN LARGE QUANTITIES

- Ideas for programs
  - Stoves usually purchased in Bogwalk or Spanish Town but pressure cookers available in Linstead
  - Biogas program planned – cash for trash?
  - Other?

DESIGNING MESSAGES – BUYING A PRESSURE COOKER

Small Groups of 4-5

Choose facilitator and note-taker

Discuss for 10 minutes

Present to others – 2 minutes each

COOKING: DESIGN THE CAMPAIGN MESSAGES

PERCEIVED BENEFITS*

- Princessfield Men & Women who use gas more and coal/wood less
  - **Gas easier to use, faster**, cleaner pots
- Princessfield Men and Women who use gas sometimes and coal/wood sometimes
  - **Gas easier to use, faster**

DEVELOPING MESSAGES

- What could be the major themes (address benefits and barriers)
- Convincing evidence to include?
- What do they want to know or do?

COMMUNICATIONS PLAN–
BUYING A PRESSURE COOKER

Small Groups of 4-5

Choose facilitator and note-taker

Discuss for 10 minutes

Present to others – 2 minutes each

COOKING: FORMAT, CHANNELS, DISSEMINATION METHODS

QUESTIONS TO CONSIDER

- How should the messages be presented?
- What channels to use – TV (expensive), radio, point of sale, other?
- How often should the messages be communicated through each method?

APPROACHES FOR TARGET AUDIENCES?

- Men and Women who use gas more and coal/wood less
  - Purchase stoves and pressure cookers in **Bogwalk (women) and Linstead (men)**
  - Purchase fuel from **community retailer**
- Men and Women who use gas sometimes and coal/wood sometimes
  - Purchase stoves and pressure cookers in **Linstead**
  - Purchase fuel from **community retailer**

USAID FROM THE AMERICAN PEOPLE

AILEG Analysis and Investment for Low-Emission Growth

VOLUME VIA: COMMUNITY RENEWABLE ENERGY AND ENERGY EFFICIENCY ACTION PLANS

ACTION PLAN PROJECTS ANNEX - COMMUNITY PROJECT FUNDING PROPOSALS

THE AILEG PROJECTPR

CONTRACT NO.:EEM-I-00-07-00004-00
TASK ORDER: AID-OAA-TO-11-00041

October 2013

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FCO Strategic Programme Fund and Bilateral Programme Fund

PROJECT PROPOSAL FORM

(For projects worth **over** £10,000)

Part A: To be completed by the Project Implementer
* To be completed by the Post

Project Title	Content Solar Training and Cyber Centre	
Purpose *This must be NO MORE than one sentence clearly stating the change that the project will deliver. This is the reason the project should go ahead*	To demonstrate and train in solar renewable energy, helping to provide livelihoods through a fully solar-powered community and cyber centre.	
Which Programme is the funding being sought from * *(Policy Programme title or Bilateral Programme Budget)*		
What Programme or CBP Objective does this project help meet *	Programme	
	CBP	
How will this project help to deliver that Objective *		
Is the Project ODA eligible *	Yes/No	
Cost *What is the **TOTAL** cost of the Project* *Please note project funds are paid quarterly in arrears.*	FY13/14	£ 48,775.00
If co-funding has or is being sought, please also show the cost to the **FCO** (if there are other donors involved, state how much you are bidding to the FCO for)	FY 13/14	£ 46,448.00

Timing Please provide the estimated start and end dates for the project	Planned start date: December 2013		Planned completion date: June 2015	
Implementing Agency *Name; Address; Telephone Numbers; Email; Website*	Saint Catherine Development Agency (SACDA) MAIN STREET, BOG WALK P.O. ST. CATHERINE, JAMAICA Telephone No: (876) 708-2391 E-mail: sacdajm@hotmail.com Lead Officer: Nellie Richards			
Country or countries covered	Jamaica			
Have you bid for funding from the FCO in the past three years? *Please provide details of any bids made and/or projects*	NO			

implemented	
What change will this project deliver in the short term? *Why do we need to run this project?* Keep this short, you should be able to articulate why the project is needed in a couple of sentences	A fully energy self-sufficient, solar powered community centre that will be used as a solar training and cyber centre. This will deliver the following short-term benefits: (i) Community members trained in solar PV system installation, operation and maintenance, which will increase livelihood opportunities; and (ii) Improved communications for the community, which will contribute to livelihood opportunities through access to information (identify training and job prospects). In addition, cyber-centres have been found to be important as offline and online meeting-places that foster positive social integration (Ferlander, 2003). Based on quantitative and qualitative research, it was found that cyber-centre visitors had more local friends, less social distrust and perceived tensions between different groups in a community. This is an important aspect for youth involvement and integration into the project and the community as a whole.
What is the expected longer-term impact? *What difference will it make on the ground over the next few years? What will success look like in the years after the project is completed?* This question will be looked at again during an Evaluation of this project, and when an Impact Assessment is done a year after the project is completed. The success of the project will largely be judged on what is said here.	The long-term benefits of the project can be summarised as follows: <u>Environmental</u> • The fifteen solar PV cells for the first phase construction under the Community Action Plan for the training facility **will save approximately 40 kg of carbon emissions per year**. While this is relatively a small amount of avoided emissions on a global scale, it is appropriate given the scale of the project and the overall footprint of the community. Additional social benefits are noted below that increase potential employment in a sector that overall promotes climate smart development. • In addition to carbon emission reduction, overall, at least 89% of life-cycle air emissions associated with electricity generation could be prevented through the use of PV technology. This includes reductions in emissions of heavy metals such as lead and mercury and other pollutants such as SOx and NOx. • There is also the additional benefit that this centre will act as a place to introduce to Content community members to more efficient cooking technology and reduce the usage of wood and charcoal. A social marketing and behaviour change workshop was held on 15 July 2013 where barriers and solutions to the adoption of LED lighting were identified. The same workshop identified the barriers and solutions to adopting more efficient cooking technology. In the workshop focused on cooking, it was identified that the agro-processing centre to be established as part of the five-year Community Action Plan would act as a demonstration and promotional site for more efficient cooking techniques including the use of a pressure cooker to reduce the overall amount of time needed to cook. <u>Solar Job Training Potential</u> • Three community members trained as trainers of solar PV systems. • Four training courses per year.

	• Ten people enrolled per year (60% male and 40% female). • Seven to eight people graduated per year (75% graduation rate; distribution by gender matches enrolment distribution). • Approximately 16 employed trainees per year (out of those who graduated). <u>Cyber Centre</u> • Increased access to desktop computers and information, which in turn will lead to improved access to employment opportunities. • Increased access to free, informal training in computer hardware and software usage that is not available elsewhere. • Increased positive social integration (both offline and online). <u>Gender inclusion</u> From the very beginning of the community action planning process, ensuring strong representation of women has been important and valuable, as they have been the most vocal in the planning process. Based upon substantive participation during wide stakeholder forums, the active subset of people were selected to form the Energy Working Group to develop and finalize the Community Action Plan. Content's Energy Working Group is comprised of 19 (68%) women and 9 (32%) men, which will ensure future inclusion of gender issues under the Community Action Plan. <u>Youth involvement and engagement</u> Through eligibility to join the solar technician trainings and access to information, opportunities and a community network through the cyber-centre.
Is the change sustainable? *Who will take ownership of delivering the benefits and outputs once the project funding ends?*	By the end of the Project, the Content community should have an organized and trained independent Community arm of the Umbrella Benevolent Society, with at least 25 registered members. This would be the organization in charge of ensuring the benefits of the project continue to be delivered after the project is completed. The Content community was involved in project planning and design participating in a thorough consultation and visioning process as part of the community-based clean energy action plan component of AILEG.[1] In this sense, community-based energy efficiency (EE) and renewable energy (RE) Action Plans have been developed in two communities of the St Catherine Parish (Princessfield and Content) to support achievement of climate change goals and socio- economic objectives important to the community, including employment and youth engagement. The consultative process was executed - using participatory methodologies such as focus groups - over a three-month period that commenced on April 1st and ended on June 30th, 2013.

[1] The United States Agency for International Development (USAID) is funding the *Analysis and Investment in Low-Emission Growth (AILEG)* project to assist countries, including Jamaica, to build the capacity of Governments and other stakeholders to analyze low emissions scenarios and integrate them into economic development strategic planning and implementation, as well as conducting economic analysis to Promote investment in low emissions technologies and projects. The USAID's AILEG program supports climate change analytical decision-making and is providing assistance to the Government of Jamaica (GOJ) on several capacity-building activities to support low emissions development strategies (LEDS).

	The Community- based Organization (CBO) St. Catherine Development Agency (SACDA) has been working with these communities to carry out the Project design and planning. The CBO and communities were chosen through a competitive bidding process. The short project period is strongly supported by the social capital that the CBO has developed with the participating communities over the past 19 years. The community was engaged from the assessment and planning phases of the proposed project. It was through community engagement that the ideas were conceptualized and the Action plan formulated. The Content community will be integrally involved in the **project implementation** phase. Through the AILEG project, the community members have selected zone leaders to represent different sections of the Content community; they have also selected leaders for the various components of the five-year Strategic Plan. Therefore, due to the already wide involvement and acceptance of the project in the Content community, community involvement in the project is guaranteed so as to ensure that benefits will continue to be realised after completion of the Project.

Background *In no more than 200 words, provide the background to the issue this project will change and why the UK is the best donor*	In the Content community the lack of access to affordable energy coupled with the lack of livelihood alternatives yields a bleak picture in terms of a future for its residents, especially the young. Moreover, the energy used by households, small and micro businesses is all fossil fuel based (electricity from the grid, wood charcoal, liquefied natural gas and/or firewood) which contributes to global warming through the emission of greenhouse gases (GhG). Content received capacity building on the community action planning process and subsequently developed a five-year, community-based EE and RE action plan to support achievement of climate change goals and socio-economic objectives important to the community, including employment and youth engagement. The Action Plan aims to address the above issues through the ability to gain employment skills and access to information at a training facility and cyber centre with minimal costs associated with electricity usage. The flagship project is the aforementioned solar-powered training facility and cyber centre. The overall goal of the project is two-fold: • To increase livelihood opportunities through capacity building (training) activities in the Content community by 2018; • To contribute to climate change mitigation through the use of RE and fostering of EE habits to encourage livelihood development as well as providing skills training for community members.
Outputs *What will the project actually produce? e.g. new legislation in place; trained people, etc. The outputs must together deliver the Project Purpose. List as many outputs as needed to deliver the*	1. Three members of the community trained for administrative and technical needs of the STC through a preliminary training-of-trainers program with CMI. The training courses (four per year) will deliver approximately 16 employed trainees per year. 2. Shipping container refurbished and upgraded as a classroom for a fully

Purpose.	equipped solar technician-training centre and to be used as the community cyber-centre (as a means to access information, opportunities, and as a community network hub). 3. Solar PV system installed on the STC comprising fifteen solar panels that will save approximately 40 kg of carbon emissions per year. The system will (i) allow energy independence from the grid, (ii) provide reliability against climate hazards, (iii) act as a demonstration pilot for the expansion of solar panels for community street lighting and other public facilities.
Activities *What will you need to do in order to deliver each output? The activities must link to a specific output.*	1.1. - Specific design for Content of the train-of-trainers course by CMI (with SACDA's input). 1.2. - Delivery of the 7-day train-of-trainers course at CMI. 1.3. - Delivery of the 4 yearly trainings at the STC. 2.1. - Purchase and installation of refurbished and upgraded shipping container to be used as STC as well as cyber-centre. 3.1. - Purchase, installation and commissioning of 4 kW solar PV system with back-up batteries. Includes batteries, inverter, switch, etc., and instalment cost. Would need 15 panels of 280 watts each, which would use 22 square feet each for a total 330 square feet. 4.1. Project administration support and coordination by SACDA's dedicated team during the 18-month duration of the project.
Milestones *What are your milestones for measuring success during the Project? What will success look like?*	a. Complete design of the train-of-trainers course by the end of 2013 b. Successful delivery of the above-mentioned course to the three chosen community members (by the end of January 2014) c. Successful installation of the refurbished shipping container by the end of January 2014 d. Successful commissioning and start of operation of the solar PV system by the end of February 2014 e. Successful delivery of the solar training courses each trimester (beginning March 2014) f. Enrolment of at least 10 community members on average per training course g. Graduation of at least 7 community members on average per training course h. Employment (including self-employment) of at least 4 community members on average per training course i. Gradual increase in utilization of the cyber-centre up to full capacity by the end of the first year (November 2014)

PLEASE COMPLETE THE ACTIVITY BASED BUDGET – *your bid will not be considered without this. You should provide as much detail as possible. Consider all of the Activities listed to deliver the outputs and estimate their individual costs. Enter the costs in the month you expect the activities to be completed. Provide as much detail as possible, (i.e. do not state just the figure for a workshop, but break that down into venue, catering, travel costs etc.). Administration costs should not exceed 10% of the total project costs.*

Co-Funding *Has funding for this project been sought from other donors (EU, DfID, other countries), Private institutions or the host government?* If Yes, please provide details. If No, why not, and were options for doing so explored?	Funding is being sought from the GoJ, through the Caribbean Maritime Institute (CMI), to cover the train-the trainer's expenses: 7-day course at the CMI in Kingston + travel and per diem expenses of the three, selected community members who will become the trainers at he STC.			
Monitoring *Please note that our funding Agreement specifies the need for (at least) quarterly reporting on progress and finances*	**How will the monitoring be carried out**	**When/how often**	**By whom**	**What involvement will the project's Beneficiaries have?**
	Paying regular visits to the project locations and monitoring the activities through active participation in them	At least once a fortnight	Project Manager	In terms of project monitoring and evaluation, the different component leaders from the community will be responsible of working with the SACDA project team to deliver the agreed periodic indicators and reports
	Narrative reports that will include a checklist with indicators and targets achieved during the month and project-to-date	Monthly	Project Officer(s) (supervised by Project Manager)	
	Financial reports that will monitor all project-related expenditures	Monthly	Finance Officer (supervised by Project Manager)	
	Regular visits + site visit forms, training reports, case studies and registers.	At least 3 days/week	Project Officer(s)	

Risks *What are the key risks in implementing this project and how are you going to manage them* *Add more lines as required* *Larger/higher value projects will require a full Risk Management Strategy. You should consider whether one is needed for this project. You should also think here about when risks should be flagged up to Programme Managers in London* Please note when the risk would need to be escalated to the next level in the management chain.	**Risk**	**Impact** Low/Medium/ High	**Likelihood** Low/Medium/ High	**Management**	**Owner**	**Escalation Point**
	The solar PV system fails to work as expected	Medium	Low	To avoid that, the CMI will provide technical advice on the choice of equipment supplier and installer		
	The trained members of the community are no longer available to conduct the trainings at the STC	High	Low	Three community members will attend the train the trainers' courses. Moreover, one of the conditions to receive this training will state that they must at least remain as trainers in the community for five (5) years. This is considered a good balance between cost and insurance against lack of availability of this key resource. CMI also works with communities to design training-of-trainers to ensure that a sufficient number of people are trained to account for potential leakage.		
	Unexpected natural disaster	High	High	The solar panels will be installed with hurricane and earthquake-proof techniques.		
	Lack of Community involvement	High	Low	SACDA does not anticipate any lack of involvement of community residents in the project. SACDA will seek to ensure that community members continue to be integral in all the phases of the project. This level of involvement will result in community members taking ownership for the project.		

	Organizational weaknesses	Medium	Low	SACDA has been chosen to avoid such risks. This local NGO has a proven track record in handholding communities in the Saint Catherine Parish through project implementation.		
Stakeholders *Who are the people or groups with an interest in this project and who will be affected by it and/or can influence its success either positively or negatively? How will you manage your engagement with them?* *Add more lines as required* *Larger/higher value projects will require a full Stakeholder Engagement & Communications Strategy. You should consider whether one is needed for this project.*	**Stakeholders**	**Influence** Low/Medium/ High	**Impact** (Positive or negative) Low/Medium/ High	**Engagement / Communications plan** (How to engage, how often and who by/who to)		**Owner**
	Content community members	High	Positive-High	Regular visits to the community by the Project Officer + reporting to SACDA's manager on the progress of the project.		SACDA
	CMI	Medium	Positive-High	Initial + final meetings to help design the train the trainers' activity and evaluate results of the same.		SACDA
Beneficiary Groups *Describe the level of participation of beneficiary group(s) in planning the project* *Does the plan reflect the wishes/needs of the beneficiaries*	The beneficiaries of the project are the Content community members. They have been involved in the planning process from the very beginning. The Action Plan fully reflects their wishes and needs. A selected group, chosen by the community will be closely involved in the delivery of the project.					
Signature of Implementing Agency Lead Contact						
Date						

Annex 1. Expected long-term results

Solar facilities reduce environmental impacts from local air pollution and greenhouse gas (GHG) emissions responsible for anthropogenic climate change. Although financial assessment has been limited, it is estimated that the social and environmental co-benefits of carbon mitigation may have a higher overall value than those of the energy savings benefits (Levine, et al., 2007).

Environmental

To determine the potential carbon emissions savings from PV technology, the general equation for emissions estimation is used (US Environmental Protection Agency, 2011). The fifteen solar PV cells for the first phase construction under the Community Action Plan for the training facility will save approximately 40 kg of carbon emissions per year. While this is relatively a small amount of avoided emissions on a global scale, it is appropriate given the scale of the project and the overall footprint of the community. Additional social benefits are noted below that increase potential employment in a sector that overall promotes climate smart development.

$E = A \times EF \times (1-ER/100)$

Where:

E = emissions;

A = activity rate;

EF = emission factor, and

ER =overall emission reduction efficiency, %

The activity rate (A) is the energy output of a photovoltaic system. Using the following formula and a simple calculator (Photovoltaic Software, 2012), the activity rate was estimated to be 6.9 MWh/year.

$E = A \times r \times H \times PR$

Where:

E = energy (kWh)

A = total solar panel area (m^2)

r = solar panel yield (%)

H = annual average solar radiation on tilted panels (shadings not included)

PR = performance ratio, coefficient for losses (default value = 0.75)

The total solar panel area is 330 ft2 (30.7 m2). The solar panel yield is the ratio of the power of a solar panel (280 watts) divided by its area, which is 14%. The daily average solar radiation for the southern half of Jamaica is 6-8 $kWh/m^2/day$ (Worldwatch Institute, forthcoming 2013), which is tremendous solar potential. Using the lower end of the range for a conservative estimate, the annual average solar radiation is 2,190 $kWh/m^2/year$. The default performance ratio of 0.75 was used. The Photovoltaic Software calculator had built in assumptions on losses due to the inverter, temperature, AC/DC cable losses, shading, weak irradiation, and dust.

An emission factor (EF) is a representative value for quantity of pollutant released by an associated activity (US Environmental Protection Agency, 2011).The latest available grid emission factor for Jamaica was developed by the Ministry of Science, Technology, Energy and Mining (MSTEM) using the Clean Development Mechanism's (CDM) "Tool to calculate the emission factor for an electricity system" (Government of Jamaica, 2011). The EF is 732.4 kg/MWh.

The overall emission reduction efficiency (ER), also known as the conversion efficiency, of a PV cell is the percentage of the solar energy shining on a PV device that is converted into electricity (US Department of Energy, 2013). Although ER is always improving with advances in technology, the current ER for commercial

crystalline silicon cells ranges from 20% to 27% (National Renewable Energy Laboratory, 2013). To err on the side of caution and provide a conservative estimate, 20% ER is used in the emissions estimation.

In addition to carbon emission reduction, overall, at least 89% of life-cycle air emissions associated with electricity generation could be prevented through the use of PV technology (Fthenakis, Kim, & Alsema, 2008). This includes reductions in emissions of heavy metals such as lead and mercury and other pollutants such as SOx and NOx.

There is also the additional benefit that this centre will act as a place to introduce to Content community members to more efficient cooking technology and reduce the usage of wood and charcoal. A social marketing and behaviour change workshop was held at Princessfield on 15 July 2013 where barriers and solutions to the adoption of LED lighting were identified. The same workshop at Content on the same day identified the barriers and solutions to adopting more efficient cooking technology. The solutions and plans were shared between the two communities. In the workshop focused on cooking, it was identified that the agro-processing center to be established as part of the five-year Community Action Plan would act as a demonstration and promotional site for more efficient cooking techniques including the use of a pressure cooker to reduce the overall amount of time needed to cook.

Solar Job Training Potential

Based upon the survey conducted under AILEG, Content has a community-level unemployment rate of 35%. The use of renewable energy frees up the communities from paying high electricity costs, which allows them to focus their capital on other job creation investments. Through the visioning and action planning process, the communities both identified their first investment to be a solar-powered Solar Training Centre (STC) that also serves as a cyber-centre. Organizations that provide solar technician training have been identified as potential resources for the STC train-the-trainers program, see list below (Chang, 2013) (Forrest, 2013). The purpose of the train-the-trainers program is to have the double benefit of providing capacity and employment to the trainers and increasing the sustainability of the training program through independence of outside training resources.

- Vector Technology
- The National Council on Technical and Vocational Education and Training
- The Caribbean Maritime Institute (CMI)
- Institutions that are currently putting together solar technician training programs are:
    - Human Employment and Resource Training Trust, National Training Agency (HEART Trust/NTA)
    - University of Technology, Jamaica led by the Sustainable Energy Department

The Jamaican Business Development Corporation was also contacted; however, they currently only have an Energy Conservation and Management program for MSME's on conducting energy audits and available energy efficiency solutions (Porter, 2013). They were willing to explore the option to tailor a solar technician training program by tapping into their network of renewable energy industry contacts. Further private industry training providers may materialize through members of the Jamaica Solar Energy Association, which encompass most of Jamaica's solar energy manufacturers and installers.

Of the three training providers currently available, the CMI has been selected as a partner within this proposal, as they have volunteered themselves as a willing partner with an established solar technician training program within Jamaica (Forrest, 2013). They will provide assistance in proposal writing to gain funding from the HEART Trust/NTA and other potential GoJ sources to pay for the trainings to have them at no cost to the communities. They also conduct assessments on the ability and rate and which a community can absorb a training program. This ensures that the maximum number of trainings is provided to use resources the most effectively.

The CMI solar technician trainings generally have an enrolment of 8-15 people of the ages 18-25 years. They target a ratio of 60% men and 40% women trainees; women tend to have better attendance rates at 85%. Youth unemployment and underemployment is an additional issue in Content. The CMI solar technician trainings generally have an enrolment of 8-15 people of the ages 18-25 years.

CMI has a basic Level One training and a Level Two training that can be either three, five or seven days in duration. They have found that the three and five day trainings had a graduation rate of approximately 90-100% while the seven day training had a graduation rate of approximately 60%. CMI notes that most graduates are self-employed after training, and few are employed by others in the larger job market. This is indicative of Jamaica's current market readiness for solar technicians, which is discussed further in the next section.

Men tend to use their training to improve already existing businesses, while women use their training to start new businesses. It should be noted though, that, overall, trained men had a 62% employment rate while trained women had a 53% employment rate (HEART Trust/NTA, 2013). It is likely that, those who are employed by others will be hired by private companies such as the Future Energy Corp. This company estimates that they install 3 kW of solar residential PV on a "regular basis" with a 3-5 person crew per installation, which translates to 2-3 person full-time jobs. However, Future Energy Corp does not provide maintenance, as they lease their solar panels for the period of their useful life (Worldwatch Institute, forthcoming 2013).

The number of people who are able to be trained through the solar technician program depends on a number of limiting factors, which cannot be estimated in a quantitative manner until CMI conducts an assessment of the communities' ability to absorb the training. The job creation potential is dependent upon the following limiting factors:

- Duration and frequency of solar technician training provided; this will be addressed by CMI's assessment of the communities' ability to absorb the training.
- Depending on the duration of the training and time commitment required, the graduation rate varies between 60-100%. People who do not complete training programs are less likely to find employment within the specific field (HEART Trust/NTA, 2013).
- Percentage of trained people that remove themselves from the job market and are not looking for employment, which, nationwide, is 6% (HEART Trust/NTA, 2013). This can be for various reasons such as illness, going back to school, or pregnancy.
- The ability of the solar job market to absorb the training graduates at the various levels of training provided. This is discussed further in the next section, but only estimates are available given the nascent level of Jamaica's solar market. The ability of training graduates overall and by gender to find employment varies by job sector. This information being unavailable is a main constraint to estimating job potential for training graduates.

Assuming that once the STC has been established and the train-the-trainers program has been successful at the end of Year 1 of the Community Action Plans, the communities follow the CMI training model and provide four seven-day training/year to 10 people/training (6 men and 4 women), a very conservative and preliminary calculation can be made on the number of people qualified to enter the solar technician job market and find potential employment within a community. The frequency of four trainings per year should allow for sufficient momentum to be established and to also cater to those who learn at a slower pace.

Estimated Number of People Trained and Employed as Solar Technician

	Female	Male	Total	Assumptions
Enrolled / training	4.0	6.0	10.0	Number enrolled is between 8-15 people; 40% female and 60% male
Graduated / training	3.0	4.5	7.5	75% graduation rate for 7-day training; graduation rate by gender matches enrollment distribution
Actively in job market / training	2.8	4.2	7.1	Nationwide, 6% of training graduates remove themselves from the job market
Employed/training	1.5	2.6	4.1	Nationwide, trained women had a 53% employment rate and trained men had a 62% employment rate; this employment rate does not distinguish between self-employed and employed by others
Employed/year	**6.0**	**10.5**	**16.5**	Four trainings per year

An increase of approximately seven people/year/community employed only provide a 3.2% difference in the current unemployment rate of 35%. However, the benefit to the community is greater than just the employment rate directly associated with those who completed training, although, incrementally, each job created is an improvement. Those potentially hired by those who graduated from training can be counted in the direct employment statistics. This is likely given CMI's assessment that the majority of their graduates is self-employed and uses their training for currently existing and new businesses. In addition to the direct employment, there is indirect employment through the "supplier effect," where demand for upstream and downstream suppliers is increased (Wei, Patadia, & Kammen, 2010). Induced jobs are created through increased activity in the general economy due to spending of direct and indirect employees. In addition, those who attended trainings also went on to higher levels of formal education, which also lead to improved employment potential (HEART Trust/NTA, 2013).

