

[GS 5642](#)

**Gold Standard for the Global Goals
Transition Annex**



Version 1 – September 2017

KEY PROJECT INFORMATION

Title of Project/PoA/Activity:	Burn Stoves Project in Kenya
GS ID of the project/PoA/activity:	GS 5642
GS Version:	Gold Standard Tool Kit Version 2.1
Brief description of Project:	Project History Burn Stoves Project in Kenya ("the Project") seeks to improve health and incomes throughout Kenya by reducing time and money spent acquiring fuel for household cooking. This project started as part of GS966 "Paradigm Healthy Water and Cookstoves Project". However, it was successfully converted to a new project through a Design Change and a new project GS5642 was created for Burn Manufacturing involving its own sale charcoal stoves. The project may be expanded to include further designs of stoves in the future. In order to reach a wide range of Kenyans with the most appropriate technology, the project leverages carbon finance to support the sale and distribution of stoves to households. Burn Manufacturing ("Burn") has built a factory in Ruiru, north of Nairobi, to make very efficient charcoal burning stoves. It has a number of routes to market: through distributors and its own direct sales. All stoves to date have been sold with carbon finance under GS 966. As explained in the Memorandum, this part of GS 966 is being re-designed to create a separate project in which Burn is a Project Participant and owner of the project itself.
Project type: Energy/Land Use	Energy
For Renewable Energy Projects – intention to apply RECs Labels (y/n)	No
GS Stream (CDM/VER):	Verified Emission Reductions
Scale (large/scale/micro):	Large
GS Registration Date:	28 February 2018
GS Crediting period start date:	26 th April 2017
CDM Registration Date:	N/A
CDM Crediting period start date:	N/A
Project Developer:	Burn Manufacturing
Project Representative:	ClimateCare
Project Participants and any communities involved:	Burn Manufacturing ClimateCare Limited
Host Country/Location:	The Republic of Kenya
Methodologies applied:	Selected methodology(ies): Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC); Version 3.1
SDG Impacts:	1. SDG 1: End poverty in all its forms everywhere 2. SDG 3: Ensure healthy lives and promote well-being for all at all ages 3. SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all 4. SDG 13 Climate Action
Estimated amount of SDG Impact (GSVERs and others)	924,215 tCO ₂ e

A.1 Relevant target for each of the three SDGs

>>

Indicator	Mitigation measure	Relevance to achieving SDG Target	Chosen Monitoring Indicator and explanation
1.4.1 Proportion of population living in households with access to basic services (efficient cook stoves)	No mitigation measure	Goal 1. End poverty in all its forms everywhere Target 1.4: By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance Introduction of the efficient cook stoves will lead to time and money savings due to reduced fuel consumption. This saved income can be used by households to engage in other income generating activities that can lead to improved livelihoods of the households.	<u>Equivalent monetary savings</u> <u>Kitchen Test Survey Results</u> Kitchen test <u>surveys will be conducted to determine fuel savings achieved by using the efficient stoves as compared to baseline stoves.</u> The results will be used to indicate the fuel savings <u>achieved by using the efficient</u> of stoves and this will be used to derive the equivalent monetary savings achieved. The <u>number of stoves distributed will be sales records recorded will to show the proportion of households with indicate the number of people with access to efficient cook stoves.</u> <u>In addition, survey results will be utilised to determine the proportion of stoves in use (usage rate) from time to time.</u>
3.9.1 Illnesses and Mortality rate attributed to household and ambient air pollution	No mitigation measure	SDG 3: Ensure healthy lives and promote well-being for all at all ages Target 3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination Indoor air pollution caused by combustion of charcoal fuel will be reduced since the households will be using energy efficient jikos which require less charcoal and produce less soot.	<u>Measurement of user perceptions between the baseline and project scenario: smoke levels, incidence of coughing, incidence of respiratory illness, and incidence of itchy eyes.</u> <u>Measurement of user perceptions between old stove and new stove:</u> The project shall survey and report the perceived changes in smoke levels and related emission when

			using project stove when compared with baseline stove.
8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities	No mitigation measures	Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all Target 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value. This project will create jobs for the people who will be involved in manufacturing, sales and distribution, maintenance as well as conducting the monitoring survey exercise. Jobs opportunities will be open to both interested men and women without any form of bias or discrimination.	Number of local jobs created in manufacturing and retail The project activity shall provide job opportunities to locals during manufacturing, sale and distribution of the stoves. The project shall keep records of the employees and also ensure equal pay for both men and women for equivalent skills sets and job levels.
13.3.2 Number of households/ individuals that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions	No mitigation measures	Goal 13. Take urgent action to combat climate change and its impact Target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning Efficient cook stoves leads to reduced usage of fuel which in return lead to reduced emissions and indoor air pollution. Reduced emissions significantly contribute towards averting climate change and lead to environmental sustainability.	<u>Number of people/households with access to the energy efficient cook stoves</u> <u>Sales Records</u> The project shall monitor the number of people/households with access to the efficient cook stoves and this will be indicated based on the sales records. In addition, the usage rates of the stoves will be surveyed in order to determine the proportion of active stoves.

A.2 Explanation of methodological choices/approaches for estimating the SDG outcome

>>

The Project follows the methodological steps for estimating emission reduction as outlined in the Gold Standard Methodology, "Technologies and Practices to Displace Decentralized Thermal Energy Consumption" (version 3.1).

The project distributes charcoal stoves which replaces charcoal. The baseline fuel and the project fuel are the same and the baseline emission factor and project emission are considered the same.

Gold Standard®

As per the methodology, the emission reductions are verified and credited by comparing the emissions for a given project scenario to the emissions for the applicable baseline scenario. In the project case, the baseline fuel type and the project fuel type are the same and the baseline fuel emission factor and project fuel emission factor are also considered to be the same. The overall GHG reductions achieved by the project activity in year y are calculated as follows:

$$ER_y = \sum_{b,p} (N_{p,y} * U_{p,y} * P_{p,b,y} * NCV_{b, fuel} * (f_{NRB,b,y} * EF_{fuel, CO2} + EF_{fuel, nonCO2})) - \sum LE_{p,y} \quad (1)$$

Where:

$\sum_{b,p}$	=	Sum over all relevant (project p) couples
$N_{p,y}$	=	Cumulative number of project technology-days included in the project database for project scenario p against baseline scenario b in year y
$U_{p,y}$	=	Cumulative usage rate for technologies in project scenario p in year y, based on cumulative adoption rate and drop off rate revealed by usage surveys (fraction)
$P_{p,b,y}$	=	Specific fuel savings for an individual technology of project p against an individual technology of baseline b in year y, in tons/day, as derived from the statistical analysis of the data collected from the field tests
$f_{NRB,b,y}$	=	Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass
$NCV_{b,fuel}$	=	Net calorific value of the fuel that is substituted or reduced (IPCC default for charcoal fuel, 0.0295 TJ/ton)
$EF_{b,fuel,CO2}$	=	CO ₂ emission factor of the fuel that is reduced. 112 tCO ₂ /TJ for Wood/Wood Waste, or the IPCC default value of other relevant fuel
$EF_{b,fuel,nonCO2}$	=	Non-CO ₂ emission factor of the fuel that is reduced
$LE_{p,y}$	=	Leakage for project scenario p in year y (tCO ₂ e/yr)

Gold Standard

Baseline Emission estimation are conducted as follows:

$$BE_{b,y} = B_{b,y} * ((f_{NRB,y} * EF_{b,fuel, CO_2}) + EF_{b,fuel, nonCO_2}) * NCV_{b, fuel} \quad (3)$$

Where:

$BE_{b,y}$	3.7866	Emissions for baseline scenario b during the year y in tCO ₂ e
$B_{b,y}$	1.3029	Quantity of fuel consumed in baseline scenario b during year y, in tons, as per by-default factors ²⁴ (cases with project performance field test only)
$f_{NRB,y}$	0.8948	Fraction of biomass used during year y for the considered scenario that can be established as non-renewable biomass (drop this term from the equation when using a fossil fuel baseline scenario)
$NCV_{b,fuel}$	0.029	$NCV_{b,fuel}$ Net calorific value of the fuel that is substituted or reduced (IPCC default for wood fuel, 0.015 TJ/ton)
$EF_{b,fuel,CO_2}$	112	$EF_{b,fuel,CO_2}$ CO ₂ emission factor of the fuel that is substituted or reduced. 112 tCO ₂ /TJ for Wood/Wood Waste, or the IPCC default value of other relevant fuel
$EF_{b,fuel,nonCO_2}$	0.00	$EF_{b,fuel,nonCO_2}$ Non-CO ₂ emission factor of the fuel that is substituted or reduced

Project emission estimations are conducted as follows:

$$PE_{p,y} = B_{p,y} * ((f_{NRB,y} * EF_{p,fuel, CO_2}) + EF_{p,fuel, nonCO_2}) * NCV_{p, fuel} \quad (5)$$

Where:

$PE_{p,y}$	1.6867	Emissions for project scenario p during year y in tCO ₂ e
$B_{p,y}$	0.5804	Quantity of fuel consumed in project scenario p during year y, in tons, and as derived from the statistical analysis conducted on the data collected during the project performance field tests (cases when no baseline performance field test are performed, e.g. by-default baseline factors)
$f_{NRB,y}$	0.8948	Fraction of biomass used during year y that can be established as non-renewable biomass (drop this term from the equation when using a fossil fuel baseline scenario)
$NCV_{p,fuel}$	0.029	Net calorific value of the project fuel (IPCC default for wood fuel, 0.015 TJ/ton). This is equal to the baseline fuel NCV in projects which use the same fuel.
$EF_{p,fuel,C O_2}$	112	CO ₂ emission factor of the project fuel. This is equal to the baseline fuel EF in projects which use the same fuel, 112 tCO ₂ /TJ for Wood/Wood Waste, or the IPCC default value of other relevant fuel
$EF_{p,fuel,nonCO_2}$	0.00	Non-CO ₂ emission factor of the project fuel. This is equal to the baseline fuel EF in projects which use the same fuel.

Therefore, the overall GHG reductions achieved by the project activity are then estimates as follows:

$$ER_y = \sum BE_{b,y} - \sum PE_{p,y} - \sum LE_{p,y} \quad (7)$$

Where:

ER_y	2.10	Emission reduction for total project activity in year y (tCO ₂ e/yr)
$BE_{p,y}$	3.79	Baseline emissions for baseline scenario b in year y (tCO ₂ e/yr)
$PE_{p,y}$	1.69	Project emissions for project scenario p in year y (tCO ₂ e/yr)
$LE_{p,y}$	0.00	Leakage for project scenario p in year y (tCO ₂ e/yr)

A.3 Data and parameters fixed ex ante for monitoring contribution to each of the three SDGs

Relevant SDG Indicator	SDG 13: Climate Action Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
Data/parameter	EF _{b,CO₂}
Unit	tCO ₂ /TJ
Description	CO ₂ emission factor arising from use of fuels in baseline scenario
Source of data	IPCC Default emission factor
Value(s) applied	112
Choice of data or Measurement methods and procedures	IPCC default values provide an accurate and conservative estimate of emissions reduction from various fuel sources.
Purpose of data	To determine the CO ₂ emission factor of the wood fuel
Additional comment	Term can include a combination of emission factors from fuel production, transport, and use.

Relevant SDG Indicator	SDG 13: Climate Action Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
Data/parameter	$EF_{b,nonCO_2}$
Unit	tCO ₂ /TJ
Description	Non-CO ₂ emission factor arising from use of fuels in baseline scenario
Source of data	IPCC defaults are applied in conjunction with credible published literature
Value(s) applied	0.00
Choice of data or Measurement methods and procedures	IPCC default values provide an accurate and conservative estimate of emissions reduction from various fuel sources.
Purpose of data	To determine the Non-CO ₂ emission factor arising from use of fuels in baseline scenario
Additional comment	Term can include a combination of emission factors from fuel production, transport, and use. The PP has opted not to account for this source in order to ensure conservativeness.

Relevant SDG Indicator	SDG 13: Climate Action Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
Data/parameter	EF_{p,CO_2}
Unit	tCO ₂ /TJ
Description	CO ₂ emission factor arising from use of fuels in baseline scenario
Source of data	IPCC Default emission factor
Value(s) applied	112
Choice of data or Measurement methods and procedures	IPCC default values provide an accurate and conservative estimate of emissions reduction from various fuel sources.
Purpose of data	To determine the CO ₂ emission factor of the wood fuel
Additional comment	Term can include a combination of emission factors from fuel production, transport, and use. This has same value as $EF_{baseline}$ in projects which reduce use of the same fuel.

Relevant SDG Indicator	SDG 13: Climate Action Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
Data/parameter	$EF_{p, nonCO_2}$
Unit	tCO ₂ /TJl
Description	Non-CO ₂ emission factor arising from use of fuels in project scenario
Source of data	IPCC defaults are applied in conjunction with credible published literature
Value(s) applied	0.00
Choice of data or Measurement methods and procedures	IPCC default values provide an accurate and conservative estimate of emissions reduction from various fuel sources.
Purpose of data	To determine the CH ₄ emission factor of the wood fuel
Additional comment	Term can include a combination of emission factors from fuel production, transport, and use. This has same value as $EF_{baseline}$ in projects which reduce use of the same fuel. The PP has opted not to account for this source in order to ensure conservativeness.