Solar Job Market Demand

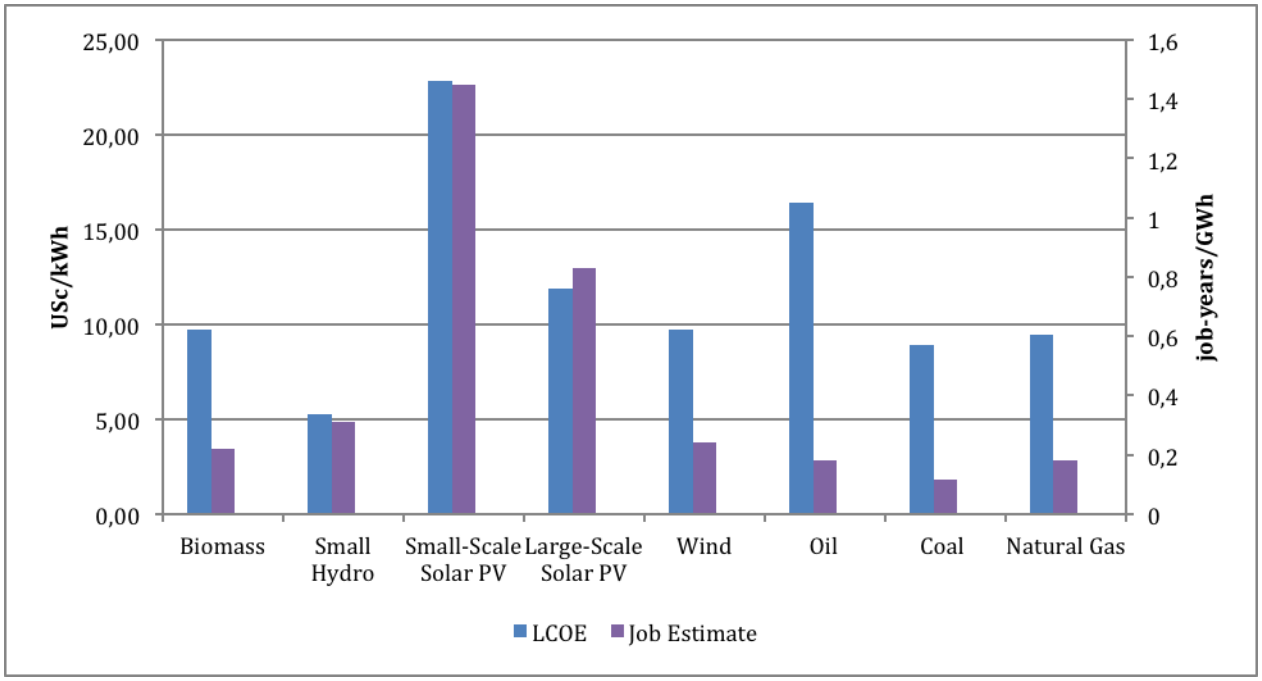
Estimating job creation potential of an activity requires looking at both the supply side (number of people trained) and the demand side (number of available jobs). Given the nascent stage of the Jamaica renewable energy market, only estimates are currently available on the solar job market demand. Through its national energy policy, Vision 2030 Jamaica – National Development Plan and its national renewable energy policy, the GoJ has set targets for 30% of the country's energy mix to come from renewable energy by 2030 (Ministry of Energy and Mining, 2010). Advances have recently been made when the GoJ removed the Petroleum Corporation of Jamaica's exclusive right to develop all renewable energy projects, which has allowed the OUR to release a Request for Proposals to procure 115MW of energy generated from renewable sources, which increases Jamaica's electricity generated from renewables to almost 50% of the target (Jamaica Information Services, 2013). However, it has not been identified whether the Petroleum Corporation of Jamaica (PCJ) and the Centre of Excellence for Renewable Energy (CERE) were successful in their task to develop and implement programs to achieve set obligatory and non-obligatory targets for percentage of renewables in the energy mix (Planning Institute of Jamaica, 2009). This hinders the ability to estimate the number of potential jobs created for the Jamaican solar market specifically. The Labour Market Intelligence and Research Department of HEART Trust/NTA has identified that solar panel installation is a skill that is in demand, but did

not elaborate on the level of demand (HEART Trust/NTA, 2013). It is assumed that is significant enough to warrant them developing a new training program.

Based on a review of fifteen studies on the job creation potential of renewable energy, energy efficiency, and low carbon sources, it is found that jobs within these sectors not only create many jobs that are guaranteed to remain domestic given that they involve construction and installation, but also provide more jobs per unit of energy ("job-years per GWh") delivered than the fossil fuel-based sector (Wei, Patadia, & Kammen, 2010). It was also found that among the common renewable portfolio standards (RPS) technologies, solar photovoltaic (PV) creates the most jobs per unit of electricity output. Globally, for each MW of PV capacity, 30 installation jobs and one maintenance job will be created. It is noted that Jamaica is missing a large opportunity to capture the full in-country employment opportunities by not manufacturing solar technologies (Worldwatch Institute, forthcoming 2013).

The Worldwatch Institute related global multipliers on RPS job-years/GWh created to the Jamaican market (Worldwatch Institute, forthcoming 2013). They compared these to the Levelized Cost of Energy for different energy types based upon inputs from recently built plants, planned projects, and fuel costs in Jamaica specific. Looking at the job-years/GWh created in Figure 2 below, Worldwatch Institute focused on direct jobs, which can be certain to remain within Jamaica; these are jobs in construction, installation, and operation and maintenance (O&M). The jobs in construction and installation are typically concentrated in the first few years of establishing a renewable energy facility while O&M jobs last the full lifespan of the installation. Long-term job creation was estimated by averaging out the jobs over the expected lifetime of new projects, which assumes that new facility installations will continue far into the future. They estimated that approximately 1.5 job-years/GWh will be created within the solar market.

Figure 2 - LCOE & Job Creation Estimates for Various Power Sources



Source: Worldwatch Institute, forthcoming 2013 Jamaica Energy Roadmap

Although these job creation estimates seem low, there is a growing trend to fulfil the commitments made under the Vision 2030, and global statistics support the profitability of the renewable energy sector and its ability to create jobs. If Jamaica went above and beyond their 30% renewable energy goal by 2030, and had a 94% RE share by 2030, they estimated that approximately 4,800 new jobs would be created overall in the renewable energy sector, which is a 50% employment increase in comparison to today's figures. This project will allow the Content community members to take advantage of this market growth and access employment opportunities.

Cyber Centre

Based upon the AILEG quantitative survey within Content, only 18.0% of respondents own a desktop computer, and 33.1% own a laptop computer. The lack of personal access to information from computer technology makes the inclusion of a cyber-center in the project an important component to accessing employment opportunities. They are also places of free, informal training in computer hardware and software usage that is not available elsewhere (Ferlander, 2003).

In addition to access to information to identify training and job prospects and other information, cyber-centers have been found to be important as offline and online meeting-places that foster positive social integration (Ferlander, 2003). Based on quantitative and qualitative research, it was found that cyber-center visitors had more local friends, less social distrust and perceived tensions between different groups in a community. This is an important aspect for youth involvement and integration into the project and the community as a whole.

Part B (to be completed by the Post)

Contact name and details at Post	
How have lessons learned from previous similar projects been taken into consideration in the development of this idea	
What consideration has been given to an exit strategy to ensure that the project does not create dependence? Please provide details	
Evaluation *Will this project be evaluated? If so...*	When
	By Whom
The Implementer *Provide details of any previous work with the Implementing Agency, and relevant background information on financial, reputational, organisational etc issues*	
Will the Implementing partner be sub-contracting any other agencies to carry out elements of the project activities? *If so, Post should ensure correct procurement procedures are followed – see CPG Guidance*	Yes/No
Human rights (HR) assessment *(For projects in the security and justice sectors, you should refer to the FCO Overseas Security and Justice (OSJA) Human Rights Assessment Guidance including Checklist A)*	
Do you consider that there is a serious risk that the	If YES what is the risk:

assistance might directly or significantly contribute to a violation of human rights and/or IHL?	
Specify what those HR/IHL violations are	
Describe the evidence base that has been used to identify and assess the above risks?	
How would the risk of those HR/IHL violations be mitigated	
Once all appropriate mitigating steps have been taken, do you still consider that there is a serious risk that the assistance might directly or significantly contribute to a violation of human rights and/or IHL?	If YES, what are your next steps?
Who will need to approve the HR risk assessment? (refer to the OSJA Guidance) *Programme Manger; Head of Department; DHM; HOM; Ministers?*	
Cross Cutting Issues *What impact will the project have on issues such as the environment, diversity, gender, and human rights?* *Please note both positive and negative possible impacts*	

Can this project be referred to publicly, or are there sensitivities that would preclude publicity. If public, please provide an unclassified form of words describing the project, which can be used in briefing materials.	
Date of Post Programme Board at which the bid was discussed	
Comments from Post Programme Board *[Note: **All** bids must be appraised by the Post Programme Board]* *Include here, information on why the Project was approved, what additional work was needed prior to approval, further information for the Strategic Programme Board in London*	
Signature of Board Chair	
Date	
Once approved by the Post Programme Board, non-Bilateral and non-devolved Programme Budget projects should be forwarded to the Programme Team in London for discussion at the main Programme Board	
Comments from Policy Desk either geographical or thematic *Does the project have the support of the relevant desk?*	
Comments from Strategic Programme Board	
Date	

CONTENT

Summary

COST ITEM (Activity based)	JA$	£	
1.1.	0	0	0%
1.2.	199,500	1,243	3%
1.3.	0	0	0%
2.1.	3,162,400	19,702	40%
3.1.	3,675,120	22,896	47%
4.1.	792,000	4,934	10%
Total project cost	**7,829,021**	**48,775**	**100%**
Requested of FCO	**7,455,521**	**46,448**	
Provided by other donors	**373,500**	**2,327**	
Provided by CMI	157,500	981	
Provided by SACDA	216,000	1,346	
ER (£/JA$)	0.00623		

Equipment

COST ITEM	BUDGET (JA$)	£	Comments
Container (inc. power house)	1,000,000	6,230	Purchasing, transport and installation of the shipping container (with retrofit).
Fencing	409,649	2,552	Includes material and labour (inc. GCT)
Solar panels for power supply (inc. batteries)	3,675,120	22,896	Includes batteries, inverter, switch, etc., and installment cost. Would need 15 panels of 280 watts each, which would use 22 square feet each for a total 330 square feet (max. cost of 15,000 USD).
Solar PV equipment for training purposes	473,997	2,953	One 280 W system (Including batteries).
Access to broad band	55,000	343	8 mega bite internet modem with Lime Phone Company
Personal Computers (PC) x 10	900,000	5,607	JA$90,000 for 1 personal computer (PC) X 10 PC
LaserJet Printer x 1	88,000	548	JA$88,000 for 1 LaserJet printer
Ceiling fans x 3	42,000	262	JA$14,000 for 1 ceiling fan
CFL bulbs x 10	5,000	31	JA$500.00 for 1 CFL blub 10 CFL bulbs
Chairs and tables x 10	130,000	810	JA$3,315 for 1 table and JMMD$9,685 for 1 chair
Erasable Board (for writing) x 2	37,754	235	JA$18,877 for 1 Erasable board (for writing)
Other classroom consumables	21,000	131	Markers, paper, etc.
TOTAL	**6,837,521**	**42,598**	

Training

COST ITEM	BUDGET (JA$)	£	Comments
CMI training	157,500	981	7-day course for 3 people at 7,500 JMD / person / day
		0	
		0	
TOTAL	**157,500**	**981**	

Travel expenses

COST ITEM	BUDGET (JA$)	£	Comments
Travel to attend the training for the trainers course	21,000	131	JA$3,000 for each Return trip from Content to CMI (Kingston) for 3 trainers x 7 days
Meals for trainers	21,000	131	JA$1,000 per Meal per day for 7 days x 3 trainers
		0	
TOTAL	**42,000**	**262**	

SACDA

COST ITEM	BUDGET (JA$)	£	Comments	
Labour (administration and coordination)	396,000	2,467	Coordination (22,000 JA$ / month) for 18 months	
Other admin. costs, % of rent, phone bill & light bill	180,000	1,121	10,000 per month toward SACDA's office rent and utilities (18 months)	
Other Expendable goods	0	0		
TOTAL	**576,000**	**3,588**	Can't be more than 10% of the total project costs	**7.36%**

22,000	JA$ PER MONTH FOR SACDA'S COORDINATION

Funding Source	Total (JA$)	Total (£)	
FCO	7,455,521	46,448	
Proposing Organization (SACDA)	216,000	1,346	In kind contribution - 12,000 JA$ / month (Staff time , use of office space ,
Other co-funders (GoJ through CMI)	199,500	1,243	
			utilities, travelling costs to and from community)

Add additional rows as necessary. All activities listed in the Project Proposal Form must be included.

Activity Number	Activity	Dec	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	March	April	May	Total £
1.1.	**Specific design for Content of the train-of-trainers course by CMI (with SACDA's input).**	**0**																		**0**
1.2.	**Delivery of the 7-day train-of-trainers course at CMI**		**1,243**																	**1,243**
1.2.	CMI cost		981																	981
1.2.	Travel expenses		131																	131
1.2.	Per diems (meals for 3 trainees)		131																	131
1.3.	**Delivery of the 4 yearly trainings at the STC.**				**0**			**0**			**0**			**0**			**0**			**0**
2.1.	**Purchase and installation of refurbished and upgraded shipping container to be used as STC as well as cyber-centre.**		**19,702**																	**19,702**
	Shipping Container (inc. power house)		6,230																	6,230
	Fencing		2,552																	2,552
	Solar PV equipment for training purposes		2,953																	2,953
	Access to broad band		343																	343
	Personal Computers (PC) x 10		5,607																	5,607
	LaserJet Printer x 1		548																	548
	Ceiling fans x 3		262																	262
	CFL bulbs x 10		31																	31
	Chairs and tables x 10		810																	810
	Erasable Board (for writing) x 2		235																	235
	Other classroom consumables		131																	131
3.1.	**Purchase, installation and commissioning of 4 kW solar PV system with back-up batteries.**			**22,896**																**22,896**
4.1.	**Project administration support and coordination by SACDA's dedicated team.**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**4,934**
	Total	**274**	**21,219**	**23,170**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**274**	**48,775**

CALL FOR PROJECT CONCEPTS

GEF SGP Regular Projects
(5th Operational Phase: 2011-2014)

Background

The Global Environment Facility (GEF) Small Grants Programme (SGP) provides to civil society organizations (including national NGOs, community-based organizations, and indigenous peoples organisations) in 126 countries. Grants are provided in the following GEF focal areas: mitigation of climate change (CC), conservation of biodiversity (BD), protection of international waters (IW), reduced impact of chemicals and Persistent Organic Pollutants (POPs), prevention of land degradation (LD), and promotion sustainable forest management (SFM).

SGP also seeks to generate sustainable livelihoods, reduce poverty, and create community empowerment. Grants will be made to a maximum of **US$50,000** of matching co-financing (cash and kind), to registered NGOs and CBOs for projects in the below focal areas including capacity development

AREAS OF FOCUS

A. Biodiversity Conservation

1. Improve sustainability of protected areas and indigenous and community conservation areas (ICCAs) through community-based actions.
2. Mainstream biodiversity conservation and sustainable use into production landscapes, seascapes and Sectors through community initiatives and actions

C. Climate Change (Mitigation)

1. Promote the demonstration, development and transfer of low carbon technologies at the community level.
2. Promote and support energy efficient, low carbon transport at the community level
3. Support the conservation and enhancement of carbon stocks through sustainable management and climate proofing of land use, land use change or forestry.

B. Prevention of Land Degradation:

1. Maintain or improve flow of agro ecosystem and forest ecosystem services to sustain livelihoods of local communities
2. Reduce pressures at community level from competing land uses (in the wider landscapes)

Criteria for Selection

- Limited Funding is available to legally registered NGOs and CBOs for community-based initiatives.
- Projects with tangible co-financing will be of priority.
- Projects should demonstrate collaborations and partnerships with other agencies, as well as broad community participation. with

- Demonstrated ability to manage project processes.
- Projects should be aligned to National Policies/Priorities (i.e. Vision 2030 Jamaica) and the UN Conventions (CBD, UNFCCC, UNCCD) to which Jamaica is a signatory
- Projects should have cross-cutting results in poverty reduction, livelihoods, capacity development and gender with special focus on youth involvement
- **Consideration will not be given to concepts submitted not using the template**

Please submit Projects concepts for SGP **Jamaica** to the following address:

The GEF Small Grants Programme
United Nations Development Building
1-3 Lady Musgrave Road, Kingston 5
OR
E-mail: gefsgpjamaica@gmail.com

For further information please contact the Secretariat at 978-2390-9 ext. 2030/2031
Websites: http://sgp.undp.org

DEADLINE FOR PROJECT CONCEPT SUBMISSION IS:

Friday, May 31, 2013 @ 4:00 p.m.

Project Concept Template- Revised April 2013

Country: _ JAMAICA Submission Date: _____

Project Title: **PRINCESSFIELD SOLAR TRAINING AND CYBER CENTRE**

_____

(Must capture the essence of project and aligns to GEF focal areas)

Name/Type of Organisation: **ST. CATHERINE COMMUNITY DEVELOPMENT AGENCY (SACDA)** _____

Year Established: 1996 Number of Members:

Address: MAIN STREET, BOG WALK P.O. ST. CATHERINE, JAMAICA

Telephone No: (876) 708-2391 E-mail: sacdajm@hotmail.com

Project Contact/Manager: NELLIE RICHARDS (*Name and position) DIRECTOR*

Thematic/Focal Areas addressed by project: ***(please***		**Project Category** ***(please tick)***

tick)			
☐	Conservation of Biodiversity	☒	Demonstration Project
☒	Climate Change (Mitigation)	☒	Capacity Development Project
☐	Land Degradation and Sustainable Forest Management	☐	Information/Networking/Policy Dialogue
		☐	Applied Research/Policy Analysis
	GEF Operational Programme addressed by project (please tick)		
☐	**Land Degradation and Sustainable Forest Management** 15. Sustainable Land Management (including disaster risk reduction)	☒	**Climate Change (Mitigation)** 5. Removal of Barriers to Energy Efficiency and energy conservation
		☒	6. Promoting the adoption of renewable energy
☐	**Conservation of Biodiversity** 1. Arid & Semi-arid ecosystems (dry forest)	☐	11. Promoting Environmentally Sustainable Transportation
☐	2. Coastal, Marine and Freshwater ecosystems		
☐	3. Forest Ecosystems		
☐	4. Mountain Ecosystems		
☐	13. Conservation and Sustainable use of Biological Diversity		
	Vision 2030 Jamaica - Goals # 3 & 4 National Outcomes *(please tick)*		
☒	10. Energy Security and Efficiency		
☐	13. Sustainable Management & Use of Environmental & Natural Resources		
☒	14. Hazard Risk Reduction and Adaptation to Climate Change		
☒	15. Sustainable Urban and Rural Development		
Proposed Start Date: December 2013		Expected Project Duration: 18 months	
Finances			
Total GEF SGP Request		USD 50,000	
Total from other Sources:		USD 77,435	
Total Project Cost:		USD 127,435	
UN Rate of Exchange *(for GEF SGP official use)*			

Please list below the projects information that have been implemented in the last five (5) years.

Project Name	From	To	Donor (s)	Project Budgets (JM$)
Sponsor a Grandparent Programme	2008	2012	HelpAge International	9,671,800.00.00
Alleviating the poverty and socio-economic marginalization of vulnerable multigenerational household in Jamaica	2008	2011	Irish Aid Project via HelpAge International	12,911,000.00
Helping vulnerable populations and communities to manage risks associated with hurricanes and floods (JAM093)	2011	2012	DIPECHO via HelpAge International	3,300,000.00
Basic Needs Project (CAR023)	2012	2013	HelpAge International	1,995,000.00
Building the resilience of vulnerable communities, through community based disaster risk management in Jamaica (JAM094)	2011	2013	USAID via HelpAge International	1,591,500.00
AILEG 014 Community Energy Efficiency and Renewable Energy Action Project	2013	2013	USAID via ABT	3,248,307.50

Concept

This concept includes the following main sections: Project Rationale and Approach (Section A), Project Risks, Monitoring & Evaluation (Section B) and Project Budget (Section C).

SECTION A: PROJECT RATIONALE AND APPROACH

1.1 Project Summary/Problem Statement

Identify the **ENVIRONMENTAL** problem(s) to be addressed. Please note if you cannot clearly identify an environmental problem in a GEF focal Area, then your project cannot be considered for funding by the GEF SGP. Ideas for information to include here are:

- Length of time needs/problems have existed
- State the Impacts of problem to target population on **natural environment** and its effects on human population including impacts on vulnerable groups – poor, youth, elderly, disabled)
- Clearly indicate the cause and effect of the problem being faced
- State whether problem has ever been addressed before, and what the outcome was the impact of the intervention

- State what would result if the problem(s) are not addressed
- For climate change projects, please specify what activities are contributing to exacerbation of the problem, and the negative impacts on the national and global environments.

1.1.1 Project Summary

This climate change mitigation effort is the flagship project identified within the Princessfield five-year Community Energy Efficiency (EE) and Renewable Energy (RE) Action Plan, and is the first of its kind in the community. The Community Action Plan was developed through an interactive and community-driven planning process guided by the St. Catherine Community Development Agency (SACDA) as part of the Government of Jamaica (GOJ) and US Agency for International Development (USAID) project, Analysis and Investment in Low Emission Growth (AILEG). The Action Plan supports the achievement of climate change goals and socio-economic objectives important to the community, including employment and youth engagement.

The flagship project is the establishment of a solar-powered training facility for solar technician training and a cyber-centre. Although the solar PV system will only service the training facility/cyber-centre, it will be used as a demonstration for the community residents and other community groups in Jamaica to replicate. The solar PV system will be comprised of 15 panels of 280 watts each with an area of 22 ft^2 (2.04 m^2) each for a total 330 ft^2 (30.7 m^2), and battery storage to act as a disaster risk reduction measure for continued power availability during storms or other periods with low sun irradiance. The cyber-centre will contain ten desktop computers and one printer. The facility will be lit with compact fluorescent lights (CFL) as an additional energy efficiency measure.

1.1.2 Problem Statement

As an island country, Jamaica's agriculture, forestry, energy, and infrastructure sectors are particularly vulnerable to changes in severe events, temperature, sea-level rise, and precipitation. Jamaica damages were in excess of US$1.4 billion, or about J$120 billion, over the last eight years following the passage of several storms and hurricanes. Jamaica's Office of Disaster Preparedness and Emergency Management spends approximately $14 billion per year repairing damage caused by hurricanes and floods. With a majority of its population (82%), agriculture, and tourism industry located within 5 km of the coastline, any increases in the severity or magnitude of tropical storms will have deleterious impacts on national growth and livelihoods.

For the past decade, the Government of Jamaica (GOJ) has actively implemented a number of climate change adaptation and mitigation programs and policies. In 2009, Jamaica's Vision 2030 National Development Plan and the GOJ Medium Term Socio-Economic Policy Framework for 2009-2012 established the intermediate and long-term roadmaps for realizing sustainable development goals – while building climate change resilience and reducing the rate of growth in emissions. In June 2011, the Second National Communications of Jamaica was submitted to the United Nations Framework Convention on Climate Change (UNFCCC). In April 2012, the GOJ established a climate change advisory committee within the Climate Change Department under the Ministry of Water, Land, Environment, and Climate Change (MWLECC). The new climate change department, recently established, will prepare a climate change policy, continue awareness-building on climate change issues, and seek additional bilateral and multi-lateral support for climate change projects.

In Jamaica, policy and plans seem to stall during implementation, for several reasons including lack of stakeholder engagement, a sound analytical framework to assess costs and benefits, and a legal framework to spur grid-scale investment in renewable energy. The issues above have caused inertia in addressing the underlying framework required to promote large-scale investments in renewable energy and energy efficiency. However, the economic motivation exists at the community level to find replacements for and reduce demand for expensive fossil-fuel generated power. These communities are becoming even more vulnerable as climate change is affecting thousands of persons in Jamaica, especially those who are more vulnerable and dependent such as the farmers, the elderly, and women with many children and the disabled. Therefore, there is a significant

opportunity to promote investments in EE and RE at the local level, and to integrate it with local economic and climate change adaptation planning.

Princessfield in the St. Catherine Parish was selected for participation in the GOJ and US Agency for International Development (USAID) project, Analysis and Investment in Low Emission Growth (AILEG), based on its long-standing characteristics of underdevelopment and vulnerability to natural and man-made disasters especially frequent and prolong drought conditions, hurricanes and landslides resulting in destruction of the already deteriorating road network, houses, buildings, agriculture crops and livestock which is the main source of livelihood. Princessfield, though not an urban center, bears characteristics of inner city communities such as squatting, "tenement yard setting, frequent incidence of crime and violence, high level of unemployment and underemployment especially among women and youth.

A quantitative survey was conducted under AILEG within Princessfield. Most respondents were either 'unemployed' (37%) or 'self-employed' (33%). Approximately one in every ten respondent was either 'employed' (15%) or 'retired' (9%). The significant majority of respondents earned less than $50,000 per month for salary (94%), with the remaining 6% earning between $50,000 and & 70,000 per month. Most respondents had a monthly electricity bill between $3,001- $4,000 (18%) and $5,001-$ 6,000 (13%). Approximately one in every ten respondent also paid more than $10,000. The majority of respondents' indicated that the cost of electricity was not affordable – approximately six out of every ten respondent (62%). Although the production of electricity from liquid petroleum gas and its associated environmental and climate change impacts is not within the control of the communities, the affordability of their main available electricity source has bearing on livelihood and cooking fuel options. Without an affordable source of electricity, community members have had to make choices between affording education for themselves and their family, which decreases their options for employment. It has also hampered efforts for community businesses; one resident gave testimony that they had a deep freezer for chicken storage to increase the volume of sales and flexibility to market demands, but that the cost of the electricity was too prohibitive. Lastly, it has an indirect effect on the type of cooking fuel used. Approximately half of the Princessfield respondents stated that they either "cook some of the time with gas and some of the time with coal/wood" (27%) or "cook with only wood" (25%) with cost being the primary reason (97%) for not cooking with gas. Although no local deforestation was evident in Princessfield to the AILEG team, there are still the associated climate change impacts of tree removal and burning and the health impacts of smoke inhalation.

Previously in February 2012, Princessfield conducted, with the support of the Jamaica Red Cross Society and the St. Catherine Community Development Agency (SACDA), a vulnerability and capacity assessment. This led to the establishment of a community Disaster Risk Reduction (DRR) team to prepare and respond to impacts from natural disasters. Activities consist of, for example, trimming trees near power lines in preparation for hurricanes. Although this effort is an effort to reduce community vulnerability to natural disasters, it does not focus on the livelihood and employment generation through energy efficiency (EE) and renewable energy (RE) as this project does.

Under AILEG, with further support from SACDA, Princessfield developed a five-year, community-based EE and RE action plans to support achievement of climate change goals and socio-economic objectives important to the community, including employment and youth engagement. Princessfield identified as their Community Action Plan flagship project the aforementioned solar-powered training facility and cyber centre. However, access to funds is a major constraint to implementation of their Community Action Plan, which aims to address the above issues through the ability to gain employment skills and access to information at a training facility and cyber centre with minimal costs associated with electricity usage.

1.2 Organisational Background

SACDA has the experience, capacity and commitment to successfully implement the proposed project. Below we present a summarised profile describing its main characteristics.

Profile

The St. Catherine Community Development Agency, (SACDA) is a Community-Based Voluntary, Non-Governmental Organisation located in Bog Walk, in the Parish of St. Catherine, Jamaica. The Agency operates in several poor communities in the Parish of St. Catherine. These communities include: Giblatore, Springvale, Bowers Wood, Lime Walk, Cameron, Content, Trafalgar, Barry, Deeside, Princessfield, Browns Hall more recently Riversdale and Ginger Ridge. SACDA is a legal entity registered with The Office of the Registrar of Companies, **Registration # 80597.**

Community Development, with an emphasis on children and their families, commenced in these communities in April 1993. Save the Children-Canada (SCC) facilitated the growth of these community Organisations and subsequently SACDA. This was in keeping with one of SCC's objectives, to foster the development of local autonomous organisations that are committed to the Rights of the Child. Save the Children-Canada assisted with the formal establishment of SACDA in April 1996.

The communities served by SACDA have a combined population of approximately 10,000 persons, 70% of who are women and children. They communities are characterised by both public and private property and are underdeveloped due to their remote geographic locations. This even makes them very slow to receive assistance for development.

The lack of access to basic facilities such as piped water, proper roads, land, telephone and public transportation are evident. Residents gain employment largely through farming on small plots of hilly land or by offering their labour at estates outside of the community. Income resulting from these types of employment is therefore understandably low and as a result, hinders the development of the residents.

SACDA, as a result of being a part of the Community, is able to understand its communities and help to analyse their situation to assess the underlying causes of their poverty. SACDA understands the importance of personal development through community development.

Structure

The Agency is governed by a Board of Directors. Day-to-day operations are the responsibility of an Executive Director who reports directly to the Board of Directors. Three Project Officers, one Administrative Assistant and an Office Attendant complete the staff. The office is located in Bog Walk, St. Catherine. The Organisation has registered members from the selected communities.

Mission

SACDA is an organisation committed to the strengthening of community organisations. It is dedicated to realising its goal by promoting participation, self-reliance and sustainable development to improve the lives of children, youth, the elderly and their families living in target communities in the Parish of St. Catherine, Jamaica.

Objectives

SACDA's main objectives are:

1. To improve the social and economic conditions of life of marginalized children, youth, the elderly and their families living in the target communities.
2. To strengthen the capacity of community groups to effectively undertake social, economic, environmental, health and educational programmes.

Track record

SACDA's track record is shown in Annex 1 of this document.

Affiliations and sponsors

SACDA has received funding and technical assistant from the following Agencies:

- Save the Children-Canada (SCC)
- Canada Fund
- Help Age International (H.A.I.) (present)
- Social Development Commission (SDC)

- Jamaica Cultural Development Commission (JCDC)
- Association of Development Agencies (ADA)
- Jamaica Coalition on the Rights of the Child (JCRC)
- Food for the Poor Organisation
- National Council for Senior Citizen
- Environmental Foundation of Jamaica (EFJ)
- Enhancing Civil Society
- Inter American Development Bank (IADB)
- Ministry of Water and Housing
- United Nation Development Programme (UNDP) Life
- Christian Children Fund of Canada (CCFC)
- Irish Aid
- USAID

1.3 Project Objectives and Expected Results

Please indicate the problem statement, the primary objective and specific objectives and your justification for the project. Justification should indicate the importance of the project to the GEF Small Grants Programme in terms of contributing to its overall specific focal area objectives. Project should also reflect the relationship with **goals 3 and 4** of the National Plan – Vision 2030. Please state the expected results and location of your project. A site map would be very useful.

1.3.1 Problem Statement

In the Princessfield community the lack of access to affordable energy coupled with the lack of livelihood alternatives yields a bleak picture in terms of a future for its residents, especially the young. Moreover, the energy used by households and small and micro businesses is all fossil fuel based (electricity from the grid, wood charcoal, liquefied natural gas and/or firewood). Please see Section 1.1.1 for a detailed Problem Statement.

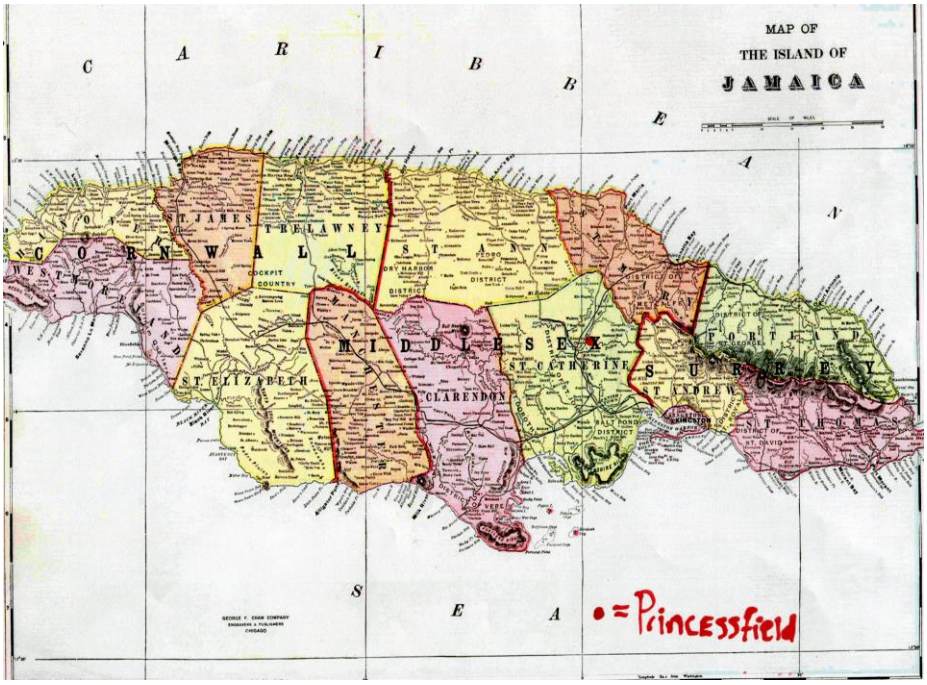
1.3.2 Primary Objective

The overall goal of the project is two-fold:

- To increase livelihood opportunities through capacity building (training) activities in the Princessfield community by 2018;
- To contribute to climate change mitigation through the use of RE and fostering of EE habits to encourage livelihood development as well as providing skills training for community members.

The location of the Project, in Princessfield, is identified in the following figure:

Figure 1 – Location of the Project



The Community has broken down this overall goal into the following specific objectives and expected results during a 5-year period (2013 – 2018).

Project Objectives

#	Objective	Results
1	To help alleviate poverty and improve lives through provision of training and renewable energy for development of livelihood activities in the Princessfield community	Community centre: • Is refurbished and fully powered by solar energy; • Offers cyber centre services at affordable rates; • Provides training for employment; • Has a business incubator and a business centre for micro businesses.
2	To increase knowledge about Energy Efficiency and Renewable Energy and stimulate behaviour change amongst the Princessfield community residents through education, public awareness programs and social marketing programs	Community residents change their energy use habits as they become more aware of the importance of saving energy and how they can contribute to climate change mitigation.
3	To secure funding to support development of programs including income generation activities	Securing adequate funding to support implementation of planned actions to initiate EE & RE activities in the community
4	To lead the community's development through a well established and legally registered community organization	Establishment of a legal community organization leading community development activities and monitoring implementation of projects and

		programmes

1.3.3 Project Justification

Objectives 1 and 2 will contribute directly to the SGP and Vision 2030 goals, while objectives 3 and 4 will only do so indirectly (could be considered as 'operating' goals to make the first two possible). In this sense, the matrix below indicates the relevance of the first two objectives to the SGP and Vision 2030 goals:

Relevance of the Project Objectives

	STRATEGIC OBJECTIVE #1	STRATEGIC OBJECTIVE #2
SGP Focal Area: Climate Change Mitigation (CCM)	Promoting the adoption of renewable energy (RE) through (i) a demonstration project at the community centre and (ii) training of local residents in the installation and O&M of small-scale solar PV systems	Removal of barriers to energy efficiency (EE) and energy conservation (EC) through an education and information campaign in the community to foster change in habits
V-2030: Energy Security and Efficiency	Energy security through autonomous renewable energy supply	EE promotion through an education and information campaign in the community to foster change in habits
V-2030: Hazard Risk Reduction and Adaptation to Climate Change	Increase in climate change resilience through the use of RE	
V-2030: Sustainable Urban and Rural Development	Use of RE contributes to sustainable development (SD) mainly through (i) a decrease in greenhouse gas emissions (GHG) and (ii) a reduction in the cost of electricity	Increase in EE habits contributes to SD mainly through (i) a decrease in greenhouse gas emissions (GHG), (ii) a reduction in the cost of electricity and (iii) improved health conditions at home

More specifically, this proposal seeks funding for the first activity of the five-year plan: The **set-up of a fully solar-powered community centre that would act as a Solar Training Centre (STC) as well as Cyber Centre.** This would entail the following supporting activities:

- Installation of a 4 kW solar PV system to provide power to the STC;
- Upgrading of community centre as classroom – cyber centre;
- Design of a tailor-made 'train-the-trainers' training program in installation, operation and maintenance (O&M) of small-scale solar PV systems. The Caribbean Maritime Institute (CMI) would be responsible for this as a partner in this initiative;
- Training of three community members as trainers at the CMI. They would then be responsible for delivering the trainings at the STC.

1.3.4 Expected Results

Solar facilities reduce environmental impacts from local air pollution and greenhouse gas (GHG) emissions responsible for anthropogenic climate change. Although financial assessment has been limited, it is estimated that the social and environmental co-benefits of carbon mitigation may have a higher overall value than those of the energy savings benefits (Levine, et al., 2007).

Environmental

To determine the potential carbon emissions savings from PV technology, the general equation for emissions estimation is used (US Environmental Protection Agency, 2011). The fifteen solar PV cells for the first phase construction under the Community Action Plan for the training facility will save approximately 40 kg of carbon emissions per year. While this is relatively a small amount of avoided emissions on a global scale, it is appropriate given the scale of the project and the overall footprint of the community. Additional social benefits are noted below that increase potential employment in a sector that overall promotes climate smart development.

$E = A \times EF \times (1-ER/100)$

Where:

E = emissions;

A = activity rate;

EF = emission factor, and

ER =overall emission reduction efficiency, %

The activity rate (A) is the energy output of a photovoltaic system. Using the following formula and a simple calculator (Photovoltaic Software, 2012), the activity rate was estimated to be 6.9 MWh/year.

$E = A \times r \times H \times PR$

Where:

E = energy (kWh)

A = total solar panel area (m^2)

r = solar panel yield (%)

H = annual average solar radiation on tilted panels (shadings not included)

PR = performance ratio, coefficient for losses (default value = 0.75)

The total solar panel area is 330 ft2 (30.7 m2). The solar panel yield is the ratio of the power of a solar panel (280 watts) divided by its area, which is 14%. The daily average solar radiation for the southern half of Jamaica is 6-8 $kWh/m^2/day$ (Worldwatch Institute, forthcoming 2013), which is tremendous solar potential. Using the lower end of the range for a conservative estimate, the annual average solar radiation is 2,190 $kWh/m^2/year$. The default performance ratio of 0.75 was used. The Photovoltaic Software calculator had built in assumptions on losses due to the inverter, temperature, AC/DC cable losses, shading, weak irradiation, and dust.

An emission factor (EF) is a representative value for quantity of pollutant released by an associated activity (US Environmental Protection Agency, 2011).The latest available grid emission factor for Jamaica was developed by the Ministry of Science, Technology, Energy and Mining (MSTEM) using the Clean Development Mechanism's (CDM) "Tool to calculate the emission factor for an electricity system" (Government of Jamaica, 2011). The EF is 732.4 kg/MWh.

The overall emission reduction efficiency (ER), also known as the conversion efficiency, of a PV cell is the percentage of the solar energy shining on a PV device that is converted into electricity (US Department of Energy, 2013). Although ER is always improving with advances in technology, the current ER for commercial crystalline silicon cells ranges from 20% to 27% (National Renewable Energy Laboratory, 2013). To err on the side of caution and provide a conservative estimate, 20% ER is used in the emissions estimation.

In addition to carbon emission reduction, overall, at least 89% of life-cycle air emissions associated with electricity generation could be prevented through the use of PV technology (Fthenakis, Kim, & Alsema, 2008). This includes reductions in emissions of heavy metals such as lead and mercury and other pollutants such as SOx and NOx.

There is also the additional benefit that this center will act as a place to introduce to Princessfield community members to more efficient cooking technology and reduce the usage of wood and charcoal. A social marketing and behavior change workshop was held at Princessfield on 15 July 2013 where barriers and solutions to the adoption of LED lighting were identified. The same workshop at Content on the same day identified the barriers and solutions to adopting more efficient cooking technology. The solutions and plans were shared between the two communities. In the workshop focused on cooking, it was identified that the agro-processing center to be established as part of the five-year Community Action Plan would act as a demonstration and promotional site for more efficient cooking techniques including the use of a pressure cooker to reduce the overall amount of time needed to cook.

Solar Job Training Potential

Based upon the survey conducted under AILEG, Princessfield has a community-level unemployment rate of 37%. The use of renewable energy frees up the communities from paying high electricity costs, which allows them to focus their capital on other job creation investments. Through the visioning and action planning process, the communities both identified their first investment to be a solar-powered Solar Training Centre (STC) that also serves as a cyber-centre. Organizations that provide solar technician training have been identified as potential resources for the STC train-the-trainers program, see list below (Chang, 2013) (Forrest, 2013). The purpose of the train-the-trainers program is to have the double benefit of providing capacity and employment to the trainers and increasing the sustainability of the training program through independence of outside training resources.

- Vector Technology
- The National Council on Technical and Vocational Education and Training
- The Caribbean Maritime Institute (CMI)
- Institutions that are currently putting together solar technician training programs are:
    - Human Employment and Resource Training Trust, National Training Agency (HEART Trust/NTA)
    - University of Technology, Jamaica led by the Sustainable Energy Department

The Jamaican Business Development Corporation was also contacted; however, they currently only have an Energy Conservation and Management program for MSME's on conducting energy audits and available energy efficiency solutions (Porter, 2013). They were willing to explore the option to tailor a solar technician training program by tapping into their network of renewable energy industry contacts. Further private industry training providers may materialize through members of the Jamaica Solar Energy Association, which encompass most of Jamaica's solar energy manufacturers and installers.

Of the three training providers currently available, the CMI has been selected as a partner within this proposal, as they have volunteered themselves as a willing partner with an established solar technician-training program within Jamaica (Forrest, 2013). They will provide assistance in proposal writing to gain funding from the HEART Trust/NTA and other potential GoJ sources to pay for the trainings to have them at no cost to the communities. They also conduct assessments on the ability and rate and which a community can absorb a training program. This ensures that the maximum number of trainings is provided to use resources the most effectively.

The CMI solar technician trainings generally have an enrolment of 8-15 people of the ages 18-25 years. They target a ratio of 60% men and 40% women trainees; women tend to have better attendance rates at 85%. CMI has a basic Level One training and a Level Two training that can be either three, five or seven days in duration. They have found that the three and five day trainings had a graduation rate of approximately 90-100% while the seven day training had a graduation rate of approximately 60%. CMI notes that most graduates are self-employed

after training, and few are employed by others in the larger job market. This is indicative of Jamaica's current market readiness for solar technicians, which is discussed further in the next section.

Men tend to use their training to improve already existing businesses, while women use their training to start new businesses. It should be noted though, that, overall, trained men had a 62% employment rate while trained women had a 53% employment rate (HEART Trust/NTA, 2013). It is likely that, those who are employed by others will be hired by private companies such as the Future Energy Corp. This company estimates that they install 3 kW of solar residential PV on a "regular basis" with a 3-5 person crew per installation, which translates to 2-3 person full-time jobs. However, Future Energy Corp does not provide maintenance, as they lease their solar panels for the period of their useful life (Worldwatch Institute, forthcoming 2013).

The number of people who are able to be trained through the solar technician program depends on a number of limiting factors, which cannot be estimated in a quantitative manner until CMI conducts an assessment of the communities' ability to absorb the training. The job creation potential is dependent upon the following limiting factors:

- Duration and frequency of solar technician training provided; this will be addressed by CMI's assessment of the communities' ability to absorb the training.
- Depending on the duration of the training and time commitment required, the graduation rate varies between 60-100%. People who do not complete training programs are less likely to find employment within the specific field (HEART Trust/NTA, 2013).
- Percentage of trained people that remove themselves from the job market and are not looking for employment, which, nationwide, is 6% (HEART Trust/NTA, 2013). This can be for various reasons such as illness, going back to school, or pregnancy.
- The ability of the solar job market to absorb the training graduates at the various levels of training provided. This is discussed further in the next section, but only estimates are available given the nascent level of Jamaica's solar market. The ability of training graduates overall and by gender to find employment varies by job sector. This information being unavailable is a main constraint to estimating job potential for training graduates.

Assuming that once the STC has been established and the train-the-trainers program has been successful at the end of Year 1 of the Community Action Plans, the communities follow the CMI training model and provide four seven-day training/year to 10 people/training (6 men and 4 women), a very conservative and preliminary calculation can be made on the number of people qualified to enter the solar technician job market and find potential employment within a community. The frequency of four trainings per year should allow for sufficient momentum to be established and to also cater to those who learn at a slower pace.

Estimated Number of People Trained and Employed as Solar Technician

	Female	Male	Total	Assumptions
Enrolled	4.0	6.0	10.0	Number enrolled is between 8-15 people; 40% female and 60% male
Graduated	3.0	4.5	10.0	75% graduation rate for 7-day training; graduation rate by gender matches enrolment distribution
Actively in job market	2.8	4.2	7.1	Nationwide, 6% of training graduates remove themselves from the job market

Employed/training	1.5	2.6	4.1	Nationwide, trained women had a 53% employment rate and trained men had a 62% employment rate; this employment rate does not distinguish between self-employed and employed by others
Employed/year	**6.0**	**10.5**	**16.5**	Four trainings per year

An increase of approximately seven people/year/community employed only provide a 1.6% difference in the current unemployment rate of 37%. However, the benefit to the community is greater than just the employment rate directly associated with those who completed training, although, incrementally, each job created is an improvement. Those potentially hired by those who graduated from training can be counted in the direct employment statistics. This is likely given CMI's assessment that the majority of their graduates is self-employed and uses their training for currently existing and new businesses. In addition to the direct employment, there is indirect employment through the "supplier effect," where demand for upstream and downstream suppliers is increased (Wei, Patadia, & Kammen, 2010). Induced jobs are created through increased activity in the general economy due to spending of direct and indirect employees. In addition, those who attended trainings also went on to higher levels of formal education, which also lead to improved employment potential (HEART Trust/NTA, 2013).

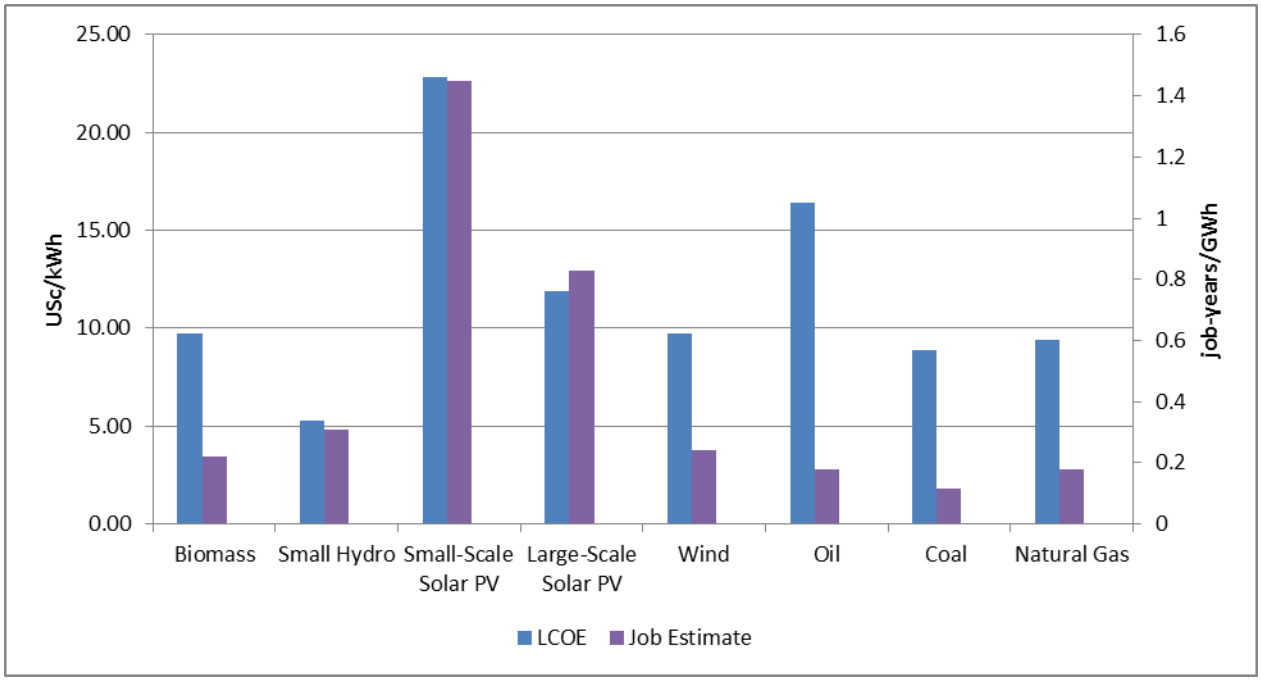
Solar Job Market Demand

Estimating job creation potential of an activity requires looking at both the supply side (number of people trained) and the demand side (number of available jobs). Given the nascent stage of the Jamaica renewable energy market, only estimates are currently available on the solar job market demand. Through its national energy policy, Vision 2030 Jamaica – National Development Plan and its national renewable energy policy, the GoJ has set targets for 30% of the country's energy mix to come from renewable energy by 2030 (Ministry of Energy and Mining, 2010). Advances have recently been made when the GoJ removed the Petroleum Corporation of Jamaica's exclusive right to develop all renewable energy projects, which has allowed the OUR to release a Request for Proposals to procure 115MW of energy generated from renewable sources, which increases Jamaica's electricity generated from renewables to almost 50% of the target (Jamaica Information Services, 2013). However, it has not been identified whether the Petroleum Corporation of Jamaica (PCJ) and the Centre of Excellence for Renewable Energy (CERE) were successful in their task to develop and implement programs to achieve set obligatory and non-obligatory targets for percentage of renewables in the energy mix (Planning Institute of Jamaica, 2009). This hinders the ability to estimate the number of potential jobs created for the Jamaican solar market specifically. The Labour Market Intelligence and Research Department of HEART Trust/NTA has identified that solar panel installation is a skill that is in demand, but did not elaborate on the level of demand (HEART Trust/NTA, 2013). It is assumed that is significant enough to warrant them developing a new training program.

Based on a review of fifteen studies on the job creation potential of renewable energy, energy efficiency, and low carbon sources, it is found that jobs within these sectors not only create many jobs that are guaranteed to remain domestic given that they involve construction and installation, but also provide more jobs per unit of energy (''job-years per GWh'') delivered than the fossil fuel-based sector (Wei, Patadia, & Kammen, 2010). It was also found that among the common renewable portfolio standards (RPS) technologies, solar photovoltaic (PV) creates the most jobs per unit of electricity output. Globally, for each MW of PV capacity, 30 installation jobs and one maintenance job will be created. It is noted that Jamaica is missing a large opportunity to capture the full in-country employment opportunities by not manufacturing solar technologies (Worldwatch Institute, forthcoming 2013).

The Worldwatch Institute related global multipliers on RPS job-years/GWh created to the Jamaican market (Worldwatch Institute, forthcoming 2013). They compared these to the Levelized Cost of Energy for different energy types based upon inputs from recently built plants, planned projects, and fuel costs in Jamaica specific. Looking at the job-years/GWh created in Figure 2 below, Worldwatch Institute focused on direct jobs, which can be certain to remain within Jamaica; these are jobs in construction, installation, and operation and maintenance (O&M). The jobs in construction and installation are typically concentrated in the first few years of establishing a renewable energy facility while O&M jobs last the full lifespan of the installation. Long-term job creation was estimated by averaging out the jobs over the expected lifetime of new projects, which assumes that new facility installations will continue far into the future. They estimated that approximately 1.5 job-years/GWh will be created within the solar market.

Figure 2 - LCOE & Job Creation Estimates for Various Power Sources



Source: Worldwatch Institute, forthcoming 2013 Jamaica Energy Roadmap

Although these job creation estimates seem low, there is a growing trend to fulfil the commitments made under the Vision 2030, and global statistics support the profitability of the renewable energy sector and its ability to create jobs. If Jamaica went above and beyond their 30% renewable energy goal by 2030, and had a 94% RE share by 2030, they estimated that approximately 4,800 new jobs would be created overall in the renewable energy sector, which is a 50% employment increase in comparison to today's figures. This project will allow the Princessfield community members to take advantage of this market growth and access employment opportunities.

Cyber Centre

Based upon the AILEG quantitative survey within Princessfield, only 12.1% of respondents own a desktop computer, and 23.9% own a laptop computer. The lack of personal access to information from computer technology makes the inclusion of a cyber-centre in the project an important component to accessing employment opportunities. They are also places of free, informal training in computer hardware and software usage that is not available elsewhere (Ferlander, 2003).

In addition to access to information to identify training and job prospects and other information, cyber-centres have been found to be important as offline and online meeting-places that foster positive social integration (Ferlander, 2003). Based on quantitative and qualitative research, it was found that cyber-centre visitors had more local friends, less social distrust and perceived tensions between different groups in a community. This is an important aspect for youth involvement and integration into the project and the community as a whole.

1.4 Plan to Ensure Community Participation

Describe how the stakeholder communities **were** involved in the **project planning and design** and will be involved in: 1) **project implementation** and ii) **project monitoring and evaluation**. This information will serve as a basis for assessing and understanding community participation and ownership.

1.4.1 Community Project Planning and Design

The Princessfield community was involved in project planning and design participating in a thorough consultation and visioning process as part of the community-based clean energy action plan component of AILEG.[2] In this sense, community-based energy efficiency (EE) and renewable energy (RE) Action Plans have been developed in two communities of the St Catherine Parish (Princessfield and Content) to support achievement of climate change goals and socio- economic objectives important to the community, including employment and youth engagement. The consultative process was executed - using participatory methodologies such as focus groups - over a three-month period that commenced on April 1st and ended on June 30th, 2013.
The Community- based Organization (CBO) St. Catherine Development Agency (SACDA) has been working with these communities to carry out the Project design and planning. The CBO and communities were chosen through a competitive bidding process. The short project period is strongly supported by the social capital that the CBO has developed with the participating communities over the past 19 years.

1.4.2 Community Project Implementation

The Princessfield community will be integrally involved in the project implementation phase. The community was engaged from the assessment and planning phases of the proposed project. It was through community engagement that the ideas were conceptualized and the Action plan formulated.
Through the AILEG project, the community members have selected zone leaders to represent different sections of the Princessfield community; they have also selected leaders for the various components of the five-year Strategic Plan. Therefore, due to the already wide involvement and acceptance of the project in the Princessfield community, community involvement in the project is guaranteed.

1.4.3 Community Monitoring and Evaluation

In terms of project monitoring and evaluation, the different component leaders from the community will be responsible of working with the SACDA project team to deliver the agreed periodic indicators and reports (see section 2.2. below).

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[2] The United States Agency for International Development (USAID) is funding the *Analysis and Investment in Low-Emission Growth (AILEG)* project to assist countries, including Jamaica, to build the capacity of Governments and other stakeholders to analyze low emissions scenarios and integrate them into economic development strategic planning and implementation, as well as conducting economic analysis to Promote investment in low emissions technologies and projects. The USAID's AILEG program supports climate change analytical decision-making and is providing assistance to the Government of Jamaica (GOJ) on several capacity-building activities to support low emissions development strategies (LEDS).

1.5 Knowledge Management

Please describe how you plan to capture, share and disseminate the knowledge, lessons learnt and good practices gained through the implementation of the project.

Knowledge Sharing can be one of the most competitive advantages for SACDA in a global economy.