Relevant SDG Indicator	SDG 13: Climate Action Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
Data/parameter	NCV _b
Unit	TJ/ton
Description	Net calorific value of charcoal fuel used in the baseline
Source of data	IPCC 2006 defaults values, project-relevant measurement reports, or project-specific testing
Value(s) applied	0.029 for charcoal
Choice of data or Measurement methods and procedures	IPCC default values provide an accurate and conservative estimate of emissions reduction from various fuel sources.
Purpose of data	To determine the calorific value of wood fuel used in the baseline
Additional comment	If EF is in units of tCO ₂ /t _{fuel} , remove NCV term from emission calculations.

Relevant SDG Indicator	SDG 13: Climate Action Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
Data/parameter	NCV _p
Unit	TJ/ton
Description	Net calorific value of the fuels used in the project
Source of data	IPCC 2006 defaults values, project-relevant measurement reports, or project-specific testing
Value(s) applied	0.029 for charcoal
Choice of data or Measurement methods and procedures	IPCC default values provide an accurate and conservative estimate of emissions reduction from various fuel sources.
Purpose of data	To determine the net calorific factor of the wood fuel
Additional comment	This has same value as NCV _{baseline} in projects which reduce use of the same fuel.

SECTION B Safeguarding Principles Assessment

B.1 Analysis of social, economic and environmental impacts

>>

Safeguarding principles	Assessment questions	Assessment of relevance to the project (Yes/potentially/no)	Justification	Mitigation measure (if required)
3.1 Human Rights	1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights	No	Improved cookstoves respect the dignity, cultural property and indigenous qualities of local communities. The project will improve local health through reduced	No mitigation measure required

	abuses of any kind as defined in the Universal Declaration of Human Rights 2. The Project shall not discriminate with regards to participation and inclusion.	No	indoor air pollution from reduced use of high emission stoves.¹ Improved cookstoves project does not discriminate anyone. Stakeholders are involved in project planning and implementation.	No mitigation measure required.
3.2 Gender Equality and Women's Rights	1. Is there a possibility that the Project might reduce or put at risk women's access to or control of resources, entitlements and benefits?	No	The project seeks to promotes gender equality and the empowerment of women. Women will have access to the cookstoves and they are the ones who make household decisions on which stove to use and buy. During project surveys, they will be interviewed and their comments will be used during research development of the stove. There is no discrimination against women.	There is no mitigation selected for this safeguarding principle.
	2. Is there a possibility that the Project can adversely affect men and women in marginalised or vulnerable communities (e.g., potential increased burden on women or social isolation of men)?	No	The cook stove project will help in reducing the burden faced by women in search of fuelwood and charcoal for household use.	No mitigation measure is required.
	3. Is there a possibility that the Project might not take into account gender roles and the abilities of women or men to participate in the decisions/designs of the project's activities (such as lack of time, child care duties, low literacy or educational levels, or societal discrimination)?	No	The cook stoves provide an easy way of cooking. They require less fuel and also save money spent on fuel and cooking. The women will therefore get more time to engage in other activities child care.	No mitigation measure is required.
	4. Does the Project take into account gender roles and the abilities of women	Yes	Both men and women will have equal opportunities to participate in decisions when	No mitigation measure is required.

¹ Kenya is signatory to African Charter on Peoples and Human Rights (ACPHR).

http://lib.ohchr.org/HRBodies/UPR/Documents/Session8/KE/KSC_UPR_KEN_So8_2010_KenyaStakeholdersCoalitionforUPR_Annex3.pdf

	or men to benefit from the Project's activities (e.g., Does the project criteria ensure that it includes minority groups or landless peoples)? 5. Does the Project design contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities? 6. Would the Project potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation or access to opportunities and benefits? 7. Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services? 8. Is there a likelihood that the proposed Project would expose women and girls to further risks or hazards?	No No No No	it comes to buying the efficient stove. In addition, the use of project stoves will not alter the gender roles in households. The project does not increase women's workload but rather reduces their workload by reducing the amount of time and money spent on fuel and cooking. Time saved can be spent on other activities. The project does not discriminate against women, instead they empower them in decision making in households since they choose their stoves. Also, they will have access to job opportunities that will be created by the project. The project aims to reduce the amount of fuel used for providing household energy. Since most users of the stoves are women and reducing fuel consumption saves forests, then the women will play a big role in protecting forests. The project activity will distribute energy efficient cook stoves which will displace the traditional cookstoves used in the households. This will consequently reduce the level of indoor air pollution in the households and all health impacts associated with indoor air pollution.	No mitigation measure is required. No mitigation measure is required. No mitigation measure is required. No mitigation measure is required.
3.4.2 Forced Eviction and Displacement	1. Does the Project require or cause the physical or economic relocation of	No	Project participants are self-selecting in that they choose whether or not to purchase a subsidized stove. The sale	No mitigation measure is required.