- Princessfield Solar Training and Cyber **C**entre will be used as a spring board into action for other community groups/ Agencies;
- SACDA will log lessons learn during the life of the project. The lessons learnt will be shared with other Government and non Government institutions;
- SACDA will record testimonies of community residents as they share their experiences on a one-to-one basis or through the existing community groups;
- Princessfield Solar Training and Cyber Centre will be open for other groups/ Agencies to visit and learn from the experience and methodology;
- SACDA will be using social networks to share information about the project;
- SACDA will use and share best practices with other groups / Agencies at organised Forums and during visits from other groups to the Project.

1.6 Gender Mainstreaming

Please describe how the project takes into consideration, the roles and needs of the men and women (with focus on the needs of women) and how this would be reflected in the results and benefits of the project.

Whilst the project has no explicit gender focus, it will take into account the specific needs of women, men and youth (especially male). Many of the women are sole-breadwinners for their families and head multi-generational households, while a number of the youths living in the Princessfield community who are unemployed and underemployed will be encouraged to get involved in the project. Additionally, as previously mentioned, the CMI solar technician trainings target a ratio of 60% men and 40% women trainees; women tend to have better attendance rates at 85%. Future components of the Community Action Plan, such as the agro-processing center, provide business opportunities that are inclusive to both genders.

1.7 Communication and Replication of Project Results

Please describe how you would communicate the goals, activities and results of the project with the community members, other community-based organisations and other key stakeholders. If the project requires awareness-raising at the local level, please describe the plan/activities you would use to achieve the targeted results and ensure replication of project results.

SACDA will carry out one workshop per year during the 5-year horizon of the Strategic Plan to communicate the results and lessons learned to key stakeholders.
Given the common profile of the Princessfield community (i.e. similar to many other semi-urban communities in Jamaica), it is estimated that the project is highly replicable.

SECTION B: PROJECT RISKS, MONITORING & EVALUATION

2.1 Risks to successful implementation

Please identify and list the major risk factors that could result in the project not producing the expected results. These should include both internal factors to the project (e.g. the technology involved failed to work as expected,

key resource people are no longer available to provide technical expertise) and external factors to the project (e.g. the currency exchange rate drops, unexpected natural disasters, community involvement, organizational weaknesses. How will you cope with these risks? What are the key assumptions on which the feasibility of the project is based? (i.e. government environmental policy remaining stable).

The following table summarizes the identified risks and the corresponding mitigation measures:

Risk	Mitigation measure
Internal Factors	
The solar PV system fails to work as expected	To avoid that, the CMI will provide technical advice on the choice of equipment supplier and installer
The trained members of the community are no longer available to conduct the trainings at the STC	Three community members will attend the train the trainers' courses. Moreover, one of the conditions to receive this training will state that they must at least remain as trainers in the community for five (5) years. This is considered a good balance between cost and insurance against lack of availability of this key resource.
External Factors	
Unexpected natural disaster	The solar panels will be installed with hurricane-proof techniques.
Lack of Community involvement	SACDA does not anticipate any lack of involvement of community residents in the project. SACDA will seek to ensure that community members continue to be integral in all the phases of the project. This level of involvement will result in community members taking ownership for the project.
Organizational weaknesses	SACDA has been chosen to avoid such risks. This local NGO has a proven track record in handholding communities in the Saint Catherine Parish through project implementation.

Key assumptions for project feasibility

There are two key assumptions:

- Constant involvement of key people in the community; and
- People coming out of the trainings will be able to find jobs in the Jamaican solar market (and thus bring increased incomes into the community).

2.2 Project Management, Monitoring and Evaluation

Provide details of the structure and function of the project team that will be responsible for the successful implementation of the project. The project should be monitored in accordance with the workplan. Explain how project will be monitored and evaluated - this should both during its implementation (field activities) and at completion (review and analysis). State clearly how the participation of community members in the project monitoring and evaluation processes will be achieved.

The project team will be comprised of a Project Manager, a project Officer and a Finance Officer with the following functions:

The Project Manager will be responsible for

- Ensuring that project activities are carried out as planned, that resources are provided on a timely basis, and the planning and implementation of activities are carried out in such a way as to achieve maximum efficiency and effectiveness;
- Paying regular visits to the project locations and monitoring the activities through active participation in these activities;
- Preparing the necessary Terms of Reference and contracts for personnel employment to the project;
- Ensuring the timely preparation of narrative reports and with the support of the Finance Officer will monitor project expenditure and the monthly preparation of financial reports;
- Supervising staff working on the project;
- Reviewing monthly narrative reports which will include a checklist with indicators and targets achieved during the month and project-to-date; and
- Submitting a Progress report as required by Donor Agency.

The Project Officer will

- Manage community level implementation;
- Liaise with community key leaders and residents, and provide technical assistance in the implementation of project activities;
- Coordinate and organize workshops, meetings, mobilization of the residents, logistics at the community level and learning processes, including write-ups and reporting;
- Work closely with community level staff and communities in developing appropriate implementation strategies and work with SACDA and other project support staff to monitor the performance of the project.

The Finance Officer will

- Perform accounting, payroll, and other duties requiring the exercise of independent judgment in the financial management of the project;
- Carry out administrative functions related to the project;
- Monitor all project-related expenditures;
- Maintain cash controls;
- Prepare financial reports for submission to donor, supervising banking activities related to the project, processing invoices for payment and all procurement activities, filing and maintaining all records pertaining to the project.

Project implementation

All related activities will be designed using a bottom up planning approach to working with the residents in the Princessfield community. Community key stakeholders, which include businesspersons, teachers, church leaders, youth club, seniors, farmers, Community Disaster Response Team leadership and other community residents, will be mobilized to participate in all phases of the project.

Project Monitoring and Evaluation

Project activities will be monitored daily by Project Officers. Monitoring will be supplemented by supervision from the Project Manager and follow-up by any person/s assigned by SACDA. Tools to be used include site visit forms, monthly reports by all project staff, training reports and reports to the donors, case studies and registers. Princessfield community members also received training in June 2013, as part of the AILEG project, on conducting an Environmental Management Plan (EMP), which is a guide to identify potential social and environmental impacts from project implementation, potential mitigation measures and a monitoring plan. The training followed the USAID Latin American and Caribbean (LAC) EMP Guidance covering its Environmental Screening Form, Identification of Mitigation Plan, and Environmental Monitoring and Tracking Table (USAID LAC, 2009). The templates and the training presentation were provided to SACDA for future reference with the understanding that these are guides that can be adapted to be more appropriate for future applications.

2.3 Communication and Visibility Plan

Outline how the project will give adequate visibility to the activities being implemented especially giving credit to the Global Environment Fund for its financial support to the project. This should include the compulsory use of the GEF logo on all materials, publications, leaflets, brochures, newsletters, websites, signage, display panels, commemorative plaques, banners, promotional items, photographs, audiovisual productions, public events and visits, supplies and equipment and information campaigns.

The Communication and Visibility Plan will include the following key components:
Use of the GEF logo on all materials, publications, leaflets, brochures, newsletters, websites, signage, display panels, commemorative plaques, banners, promotional items (e.g. T-shirts), photographs, audiovisual productions, public events and visits, supplies and equipment and information campaigns.

2.4 Sustainability of Results Achieved

Outline how the results of the project are expected to create ongoing impact on the natural environment beyond the life of the project. How the project will strengthen the effectiveness and sustainability of participating organisations and/or individuals. What plans are in place for replication, up-scaling and mainstreaming successful initiatives and lessons learnt.

The Princessfield Solar Training and Cyber **C**entre will generate a positive, sustainable impact on the environment through the use of renewable energy for power generation (reducing emissions from the grid).
The project will strengthen networking with other organizations and Agencies. The Princessfield Solar Training and Cyber Centre is intending to be a part of an overall community development strategy intended to improve livelihoods and training especially for youth and women. It will thereby help to reduce poverty while saving energy and promoting equitable distribution of benefits. The community will be in charge of the project after funding is completed. Moreover, Community residents will view the project as an achievement or success story.
A project of this nature can be replicated or scaled up. It envisages that the Princessfield Solar Training and Cyber Centre will be used as a demonstration Project for other groups/Agencies in Jamaica. Moreover, the project will serve as a source of motivation as community residents and groups will want to replicate for personal as well as community purposes.
SECTION C: PROJECT BUDGET

3.1 Financial Details

The project budget is an important part of every SGP project proposal and must be completed prior to consideration of a proposed project for funding. Once your project has been approved for funding, the budget information becomes part of the binding Memorandum of Agreement (MoA) between GEF SGP and your organisation.

Table 1 below provides a summary of how the project will be funded:

Table 1 – Project Funding Summary

Funding Source	Total (JA$)	Total (US$)
GEF SGP	5.000.036	50.000
Proposing Organization (SACDA)	216.000	2.160
Community (real state building and land space)	7.000.000	70.000
Volunteers x 28 @ JA$10,000 per volunteer	280.000	2.800
Trainers x 3 x 4 session x JA$12,000 per session	48.000	480
Other co-funders (GoJ through CMI)	199.500	1.995
Total Project Cost	12.743.536	127.435

Table 2 – Community Contribution

Sources of Contribution	Type (cash/in-kind)	Committed/ projected	Value (JA$)
Real state (Community Centre's building and land where it is located)	In-kind	Projected	7,000,000.00
Training time by chosen community trainers + volunteers' time	In-kind	Projected	328,000.00
Total			**7,328,000.00**

Table 3 – Proposing Organisation's Contribution

Sources of Contribution	Type (cash/in-kind)	Committed/ projected	Value (JA$)
Time dedicated by coordinating team	In-kind	Committed	108,000.00
Other expenses	In-kind	Committed	108,000.00
Total			**216,000.00**

3.2 Projected Expenditures

Please complete table 4 below detailing expenditure per category and how the funds will be used over the project period.

Table 4 - Detailed Budget of Project Expenditures

Expenditure Category	Total Cost (JA$)	Support from other Donors as confirmed co-financing (see tables 2/3)		Amount Requested of SGP (JA$)	Budget Notes
		Cash	In-Kind		
Personnel/Labour (managing and administering of the project)*	**504.000,00**			**396.000,00**	Coordination and implementation support dedicated by SACDA (17% funded by SACDA)
Training/Seminar/Workshops/Travel	**199,500**	**199,500**			Cost of CMI's train-the-trainers' courses + travel expenses for the three chosen community members
Contracts (*specialized/certified services-please list)* **					Certified solar PV installer cost included in equipment cost below
Equipment/Material	**4,063,654**			**4,063,654**	
Container (power house)	200,000			200,000	
Fencing cost	360.382				
Solar panels for power supply (inc. batteries)	2,289,600			2,289,600	
Solar PV equipment for training purposes	295,300			295,300	
Access to broad band	55,000			55,000	
Personal Computers (PC) x 10	900,000			900,000	
LaserJet Printer x 1	88,000			88,000	
Ceiling fans x 3	42,000			42,000	
CFL bulbs x 10	5,000			5,000	
Chairs and tables x 10	130,000			130,000	
Erasable Board (for writing) x 2	37,754			37,754	
Other classroom consumables	21,000			21,000	
Administrative costs*	**288,000**			**180,000**	Use of office space, utilities, traveling costs to and from community (37,5% funded by SACDA)
Total Project Cost	**5.415.536,03**			**5.000.036,03**	

NB: ** Together should not exceed 20% of SGP grant amount. **Provide listing of all specialised certified services that will be needed. Terms of Reference (ToR) for all consultants along with their Curriculum Vitas (CVs) must be submitted prior to engagement of services during project implementation*

ANNEX 1. SACDA's track record

Over the past 15 years SACDA has been resolute in the identification of problems affecting communities, conducting needs assessments, planning and implementation of projects in communities and providing technical skills in several areas.
The Agency has an enviable track record of accountability as well as timely and accurately reporting to donor agencies. Thus, SACDA's performance has won it the Environmental Foundation of Jamaica Award for 'Best Project in Child Sustainability' for 2007-2008. Moreover, SACDA was one of the Nominees for the Michael Manley Award for Excellence for 2007-2008. Both are national awards.

PROGRAMME ACTIVITIES

Many programmes and projects have been implemented since the inception of SACDA. The activities undertaken have been categorised under seven main headings:

1. CHILDREN'S RIGHTS AND ADVOCACY PROGRAMME

- Quiz, Essay and letter writing competition in 8 Primary and All Age Schools for 3 consecutive years.
- Leadership training for members of the Children Rights Club. Membership totals over 300 children in these clubs.
- Annual Summer Camp Programme in the Springvale, Giblatore and Content communities for 13 consecutive years.
- On-going Parent Education programme in the Springvale, Giblatore, Content, and Princessfield and Deeside Communities.

2. POVERTY ALLEVIATION PROGRAMME

Girls and boys from Springvale, Giblatore and Content communities benefited from a revolving loan facility for chicken and pig rearing.

- Children from the Springvale community were involved in a revolving loan Goat Rearing Project.
- Parents from selected target communities of Giblatore and Springvale benefited from a revolving loan project. Parents were involved in farming, vending and other small business ventures.

3. HEALTH PROGRAMMES

- Establishment of a Satellite Community Health Centre at Giblatore.
- Setting up a vegetable garden at Springvale Primary School to grow vegetables for the School Canteen.
- Constructed sanitary conveniences at the Giblatore Basic School and Health Centre respectively.
- Periodic visits of a medical Doctor to Giblatore Satellite Clinic to work with the Children and Elderly at the community level.

- Linking community residents to access Government Social Programmes, such as the Jamaica Drugs for the Elderly Programme, National Health Fund, Programme of Advancement for Health and Education and Poor Relief.

4. EDUCATION PROGRAMMES

- Funded and facilitated Vocational Training Programme at Springvale and Giblatore Primary schools, and more recently at Guano boa Vale All Age School.
- Organised a vegetable garden plot at the Springvale Primary School. SACDA used a demonstration plot to teach basic agriculture skills to grade 4-6 students.
- Organised and conducted skills training in garment making for adults in the Springvale, Giblatore and Content Communities.
- Setting up of a textbook project at Springvale Primary School.
- Ongoing Career Guidance Development Programme for youth and adults in transition.

5. INSTITUTIONAL STRENGTHENING

- SACDA organised Children's Right Clubs in the Springvale, Giblatore and Content communities.
- Funded equipment and material to prepare hot lunch at the Springvale Primary and Basic school as well as Giblatore Primary School.
- Assisted with building material and educational supplies at the Springvale basic School.
- Setting up of three community organisations in the Springvale, Giblatore and Content communities.
- Setting up and ongoing operation of local Farmer's groups in the Springvale, Giblatore, Content and Princessfield areas.
- Setting up and ongoing operation of Senior Citizen Clubs in the Springvale, Content, Giblatore, Deeside, Browns Hall and Princessfield communities.
- Career Guidance and Development programme for youth and adults in transition in the Content Community.
- Established a Water Organisation in the Springvale, Giblatore and Content communities. The Organisation is a legal entity.

6. INFRASTRUCTURE DEVELOPMENT

- SACDA assisted with road repairs project in the Content and Springvale communities.
- Paving of roadway leading to community source of domestic water supply in the Giblatore Community.
- Secured a potable water project from Inter American Development Bank (IDB) for residents of Springvale, Giblatore, Content, Lime Walk, Bowers Wood and Barry communities.

7. WORK WITH OLDER PEOPLE

SACDA began working directly with older persons in 1996. As mentioned earlier, members of the Children's Rights Club initiated the effort by reaching out to older people in their homes. The Programme was subsequently formalised with SACDA staff members playing a key role in the planning, development and implementation of the Intergenerational Programme. The Programme to date has six main elements.

7.1 HEALTH AND NUTRITION

- Registration of older persons in the Governments Drug for the Elderly Programme. These persons received specified drugs at a subsidised rate.
- Assistance to older people in getting to the doctor and provision of transportation costs.
- Provision of food aid, wheel chair, bed, mattress, clothes, household articles for the most needy through assistance from the organisation Food for the Poor.
- Representation on behalf of older persons for waiver of hospital fees, optician fees and funeral expenses for those persons unable to meet the costs.

7.2 SKILLS TRANSFER

- Training carried out by older people with young persons in various crafts in the various senior clubs
- Craft training for older people carried out by personnel from the National Council of Senior Citizens through its Parish Office.

7.3 BACKYARD GARDENING

- Assistance to older and younger persons to improve and start backyard gardening for home consumption as well as to supplement family incomes.

7.4 POULTRY REARING

- Assistance given to elderly persons to raise chickens for home consumption as well as to supplement family income.

7.5 SOCIAL SERVICES/ACTIVITIES

- Establishment of Senior Citizen Clubs in six communities, namely Springvale, Giblatore, Content, Deeside, Princessfield and Browns Hall with membership totalling over 400 persons. Strengthening of Senior Citizen club in two communities (Riversdale and Prospect).
- Registration of these clubs with the National Council of Senior Citizens through its Parish Office.
- Practical assistance to older people in carrying out household chores, shopping, cleaning etc.

7.6 ADVOCACY

- One of the main emphasis of the Agency is to empower older persons to advocate for rights and entitlements. Older persons are trained in communication, leadership and media skills. Over the years older people leadership have been making representation to Government and non-Government Agencies on behalf of other older people in the community as well as making appeal for various issues affecting the communities.

The following projects and activities are currently underway in the Communities **where the Agency operates.**

- SACDA operates seven Senior Citizens Clubs in the Browns Hall, Content, Giblatore, Springvale, Deeside, Princessfield and Riversdale communities.
- Establishment of a Farmer's Groups in the Springvale and Giblatore, Content, Princessfield areas.
- Strengthening of Farmer's Groups in Riverdale, Browns Hall and Ginger Ridge communities.
- Satellite Health Centre in the Giblatore Community.
- SACDA operates Intergenerational Development Programme in the Browns Hall, Content, Giblatore, Springvale, Deeside and Princessfield communities
- SACDA implemented a Potable Water Supply Project in Springvale, Giblatore, Barry, Content, Lime Walk and Springvale areas.
- Helping vulnerable populations and communities manage risks associated with hurricanes and floods.
- Building the resilience of vulnerable communities, through community-based Disaster Risk Management (DRM) in Jamaica.
- Analysis and Investment for Low Emissions Growth (AILEG) Community Renewable Energy (RE) & Energy Efficiency (EE) Project

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AILEG Analysis and Investment for Low-Emission Growth

VOLUME VIB: COMMUNITY RENEWABLE ENERGY AND ENERGY EFFICIENCY ACTION PLANS

ACTION PLAN PROJECTS ANNEX - SOCIAL AND ENVIRONMENTAL IMPACT ASSESSMENT

THE AILEG PROJECTPR

CONTRACT NO.:EEM-I-00-07-00004-00
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1. INTRODUCTION

As an island country, Jamaica's agriculture, forestry, energy, and infrastructure sectors are particularly vulnerable to changes in severe events, temperatures, rising sea levels, and precipitation. Over the last eight years, following several storms and hurricanes, damages in Jamaica were in excess of US$1.4 billion, or about J$120 billion. Jamaica's Office of Disaster Preparedness and Emergency Management spends approximately J$14 billion per year repairing damage caused by hurricanes and floods. Given that a majority of Jamaica's population (82 percent) is located within 5 kilometers (km) of the coastline, as are the country's agriculture and tourism industries, any increases in the severity or magnitude of tropical storms will have deleterious impacts on national growth and livelihoods.

For the past decade, the Government of Jamaica (GOJ) has actively implemented a number of climate change adaptation and mitigation programs and policies. In 2009, Vision 2030 Jamaica: National Development Plan and the GOJ Medium-Term Socio-Economic Policy Framework for 2009–2012 established the intermediate and long-term roadmaps for realizing sustainable development goals while building climate change resilience and reducing the rate of growth in emissions. In June 2011, the Second National Communication of Jamaica was submitted to the United Nations Framework Convention on Climate Change (UNFCCC). In April 2012, the GOJ established a Climate Change Advisory Committee, and in 2013 plans are underway to fully establish a Climate Change Division in the Ministry of Water, Land, Environment, and Climate Change (MWLECC). The new Climate Change Division will prepare a climate change policy, continue awareness-building on climate change issues, and seek additional bilateral and multilateral support for climate change projects.

In Jamaica, policies and plans often undergo major delays during implementation. This happens for several reasons, including a lack of stakeholder engagement, the absence of a sound analytical framework to assess costs and benefits, and the lack of a legal framework to spur grid-scale investment in renewable energy (RE). These issues have caused inertia in addressing the underlying framework required to promote large-scale investments in RE and energy efficiency (EE). However, economic motivation exists at the community level to find replacements for and reduce demand for expensive power generated by fossil fuels. Communities are becoming even more vulnerable as climate change affects thousands of Jamaicans, especially those who are more vulnerable and dependent, such as farmers, the elderly, women with many children, and the disabled. There is, therefore, a significant opportunity to promote investments in EE and RE at the local level, and to integrate them with local economic and climate change adaptation planning.

One component of the Analysis and Investment for Low-Emission Growth (AILEG) project in Jamaica is the development of two Community Renewable Energy and Energy Efficiency Action Plans (known as Community Action Plans). The Community Action Plans support climate change goals and socio-economic objectives that are important to the community, including employment and youth engagement. This activity is being undertaken in one urban community, Princessfield, and one rural community, Content, in the parish of Saint Catherine.

The community-based organization (CBO) St. Catherine Development Agency (SACDA) is working with these communities to carry out the activity through an interactive and community-driven planning process. The CBO and the communities were chosen through a competitive bidding process. The activity was executed over a three-month period, which commenced on April 1, 2013, and ended on

June 30, 2013. The short execution period was achievable largely due to the high level of social capital that SACDA has developed with the participating communities over the past 19 years.

As flagship projects under the Community Action Plans, both communities identified the establishment of a solar-powered facility to serve as a center for training solar technicians and as a cyber-center. Each facility will use a solar photovoltaic (PV) system and be lit with compact fluorescent lights (CFLs) as an additional energy efficiency measure. The solar training will be conducted by community members that have undergone a train-the-trainers program with the Caribbean Maritime Institute (CMI). The train-the-trainers program will engage the communities until a sustainable level of trainers have been establishment within each community.

Although under Regulation 216 of the United States Agency for International Development (USAID), AILEG does not require further environmental review (USAID Africa Bureau 2007), a Preliminary Environmental Review (PER) was conducted of this activity in Jamaica because some activities within the Content and Princessfield Community Action Plans will need an Environmental Review (ER) and are likely to require some mitigation and monitoring to control adverse impacts.

The first half of this report looks at the social impact that the flagship projects will have on job potential and on gender and youth engagement. It is important to assess the social development of the communities' participation in low-emission development strategies (LEDS), as the Community Action Plans under AILEG are part of the larger Enhancing Capacity for Low-Emission Development Strategies (EC-LEDS) initiative. The second half of the report is a PER that identifies the flagship projects' potential impacts, looks at mitigation actions, and lays the foundation for environmental reviews of subsequent phases of the Community Action Plans.

2. SOCIAL IMPACT ASSESSMENT

Jamaica nationally has a double-digit unemployment rate of 14.2 percent as of January 2013 (Statistical Institute of Jamaica 2013). Based on surveys conducted under AILEG, Content and Princessfield have community-level unemployment rates of 35 percent and 37 percent respectively.

The goal of this AILEG activity is to increase the employment rate of these communities through low-emission technologies. The use of renewable energy frees up the communities from paying the high cost of energy, which allows them to focus their capital on other job-creation investments. Through the visioning and action planning process, both communities identified their first investment priority to be a solar-powered facility to serve as a solar technician training site and a cyber-center.

2.1. SOLAR JOB TRAINING POTENTIAL

Occurring simultaneously with the establishment of the solar-powered facility, the train-the-trainers program with CMI will begin to ensure a quick start-up of the training program. The train-the-trainers program have a double benefit: providing capacity and employment to the trainers while also increasing the sustainability of the training program by using independent outside training resources. The following organizations that provide solar technician training have been identified as potential resources for the solar technician train-the-trainers program (Chang 2013) (Forrest 2013).

Institutions that have completed solar technician training programs:

- Vector Technology
- The National Council on Technical and Vocational Education and Training
- The Caribbean Maritime Institute (CMI)

Institutions that are currently putting together solar technician training programs:

- Human Employment and Resource Training Trust/National Training Agency (HEART Trust/NTA)
- University of Technology, Jamaica, led by the Sustainable Energy Department

AILEG also contacted the Jamaican Business Development Corporation. However, it currently only has an energy conservation and management program for medium, small, and micro-enterprises on conducting energy audits and available EE solutions (Porter 2013). It was willing to explore the option of tailoring a solar technician training program by tapping into its network of RE industry contacts. Other private industry training providers may materialize through members of the Jamaica Solar Energy Association, which encompasses most of Jamaica's solar energy manufacturers and installers.

Of the three training providers currently available, CMI has been selected as a partner under this proposal, as it volunteered as a willing collaborator and it has an established solar technician training program within Jamaica (Forrest 2013). CMI will provide assistance in proposal writing to gain funding from HEART Trust/NTA and other potential GOJ sources to pay for the trainings, so that they will not have any cost to the communities. CMI also conducts assessments on the ability and rate at which a community can absorb a training program. This will ensure that the maximum number of trainings is provided to use resources most effectively.

A number of youth in both communities are unemployed or underemployed. The CMI solar technician trainings generally have an enrollment of 8 to 15 people ages 18 to 25. They target a ratio of 60 percent men and 40 percent women trainees; women tend to have better attendance rates at 85 percent. CMI has a basic Level One training and a Level Two training that can be either three, five, or seven days in duration. The organization has found that the three- and five-day trainings have a graduation rate of approximately 90 to 100 percent, while the seven-day training has a graduation rate of approximately 60 percent. CMI notes that most graduates are self-employed after training, and few are employed by others in the larger job market. This is indicative of Jamaica's current market readiness for solar technicians, which is discussed further in the next section.

Men tend to use their training to improve already-existing businesses, while women use their training to start new businesses. Overall, trained men had a 62 percent employment rate while trained women had a 53 percent employment rate (HEART Trust/NTA 2013b). It is likely that those who are employed by others will be hired by private companies such as the Future Energy Corp. This company estimates that it installs 3 kilowatts (kW) of solar residential PV on a "regular basis" with a three- to five-person crew per installation, which translates to two to three full-time jobs. However, Future Energy Corp. does not provide maintenance, as it leases its solar panels for the period of their useful life (Worldwatch Institute 2013).

The number of people who can be trained through the solar technician program depends on a number of limiting factors, which cannot be estimated quantitatively until CMI assesses the communities' ability to absorb the training. Job-creation potential is dependent upon the following limiting factors:

- ***Duration and frequency of solar technician training provided***. This will be addressed by CMI's assessment of the communities' ability to absorb the training.
- ***Graduation rates.*** Depending on the duration of the training and time commitment required, the graduation rate varies between 60 and 100 percent. People who do not complete training programs are less likely to find employment within the specific field (HEART Trust/NTA 2013b).
- ***Percentage of trained people who remove themselves from the job market and are not looking for employment.*** Nationwide, this is 6 percent (HEART Trust/NTA 2013b). This can be for various reasons such as illness, a return to school, or pregnancy.
- ***The ability of the solar job market to absorb training graduates with the various levels of training provided.*** This is discussed further in the next section, but only estimates are available, given the nascent level of Jamaica's solar market. The ability of training graduates overall (and by gender) to find employment varies by job sector. The lack of availability of this information is a main constraint to estimating job potential for training graduates.

Assuming that once the solar training programs have been established and the train-the-trainers program has been successful at the end of Year One of implementation of the Community Action Plans, the communities follow the CMI training model and provide four seven-day trainings per year to 10 people per training (six men and four women), a very conservative and preliminary calculation can be made on the number of people qualified to enter the solar technician job market and find potential employment within a community (see Table 1 below). The frequency of four trainings per year should allow for sufficient momentum to be established while also catering to those who learn at a slower pace.

Table 1: Estimated Number of People Trained and Employed as Solar Technicians

	Female	Male	Total	Assumptions
Enrolled	4.0	6.0	10.0	Number enrolled is between 8 and 15 people; 40 percent female and 60 percent male.
Graduated	3.0	4.5	7.5	There is a 75 percent graduation rate for seven-day training; graduation rate by gender matches enrolment distribution.
Actively in job market	2.8	4.2	7.1	Nationwide, 6 percent of training graduates remove themselves from the job market.
Employed/training	1.5	2.6	4.1	Nationwide, trained women have a 53 percent employment rate and trained men have a 62 percent employment rate; this employment rate does not distinguish between self-employed and employed by others.
Employed/year	**6.0**	**10.5**	**16.5**	There are four trainings per year.

An increase of approximately 16 people employed per year per community provides only a 3.2 percent (in Content) and 1.6 percent (in Princessfield) difference in the communities' respective current unemployment rates of 35 percent and 37 percent. However, the benefit to the community will be greater than just the employment rate directly associated with those who completed training (although incrementally, each job created is an improvement). People potentially hired by those who graduated from training can be counted in the direct employment statistics. This is likely, given CMI's assessment that the majority of its graduates is self-employed and uses their training for currently existing and new businesses. In addition to the direct employment, there is indirect employment through the "supplier effect," where demand for upstream and downstream suppliers is increased (Wei, Patadia and Kammen 2010). Induced jobs are created through increased activity in the general economy due to spending by direct and indirect employees. In addition, those who attended trainings also went on to higher levels of formal education, which also leads to improved employment potential (HEART Trust/NTA 2013b).

2.2. SOLAR JOB MARKET DEMAND

Estimating an activity's potential for job creation requires an assessment of both the supply side (number of people trained) and the demand side (number of available jobs). Given the nascent stage of the RE market in Jamaica, it has only been possible to make estimates on demand in the solar job market. Through its national energy policy, Vision 2030 Jamaica: National Development Plan and its national renewable energy policy, the GOJ has set targets for 30 percent of the country's energy mix to come from renewable energy by 2030 (Ministry of Energy and Mining 2010). Advances were recently made, when the GOJ removed the exclusive right of the Petroleum Corporation of Jamaica (PCJ) to develop all RE projects. This has allowed the Office of Utilities Regulation to release a Request for Proposals to procure 115 megawatts (MW) of energy generated from renewable sources, which will increase

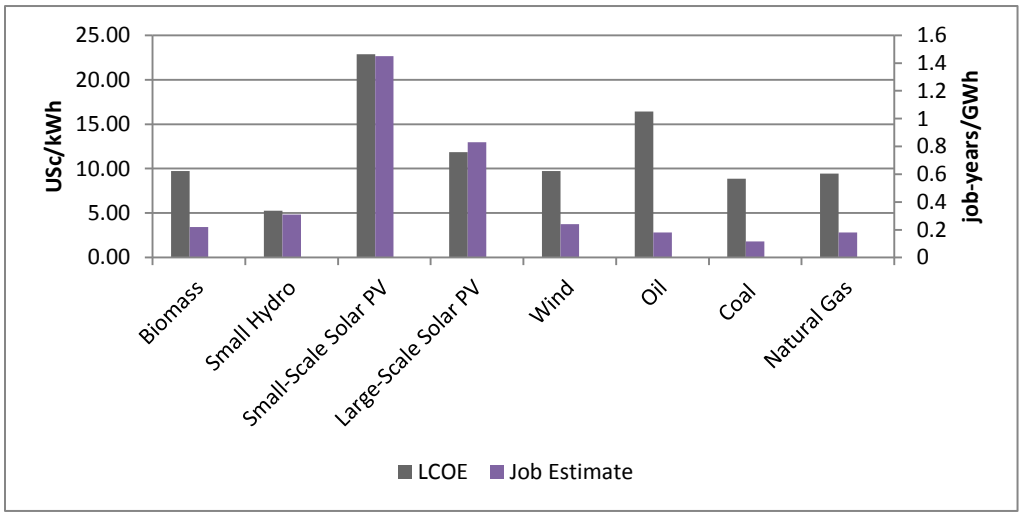
Jamaica's electricity generated from renewables to almost 50 percent of the target (Jamaica Information Services 2013).

However, it is not clear whether the PCJ and the Centre of Excellence for Renewable Energy were successful in their task of developing and implementing programs to achieve established obligatory and non-obligatory targets for the percentage of renewables in the energy mix (Planning Institute of Jamaica 2009). This makes it difficult to estimate the number of potential jobs created specifically in the Jamaican solar market. The Labour Market Intelligence and Research Department of HEART Trust/NTA has identified solar panel installation as a skill that is in demand, but did not elaborate on the level of demand (HEART Trust/NTA 2013a). It is assumed that the level of demand is significant enough to warrant the development of a new training program.

A review of 15 studies on the job-creation potential of RE, EE, and low-carbon sources showed that jobs within these sectors not only create many jobs that are guaranteed to remain domestic, given that they involve construction and installation, but also provide more jobs per unit of energy (job-years per gigawatt hour, or GWh) delivered than the fossil fuel-based sector (Wei, Patadia and Kammen 2010). The review also found that among the common renewable portfolio standards (RPS) technologies, solar PV creates the most jobs per unit of electricity output. Globally, for each MW of PV capacity, 30 installation jobs and 1 maintenance job will be created. It is noted that Jamaica is missing a large opportunity to capture the full in-country employment opportunities by not manufacturing solar technologies (Worldwatch Institute 2013).

The Worldwatch Institute related global multipliers on RPS job-years/GWh created to the Jamaican market (Worldwatch Institute 2013). It compared these to the levelized cost of energy (LCOE) for different energy types, based on inputs from recently built plants, planned projects, and fuel costs in Jamaica specifically. Looking at the job-years/GWh created in Figure 1 below, Worldwatch Institute focused on direct jobs, which can be certain to remain within Jamaica; these are jobs in construction, installation, and operation and maintenance (O&M). The jobs in construction and installation are typically concentrated in the first few years of establishing a renewable energy facility, while O&M jobs last the full lifespan of the installation. Long-term job creation was estimated by averaging out the jobs over the expected lifetime of new projects, which assumes that new facility installations will continue far into the future. The Worldwatch Institute estimated that approximately1.5 job-years/GWh will be created within the solar market.

Figure 1: LCOE & Job Creation Estimates for Various Power Sources



Source: Worldwatch Institute, forthcoming 2013, Jamaica Energy Roadmap

Although these job-creation estimates seem low, there is a growing trend to fulfill the commitments made under Vision 2030, and global statistics support the profitability of the RE sector and its ability to create jobs. If Jamaica went above and beyond its 30 percent renewable energy goal by 2030, and had a 94 percent RE share by 2030, Worldwatch Institute estimated that approximately 4,800 new jobs would be created overall in the renewable energy sector, which is a 50 percent employment increase in comparison to today's figures. These flagship projects will allow the Princessfield and Content communities to take advantage of this market growth and access employment opportunities.

2.3. CYBER-CENTERS

Based upon the AILEG quantitative survey within Content and Princessfield, only 18.0 percent and 12.1 percent respectively of respondents own a desktop computer, while 33.1 percent and 23.9 percent own a laptop computer. The lack of personal access to information from computer technology makes the inclusion of a cyber-center in the project an important component for accessing employment opportunities. The centers will also be places of free, informal training in computer hardware and software usage that is not available elsewhere (Ferlander 2003).

In addition to providing access to information about training and job prospects, cyber-centers have been found to be important as offline and online meeting places that foster positive social integration (Ferlander 2003). Based on quantitative and qualitative research, cyber-center visitors have been found to have more local friends and less social distrust, and to reduce perceived tensions between different groups in a community. This is an important factor in looking at youth involvement and integration into the project and the community as a whole.

3. ENVIRONMENTAL IMPACT ASSESSMENT

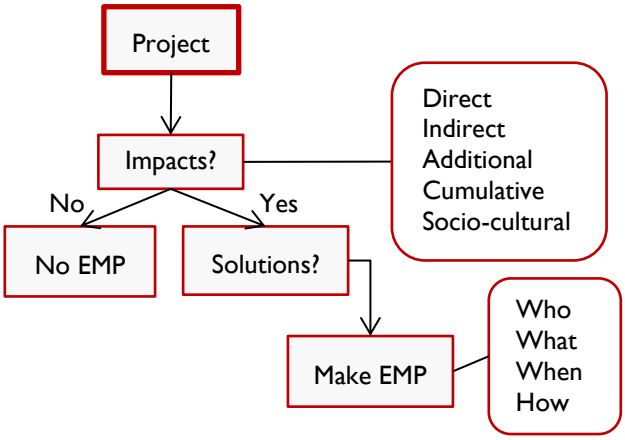
Under USAID Regulation 216, AILEG, as a technical assistance program, is a Category A project requiring no further environmental review (USAID Africa Bureau 2007). However, specific activities within the Content and Princessfield Community Action Plans are Category B projects, which require an ER and are likely to require some mitigation and monitoring to control adverse impacts. The Community Action Plans include a three-phased, small-scale construction activity and the establishment of small and micro-enterprises (SMEs) in each community. AILEG is responsible for the process of identifying these activities and for writing proposals to help identify funding for the initial phase of construction. AILEG is not, however, responsible for direct implementation and design of the activities. For this reason, an additional training was provided to Content and Princessfield on how, why, and when to create an Environmental Management Plan (EMP). AILEG also prepared a PER and an EMP within this report.

The PER focuses on the first phase of small-scale construction activity within the Community Action Plans. This first phase is the construction of a solar-powered facility to be used as a solar training center and a cyber-center. The potential impacts and mitigation options for the later activities under the Community Action Plans are identified within the PER, but are not discussed at length, since their future date leads to a high level of uncertainty about the shape they will take.

3.1. EMP TRAINING

AILEG provided EMP Training on June 24, 2013, at a Joint Stakeholder Workshop attended by members of the communities' Energy Action Committees. The purpose of the training was to socialize and familiarize the communities with how, why, and when to create an EMP, and how an EMP fits into the context of current planning exercises and activities under their action plans. The training followed the USAID Latin American and Caribbean (LAC) EMP Guidance, which covers the environmental screening form, identification of mitigation plan, and the environmental monitoring and tracking table (USAID LAC 2009). The USAID LAC EMP Guidance templates are attached to this report.

Figure 2: EMP Process Flow



AILEG presented the information shown in Figure 2—the EMP Process Flow—and invited participants to discuss the process. The figure shows how the environmental screening form identifies whether a given project has potential direct, indirect, additional, cumulative and/or socio-cultural impacts. If the project does have potential impacts, the identification of mitigation plan is completed, listing the project

components with potential impacts and their corresponding mitigation solutions. The EMP was finalized with the completion of the environmental monitoring and tracking table, which listed who would be responsible for ensuring when and how a specific mitigation solution was implemented.

AILEG provided the templates and training presentation to SACDA for future reference and use for subsequent phases of the Community Action Plans. Workshop participants were cautioned that these templates should be used as a guide, but that future donors may have their own templates. The trainer explained that it is beneficial for the communities to minimize the costs of incorporating environmental concerns into projects and demonstrate to donors their preparedness and willingness to mitigate.

The trainer conducted a step-by-step exercise with the USAID LAC EMP Guidance, using the small-scale construction activities within each Community Action Plan as an example. Although AILEG is helping identify funding for only the first phase of construction of the solar-powered facilities, the exercise followed a cumulative approach that included looking at the potential impacts of the second- and third-phase construction and operation of business incubators and business centers. This approach also facilitated discussion of the potential impacts of the agro-processing and laundry facilities planned for these subsequent phases. The potential impacts and mitigation measures identified during the exercise were adapted from the USAID Africa Bureau's environmental guidelines for small-scale activities (USAID Africa Bureau 2009).

The EMP training materials also covered the potential impacts of and potential mitigation for the CFL bulb distribution activity within the Community Action Plans, although there was less focus on this as it is a relatively small and short-term activity. CFLs contain an average of 4 milligrams (mg) of mercury sealed within the glass tubing (Energy Star 2010). Although the United States Environmental Protection Agency (US EPA) estimates that only 11 percent of that mercury has the potential to be released into air or water (the rest vaporizes and binds to the inside of the bulb), the potential cumulative effect of the communities' increased use of CFLs could have an impact. This is made worse by the fact that the communities do not have solid waste management practices and facilities available.

3.2. PRELIMINARY ENVIRONMENTAL REVIEW

The PER covers the construction and operations identified within the Community Action Plans over the plans' five years, but focuses on the first-phase construction. The exact design and implementation of the projects is outside the scope of AILEG, and the activities under the Community Action Plans are also subject to change. The ER is preliminary as the need for an environmental review was only able to be identified after Content and Princessfield had completed their action planning workshops and drafted their Community Action Plans in mid-June. This left extremely limited time and ability to craft a response. With more time, community participation in the environmental review process would have been more comprehensive, a full environmental situation analysis would have been conducted, and more focus would have been given to the later activities within the Community Action Plans. The structure of the PER is based on USAID guidelines (USAID 2006). The potential impacts and mitigation options were based on USAID guidelines for small and micro-enterprises (USAID 2006).

3.2.1. Background, Rationale and Outputs/Results Expected

3.2.1.1. Background

The Content and Princessfield Community Action Plans form one component of the AILEG project in Jamaica. As described above, these plans support the achievement of climate change goals and socio-economic objectives, including employment and youth engagement, which are important to the

participating communities. Each community's flagship project will be the establishment of a solar-powered facility that will serve as a solar technician training site and cyber-center. Although the solar PV system will only service the training facility and cyber-center, it will be used as a demonstration for community residents and other community groups in Jamaica to replicate. Battery storage will act as a disaster risk-reduction measure, to ensure continued power availability during storms or other periods with low sun irradiance. The cyber-center will contain 10 desktop computers and one printer. The facility will be lit with CFLs as an additional energy efficiency measure.

3.2.1.2. Rationale

The rationale and overall goal of the flagship projects is two-fold:

- Increase livelihood opportunities through capacity building (training) activities in the Content and Princessfield communities by 2018
- Contribute to climate change mitigation through use of RE and fostering of EE habits

3.2.1.3. Expected Outputs/Results

The physical outputs of the project consist of two (one per community) solar-powered training facilities for solar technician training; these facilities will also serve as cyber-centers. This will be the first phase of activities identified in the Community Action Plans, paving the way for establishment of SMEs that will provide community-based laundry facilities and agro-processing centers. All facilities and activities will be conducted in an energy-efficient manner, including using CFLs for lighting and pressure cookers for agro-processing cooking activities.

The expected results of the project can be summarized as described below. Further details on the social benefits are described in Section 2; further details on the environmental benefits and the calculation methodology for emissions reductions are described under Section 3.2.5.

Environmental

- The 15 solar PV cells for the first phase construction under the Community Action Plan for the training facility will save approximately 40 kilograms (kg) of carbon emissions per year.
- In addition to carbon emission reductions, overall at least 89 percent of lifecycle air emissions associated with electricity generation will be prevented through the use of PV technology. This includes reductions in emissions of heavy metals such as lead and mercury and other pollutants such as sulfur oxide (SO_x) and nitrogen oxide (NO_x).
- As an additional benefit, these centers will be a place where Content and Princessfield community members will be introduced to more-efficient cooking technology, helping reduce the use of wood and charcoal. A social marketing and behavior change workshop on July 15, 2013, identified barriers and solutions to the adoption of both LED lighting and more-efficient cooking technology.

Solar Job Training

- Three community members will be trained as trainers of solar PV systems.
- Four training courses will be held per year.
- Ten people will be enrolled per year (six men and four women).
- Seven to eight people will graduate per year (75 percent graduation rate; distribution by gender to match enrollment distribution).
- Approximately 16 trainees will be employed per year (out of those who graduated).

Cyber-Centers

- Increased access to desktop computers and information will in turn lead to improved access to employment opportunities.
- There will be increased access to free, informal training in computer hardware and software usage that is not available elsewhere.
- There will be an increase in positive social integration (both offline and online).

By the end of the project, both communities should have an organized and trained independent community arm of the Umbrella Benevolent Society, with at least 25 registered members to ensure the sustainability of the outputs and expected results. The community arm will be the organization in charge of ensuring that benefits continue to be delivered after the project is completed. The use of an interactive and community-driven planning process also ensures sustainability; both communities were involved in project planning and design, and will be integrally involved in the project implementation phase. Within the Community Action Plans, zone leaders were selected to represent different sections of the community and various components of the plans. This community involvement will promote project sustainability.

3.2.2. Activity Description

3.2.2.1. Location and Siting

The project will be implemented at community centers in Content and Princessfield. Both communities are within the parish of Saint Catherine, each approximately an hour and a half away from Kingston, Jamaica's capital city. They are 2 of 15 communities within the Bog Walk area. Because this is a preliminary environmental review, few physical environment details are available about the location, siting, and surroundings of these centers. However, given that the community centers are pre-existing structures in semi-urban locations, the additional infrastructure necessary for the flagship projects will cause a minimal impact to the current location and site. Disturbances due to establishing and running the facilities are anticipated to be minimal and temporary. See Section 3.2.3 for further details.

3.2.2.2. Activities

Construction activities will be tailored to each community; Content's center currently has a wooden structure and Princessfield has a cement structure. To minimize new construction, old shipping containers will be used for any new structures—either the solar-powered facility or the required power storage needed for the backup batteries. Content will require the purchase, installation, and retrofit of a shipping container to hold the solar panels on top, serve as a classroom and cyber center, and store the backup batteries. Princessfield will require simply the purchase and installation of an un-retrofitted shipping container to store the backup batteries; the existing community center structure will hold the solar panels and be used as the classroom and cyber-center. Both communities will need to purchase, install, and commission 4 kW solar PV systems with backup batteries (including batteries, inverter, switch, etc.). The solar PV system will be comprised of 15 panels of 280 watts each, with an area of 22 ft^2 (2.04 m^2), for a total 330 ft^2 (30.7 m^2).

The construction activities are considered by USAID regulations to be small-scale construction or rehabilitation of facilities or structures. This is defined as a case where the surface area to be disturbed does not exceed 10,000 ft^2 (approximately 1,000 m^2); the funding level is not in excess of $200,000; and no protected or other sensitive environmental areas could be affected (USAID 2006). All construction and design will be in compliance with Jamaica's Bureau of Standards Criteria 1301.1.1, where "buildings

shall be designed and constructed in accordance with the International Energy Conservation Code (IECC) and its Jamaica Applicant Document" (Bureau of Standards Jamaica 2009). The use of recycled shipping containers will increase the project's environmental sustainability, since this will eliminate the need to use virgin materials. Project implementers will need to ensure, however, that shipping containers have undergone proper industrial cleaning to remove any potential hazardous chemical spills or residue, and that they are properly insulated with an ecologically friendly insulation material such as straw (Design Build Source 2012).

In addition to construction activities, the following capacity development activities will take place: design of the train-of-trainers course by the communities, CMI, and SACDA; delivery of the seven-day train-the-trainers course at CMI; and delivery of four solar technician trainings per year.

3.2.3. Environmental Situation

An environmental situation assessment covers the affected environment, including essential baseline information available for all affected locations and sites, for both primary and ancillary activities. AILEG was unable to complete an environmental situation assessment due to uncertainty about the exact design, siting, and operations of the Community Action Plans' activities (which are outside the scope of AILEG) and due to the limited availability of time between the ER being triggered and the end of AILEG Jamaica as a whole, and hence this activity.

This report presents limited information from disaster risk reduction assessments done within each community, and from visual observations made during one-time site visits in May 2013. Once funding has been secured for each phase of construction and operation, the communities will need to work with the donors to ensure that a full environmental situation assessment is completed for their community center sites.

Content and Princessfield were selected for participation in AILEG based on their long-standing characteristics of underdevelopment and vulnerability to natural and man-made disasters—especially frequent and prolonged drought conditions, hurricanes, and landslides. These disasters have resulted in destruction of the already-deteriorating road network, houses, and buildings, as well as the agricultural crops and livestock that are the main source of livelihood (St. Catherine Development Agency 2013). The lack of access to affordable energy, coupled with the lack of livelihood alternatives, yields a bleak picture of the future for members of both communities, especially the young. Moreover, the energy used by households and SMEs is all fossil-fuel based (electricity from the grid, wood charcoal, liquefied natural gas, and/or firewood). This contributes to global warming through the emission of greenhouse gases (GHGs). Content is characterized as a rural community. Princessfield, although not an urban center, shows characteristics of inner-city communities, such as squatting, "tenement yard" settings, frequent incidences of crime and violence, and high levels of unemployment and underemployment, especially among women and youth.

The Content community center is located on land owned by the community and situated at the entrance to the community on sloped land that is sparsely vegetated. The center is a one-room wooden building on a concrete slab with a metal roof and basic kitchen facilities. An outhouse is located outside, approximately 6 to 10 feet behind the center. Directly in front of the center is a mature mango tree. Water for the center is pumped from an adjacent rainwater-collection cistern. Overall, the majority of Content's potable water comes from rainwater harvesting, with three 650-gallon water tanks (black plastic and concrete) established between 2008 and 2009 (St. Catherine Development Agency 2013). There is also an entombed spring serving Giblatore and the surrounding areas, including Content.

The Princessfield community center is located on the outskirts of the community, approximately a 15-minute drive from the center of Princessfield on sloped land that was up until July 2013 well-vegetated. It should be noted that the land had fruit trees in front of and behind the center, but a local government official provided a misguided "beautification" service that was unrequested and unapproved by the community members and included cutting down the fruit trees. The center is a concrete building consisting of one main room with a metal roof and a bathroom and basic kitchen facilities. Water is gravity-fed from an adjacent water tower. Overall, since 1961, Princessfield has been served piped water from a reservoir (St. Catherine Development Agency 2013).

3.2.4. Potential Environmental Impact Evaluation

AILEG used the USAID LAC EMP Guidance's Environmental Screening Form to evaluate the potential environmental impacts of the construction activities (USAID LAC Bureau 2009). The screening form was adapted slightly to fit the small-scale nature of the planned activities. As there were no activities that posed a high risk, this category was removed and no risk, low risk, and medium risk remained. The table below is the screening form filled out for the first-phase solar-powered facility. However, this form can also be used for the subsequent phases, including construction of a business incubator, business center (that will house the community-based laundry facility and the agro-processing center), and greenhouse (Content community only). Many impacts associated with construction will be medium to low risk and temporary and intermittent in nature. Long-term hydrologic and water quality impacts are associated with an increased footprint from impervious surfaces (from installation of the shipping container) and increased use of facility bathrooms and kitchens.

Table 2: Environmental Screening Form

Name of Activity: Installation of 4 kW solar PV system; installation of shipping container (includes retrofitting activities for Content) **Type of Activity:** Small-scale construction **Date:** DD MM YYYY		**A**	**B**	**C**	
		Yes	**No**	**If answered yes to Col. A. is it a--?**	
				Medium Risk	Low Risk
IMPACT ON NATURAL RESOURCES & COMMUNITIES					
1	Will the project involve construction of any type of structure (building, check dam, walls, etc.)?	X Shipping container			X
2	Will the project involve the construction or repair of roads or trails?		X		
3	Will the project involve use, plans to use, or training in the use of any chemical compounds such as pesticides (including neem), herbicides, paint, varnish, lead-based products, etc.?	X Paint and/or varnish		X	
4	Involve the construction or repair of irrigation systems?		X		
5	Involve the construction or repair of fish ponds?		X		
6	Involve the disposal of used engine oil?		X		
7	Will the project involve implementation of timber management or extraction of forest products?		X		
8	Are there any potentially sensitive land or water areas near the project site, including protected areas?		X		
9	Does the activity impact upon wildlife, forest resources, or wetlands?		X		
10	Will the activities proposed generate airborne gases, liquids, or solids (i.e., discharge pollutants)	X Temporary			X
11	Will the waste generated during or after the project impact on neighboring surface or ground water?	X		X	
12	Will the activity result in clearing of forest cover?		X		
13	Will the activity contribute to erosion?	X		X	
14	Is the activity incompatible with existing land use in the vicinity?		X		
15	Will the activity contribute to displaced housing?		X		
16	Will the activity affect unique geologic or physical features?		X		
17	Will the activity contribute to changes in the amount of surface water in any body?	X			X
18	Will the activity deal with mangroves and coral reefs?		X		
19	Will the activity expose people or property to flooding?	X			X
20	Will the activity contribute to substantial reduction in the amount of ground water otherwise available for public water supplies?		X		
21	Will the activity create objectionable odors?		X		
22	Will the activity violate air standards?		X		
23	Will the project activities create conditions encouraging an increase of waterborne diseases or populations of disease-carrying vectors or other health or safety hazards?		X		
24	For road rehabilitation as well as water and sanitation grants, has a maintenance plan been submitted?		X		
25	Will the activity generate hazards or barriers for pedestrians, motorists, or persons with disabilities?		X		
26	Will the activity increase existing noise levels?	X Temporary			X
27	Will the project involve the disposal of syringes, gauzes, gloves, and other biohazard medical waste?		X		

Name of Activity: Installation of 4 kW solar PV system; installation of shipping container (includes retrofitting activities for Content) **Type of Activity:** Small-scale construction **Date:** DD MM YYYY		**A**	**B**	**C**	
		Yes	**No**	**If answered yes to Col. A. is it a--?**	
				Medium Risk	Low Risk
28	Is the activity incompatible with existing land use?		X		
LOCAL PLANNING PERMITS					
29	Does the activity (e.g., infrastructure improvements) require local planning permission(s)?	X		N/A	N/A
30	Does the activity meet the national building code (e.g., infrastructure improvements)?	X		N/A	N/A
GENDER					
31	Do men and women benefit disproportionately or are they involved unequally in the project's activities?		X		
32	Are there factors that prevent women's participation in the project?		X		

3.2.5. Environmental Mitigation Actions

The project has mitigation at two levels. The first level is direct mitigation activities that can be done at the time of implementation. The second is mitigation through LEDS. The AILEG project is part of USAID's larger EC-LEDS initiative, which supports developing countries' efforts to pursue long-term, transformative development and accelerate sustainable, climate-resilient economic growth while slowing the growth of GHG emissions. AILEG's facilitation of community-level development through the use of solar power fits into the broader EC-LEDS framework to promote systemic mitigation of climate change impacts.

3.2.5.1. Direct Mitigation of Activities

Direct mitigation actions have been identified in Table 3 below as they relate to the potential environmental impacts listed in Table 2. Table 3 lists the main mitigation actions for the establishment of the solar-powered facilities. Some mitigation actions have the potential to be taken for later Community Action Plan activities, such as the development of community-based laundry facilities, agro-processing centers, and any associated construction. Where applicable, these mitigation actions are shaded in grey.

The format of the direct mitigation actions table was taken from the USAID LAC EMP Guidance (USAID LAC Bureau 2009). Unless otherwise cited, mitigation actions were drawn from the Environmental Guidelines for Small-Scale Activities in Africa 2nd Edition, published by USAID's Environmentally Sound Design and Management Capacity Building for Partners and Programs in Africa. These guidelines were chosen because the scale of activities and the level of options assessed in this guide are similar to the activities being completed and to Jamaica's current level of development. As with the USAID LAC EMP Guidelines and templates, the link to USAID's ENCAP mitigation measures was also provided to SACDA for future use for subsequent phases of the Community Action Plans.