	peoples (temporary or permanent, full or partial)?		and distribution of cookstoves will not cause involuntary resettlement. ²	
3.4.4 Indigenous Peoples	1. Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples?	No	The project involves cook stoves which are individual units and they are purchased by individual households. Their use will not involve resettlement or intrusion into indigenous people's way of life. ³	No mitigation measure is required.
3.5 Corruption	1. The project does not involve and is not complicit in corruption.	No	The project is not involved or complicit in corruption. ⁴	No mitigation measure is required.
3.6.1 Labour Rights	1. The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights	Yes	The project respects all employees' freedom of association and does not restrict these rights. ⁵ All employees have right to join trade union.	No mitigation measure is required.
	2. The project does not involve and is not complicit in any form of forced or compulsory labour.	No	Participation in the project is voluntary; no forced or compulsory labour is employed by the project.. all employees of the project sign employment contracts. <i>*See footnote for indicator 4 for related national agreements.</i>	No mitigation measure is required.
	3. The project does not employ and is not complicit in any form of child labour.	No	The project does not employ and is not complicit in child labor. ⁶ The project employs staff who are above the legal age of 18 years.	No mitigation measure is required.
	4. The project does not involve and is not complicit in any form of discrimination based on gender, race, religion,	No	The project does not involve any form of discrimination based on gender, race, religion, sexual orientation, or any other basis. <i>*See footnote for indicator 4 for related national agreements</i>	No mitigation measure is required.

² Kenya has authored a Convention on the Status of Refugees (CSR) which provides certain rights to displaced persons.

http://lib.ohchr.org/HRBodies/UPR/Documents/Session8/KE/KSC_UPR_KEN_So8_2010_KenyaStakeholdersCoalitionforUPR_Annex3.pdf

³ Kenya signed International Covenant on Economic, Social and Cultural Rights (ICESCR).

http://lib.ohchr.org/HRBodies/UPR/Documents/Session8/KE/KSC_UPR_KEN_So8_2010_KenyaStakeholdersCoalitionforUPR_Annex3.pdf

⁴ Kenya has recognized the Rome Statute of the International Criminal Court that can address issues of corruption.

http://lib.ohchr.org/HRBodies/UPR/Documents/Session8/KE/KSC_UPR_KEN_So8_2010_KenyaStakeholdersCoalitionforUPR_Annex3.pdf

⁵ Kenya has signed Covenant on Economic, Social and Cultural rights

⁶ Kenya signed ILO Convention No. 182 Concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour

http://lib.ohchr.org/HRBodies/UPR/Documents/Session8/KE/KSC_UPR_KEN_So8_2010_KenyaStakeholdersCoalitionforUPR_Annex3.pdf

	sexual orientation or any other basis. 5. The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments	Yes	The manufacture of cookstoves involves light factory work. ⁷ Employees are provided with protective clothing for use. The project has in place health and safety procedure to be followed by all employees.	No mitigation measure is required.
3.6.2 Negative Economic Consequences	1. Is the project financial sustainability. 2. Will the Projects lead to negative economic impacts to the local economy during project design, implementation, operation and after the project.	Yes No	The cookstove project is being implemented with aim of being financially sustainable and the carbon funds will help in meeting its financial operating costs. This cook stove project generates employment through the manufacture, sales, distribution of the cook stoves. Additionally, jobs are created during annual monitoring surveys of the cookstoves.	No mitigation measure is required. No mitigation measure is required.
4.1.1 Emissions	1. Will the Project increase greenhouse gas emissions over the Baseline Scenario?	No	There project will reduce GHG emission given that the project introduces energy efficient cook stoves which uses less fuel compared with baseline stoves. By reducing the consumption charcoal and the smoke levels, GHG emissions are reduced.	No mitigation measure is required.
4.1.2 Energy Supply	1. Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	No	The cook stoves use charcoal sourced from the local vendors which does not involve use of energy supply from the local grid.	No mitigation measure is required.
4.2.1 Impact on natural water patterns and flow	1. Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	No	The project activity consists of cook stoves that does not impact on natural water patterns and flow.	No mitigation measure is required.

⁷ Kenya has established the Protocol to the African Charter on Human and Peoples' Rights on the Establishment of an African Court on Human and Peoples' Rights. Weblink as previous footnote.

4.2.1 Erosion and/or water body stability	1. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? If 'Yes' or 'Potentially' proceed to question 2.	No	Use of energy efficient sook stoves will minimise deforestation in the project boundary since they require less fuel. This inturn will lead to reduction in the occurrence and severity of soil erosion.	No mitigation measure is required.
	2. Is the Project's area of influence susceptible to excessive erosion and/or water body instability?	No	The project area is not susceptible to excessive erosion or water body instability and the proposed project activity shall not negatively affect soil conditions in the project scenario.	No mitigation measure is required.
4.3.1 Landscape modification and soil	1. Does the Project involve the use of land and soil for production of crops or other products?	No	The project is a cook stove project and It therefore does not involve production of crops neither will it lead to soil degradation.	No mitigation measure is required.
4.3.2 Vulnerability to Natural Disaster	1. Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?	No	The project does not create nor increase vulnerability to natural disasters or other extreme climatic conditions.	No mitigation measure is required.
4.3.3 Genetic Resources	1. Could the Project be negatively impacted by the use of genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development)?	No	The project activity is a cook stove project and does not involve the use of GMOs in its operations.	No mitigation measure is required.
4.3.4 Release of pollutants	1. Could the Project potentially result in the release of pollutants to the environment?	No	The project activity is a cook stove project which is aimed at reducing the amount of fuel used in the households as well as reduce indoor air pollution. The project has therefore no potential of releasing pollutants to the environment.	No mitigation measure is required.
4.3.5 Hazardous and Non-hazardous Waste	1. Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous	No	The construction of the and distribution of the cook stoves will not leas to release or use of hazardous	No mitigation measure is required.

	hazardous chemicals and/or materials?		ans non-hazardous chemicals and materials.	
4.3.6 Pesticides and fertilizers	1. Will the Project involve the application of pesticides and/or fertilisers?	No	The project is a cook stove project that does not use pesticides nor fertilizers.	No mitigation measure is required.
4.3.7 Harvesting of forests	1. Will the Project involve the harvesting of forests?	No	The project Activity will lead to sustaining the forests and the biodiversity as less fuel is required.	No mitigation measure is required.
4.3.8 Food	1. Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	No	The project is a cook stove project that aims at providing affordable, clean, efficient and easy-way of cooking. It therefore does not affect crop production, quality, quantity and availability of the same in any way.	No mitigation measure is required.
4.3.9 Animal Husbandry	1. Will the Project involve animal husbandry?	No	The project is a cook stove project and It therefore does not involve animal husbandry practices.	No mitigation measure is required.

SECTION C Monitoring plan

C.1 Data and parameters to be monitored

Relevant SDG Indicator/Safeguarding Principle	SDG 13: Climate Action Target: 13.1 Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries
Data / Parameter	$f_{NRB,i,y}$
Unit	Fractional non-renewability
Description	Non-renewability status of woody biomass fuel in scenario i during year y
Source of data	calculated
Value(s) applied	0.8948
Measurement methods and procedures	KT Measurements
Monitoring frequency	Fixed by baseline study for this crediting period
QA/QC procedures	Transparent data analysis and reporting
Purpose of data	To calculate the quantity of non-renewable biomass being consumed in the baseline scenario and the project scenario
Additional comment	As applicable, NRB assessment may be used for multiple scenarios

Relevant SDG Indicator/Safeguarding Principle	SDG 13: Climate Action Target : 13.1 Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries
Data / Parameter	$P_{b,y}$
Unit	Kg/household-day
Description	Quantity of fuel that is consumed in baseline scenario b during year y
Source of data	Baseline FT or default baseline fuelwood consumption, baseline FT updates, and any applicable adjustment factors
Value(s) applied	3.652
Measurement methods and procedures	KT measurements
Monitoring frequency	Updated every two years
QA/QC procedures	Transparent data analysis and reporting
Purpose of data	Calculation of baseline emissions
Additional comment	A single baseline fuel consumption parameter is weighted to be representative of baseline technologies being compared for project crediting. A default value for fuelwood consumption i.e., 0.5 tonnes/capita/year is applied as discussed in section C option 1 of the methodology.

Relevant SDG Indicator/Safeguarding Principle	SDG 13: Climate Action Target : 13.1 Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries
Data / Parameter	$P_{p,y}$
Unit	kg/household-day
Description	Quantity of fuel that is consumed in project scenario p during year y
Source of data	Total sales record, Project FT, project FT updates, and any applicable adjustment factors
Value(s) applied	To be determined ex-post and prevailing value to be applied
Measurement methods and procedures	KT measurements
Monitoring frequency	Updated every two years
QA/QC procedures	Transparent data analysis and reporting
Purpose of data	Calculation of project emission reductions
Additional comment	A single project fuel consumption parameter is weighted to be representative of the quantity of project technologies of each age being credited in a given project scenario