The participating communities, and Jamaica as a whole, are currently ill-equipped to mitigate and properly manage disposal of electronic waste (e-waste) resulting from the project in the form of CFLs, cyber-center computer and printer equipment, solar PV cells, and uninterruptable power supply (UPS) backup batteries. As mentioned previously in Section 3.1 on EMP Training, CFLs contain an average of 4

mg of mercury sealed within the glass tubing (Energy Star 2010), creating potential cumulative impacts over time with increased usage and improper landfill facilities. Community members received an Energy Star recommendation to seal the bulb in two plastic bags and put it into the outside trash or in another protected outside location.

Although the communities are not likely to need to deal with e-waste in the immediate future, they will need a proper facility for disposal or, in the likely event that one is not available, a method for ensuring that e-waste does not leak hazardous materials into the air, soil, and water. Desktop computers have an average lifespan of four to five years (Office of Computing and Communications Services, Old Dominion University 2008); UPS batteries a lifespan of three to five years under ideal conditions (APC Schneider Electric 2007); and solar PV cells a lifespan of 20 to 30 years (Centre for Alternative Technology n.d.). Electronics can include elements that can pose risks to human and environmental health, such as lead, nickel, cadmium, and mercury (US EPA 2012). If disposed of in a properly designed and maintained landfill, leachates from e-waste are not seen to pose a hazard. Content and Princessfield, however, do not have a proper landfill. According to the AILEG Jamaica Community Organizer Expert, Jamaica has had a long-standing problem with lead leachate from electronics equipment that is improperly disposed of and left abandoned on the side of the road.

Local governments have made efforts to educate communities about the hazards of improper e-waste disposal, but facilities to address the issue have not yet been implemented. The GOJ has provided vague recommendations for e-waste handling at the time that solar PV cells are installed, but not for decommissioning (Ministry of Energy and Mining & Development Bank of Jamaica 2011). It does state that e-waste from lighting "must be disposed in an approved landfill or dump site, in consultation with the National Solid Waste Management Authority (NSWMA)." The communities will need to develop a long-term plan in consultation with NSWMA to properly dispose of all e-waste.

Project activities and mitigation actions will be monitored daily by Project Officers identified by the communities and SACDA at the time of implementation. Monitoring will be supplemented by supervision from the community-identified Project Manager and through follow-up by any person/s assigned by SACDA. Tools to be used include site visit forms, monthly reports by all project staff, training reports, reports to donors, case studies, and registers.

3.2.5.2. Mitigation through Low-Emission Development Strategies

Solar facilities reduce environmental impacts from local air pollution and GHG emissions responsible for anthropogenic climate change. Although financial assessment of solar facilities has been limited, the social and environmental co-benefits of carbon mitigation are estimated to have a higher overall value than the value of the energy-saving benefits (Levine, et al. 2007).

To determine the potential carbon emissions savings from PV technology, AILEG used the general equation for emissions estimation (US EPA 2011). As noted in Section 3.2.1.3 above, the 15 solar PV cells for the first-phase construction under the Community Action Plan will save approximately 40 kg of carbon emissions per year. While this is a relatively small amount of avoided emissions on a global scale, it is appropriate given the scale of the project and the overall footprint of the community. Additional social benefits (noted below) will increase potential employment in a sector that overall promotes climate-smart development.

$E = A \times EF \times (1-ER/100)$

Where:
E = emissions
A = activity rate
EF = emission factor
ER =overall emission reduction efficiency (%)

The activity rate (A) is the energy output of a PV system. Using the following formula and a simple calculator (Photovoltaic Software 2012), the activity rate was estimated to be 6.9 megawatt hours per year (MWh/year).

$E = A \times r \times H \times PR$

Where:
E = energy (in kilowatt hours, or kWh)
A = total solar panel area (m^2)
r = solar panel yield (%)
H = annual average solar radiation on tilted panels (shadings not included)
PR = performance ratio, coefficient for losses (default value = 0.75)

The total solar panel area is 330 ft^2 (30.7 m^2). The solar panel yield is the ratio of the power of a solar panel (280 watts) divided by its area, which is 14 percent. The daily average solar radiation for the southern half of Jamaica is 6–8 kWh/m^2/day (Worldwatch Institute 2013), which is tremendous solar potential. Using the lower end of the range for a conservative estimate, the annual average solar radiation is 2,190 kWh/m^2/year. The default performance ratio of 0.75 was used. The Photovoltaic Software calculator had built-in assumptions on losses due to the inverter, temperature, alternating current/direct current (AC/DC) cable losses, shading, weak irradiation, and dust.

An emission factor is a representative value for the quantity of pollutant released by an associated activity (US EPA 2011). The latest available grid emission factor for Jamaica was developed by the Ministry of Science, Technology, Energy and Mining, using the Clean Development Mechanism's "Tool to calculate the emission factor for an electricity system" (Government of Jamaica 2011). The EF is 732.4 kg/MWh.

The overall emission reduction efficiency (ER), also known as the conversion efficiency, of a PV cell is the percentage of the solar energy shining on a PV device that is converted into electricity (US DOE 2013). Although ER is always improving with advances in technology, the current ER for commercial crystalline silicon cells ranges from 20 percent to 27 percent (National Renewable Energy Laboratory 2013). To err on the side of caution and provide a conservative estimate, AILEG used 20 percent ER in the emissions estimation.

In addition to carbon emission reduction, overall at least 89 percent of life-cycle air emissions associated with electricity generation could be prevented through the use of PV technology (Fthenakis, Kim and Alsema 2008). This includes reductions in emissions of heavy metals, such as lead and mercury, as well as other pollutants such as SO_x and NO_x.

As an additional benefit, the center will serve as a place to introduce efficient cooking technology to Princessfield community members and reduce the use of wood and charcoal. A social marketing and behavior change workshop was held at Princessfield on July 15, 2013, where barriers and solutions to the adoption of LED lighting were identified. A similar workshop in Content on the same day identified barriers and solutions to adopting more-efficient cooking technology. Solutions and plans were shared

between the two communities. In the workshop focused on cooking, participants identified the agro-processing center to be established as part of the five-year Community Action Plan as a demonstration and promotional site for more-efficient cooking techniques, including the use of pressure cookers to reduce the overall amount of time needed to cook.

Table 3: Direct Mitigation Actions

No.	Sub-activity or Component	Description of Potential Impact	Mitigation Measures
1	**Site Selection**		
1.1	Site has a steep slope (> 20%)	• Erosion	• Use hay or soil nets, etc. to catch and prevent soil erosion. • Re-plant any removed vegetation as soon as possible.
1.2	Area has trees	• If a fruit tree, loss of food and potential income source • Contribution to flooding • Reduction of shade and increased building cooling cost • Decreased aesthetic value	• Minimize clearing or disturbance of trees by shifting location of building as needed or changing the shape of the building as needed. • Design to minimize clearing or disturbance.
1.3	Homes and businesses located close by	Disturbance to neighbors; creation of dust and noise (facility and/or construction)	• Concentrate noisiest types of work into as short a period as possible, and during least disruptive times of the day. Take measures to keep dust to a minimum. • Leave natural cover intact as long as possible.
1.4	Potentially for future construction activities: Require road improvement or new road	One or more potential impacts associated with roads, including erosion, increased dust and noise, deforestation from increased access to forest land, or changing water table by blocking below surface water flow	• Follow guidance on design, construction, and O&M described in "Rural Roads" resource. http://www.encapafrica.org/EGSSAA/roads.pdf • Note: a list of potential solutions/mitigations is not provided here, as it is not known whether either or both communities will undergo road improvements for one or more of their three construction phases. Impacts are not likely to be high, as roads currently exist to both community construction sites.
2	**Planning and Design**		
2.1	Applicable to current and future construction activities: Area in high-heat climate with high energy costs	• Greater overall energy consumption to light and cool building • May overwhelm the capacity of solar panels, requiring use of grid electricity	• Design to follow the IECC, which provides a minimum design and construction criteria for energy efficiency; common sustainable design elements are: ✓ Incorporation of solar passive design techniques ✓ Integration of renewable energy systems in the design ✓ Specification of low-energy materials (windows, doors, lighting, etc.) ✓ Construction that requires less energy ✓ Insulation of shipping containers with an ecologically friendly insulation material such as straw (Design Build Source 2012)

No.	Sub-activity or Component	Description of Potential Impact	Mitigation Measures
2.2	Area experiences heavy rainfall, earthquakes	• Destruction and/or exposure of occupants to risk of injury or death • Environmental damage and/or contamination of water supplies via accidental release of toxic, infectious, or otherwise harmful materials	• Design infrastructure to minimize risk, e.g., in earthquake-prone areas, build structures with wood frames instead of concrete or brick. • Maintain protective design features (e.g., drainage structures and vegetation on slopes). • Use material appropriate to the climate. • Design storage area so that hazardous materials (such as batteries) are above ground and/or in waterproof containers. Ensure that facility operators follow these practices.
2.3	Potentially for future agro-processing and trash-to-cash activities: Will produce solid waste	• Spread of disease • Generation of GHGs • Contamination of drinking water (ground and surface) • Degraded air quality if burning waste • Impact on health of workers in agro-processing center due to equipment safety, ventilation, poor lighting and air quality, or acidity of certain fruits • Food spoilage and/or contamination	• Begin the planning process for a trash-to-cash program in Year Five of the Action Plans, which will address solid waste from the agro-processing (will need to conduct an updated EMP screening at that stage). • In the interim, before a trash-to-cash program is implemented, include and construct a compost area to re-use on farms, and/or use peelings for animal fodder. • Follow standard "good housekeeping" procedures that reduce waste, minimize accidents, and reduce costs. • Separate harmful chemical waste from organic waste, and use more care in handling chemical waste. Dispose of chemical waste in a way that prevents chemicals from leaching into ground or surface waters (such as clay- or concrete-lined pits). Check with an environmental expert to confirm the chosen disposal method is safe for the chemicals being disposed of. • Maintain safety equipment and reinforce safety training. • Create a prevention strategy. Sometimes small changes such as buying a face mask or rubber gloves can dramatically reduce incidences of harm to workers. Find ways of preventing accidents. • Find ways of reducing harmful by-products. For example, clean the floors between production cycles to get rid of excess dust, or install drip trays to catch acidic fruit juice. • To prevent food spoilage and/or contamination, include adequate drainage, screens over drains and windows to keep out rodents/insects, and well-ventilated storage areas for produce. • Follow guidance described in the "Management of Solid Waste from Residential, Commercial and Industrial Facilities" resource listed here http://www.encapafrica.org/EGSSAA/solidwaste.pdf

No.	Sub-activity or Component	Description of Potential Impact	Mitigation Measures
2.4	Potentially for future laundry activities: Will include water supply improvement	• Further construction for rainwater harvesting and/or piping and pumping of water to laundry facility • Shortage in water supply from both the laundry facility and the agro-processing center for the cleaning of equipment and food materials • Increased concentration • Temporary flooding/ponding from laundry facility wastewater, which creates stagnant water • Increase in vector-borne disease • Pollution from laundry facility wastewater	• Conduct an update to the EMP screening for any additional construction for rainwater harvesting and/or piping and pumping of water. • Use solar power to run the laundry facility and water pump if needed. • Determine sustainable level of water usage. • Establish regulation system to manage water usage at or below sustainable use level. • To address temporary flooding/ponding, design and install soil drains and/or areas with plants and sandy or gravelly soils to naturally drain soil such as swales or rain gardens. • If, using an existing septic system to manage laundry facility wastewater, conduct an update to the EMP to manage the increased use of the septic system. • To address pollution level of wastewater, use no- or low-phosphorous detergent in laundry facility. • Decrease water usage through "dry cleanup." Dry cleanup involves an initial cleaning without water (sweeping, wiping down) before washing. This method reduces the amount of water required to dislodge solid wastes from floors or machinery. • Regulate water flow. Using high-pressure water hoses can ease cleaning and cut water use; this usually only involves adding a new nozzle to the end of a hose. • Reuse water. Some food processors use steam to purify or clean packaging materials; a closed-loop system can cycle hot water back into the system. This process saves money on both water and energy costs. • Follow standard "good housekeeping" procedures that reduce waste, minimize accidents, and reduce costs • Follow guidance on design, construction, and O&M described in the "Water Supply and Sanitation" resource. http://www.encapafrica.org/EGSSAA/watsan.pdf
2.5	Applicable to current activities and potential future laundry and agro-processing activities:	• Wasted energy by machinery for the laundry facility and/or agro-processing center that leaks chemicals or fuel; possible contamination of water supplies; and possible threats to	• Follow standard "good housekeeping" procedures that reduce waste, minimize accidents, and reduce costs. • Separate harmful chemical waste from organic waste, and use more care in handling chemical waste. Dispose of chemical waste in a way that prevents chemicals from leaching into ground or surface waters (such as clay- or

No.	Sub-activity or Component	Description of Potential Impact	Mitigation Measures
	Will produce electronic waste	workers' health (repairing leaks lowers fuel costs? use? waste?) • Wide range of risks from hazardous waste from solar PV cells, backup batteries, CFLs, and/or computers and printers. (Note: These items may be chronically and acutely toxic; cause cancer; trigger birth defects; explode; corrode many materials; and cut, puncture, crush, burn, and infect people and animals. Hazardous wastes endanger many different classes of people, placing waste producers, collectors, landfill workers, waste pickers, and nearby residents at risk. The leachate from a landfill may be dangerous as well; its level of toxicity is directly related to the quantity and toxicity of hazardous materials mixed in with other solid waste.)	concrete-lined pits). Check with an environmental expert to confirm the chosen disposal method is safe for the chemicals being disposed of. • If the enterprise stores waste temporarily before transporting it to a treatment facility or landfill, make sure it is not leaking into the ground. • Schedule regular machine maintenance checks and repairs. Ensure that workers have up-to-date training in O&M. Do not wait until machinery is broken before checking it; leaks can occur long before serious equipment breakdown and may be costing the business money. If possible and cost-effective, replace faulty machinery with more-efficient machinery. • Develop systems to ensure that waste is not illegally dumped. One model that provides checks on illegal dumping is the hazardous waste manifest system in the U.S., where a "paper trail" (sequence of required documents) is generated to prove that the material reached its intended final destination. • Establish dedicated hazardous waste recycling and disposal facilities. • Explore options for contracting private sector firms that specialize in the handling and disposal of hazardous wastes. • Lead acid batteries should not be placed in landfills—the lead is toxic, the acid corrosive and contaminated. Lead acid batteries are often recycled in small-scale foundries that are highly polluting and located in residential areas. Recycling in large facilities that have emission and environmental controls is preferable, if this option is available. • Ensure that the designated area for keeping old batteries is not in close proximity or adjacent to environmentally risky areas such as drainage lines, gullers, or rivers to avoid pollution. (Ministry of Energy and Mining & Development Bank of Jamaica 2011).
3	**Construction**		
3.1	Construction crews and camps	• Resentment of outside labor • Damage to local habitat, compacted soil, and creation of erosion from camps • Contaminated surface water and spread of disease via solid waste and sewage from camps • Depletion of local flora and fauna	• Use local or regional labor, when possible. • Explore having camps off-site. • Keep camp size to a minimum. • Provide temporary sanitation on site, i.e., pit latrines assuming water table and soil conditions are suitable. • Provide education and strict guidelines regarding contact with local residents; enforce guidelines. • Set guidelines prohibiting poaching and collection with meaningful

No.	Sub-activity or Component	Description of Potential Impact	Mitigation Measures
		(particularly fuel wood) by crews • Introduction of socially destructive behavior by crews	consequences for violation, such as termination of employment. Provide adequate quantities of food and cooking fuel; both should be of good quality.
3.2	Use of toxic materials (paint, solvents, vehicle fluids, etc.)	• Soil and water contamination when materials are spilled or dumped • Risk of exposure to workers	• Use inventory control and allowance for return of construction material to ensure that unused materials will not be disposed of unnecessarily • Prevent dumping of hazardous materials. Burn waste materials that are not reusable/readily recyclable, do not contain heavy metals, and are flammable, • Investigate and use less-toxic alternative products, such as non-toxic paint,
3.3	Use of heavy equipment	• Erosion from machinery tracks, damage to roads, etc. • Soil compaction affecting flooding and groundwater • Spills or dumping of hydraulic oil, motor oil, or other harmful mechanical fluids from machinery repairs	• Minimize use of heavy machinery, • Set protocols for vehicle maintenance, such as requiring that repairs and fueling occur elsewhere or over a leak-proof surface such as plastic sheeting, • Prevent dumping of hazardous materials. Burn waste materials that are not reusable/readily recyclable, do not contain heavy metals and are flammable, • Ensure that shipping containers have had proper industrial cleaning for chemical residues and spills (Design Build Source 2012),
3.4	Potentially for future construction activities: Demolition of existing structure	• Bothered or endangered neighbors due to noise, dust, and debris • Contaminated soil, groundwater, or surface water from demolition waste containing residual amounts of toxic materials (e.g., lead paint)	• Recover all reusable materials. • Determine whether toxic materials are present. If possible, dispose of waste in lined landfill; this may be able to be negotiated with the construction contractor. Otherwise, explore options for reuse in areas where potential for contamination of surface and groundwater is small (e.g., consider the feasibility of use as roadbed material, if non-hazardous.). (See the "Management of Solid Waste from Residential, Commercial and Industrial Facilities" section of the Guidelines and references listed there for a more information.)
3.5	Site clearing and/or leveling	• Damage to or destruction of sensitive terrestrial ecosystems in the course of site clearing/preparation • Production of areas of bare soil, which causes erosion and siltation in natural water flow, and/or damage to aquatic ecosystems	• Design infrastructure to create least impact. • Minimize disturbance of native flora during construction. • Remove large plants and ground cover without destroying them, where possible. • Use erosion-control measures, such as hay bales. • Replant recovered plants and local flora as soon as possible.

No.	Sub-activity or Component	Description of Potential Impact	Mitigation Measures
3.6	Excavation	• Erosion, siltation, changes in natural water flow, and/or damage to aquatic ecosystems • Risk of falls and injuries to inhabitants and crew • Water deprivation for down-gradient populations and ecosystems, if higher regions of aquifer are blocked	• Cover pile with plastic sheeting, prevent runoff with hay bales or take similar measures when excavated soil is piled inappropriately. • Place fence around excavation. • Investigate alternatives allowing shallower or no-excavation pits.
3.7	Filling	• Blocked water courses when fill is inappropriately placed • Destruction of valuable ecosystems when fill is inappropriately placed • Land subsidence or later landslides if fill is inappropriately placed, causing injuries or damage	• Design so that filling will not be necessary. • Transplant as much vegetation and groundcover as possible • Use good engineering practices (e.g., do not use soil alone. First lay a bed of rock and gravel). • Do not fill the flow-line of a watershed.
3.8	Potentially for future construction activities; current construction uses shipping containers: Source of building materials	• Damage to aquatic ecosystems through erosion and siltation • Harm to terrestrial ecosystems via harvesting of timber or other natural products • Spread of vector-borne diseases when stagnant water accumulates in active or abandoned quarries or borrow pits (breeds insect vectors)	• Identify the most environmentally sound source of materials within budget. • Develop logging, quarrying, and borrowing plans that take into account cumulative effects. • Monitor adherence to plans and impacts of extraction practices. Modify as necessary. • Fill in quarries and pits before abandoning. • Control runoff into pit. • Crush, mill, and reuse secondary stone and concrete materials. There can be a tie-in to approved road construction.
4	**Decommissioning**		
4.1	Potentially for future construction activities Hazardous abandoned structures	• Collapsed roofs and walls, open latrines or septic systems, accumulation of rubble in or near buildings	• Remove or bury all abandoned construction materials and rubble. • Fill in and close all latrines and septic systems
4.2	Potentially for future construction	• Gulleying and siltation; damage to aesthetics	• Restore the site through replanting, reseeding, and use of soil erosion

No.	Sub-activity or Component	Description of Potential Impact	Mitigation Measures
	activities Eroded soils in the vicinity of abandoned infrastructure		control measures (hay bales, etc.).

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Guidelines FOR Implementing partners on the

USAID LAC ENVIRONMENTAL MITIGATION PLAN (EMP)

October 28th, 2009

A. Background

All projects funded by USAID must conform to US environmental regulations (22 CFR 216) requiring evaluation to ensure that no adverse environmental impacts result from the projects, that cannot be mitigated. All USAID programs funded through USAID LAC Missions fall under an Environmental Threshold Decision (ETD) designated at the Strategic Objective level. The Environmental Mitigation Plan (EMP), so described by these guidelines, ensures programmatic compliance with 22 CFR 216 by meeting the conditions specified in the applicable ETDs authorized by the USAID Latin America and the Caribbean (LAC) Bureau Environmental Officer (BEO).

Programs implemented by USAID LAC Mission implementing partners (IPs) include a range of discrete-activities under various awards that will likely have a risk for adverse environmental impact. Illustrative discrete activities include building refurbishment and medical waste management. This EMP procedure will provide for both the screening for environmental risk, preparation of a mitigation plan and reporting on monitoring of these mitigation measures, which require that appropriate consideration is given to gender as a social impact factor in the development of a mitigation plan and subsequent measures.

The EMP initially categorizes projects into three types: No Risk, Medium Risk and High Risk. Those with No Risk can continue without further review. Those with High Risk must be reconsidered for the need of an Environmental Assessment. The EMP deals with those projects at Medium Risk (*see Figure 2*).

All grantees/contractors will be required to fill out an Environmental Mitigation Plan per project type that includes:

1. The Environmental Screening Form,
2. The Identification of Mitigation Plan, and
3. The Environmental Monitoring and Tracking Table.

C. Environmental Screening Form (Table 1)

PCV Name:

Name of Activity: Community Center Business Center (Agroforestry and Laundromat) Type of Activity: Small-scale construction Date: 24 June 2013	Column A	Column B	Col C	
	Yes	No	If answered yes to Col. A. is it a--?	
			High Risk	Medium-Risk
IMPACT ON NATURAL RESOURCES & COMMUNITIES				

1	Will the project involve construction[1] of any type of structure (building, check dam, walls, etc)?				
2	Will the project involve the construction[2] or repair of roads or trails?				
3	Will the project involve the use, involve plans to use or training in the use of any chemical compounds such as pesticides[3] (including neem), herbicides, paint, varnish, lead-based products, etc?				
4	Involve the construction of repair of irrigation systems?				
5	Involve the construction or repair of fish ponds?				
6	Involve the disposal of used engine oil?				
7	Will the project involve implementation of timber management[4] or extraction of forest products?				
8	Are there any potentially sensitive land or water areas near the project site, including protected areas?				
9	Does the activity impact upon wildlife, forest resources, or wetlands?				
10	Will the activities proposed generate airborne gases, liquids, or solids (i.e. discharge pollutants)				
11	Will the waste generated during or after the project impact on neighboring surface or ground water?				
12	Will the activity result in clearing of forest cover?				
13	Will the activity contribute to erosion?				
14	Is the activity incompatible with existing land use in the vicinity?				
15	Will the activity contribute to displace housing?				
16	Will the activity affect unique geologic or physical features?				
17	Will the activity contribute to change in the amount of surface water in any body?				
18	Will the activity deal with mangroves and coral reefs?				
19	Will the activity expose people or property to flooding?				
20	Will the activity contribute substantial reduction in the amount of ground water otherwise available for public water supplies?				
21	Will the activity create objectionable odors?				
22	Will the activity violate air standard?				
23	Will the project activities create conditions encouraging an increase of waterborne diseases or populations of disease carrying vectors or other health or safety hazards?				
24	For road rehabilitation as well as water and sanitation grants, has a maintenance plan been submitted?				
25	Will the activity generate hazards or barriers for pedestrians, motorists or persons with disabilities?				
26	Will the activity increase existing noise levels?				
27	Will the project involve the disposal of syringes, gauzes, gloves and other biohazard medical waste?				
28	Is the activity incompatible with existing land use?				
LOCAL PLANNING PERMITS					
29	Does the activity e.g. infrastructure improvements, require local planning permission(s)?			N/A	N/A
30	Does the activity meet the national building code (e.g. infrastructure improvements)?			N/A	N/A
GENDER[5]					
31	Do men and women benefit disproportionately or are involved unequally in the project's activities?				
32	Are there factors that prevent women's participation in the project?				

RECOMMENDED ACTION *(Check Appropriate Action)*:		*(Check)*
(a)	The project has no potential for substantial adverse environmental effects. No further environmental review is required (Categorical Exclusion). No EMP required.	
(b)	The project has potential for minimal to medium adverse environmental effects, but mitigable environmental effects. Measures to mitigate environmental effects will be incorporated (Negative Determination with Conditions). EMP Required.	
(c)	The project has potentially substantial or significant adverse environmental effects, but requires more analysis to form a conclusion. An Environmental Assessment will be prepared (Positive Determination). No EMP required.	N/A
(d)	The project has potentially substantial adverse environmental effects, and revisions to the project design or location or the development of new alternatives is required (Deferral).	N/A
(e)	The project has substantial and unmitigable adverse environmental effects. Mitigation is insufficient to eliminate these effects and alternatives are not feasible. The project is not recommended for funding.	N/A

[1] Construction projects need to be reviewed for scale, planned use, building code needs and maintenance. Some small construction projects, such as building an entrance sign to a park, may require simple mitigations whereas larger buildings will require more extensive review and monitoring.

[2] New construction of roads and trails will require a full environmental assessment of the planned construction, i.e. a Positive Determination.

[3] The planned involvement of pesticides will trigger the need to develop a Supplemental Initial Environmental Examination that meets USAID pesticide procedures (Pesticide Evaluation Report and Safer Use Action Plan or "PERSUAP") for the project.

[4] Any activities the involve harvesting trees or converting forests will require a full environmental assessment of the activity (i.e. Positive Determination).

[5]A positive response to gender questions require follow up only when there are other positive responses on questions 1 – 30, and an EMP is developed.

PCV Name:

Name of Activity:

Type of Activity: PEACE CORPS SPA Project

Date:

B. Identification of Mitigation Plan (Table 2)

→ Enter the Question/Row # of the potential negative impacts with check marks in Column A (Table 1) and complete table below for mitigation measures to reduce or eliminate the issue. In the Sub-Activity or Component Column, list the main actions to be implemented. Under each action, list the tasks (Steps) that are needed to implement this action.

#	**Sub-activity or component**	**Description of Impact**	**Mitigation Measures**
1	Component 1		
	Step 1		
	Step 2		
	Step 3		
2	Component 2		
	Step 1		
	Step 2		

	Step 3		

* provide overview of measures used from the USAID LAC Environmental Guidelines or other pertinent guidelines, details on exact monitoring plan are illustrated in Table 3, Environmental Monitoring and Evaluation Tracking Table.