Relevant SDG Indicator/Safeguarding Principle	SDG 13. Climate Action Target: 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Data / Parameter	$U_{p,y}$
Unit	Percentage
Description	Usage rate in project scenario p during year y
Source of data	Annual Usage Survey
Value(s) applied	100
Measurement methods and procedures	KT Measurements
Monitoring frequency	Annual or more frequently, in all cases on time for any request for issuance
QA/QC procedures	Transparent data analysis and reporting
Purpose of data	To calculate the Usage rate in project scenario p during year y.
Additional comment	A single usage parameter is weighted to be representative of the quantity of project technologies of each age being credited in a given project scenario. Exact usage values will be determined ex-post

Relevant SDG Indicator/Safeguarding Principle	SDG 13. Climate Action Target: 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
Data / Parameter	$N_{p,y}$
Unit	Project technologies credited (units)
Description	Technologies in the project database for project scenario p through year y
Source of data	Total sales record
Value(s) applied	1,576,150
Measurement methods and procedures	Project database records
Monitoring frequency	Continuous
QA/QC procedures	Transparent data analysis and reporting
Purpose of data	To calculate the number project scenario P through year y.
Additional comment	The total sales record is divided based on project scenario to create the project database. The numbers of active stoves will be determined based on the day they started operation. The numbers shown above are for the operational stoves which have not reached the end of their 3 year life. However, for the calculation of ER, actual days each stoves will operate in any given monitoring period will be determined and used for ER computation.

Relevant SDG Indicator/Safeguarding Principle	SDG 13: Climate Action Target: 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.
Data / Parameter	LE _{p,y}
Unit	tCO ₂ e per year
Description	Leakage in project scenario p during year y
Source of data	Baseline and monitoring surveys
Value(s) applied	0
Measurement methods and procedures	KT measurements
Monitoring frequency	Every two years
QA/QC procedures	Transparent data analysis and reporting
Purpose of data	To determine leakage in project scenario p during year y
Additional comment	Aggregate leakage can be assessed for multiple project scenarios, if appropriate

Relevant SDG Indicator/Safeguarding Principle	SDG 3: Ensure healthy lives and promote well-being for all at all ages Target: 3.9 <i>By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.</i>
Data / Parameter	Perceived Air quality
Unit	-
Description	Smoke levels and particulates
Source of data	Survey
Value(s) applied	-
Measurement methods and procedures	Carrying out survey through either site visit of sampled households or telephone surveys.
Monitoring frequency	Biennial
QA/QC procedures	The type of measurement employed should take into consideration those factors which are out of control of households when reporting on this parameter.
Purpose of data	Reporting on sustainable development of the project
Additional comment	This parameter can be reported based on responded comments and is not measured directly

Gold Standard®

Relevant SDG Indicator/Safeguarding Principle	SDG 1: End poverty in all its forms everywhere Target 1.4: By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance
Data / Parameter	Equivalent monetary savings
Unit	Monetary savings based on fuel savings and prevailing fuel cost
Description	Financial impact
Source of data	Direct calculation based on results from the KTSurveys
Value(s) applied	-
Measurement methods and procedures	Surveys
Monitoring frequency	Annual
QA/QC procedures	The survey questions should be evaluated so that they bring out clear picture of the gains of the stove
Purpose of data	Reporting on sustainable development of the project
Additional comment	The monetary equivalent will be based on the prevailing fuel costs at the time of preparing the report

Relevant SDG Indicator/Safeguarding Principle	SDG 8: Decent Work and Economic growth Target 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value for both men and women.
Data / Parameter	Average hourly earnings of female and male employees, by occupation, age and persons with disabilities
Unit	Numbers
Description	Number of people directly employed by the project
Source of data	Project records
Value(s) applied	To be reported
Measurement methods and procedures	Direct measurement based on employment numbers of those employed directly by the project
Monitoring frequency	Annual
QA/QC procedures	-
Purpose of data	Reporting on sustainable development of the project
Additional comment	-

Relevant SDG Indicator/Safeguarding Principle	Goal 13. Take urgent action to combat climate change and its impacts Target 13.1 Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries
Data / Parameter	Number of people/households with access to the energy efficient cook stoves and the usage rates of efficient cook stoves.
Unit	Number of stove users and usage rates
Description	Number of stove users and usage rates
Source of data	Stove database records and surveys
Value(s) applied	To be reported
Measurement methods and procedures	Calculated
Monitoring frequency	Annual
QA/QC procedures	Check of database to ensure consistency of reported data
Purpose of data	Reporting on sustainable development of the project
Additional comment	-