Submit this form when Project is Completed along with SPA Completion Report

C. Environmental Monitoring and Evaluation Tracking Table (Table 3).

Type of Project:	
Project Name:	
Implementing Organization:	
Location Name:	
Project Size:	
Nearby Communities:	
Senior Project Manager:	Date:
Monitoring Period:	

#	Description of Mitigation Measure	Responsible Party	Monitoring Methods			Estimated Cost	Results			Recommended Adjustments
			Indicators	Methods	Frequency		Dates Monitored	Problems Encountered	Mitigation Effectiveness	
1							**1**			
							2			
							3			
							4			
2							1			
							2			
							3			
							4			
3							1			
							2			
							3			
							4			
4							1			
							2			
							3			

VOLUME VI.C: COMMUNITY RENEWABLE ENERGY AND ENERGY EFFICIENCY ACTION PLANS

ACTION PLAN PROJECTS ANNEX - FUNDING SOURCES FOR STRATEGIC ACTION PLAN

THE AILEG PROJECT

CONTRACT NO.:EEM-I-00-07-00004-00
TASK ORDER: AID-OAA-TO-11-00041

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1. FUNDING SOURCES FOR THE COMMUNITY ACTION PLANS

The goal of this section of Volume VI.C annex of the Community Action Plan (CAP) is to support the two communities and the NGO coordinating the implementation of the CAP - SACDA - in accessing financing for their projects by providing a shortlist of relevant funding sources and their main characteristics.

The Consultant has carried out an extensive search of different types of sources focusing on donors for small, community-based initiatives.

Table 1 below summarizes the findings showing the key information for the selected donors, including contact information and reason for selecting the funding source. Section 2 contains more detail including application requirements and evaluation criteria.

On the other hand, Table 2 provides a list of those donors that do not fund projects in Jamaica or whose focus doesn't include the types of projects included in the CAP.

Table 1. Summary of Selected Funding Sources

Source	Max. Grant per Project	Donor	Objective & Focus Areas	Application process	Reasons for selection	Contact details
UNDP / GEF-SGP (Global Environment Fund - Small Grants Program)	USD 50,000 + Plus matching funds in cash and/or in kind.	UNDP/GEF	Promotes grassroots action in developing countries to address global environmental concerns in the belief that such global issues can best be addressed if local people are involved and direct community benefits are generated. Focus areas are (i) prevention of land degradation, (ii) biodiversity conservation and (iii) climate change mitigation.	Have to first fill out a project concept note and then, if accepted have to present a full proposal. Both according to SGP templates.	Projects fit with application requirements: climate change mitigation focus area. Once presented with a summary of the projects, Ms Douglas encouraged SACDA to present a proposal, stating that the projects had the following positive aspects: a 5-year plan, collected baseline data and involvement of all key stakeholders.	Hyacinth Douglas National Coordinator GEF SGP Jamaica UNDP Building 1-3 Lady Musgrave Road, Kingston 5 Tel#(876) 978-2390-9 ext. 2030 hyacinthd@unops.org http://www.jm.undp.org/gef_sgp registry.jm@undp.org
The British High Commission / Foreign & Commonwealth Office's (FCO) Strategic & Bilateral Programme Fund (2013-2014 Budget)	Approx. 35,000 pounds Sterling	UK	For the financial year 2013/14 priority will be given to bids in the following areas: • Women's rights • Lesbian, Gay, Bisexual, & Transgender (LGBT) issues • Community development, especially in rural areas • London 2012 Olympic legacy • Climate change • Energy	Fill out application form (full proposal) and submit applications to: projects.kingston@fco.gov.uk	Projects fit with application requirements: climate change & energy focus areas. Once presented with a summary of the projects, Ms Tate (the project officer in Jamaica) encouraged SACDA to present a proposal.	Valerie Tate Project Officer BHC FCO - Jamaica Email: valerie.tate@fco.gov.uk Email: projects.kingston@fco.gov.uk www.gov.uk/government/world-location-news/british-high-commission-kingston-invites-proposals-for-bilateral-programme-budget-2013-2014

Source	Max. Grant per Project	Donor	Objective & Focus Areas	Application process	Reasons for selection	Contact details
IDB / Energy Innovation Competition for Renewable Energy, Energy Efficiency, and Energy Access in Latin America and the Caribbean (IDEAS)	100,000 USD + counterpart funding of 20% of the total amount of the project, which can be financial or in kind.	The Inter-American Development Bank (IDB), GDF SUEZ, the South Korean Government and the Nordic Development Fund (NDF)	Support the development of innovative projects, scientific research, and applied technology focused on the adoption, innovation, assimilation, development, and transfer of technologies for renewable energy and energy efficiency and access to energy in the region's **rural areas**. Support initiatives that have a tangible impact on the local or regional area, promoting the development of sustainable economies and reducing poverty.	Next round of proposals will most likely have to be submitted upon completion of the IDEAS online application form at http://www.iadb.org/ideas between May and August 2014.	Projects fit with application requirements: clean energy and access to energy in the region's rural areas focus areas.	http://www.iadb.org/en/topics/energy/ideas/ideas-iv-2013,8239.html
USAID / Innovation Fund for the Americas (IFA) - Development Innovation Ventures (DIV)	100,000 USD for stage 1	USAID, the U.K. Department for International Development, and the Bill & Melinda Gates Foundation	DIV's objective is to support the discovery of better ways to solve big problems. DIV holds a quarterly grant competition for innovative ideas, pilots and tests them using cutting-edge analytical methods, and scales solutions that demonstrate widespread impact and cost-effectiveness.	DIV's tiered-funding model, inspired by the venture capital experience, invests comparatively small amounts in relatively unproven concepts, and continues to support only those that prove they work. The DIV portfolio includes evidence-gathering and scale-up activities in 17 countries and 9 sectors around the world. DIV uses a three-tiered staged finance model. Applicants can apply at any stage. **Application Process:** Step 1: Letter of Interest (LOI). Step 2: Full Application. Not all applicants who submit an LOI will be invited to submit a Full Application. Selected applicants will be sent the Full Application form with submission instructions. The Full Application form requests additional and more in-depth information than the LOI.	Projects fit with application requirements since they represent a community-based approach to solving the energy access and reliability problem that can be scaled-up.	All communication and inquiries should be done through DIV@usaid.gov and applications should be submitted to DIVApplications@usaid.gov. http://www.usaid.gov/div/about

Source	Max. Grant per Project	Donor	Objective & Focus Areas	Application process	Reasons for selection	Contact details
Digicel Foundation	Not indicated, but they have provided a grant up to 320,000 USD in 2012	Denis O' Brien and Multi-donor	The focus areas are: Education, Special Needs and Community Empowerment. In particular for the Community Empowerment area, they are focused on encouraging community self-reliance and empowerment through the implementation of sustainable projects that build life skills or generate income for community members. Moreover, they are putting a lot of emphasis in the concept of social enterprise as the model for their grantees.	Can apply for funding for a Community Based Project by applying online, or else by filling in a form and posting this back to Digicel Foundations. The application form contains the following sections: (1) Details of Applicant , (2) Project Information, (3) Project Financing, (4) Authorization and (5) Attachments. Digicel encourages the development of a business plan.	Projects fit with application requirements: Community empowerment focus area.	Kerry-Jo Lyn Programme Manager, Community Development Mobile: +1 (876) 470 7462 Phone: +1 (876) 619 2300 klyn@digicelgroup.com 14 Ocean Boulevard Kingston http://digiceljamaicafoundation.org/
Environmental Foundation of Jamaica (EFJ)	Total grant amount in 2012 was JA$ 7,797,100 distributed among 4 projects	Multi-donor	A large part of the core activities at the Environmental Foundation of Jamaica involves funding projects that deal with child development and environmental sustainability issues in Jamaica. Since 1993 we have awarded over 1200 grants. These grants have provided early childhood interventions and programmes for children with special needs and disabilities as well as youth who are at risk. Our environmental grants have buttressed innovation in research and development as well as supported waste management, wetland and watershed management, biodiversity, disbursement of alternative energy and the establishment of community water systems.	The criteria for Proposals are as follow: - Themes identifiable in Areas of Funding - Clear statement of problems and how they will be addressed - Ability to replicate the results in other areas - Proven ability to undertake the activities Organizations wishing to apply are responsible for ensuring the following: - SMART Objectives (Specific, Measurable, Achievable, Results Oriented, Time Bound) - Project alignment with National Priorities and addressing systemic issues - Methodology clearly proven and or likely to work that identifies critical resources required (Personnel, Relevant Technical expertise, etc.) - Project and Organisational sustainability - Collaboration and Partnerships	The projects fit with the environmental aim of the EFJ.	support@efj.org.jm http://www.efj.org.jm/

Source	Max. Grant per Project	Donor	Objective & Focus Areas	Application process	Reasons for selection	Contact details
				- Community involvement - Appropriate and Justified Budget - Track record of Organisation		
Scotiabank Jamaica Foundation	Not available	Bank of Nova Scotia (BNS)	The principal objectives of the Scotiabank Jamaica Foundation are to assist in alleviating poverty, deprivation and distress among economically and socially disadvantaged individuals, and their dependents, and to undertake research into these problems and methods of addressing them. The traditional focus areas have been: Education, Health, and Community Development.	The BNS is currently enhancing the Scotia Foundation to have a greater impact in communities, so the Foundation is not accepting requests for donations and scholarships at this time. The Foundation continues to support some existing projects prior commitments, however at this time, it is engaging in an operational review and will advise its publics as soon as this process is completed.	The projects fit with the community development focus area of the Foundation.	vmktmdo@cwjamaica.com http://www.scotiabank.com/jm/en/0,,71,00.html
Jamaica Social Investment Fund (JSIF) / Rural Economic Development Initiative (REDI) project	REDI will provide grant funds as follows: • Small-scale Revenue Generating Activities – maximum amount US$50,000.00 • Critical Small-Scale Public Infrastructure, Management and Marketing Subprojects – maximum amount USD	World Bank	In fulfilling its mandate, the JSIF facilitates the empowerment of communities and assists in building national capacity to effectively implement community-based programmes aimed at social development. The Rural Economic Development Initiative (REDI) project is funded by the World Bank and will be implemented by JSIF on behalf of the Government of Jamaica. REDI aims to increase the income earning potential of agricultural and rural tourism groups by supporting improvements in the value chain and ability to access markets. JSIF has partnered with the Ministry of Agriculture & Fisheries, Ministry of Tourism, Rural Agricultural Development Authority and Tourism Product Development Company to support the Implementation of REDI. JSIF will continue its partnership with the SDC and other government and non-government organizations. <u>Target Sectors</u>: Agriculture, Fishery, Agro-processing, and Rural Tourism (attractions, accommodation, tours, eco-tourism, etc.).	Projects should be proposed by a group or community, for the implementation of REDI, 'community' refers to both the geographic grouping of persons and the grouping of persons into rural enterprises based on economic interest. To request funding for a community project a completed application form or project proposal must be submitted to JSIF. Application forms may be obtained at the: • JSIF office at 1c-1f Pawsey Road, Kingston 5 • JSIF website, www.jsif.org • RADA parish offices • TPDCo regional offices • SDC parish offices When submitting an application, sponsors should ensure that: • All relevant sections of the form are accurately completed • They include evidence that the	The planned agro-processing projects fit with the aims of the Foundation.	feedback@jsif.org http://www.jsif.org http://www.jsif.org/docs/REDI_Application_Guidelines.pdf

Source	Max. Grant per Project	Donor	Objective & Focus Areas	Application process	Reasons for selection	Contact details
	200,000			decision on the community priority need was taken by the largest number of persons possible from the community. • The form is signed and dated		
Jamaica National Building Society (JNBS) / JNBS Foundation (JNFoundation) I-Support Jamaica Project	Up to JA$ 300,000 or above	Multi-donor	The JN Foundation is mandated to bring about real and sustainable change for Rural Jamaica. Innovating, inspiring, impacting! As a mechanism for development across Jamaica, it continuously aims to support initiatives that create positive impact and are sustainable. These initiatives must have a life span after funding has ended, or they must have led to a change in attitudes or behaviour towards a specific issue. The main focus is Sustainable Rural Regeneration through the following themes: Economic & Community Development; Arts, Culture and Heritage; Youth and Education; Health, Security and Safety. It has taken support of the small business sector one step further by partnering with I-Support Jamaica – a project geared at increasing access to financial resources for small businesses across Jamaica.	Support is given in the following ways: - The JNBS Members' Advisory Council (for grants up to $300,000). Through online application or local JNBS Branch. - The JN Foundation Grant Scheme (for grants over $300,000). Through online application. - Technical and in-kind support Applications to the Foundation must fit within one or more of our areas of focus to be considered for funding. Things to consider when applying to the JNFoundation: - Is your project sustainable? - Does it fit within our areas of focus? - Does it represent value for money? - Do the stakeholders support a project of this nature?	Projects fit with the Economic & Community Development focus area.	foundation@jnbs.com http://www.jnfoundation.com/content/funding
Jamaica National Building Society (JNBS) / JNBS Foundation (JNFoundation) Social Enterprise Boost Initiative (SEBI) Project	Up to JA$ 300,000 or above	USAID	JN Foundation recently received funding from USAID to develop and implement its three-year programme called the Social Enterprise Boost Initiative (SEBI). SEBI aims to mobilize employment, investment and revenue within communities across Jamaica in a socially responsible manner, and in so doing improve the nation's economic, social and environmental conditions.	Support is given in the following ways: - The JNBS Members' Advisory Council (for grants up to $300,000). Through online application or local JNBS Branch. - The JN Foundation Grant Scheme (for grants over $300,000). Through online application. - Technical and in-kind support Applications to the Foundation must fit within one or more of our areas of focus to be considered for funding. Things to consider when applying to	Projects fit with the Economic & Community Development focus area.	foundation@jnbs.com http://www.jnfoundation.com/content/funding

Source	Max. Grant per Project	Donor	Objective & Focus Areas	Application process	Reasons for selection	Contact details
				the JNFoundation: - Is your project sustainable? - Does it fit within our areas of focus? - Does it represent value for money? - Do the stakeholders support a project of this nature?		
Jamaica Rural Economy and Ecosystems Adapting to Climate Change (Ja-REEACH)	Small Grants up to 10,000 USD	USAID	The Ja REEACH project goal is "to protect rural lives, livelihoods and ecosystems in targeted Jamaican communities affected by climate change through interventions that drive adaptation and build resilience." Ja REEACH activities will be organized into two objectives: • To improve the adaptive capacity of Jamaican partners and institutions to promote livelihoods and natural systems that are resilient to climate change and its impacts; • To strengthen local and national institutions to support the processes of adaptation and sustainability. To support communities desirous of implementing adaptation solutions, grant funding is available to support small projects that address the natural and man-made hazards that increasingly impact on their lives and livelihood due to climate change. Priority will be given to community groups currently participating in one of the Ja REEACH programs namely: CCAT, CEDAR, CC FFS, AFFS, or BDRC.	Interested community groups are invited to submit a project concept paper. The concept paper should not exceed three pages and must answer a set of questions (see annex 1 for detail). Awards will be made based on availability of funds. One award will be considered per community group. Concepts, including an illustrative budget, will be received up to March 30, 2014. Concepts may be submitted in electronic or hard copy addressed to: Mr. Errol Cobourne, Grants & Procurement Specialist ACDI/VOCA 23 Lady Musgrave Road, Kingston 5 Email: ecobourne@jareeach.org Invoices and other cost estimates should support the budget submitted. Awards will be made based on availability of funds. One award will be considered per community group. Following a review of the project concept paper eligible applicant may be invited to submit a full application (with supporting documents) for further funding consideration.	Initial consultation with Karyll Aitcheson (Chief of Party) confirms eligibility for the CAP projects, in particular Content, where they intend to do some follow-up on the adaptation side that will make them eligible to receive the Ja REEACH grant funding.	Karyll Aitcheson Chief of Party Email: kaitcheson@jareeach.org Errol Cobourne Grants & Procurement Specialist ACDI/VOCA 23 Lady Musgrave Road Kingston 5 Email: ecobourne@jareeach.org www.acdivoca.org/site/ID/jamaica-ja-reeach

Source	Max. Grant per Project	Donor	Objective & Focus Areas	Application process	Reasons for selection	Contact details
Local Initiative Facility for the Environment (LIFE) Jamaica	Not available	Multi-donor	LIFE is a NGO with the mandate to support local efforts aimed at improving living conditions and promoting sustainable development in marginalised communities through a dynamic process of dialogue, capacity building, resource mobilisation networking and partnership. Services: Life Sustainability Plan, Micro Enterprise Development, Renewable Energy, Capacity Building.	N/A	Could be a good partner, especially in terms of capacity building (in-kind donor).	email: lifejamaica@cwjamaica.com Telephone: +18769673655 +18767831427 Address: 1 National Heroes Circle, Kingston 4, Jamaica http://lifejamaica.org
Virginia Gildersleeve International Fund (VGIF)	7.500 USD	Multi-donor	VGIF provides small grants for grassroots projects that empower women and girls in developing countries. It supports women's organizations based outside of the United States by providing small grants for an array of community needs. What VGIF supports: Economic empowerment of women, Community development, Health and nutritional support, Literacy and leadership training, Educational seminars and workshops, Promoting education in the sciences for girls, Women's human rights, Organizations that are governed and directed by women. VGIF does not consider requests for the following: Individual scholarships and tuition, Political organizations, Religious groups unless the proposed project contributes to the general good of the community, The construction of permanent buildings or the purchase of land, Salaries for board members and permanent staff but may include stipends/honoraria for external resource people/trainers.	Submit first a letter of intent (LOI) and if successful present a formal online application (go to www.vgif.org and click on Application Log In). The 2014 application process closed on August 31, 2013 (for LOI presentation). The 2015 application process will most likely open on May 30th 2014.	Projects fit with Economic empowerment of women and Community development focus areas.	Email: vgif@vgif.org http://www.vgif.org http://www.vgif3.org/projects2tier/index.asp

Source	Max. Grant per Project	Donor	Objective & Focus Areas	Application process	Reasons for selection	Contact details
The Spanish-Jamaica Foundation	5.000 USD	Spanish companies in the tourism sector in Jamaica	The Spanish-Jamaican Foundation (SJF) was created in 2006 as a non-profit organization of goodwill, intended to deepen the friendship between the people of Spain and Jamaica. The SJF Mission: To strengthen partnerships between Spain and Jamaica through sustainable participation in projects focusing on education, cultural, environmental awareness and community development. The SJF Vision is to ensure Jamaican communities, in particular, those in close proximity to the Spanish companies, benefit from improved access to: Quality education, increased cultural awareness and greater social integration. Objectives are to promote: Social, educational, cultural and community-based projects to encourage the fight against poverty. Projects to enhance the common history of both nations, and to support greater recognition of heritage and historical sites. Cultural, educational and other exchanges and collaborations between the two nations.	Submit a proposal following the SJF format found in the website, which has the following structure: - Project description - Context & Situational Analysis - Background - Stakeholders (include direct and indirect beneficiaries) - Project Rationale: Goal, main activities, expected results and sustainability of project - Timetable of activities - Activity budget (specifying donor per activity) The proposal has to be submitted to the following email: projectofficer.spjf@gmail.com	Even though the SJF is more likely to consider projects in/near to where their hotels operate, there is a match with the environmental goal of the CAP projects with one of the focus areas of the Foundation.	Email: projectofficer.spjf@gmail.com www.spanishjamaicanfoundation.org

Table 2. Overview of non-eligible, reviewed funding sources

Funding Source	Web Site
Alcoa Foundation	www.alcoa.com
Acción International	www.accion.org
Aché Laboratórios Farmacêuticos S/A	www.ache.com.br
Amazon Watch	www.amazonwatch.org
Andrew W. Mellon Foundation	www.mellon.org
Annenberg Foundation	www.annenbergfoundation.org
Asociación Ancash	www.ancash.org
Asociación de Cooperación para el Desarrollo (AGEH)	www.ageh.de
Asociación Los Andes de Cajamarca (ALAC)	www.losandes.org
AVINA Stiftung	www.avinastiftung.ch/en/foundation/foundation.html
Bavaria - Sab Miller	www.grupobavaria.com
Bill & Melinda Gates Foundation	www.gatesfoundation.org
Braskem	www.braskem.com.br
California Endowment	www.calendow.org
Canadian International Development Agency (CIDA)	www.acdi-cida.gc.ca
Cartellone	www.cartellone.com.ar
CEMEX S.A.B DE C.V.	www.cemex.com
Charities Aid Foundation	ww.cafonline.org
Charles Stewart Mott Foundation	www.mott.org
Christensen Fund	www.christensenfund.org
Conservation International	www.conservation.org
Copagaz	www.copagaz.com.br
Danish International Development Agency (DANIDA)	www.um.dk
David and Lucille Packard Foundation	www.packard.org
Deutsche Bank Americas Foundation	www.db.com/us/content/en/social_responsibility.html
DuPont Brasil S/A	www.ag.dupont.com.br
Ecopetrol	www.ecopetrol.com.co

Funding Source	Web Site
EMPower - The Emerging Market Foundation	www.empowerweb.org
Endeavor	www.endeavor.org
ExxonMobil Foundation	www.exxonmobil.com
Fastenopfer	www.fastenopfer.ch
Federal Ministry for Economic Cooperation and Development (BMZ)/German Agency for Technical Assistance (GTZ)	www.bmz.de
FEMSA	www.femsa.com
FINCA International	www.villagebanking.org
Flora Family Foundation	www.florafamily.org
Fondation d'Entreprise Veolia Environment	www.fondation.veolia.com
Fondation de France	www.fdf.org
Fondation Ensemble	www.fondationensemble.org
Fondation Raiffeisen Belge / Belgische Raiffeisenstichting	www.brs-vzm.be
Ford Foundation	www.fordfound.org
Forum Empresa	www.empresa.org
Fundação AcellorMittal Acesita	ww.acesita.com.br
Fundação Assistência Médica Internacional (AMIs)	www.fundacao-ami.org
Fundação Calouste Gulbenkian Foundation (Portugal)	www.gulbenkian.pt
Fundação Luso-Americana para o Desenvolvimento (FLAD)	www.flad.pt
Fundacão Odebrecht	www.fundacaoodebrecht.org.br
Fundacão ORSA	www.fundacaoorsa.org.br
Fundação Otacílio Coser	www.foco.org.br
Fundação Semear	www.fundacaosemear.org.br
Fundacão Vale do Rio Doce de Habitacão e Desenvolvimento Social	www.cvrd.com.br
Fundación ACCIONA Microenergía (FUNDAME)	www.acciona.es/sostenibilidad/fundacion-acciona-microenergia
Fundación Acindar	www.fundacionacindar.org.ar
Fundación ADO, A.C.	www.fundacionado.org.mx

Funding Source	Web Site
Fundación Antonio Restrepo Barco	www.funrestrepobarco.org.co
Fundación Arelauquen	www.fundacionarelauquen.org
Fundación Argos	www.argos.com.co
Fundación AVINA	www.avina.net
Fundación Axtel, A.C.	www.fundacionaxtel.org
Fundación Banco Bica	www.fundacionbica.org.ar
Fundación Banco Credicoop	www.fundacioncredicoop.com.ar
Fundación Banco Francés	www.bancofrances.com.ar
Fundación Basso	www.fundacionbasso.org
Fundación Bunge y Born	www.fundacionbyb.org
Fundación C & A	www.fundacioncya.org.ar
Fundación Caicedo González	www.fundacioncaicedogonzales.org
Fundación Carvajal	www.fundacioncarvajal.org.co
Fundación Cisneros	www.fundacion.cisneros.org
Fundacion Compartir	www.fundacioncompartir.org
Fundación Corona	www.fundacioncorona.org
Fundación del Empresariado en México, A.C.	www.fundemex.org.mx
Fundación del Empresariado Sonorense A.C.	www.fesac.org
Fundación Elecnor	www.elecnor.es/es/responsabilidad/fundacion/areas-actividad
Fundacion el Alcaravan - Ecopetrol - OXY	www.alcaravan.org.co
Fundación EPSA	www.epsa.com.co
Fundación Femsa A.C.	www.fundacionfemsa.org
Fundacion Fundesmag - Ecopetrol Magdalena med	www.fundesmag.com
Fundación GASCO	www.gasco.cl
Fundación GCC, A.C.	www.fundaciongcc.org
Fundación Granahorrar	www.fundaciongranahorrar.org
Fundación Grupo Modelo A.C.	www.gmodelo.com.mx
Fundación Impulsar	www.fundacionimpulsar.org.ar

Funding Source	Web Site
Fundación La Caixa	obrasocial.lacaixa.es
Fundación MAC	www.fundacionmac.org
Fundacion Mamonal	www.fundacionmamonal.org
Fundación Mario Santo Domingo	www.fundacionmariosantodomingo.org.co
Fundación Miguel Alemán, A.C.	www.miguelaleman.org
Fundación Minetti	www.fundacionminetti.org.ar
Fundación ProHumana	www.prohumana.cl
Fundación Propal	www.propal.com.co
Fundación Rafael Dondé, I.A.P.	www.frd.org.mx
Fundación Repsol YPF	www.repsol.com
Fundación Smurfit Cartón de Col.	www.smurfittkappa.com.co
Fundación Social de Holcim Colombia	www.fundacionsocialholcimcolombia.org
Fundación Suramericana	www.suramericana.com.co
Fundación Televisa A.C.	www.fundaciontelevisa.org
Fundaflor	www.asocolflores.org
Fundescat - Ecopetrol	www.fundescat.com
Gas Natural Ban	www.primeraexportacion.com.ar
Gol	www.voegol.com.br
Grameen Foundation	www.grameenfoundation.org
Grup Gas Natural	www.fundaciongasnatural.org
Instituto Coca-Cola Brasil	www.institutococacola.org.br
Instituto Lojas Renner S.A	www.lojasrenner.com.br
Instituto Tambore	www.tamboré.com.br
Instituto Unilever	www.unilever.com.br
Instituto Wal Mart	www.iwm.org.br
Inter-American Foundation (IAF)	www.iaf.gov
Interactuar Famiempresas	www.interactuar.org
ISA	www.isa.com.co

Funding Source	Web Site
J. M. Kaplan Fund, Inc.	www.jmkfund.org
Mano a Mano International Partners	www.manoamano.org
McKnight Foundation	www.mcknight.org
Mercy Corps	www.mercycorps.org
Misereor	www.misereor.org
Monsanto Fund	www.monsantofund.org
Moriah Fund	ww.moriahfund.org
Netherlands Development Organization (SNV)	www.snvworld.org
Norwegian People's Aid	www.npaid.org
Peninsula Community Foundation	www.siliconvalleycf.org
Rabobank Foundation	www.rabobankfoundation.com
Samarco	www.samarco.com
Starr Foundation	www.starrfoundation.org
Trocaire	www.trocaire.org

2. DETAILED INFORMATION ON SELECTED SOURCES

SOURCE	GEF - SGP
OBJECTIVES & FOCUS AREAS	Promotes grassroots action in developing countries to address global environmental concerns in the belief that such global issues can best be addressed if local people are involved and direct community benefits are generated. Focus areas are (i) prevention of land degradation, (ii) biodiversity conservation and (iii) climate change mitigation. The latter includes the following: • Promote the demonstration, development and transfer of low carbon technologies at the community level; • Promote and support energy efficient, low carbon transport at the community level; and • Support the conservation and enhancement of carbon stocks through sustainable management and climate proofing of land use, land use change or forestry.
APPLICATION REQUIREMENTS	• Limited Funding is available to legally registered NGOs and CBOs for community-based initiatives. • Projects with tangible co-financing will be of priority. • Projects should demonstrate collaborations and partnerships with other agencies, as well as broad community participation. • Demonstrated ability to manage project processes. • Projects should be aligned to National Policies/Priorities (i.e. Vision 2030 Jamaica) and the UN Conventions (CBD, UNFCCC, UNCCD) to which Jamaica is a signatory • Projects should have cross-cutting results in poverty reduction, livelihoods, capacity development and gender with special focus on youth involvement • Consideration will not be given to concepts submitted not using the template

SOURCE	BHC-FCO
OBJECTIVES & FOCUS AREAS	For the financial year 2013/14 priority will be given to bids in the following areas: • Women's rights • Lesbian, Gay, Bisexual, & Transgender (LGBT) issues • Community development, especially in rural areas • London 2012 Olympic legacy • Climate change

	• Energy
APPLICATION REQUIREMENTS	Proposals must meet the funding criteria in demonstrating sustainability, risk mitigation, and fit with BHC's funding priorities. The following are the key appraisal criteria: • Strategic Fit: To identify whether the project "fits" with higher level priorities and objectives of the British High Commission and if it complements other existing initiatives. • Project Structure To ensure the project appears sound in terms of the identification of a clear purpose, and clarity with regard to which deliverables (outputs) and activities will be required to meet this purpose. • Implementing Agency: To establish that the implementing agency is appropriately equipped to carry out the project – based on the organisation's experience, skills, principles, values, priorities, capacity and current workload. • Budget (and profile): To confirm that the costs of the project are reasonable, sufficient for the expected outcome, and spread over the project life in accordance with levels of project activity • Monitoring & Evaluation: To establish that adequate mechanisms will be put in place to generate information that allows assessment of the progress and achievements of the project, as well as for the High Commission to be able to make appropriate decisions on corrective action if required. • Risk: To determine risks associated with delivery of the project objectives and whether these can be managed satisfactorily. The management of risk would be part of the monitoring plan referred to above. • Stakeholders: To identify whether or not beneficiaries have been appropriately involved in the identification of the project and if they will be committed to its success. To consider whether other stakeholders have been given due consideration – including negative stakeholders, those who might impede project and hence programme progress. • Sustainability: To check whether or not benefits generated by the project will be maintained in the longer-term and assess the project's plan for putting benefit maintenance processes in place before the end of the project (exit strategy). • Cross Cutting Issues: To ensure that potential effects of the project on gender equity, the environment and human rights have been appropriately considered and catered for and to determine the extent to which the project has explored the local context with regard to these issues and made appropriate adjustments in response. Funding will not be provided for conferences, research, and recurrent operational costs unless these activities are required to meet project objectives.

SOURCE	IDB / Energy Innovation Competition for Renewable Energy, Energy Efficiency, and Energy Access in Latin America and the Caribbean (IDEAS)
OBJECTIVES & FOCUS AREAS	Support the development of innovative projects, scientific research, and applied technology focused on the adoption, innovation, assimilation, development, and transfer of technologies for renewable energy and energy efficiency and access to energy in the region's **rural areas**.

	Support initiatives that have a tangible impact on the local or regional area, promoting the development of sustainable economies and reducing poverty.
APPLICATION REQUIREMENTS	Annual competition with the following eligibility criteria: • Purpose of the proposed projects: Projects must focus on the adoption, innovation, assimilation, development, and transfer of technologies for renewable energy and energy efficiency, and climate change, including biofuels and energy access in rural areas. • Entities eligible to participate: The contest is open to any organization, consortium, or individual based in the IDB member countries in Latin America and the Caribbean. • Timeframe: The proposed activities must be completed within a maximum of 12 months from the date of the first disbursement. • Existing support: Applicants who are already receiving funding for the same project from GDF SUEZ, NDF, the IDB, or any previous sponsor of the competition, are not eligible. • Areas eligible for funding: All expenses and investments directly related to the execution of the project that are essential for the project's successful implementation are eligible for funding. Full accounting must be made of these expenses and investments. Next round of proposals will most likely have to be submitted upon completion of the IDEAS online application form at http://www.iadb.org/ideas between May and August 2014.

SOURCE	USAID / Innovation Fund for the Americas (IFA) - Development Innovation Ventures (DIV)
OBJECTIVES & FOCUS AREAS	DIV's objective is to support the discovery of better ways to solve big problems. DIV holds a quarterly grant competition for innovative ideas, pilots and tests them using cutting-edge analytical methods, and scales solutions that demonstrate widespread impact and cost-effectiveness. For more than a decade, Latin America and the Caribbean (LAC) has experienced strong economic growth, declining poverty, and deepening democracy, however development challenges persist. Deteriorating citizen security, poor educational outcomes, high levels of youth unemployment, and extreme vulnerability to natural disasters are just some of the difficult issues facing countries in the region. To address these challenges, USAID launched the Innovation Fund for the Americas (IFA) to invest in cost-effective breakthrough solutions to development challenges in Latin America and the Caribbean. IFA will pilot, rigorously test, and bring to scale promising projects with the potential to significantly improve development outcomes. IFA is especially interested in funding proposals that address the following focus areas: Energy and environment, citizen safety, at-risk youth, education, and democracy challenges.
APPLICATION REQUIREMENTS	Selection of winning applications is based on: Cost effectiveness, Rigorous Testing and Pathways to Scale. Drawing inspiration from product development enterprises, DIV uses a three-tiered

staged finance model to maximize cost-effectiveness and minimize the risk of testing new ideas. **Applicants can apply at any stage** (staging is based on the content of the project, not the level of funding needed):

- Stage 1: Establishes proof of concept and viability of innovation. Stage 1 funding is intended to test the real-world viability of an innovative development solution. Projects demonstrate a departure from current practices and are more cost-effective than alternatives. Stage 1 funding requests will typically not exceed $100,000 per project. Stage 1 projects can propose activities for up to two years.
- Stage 2: Evaluates solution at scale with rigorous impact testing (stage 1 criteria have previously been met with DIV or other support sources). Stage 2 funding is provided to innovative solutions that have demonstrated success at a pilot or small-scale stage, and now require support to assess if the solution can achieve larger scale development impact and whether it can be successfully implemented at a larger scale. Stage 2 projects will typically not exceed $1 million but are often significantly less. Stage 2 projects can propose activities for up to four years.
- Stage 3: Transitions program to widespread adoption (criteria of stages 1 and 2 have previously been met with DIV or other support sources). Stage 3 funding is reserved for innovative solutions that have credible and rigorous evidence of development impacts at significant scale. Stage 3 projects will transition an innovation from large-scale implementation to widespread adoption in one country and/or replication in at least one other country. Applicants must provide rigorous evidence that the innovation has demonstrated cost-effective development impacts and that large-scale implementation was successful. Stage 3 projects will typically not exceed $15 million but are often significantly less. Stage 3 projects can propose activities for up to five years.

Application Process

The DIV application process balances the needs for both a rigorous and efficient selection process while reducing the burden on the applicant.

<u>Step 1: Letter of Interest (LOI)</u>

Interested applicants must first submit an LOI. All LOI submissions must be submitted using the LOI form. As requested by the LOI, applicants should describe the purpose of the project, summarize the project's goals, and include financial information for the project among other criteria in the LOI. Attachments to the LOI will not be reviewed. If DIV finds the project proposed in the LOI to be responsive to the selection criteria, then the applicant will be invited to submit a Full Application. Please note that an invitation to submit a Full Application does not constitute intent to award. Upcoming LOI deadlines for DIV applications are: August 15, 2013; December 16, 2013; and April 15, 2014. Deadlines close at 11:59 p.m. Eastern.

Letter of Interest: Stage Selection

Applicants choose one of DIV's three stages when submitting their LOI. Stage level selection should be based on how far the proposed project is in its development and to what extent the applicants have previously gathered evidence of its success. Staging is not based on the level of funding needed.
To determine which stage your project falls under, please read stage details in DIV's

	APS. ***Letter of Interest: Evaluation Factors*** LOIs will be evaluated on the degree to which the proposed solution demonstrates: For the LOI form, information on the review process, timeline, and scoring, award administration, and further clarification, please see DIV's Annual Program Statement. <u>Step 2: Full Application</u> Not all applicants who submit an LOI will be invited to submit a Full Application. Selected applicants will be sent the Full Application form with submission instructions. The Full Application form requests additional and more in-depth information than the LOI. It is provided in the Annual Program statement (APS) for informational purposes only. For complete information on the application process, including eligibility details, successful proposal examples, and evaluation criteria please closely read DIV's APS.

SOURCE	Digicel Foundation
OBJECTIVES & FOCUS AREAS	The focus areas are: Education, Special Needs and Community Empowerment. In particular for the Community Empowerment area, they are focused on encouraging community self-reliance and empowerment through the implementation of sustainable projects that build life skills or generate income for community members. New objectives have been developed. They are: EDUCATION: Achieving 100% literacy by employing the use of technology. SPECIAL NEEDS: Increasing the quality and quantity of facilities serving the special needs communities and increasing the awareness around special needs issues. COMMUNITY EMPOWERMENT: Encouraging community self-reliance and empowerment through the implementation of sustainable projects that build life skills or generate income for community members. One of the special areas of focus is Community Based Entrepreneurial Enterprise: The Foundation would like to receive grant applications that focus on community based entrepreneurial activities that create employment for others, teach a trade/skill for at-risk youths AND can demonstrate income generation within 2-3 years. Youth and Community Entrepreneurship with a focus on: (i) Small scale entrepreneurship projects in agriculture, agro-processing, technology, innovation, inner-city/urban improvement, environment management; and (ii)Development of innovative technology solutions for addressing a community or national issue. Community Development with a focus on: (i) Sports for development projects with special emphasis on sustainability and impact on youth; and (ii)Sustainability projects – emphasis on those projects that need assistance in becoming sustainable.

APPLICATION REQUIREMENTS	The application should be completed using the application form provided on the website or on a form provided in one of the Digicel Retail Outlets island wide. May also apply online via Digicel's website. Kindly use the guidelines detailed below, to assist with such. At your own discretion, you may also include a full presentation or project information pack as an appendix to this application. Please note that all taxes, duties, levies and charges imposed in connection with the grant will be borne by the applying organization and applicants are urged to seek their own professional advice. The completed Application Form will be appraised by the Project Approvals Committee, which will carefully evaluate your application and decide on whether or not to make recommendations for your application to go to the Digicel Foundation Board for a final decision to be made. It is important to remember that the Project Approvals Committee has the final decision with regards to making Board recommendation projects. The Committee will assess your application in relation to • The proposed project's commercial viability and sustainability • The appropriateness of Digicel Foundation Fund support and • The tangible benefits of the project in relation to the objectives of the Foundation The Committee may ask for a revised application if there are any issues that require further clarification before making the final decision on a grant. In terms of the Attachments to provide with the proposal: (1) A minimum of 2 professional cost estimates for the full project, which is inclusive of all items on the budget. Please note that where several suppliers are required to create a complete estimate, the project assessment team will expect that the estimates will be amalgamated so that the team can easily identify the full project cost and its component costs. Please also attach a summary sheet comparing the totals of each estimate advising which estimate you will be using. (2) Endorsement Letters. (3) Cash flow projection for the project expenditure. (4) Three most recent financial record. (5) Photographs of site/room. (6) For infrastructural projects please also include: a. Copy of lease agreements where applicable for 49 years or more b. Copy land/building title c. Engineering plans d. Letter giving permission to build e. Letter granting permission for approved drawings from MoE and Parish Council

SOURCE	The Environmental Foundation of Jamaica (EFJ)
OBJECTIVES &	A large part of the core activities at the Environmental Foundation of Jamaica involves funding projects that deal with child development and environmental sustainability issues in Jamaica. Since 1993 we have awarded over 1200 grants. These

FOCUS AREAS	grants have provided early childhood interventions and programmes for children with special needs and disabilities as well as youth who are at risk. Our environmental grants have buttressed innovation in research and development as well as supported waste management, wetland and watershed management, biodiversity, disbursement of alternative energy and the establishment of community water systems.
APPLICATION REQUIREMENTS	The criteria for Proposals are as follow: • Themes identifiable in Areas of Funding • Clear statement of problems and how they will be addressed • Ability to replicate the results in other areas • Proven ability to undertake the activities Organizations wishing to apply are responsible for ensuring the following: • SMART Objectives (Specific, Measurable, Achievable, Results Oriented, Time Bound) • Project alignment with National Priorities and addressing systemic issues • Methodology clearly proven and or likely to work that identifies critical resources required (Personnel, Relevant Technical expertise, etc.) • Project and Organisational sustainability • Collaboration and Partnerships • Community involvement • Appropriate and Justified Budget • Track record of Organisation

SOURCE	Scotiabank Jamaica Foundation
OBJECTIVES & FOCUS AREAS	The principal objectives of the Scotiabank Jamaica Foundation are to assist in alleviating poverty, deprivation and distress among economically and socially disadvantaged individuals, and their dependents, and to undertake research into these problems and methods of addressing them. The traditional focus areas have been: Education, Health, and Community Development.
APPLICATION REQUIREMENTS	The BNS is currently enhancing the ScotiaFoundation to have a greater impact in communities, so the Foundation is not accepting requests for donations and scholarships at this time. The Foundation continues to support some existing projects prior commitments, however **at this time, it is engaging in an operational review** and will advise its publics as soon as this process is completed.

SOURCE	Jamaica Social Investment Fund (JSIF) – REDI Project
OBJECTIVES & FOCUS AREAS	The Jamaica Social Investment Fund (JSIF) mobilizes resources and channels these to community-based socio-economic infrastructure and social services projects. Through a national partnership between central and local government, communities and private and public organizations, the JSIF addresses the immediate demands of communities in a manner that is quick, efficient, effective, transparent and non-partisan.

	In fulfilling its mandate, the JSIF facilitates the empowerment of communities and assists in building national capacity to effectively implement community-based programmes aimed at social development. The Rural Economic Development Initiative (REDI) project is funded by the World Bank and will be implemented by JSIF on behalf of the Government of Jamaica. REDI aims to increase the income earning potential of agricultural and rural tourism groups by supporting improvements in the value chain and ability to access markets. JSIF has partnered with the Ministry of Agriculture & Fisheries, Ministry of Tourism, Rural Agricultural Development Authority and Tourism Product Development Company to support the Implementation of REDI. JSIF will continue its partnership with the SDC and other government and non-government organizations. Target Sectors: • Agriculture • Fishery • Agro-processing • Rural Tourism [attractions, accommodation, tours, eco-tourism, etc]
APPLICATION REQUIREMENTS	**Funding availability and How to Apply for Funding** ***Size of Grants*** REDI will provide grant funds as follows: • Small-scale Revenue Generating Activities – maximum amount US$50,000.00 • Critical Small-Scale Public Infrastructure, Management and Marketing Subprojects – maximum amount US$200,000.00 **How to Apply** To request funding for a project, applicants must complete the REDI application form and submit to JSIF. Application forms may be obtained at the: • JSIF office at 1c-1f Pawsey Road, Kingston 5 • JSIF website, www.jsif.org • RADA parish offices • TPDCo regional offices • SDC parish offices When submitting the application form, please ensure that: • All relevant sections of the form are accurately completed • Supporting documentation (as needed) should be provided at the same time the application form is being submitted. • The form should be signed and dated 3. GrantFundingCriteria **Project Types** Groups operating in Jamaica and engaged in agriculture, agro-processing, and rural tourism that demonstrate viability may apply for funding to undertake projects in the following areas: • Small-Scale Revenue Generating Projects (these are income generating projects linking small producer groups or groups of tourism providers to markets)

	○ Establishment of crops and livestock ○ Purchase of machinery and equipment ○ Construction of small-scale buildings/structures (for productive purposes) ○ Capacity Building ○ Establishment of Marketing and Management systems ○ Enhancement of tourism products and services • Critical Small-scale Infrastructure, Management and Marketing Projects (these are community investments that will support efficiency, competitiveness and business viability) ○ Construction/Rehabilitation of small to medium scale buildings / structures (e.g. cold storage, visitor centres) ○ Marketing tools (packaging, labels, brochures, website linkages) ○ Information Management ○ Capacity Building Note: The list above is indicative of the types of projects that may apply for funding however it is not an extensive list. JSIF, however, DOES NOT purchase or lease land or buildings **Eligibility and Priority Criteria** Groups should be or become legally registered as Cooperative or Benevolent Society. Be engaged in an agriculture and/or rural tourism micro or small business Projects should be proposed by a group or community, for the implementation of REDI, *'community'* refers to both the geographic grouping of persons and the grouping of persons into rural enterprises based on economic interest. Group should have ability to contribute the required 20% (small-scale revenue generating projects – 10% cash and 10% kind; critical small-scale infrastructure, management and marketing – 20% cash or kind). Projects should be within rural areas or have linkages with rural areas. **Other Development Considerations** Each project must be able to demonstrate an ability to support economic development through any combination of the following: • Employment creation • Proposed project should seek to support agricultural and tourism development • Diversification of the agricultural and tourism sectors • Utilisation of local inputs • Development of local management skills • Indicate strong market demand for product and/or services • Proposed projects should be financially feasible

SOURCE	Jamaica National Building Society (JNBS) / JNBS Foundation (JN Foundation)
OBJECTIVES &	The JN Foundation is mandated to bring about real and sustainable change for Rural Jamaica. Innovating, inspiring, impacting! As a mechanism for development across

FOCUS AREAS	Jamaica, it continuously aims to support initiatives that create positive impact and are sustainable. These initiatives must have a life span after funding has ended, or they must have led to a change in attitudes or behaviour towards a specific issue. The main focus is Sustainable Rural Regeneration through the following themes: Economic & Community Development; Arts, Culture and Heritage; Youth and Education; Health, Security and Safety. To develop a modern, progressive nation, the presence of a vibrant small and medium enterprise sector is essential: small businesses stimulate the economy through increased employment, increased taxes and greater innovation. In Jamaica, the small business sector is essential to national development. The JN Foundation has been supporting this sector by offering financial grants, increased access to business support services and training opportunities to community businesses, otherwise known as social enterprises. A Social Enterprise is a for-profit with not for profit organisation, set up by a group of people who see a gap within their communities that needs to be filled. With the support given by the Foundation, groups have been able to address local social issues whilst increasing employment within their communities, and generating income in often-isolated areas. We have taken this support of the small business sector one step further by partnering with I-Support Jamaica – a project geared at increasing access to financial resources for small businesses across Jamaica. Through I-Support Jamaica, people all across the world will be able to open up access to credit lines to serve the very small, start-up entrepreneurs through loans or grants. It provides a way for persons to connect to their dreams and passions by helping someone to realise their own dreams in business. It's an easy way of bringing together people with a common passion to help an individual. In addition to providing loans to entrepreneurs, Isupportjamaica.com will also facilitate donations and grants to organisations, schools or projects within Jamaica, in need of assistance, with all donations and gifts to these entities being managed through the Foundation.
APPLICATION REQUIREMENTS	Support is given in the following ways: • The JNBS Members' Advisory Council (for grants up to $300,000). Through online application or local JNBS Branch. • The JN Foundation Grant Scheme (for grants over $300,000). Through online application. • Technical and in-kind support Applications to the Foundation must fit within one or more of our areas of focus to be considered for funding. Things to consider when applying to the JN Foundation: • Is your project sustainable? • Does it fit within our areas of focus? • Does it represent value for money? • Do the stakeholders support a project of this nature? In general, if we fund operational phases of established programmes; capital requests for purchase; furnishing of facilities; equipment purchase; conferences; films, television, or radio programmes; endowments; development campaigns; or research, we typically do so as part of a broader programming/funding effort. We do not provide grants for budget line items labelled as "indirect, miscellaneous or overhead costs." The Foundation does not fund individuals except those applying for the HA Tony

	Clarke Scholarship Programme Sustainability of Project: The grantee, community, or other beneficiary must demonstrate the potential to continue the funded work in a self-renewing manner after Foundation funding has ended.

SOURCE	Jamaica National Building Society (JNBS) / JNBS Foundation (JN Foundation) Social Enterprise Boost Initiative (SEBI) Project
OBJECTIVES & FOCUS AREAS	JN Foundation recently received funding from USAID to develop and implement its three-year programme called the Social Enterprise Boost Initiative (SEBI). SEBI aims to mobilize employment, investment and revenue within communities across Jamaica in a socially responsible manner, and in so doing improve the nation's economic, social and environmental conditions. Why Now? Jamaica, like many small developing states, has many social challenges that cannot be addressed solely by the Government. This has resulted in numerous non-governmental organizations and civic groups attempting to advocate for social causes such as health, education and culture, in their efforts to improve the lives of the Jamaican people. The challenging global economic situation among other circumstances has resulted in dwindling support for such efforts, which have traditionally relied on donations and grant funding to survive. These entities must therefore move from non-sustainable activities to building profitable business enterprises in order to support their social missions.
APPLICATION REQUIREMENTS	Support is given in the following ways: • The JNBS Members' Advisory Council (for grants up to $300,000). Through online application or local JNBS Branch. • The JN Foundation Grant Scheme (for grants over $300,000). Through online application. • Technical and in-kind support Applications to the Foundation must fit within one or more of our areas of focus to be considered for funding. Things to consider when applying to the JN Foundation: • Is your project sustainable? • Does it fit within our areas of focus? • Does it represent value for money? • Do the stakeholders support a project of this nature? In general, if we fund operational phases of established programmes; capital requests for purchase; furnishing of facilities; equipment purchase; conferences; films, television, or radio programmes; endowments; development campaigns; or research, we typically do so as part of a broader programming/funding effort. We do not provide grants for budget line items labelled as "indirect, miscellaneous or overhead costs." The Foundation does not fund individuals except those applying for the HA Tony Clarke Scholarship Programme Sustainability of Project: The grantee, community, or other beneficiary must

	demonstrate the potential to continue the funded work in a self-renewing manner after Foundation funding has ended.

SOURCE	Jamaica Rural Economy and Ecosystems Adapting to Climate Change (Ja-REEACH)
OBJECTIVES & FOCUS AREAS	ACDI/VOCA received a four-year, $14 million award to implement the Jamaica Rural Economy and Ecosystems Adapting to Climate cHange (Ja-REEACH) program, formerly known as MAJIC. The MAJIC program originally focused on transforming Jamaica's agriculture sector into a market-driven, competitive industry. In response to Jamaica's high vulnerability to climate change, the program focus was revised to respond to the impacts of global climate change on Jamaica's natural resources, lives and livelihoods. The Ja REEACH project goal is "to protect rural lives, livelihoods and ecosystems in targeted Jamaican communities affected by climate change through interventions that drive adaptation and build resilience." Ja REEACH activities will be organized into two objectives: • To improve the adaptive capacity of Jamaican partners and institutions to promote livelihoods and natural systems that are resilient to climate change and its impacts; • To strengthen local and national institutions to support the processes of adaptation and sustainability. To support communities desirous of implementing adaptation solutions, grant funding is available to support small projects that address the natural and man-made hazards that increasingly impact on their lives and livelihood due to climate change. Using site assessments and other data to evaluate vulnerability, exposure and sensitivity, ACDI/VOCA will prepare site and activity-specific action plans. Ja REEACH will apply an integrated approach that recognizes that climate change poses both economic and social problems. The project will work with beneficiaries and the broader community of stakeholders, including value chain members, partners and policymakers. The project will also seek to ensure that traditionally marginalized groups and vulnerable populations – including single woman-households and youth – are included and represented as both stakeholders and program participants. ACDI/VOCA will work with local partners, strengthening their ability to provide services all along the value chain to improve productivity beyond the life of the project.
APPLICATION REQUIREMENTS	Priority will be given to community groups currently participating in one of the Ja REEACH programs namely: • Climate Change Action Training (CCAT) • Communities Engaged to Drive Adaptation Responses (CEDAR) • Climate Change Farmer Field School (CC FFS) • Agroforestry Farmer Field School (AFFS) • Building Disaster Resilient Communities (BDRC) Interested community groups are invited to submit a project concept paper. The concept paper should not exceed three pages and MUST answer the following questions:

	• What is the group's focus as it relates to climate change? • What weather/ climate related challenge is being faced by the community (e.g. drought, flooding, pest and diseases or hurricane damage)? Please provide historical information on impact(s) if available. • What is the project to be done by the group to address the priority challenge? • How will the activity (to be funded through the grant) support this focus? • Which ACDI/VOCA – Ja REEACH program is the group aligned (if any)? • Who will benefit from the activity? • What is the total estimated amount that the group will require from ACDI/VOCA to implement the proposed activity? • What is the group's contribution (in cash or kind)? • Are there any national or local partners involved in the activity (e.g. Forestry Department, ODPEM, JAS, 4-H, RADA)? Concepts, including an illustrative budget, will be received up to March 30, 2014. Concepts may be submitted in electronic or hard copy addressed to: Mr. Errol Cobourne Grants & Procurement Specialist ACDI/VOCA 23 Lady Musgrave Road Kingston 5 Email: ecobourne@jareeach.org Invoices and other cost estimates should support the budget submitted. Awards will be made based on availability of funds. One award will be considered per community group. Following a review of the project concept paper eligible applicant may be invited to submit a full application (with supporting documents) for further funding consideration.

SOURCE	Local Initiative Facility for the Environment (LIFE) Jamaica
OBJECTIVES & FOCUS AREAS	LIFE is a NGO with the mandate to support local efforts aimed at improving living conditions and promoting sustainable development in marginalised communities through a dynamic process of dialogue, capacity building, resource mobilisation networking and partnership. Services: Life Sustainability Plan, Micro Enterprise Development, Renewable Energy, and Capacity Building.
APPLICATION REQUIREMENTS	Doesn't apply.

SOURCE	Virginia Gildersleeve International Fund (VGIF)
OBJECTIVES & FOCUS AREAS	VGIF provides small grants for grassroots projects that empower women and girls in developing countries. It supports women's organizations based outside of the United States by providing small grants for an array of community needs. What VGIF supports: Economic empowerment of women, Community development, Health and nutritional support, Literacy and leadership training, Educational seminars and workshops, Promoting education in the sciences for girls, Women's human rights, Organizations that are governed and directed by women. VGIF does not consider requests for the following: Individual scholarships and tuition, Political organizations, Religious groups unless the proposed project contributes to the general good of the community, The construction of permanent buildings or the purchase of land, Salaries for board members and permanent staff but may include stipends/honoraria for external resource people/trainers.
APPLICATION REQUIREMENTS	Submit first a letter of intent (LOI) and if successful present a formal online application (go to www.vgif.org and click on Application Log In). The 2014 application process closed on August 31, 2013 (for LOI presenation). The 2015 application process will most likely open on May 30th 2014.

SOURCE	The Spanish-Jamaica Foundation
OBJECTIVES & FOCUS AREAS	The Spanish-Jamaican Foundation (SJF) was created in 2006 as a non-profit organization of goodwill, intended to deepen the friendship between the people of Spain and Jamaica. The SJF Mission: To strengthen partnerships between Spain and Jamaica through sustainable participation in projects focusing on education, cultural, environmental awareness and community development. The SJF Vision is to ensure Jamaican communities, in particular, those in close proximity to the Spanish companies, benefit from improved access to: Quality education, increased cultural awarenes and greater social integration. Objectives are to promote: Social, educational, cultural and community-based projects to encourage the fight against poverty. Projects to enhance the common history of both nations, and to support greater recognition of heritage and historical sites. Cultural, educational and other exchanges and collaborations between the two nations.
APPLICATION REQUIREMENTS	Submit a proposal following the SJF format found in the website, which has the following structure:

	• Project description • Context & Situational Analysis • Background • Stakeholders (include direct and indirect beneficiaries) • Project Rationale: Goal, main activities, expected results and sustainability of project • Timetable of activities • Activity budget (specifying donor per activity) The proposal has to be submitted to the following email: projectofficer.spjf@gmail.com