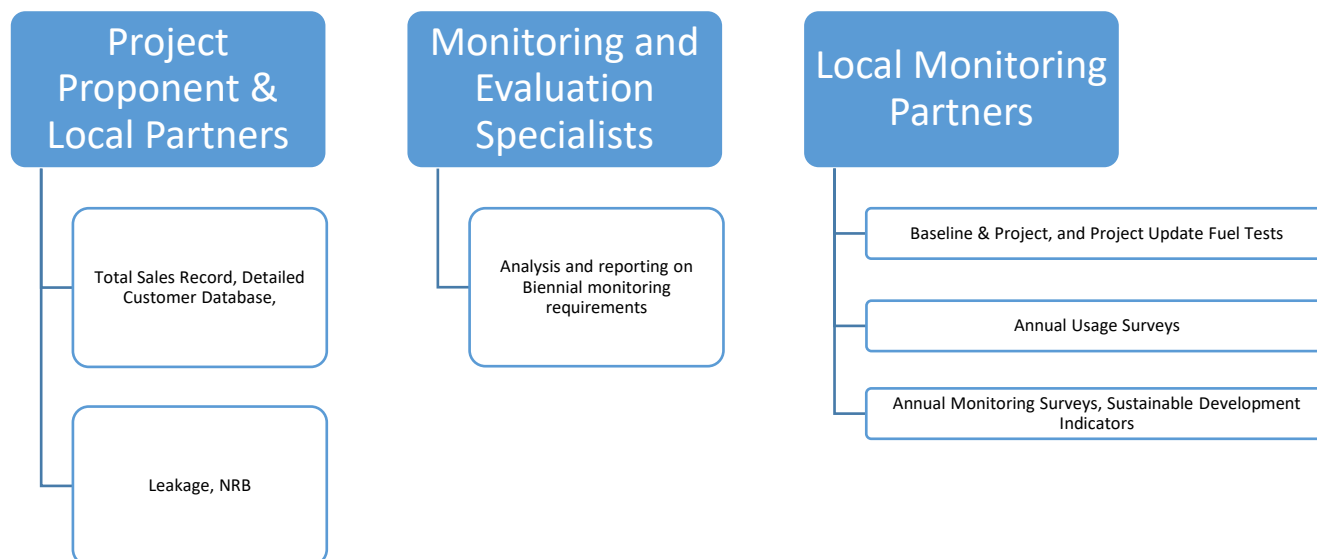
C.1.1.1 Other elements of monitoring plan (if applicable)

>>

Organisational structure

The completion of all monitoring tasks will be carried out by Burn and overseen by ClimateCare. Implementation of monitoring tasks will be performed according to the following diagram:

Figure 1: Monitoring Organization



Management

A senior member of staff at Burn will be appointed Carbon Manager who will manage all monitoring requirements for the project. All documentation will be consolidated within the auspices of ClimateCare, Burn is also responsible for organising and maintaining the Detailed Customer Database (DCD), Total Sales Record/Installation Record (TSR/IR) database.

The following on-going monitoring is conducted for the project activity. The monitoring activity provides a framework for project preparation and monitoring processes that will be undertaken, as required by the GS rules. This schedule takes into account the key parameters that are needed during the monitoring periods of the project. All required monitoring and documentation will be implemented, reported, consolidated and managed by the project proponent or a qualified expert partner to meet verification requirements.

The monitoring plan to be followed is outlined as follows:

1. Monitoring Procedure:

The project maintains sales record database consisting of SMS based customer activated warranties. The database is electronic and it has key parameters i.e. the serial number of the stove, the contact details of the customer and date of purchase. The project maintains a total sales records and project databases forms the basis for which all the previous verifications are based. This is the same database which will be utilised in future verifications. Continuous monitoring surveys and usage surveys will be conducted annually while a leakage assessment is to be conducted every two years to update monitoring parameters over time.

The leakage assessment will involve establishing if the project has in any way lead to increase in emissions outside the project boundary and if the increase will be directly be attributed to the project activity. The leakage assessment is done below:

Source	Risk	justification
The displaced baseline technologies are reused outside the project boundary in place of lower emitting technology or in a manner suggesting more usage than would have occurred in the absence of the project	Very low	The displaced baseline technology is the most common and easily available cooking method in the project area and most of households usually sale off the old stove as scrap metal upon purchase of new efficient stove. It is highly unlikely that displaced baseline technology is reused outside the project boundary.
The non-renewable biomass or fossil fuels saved under the project activity are used by non-project users who previously used lower emitting energy sources	Very low	As per the baseline survey, most household rely either on charcoal for cooking and those who have LPG use it in the morning to warm water of make tea even in the baseline scenario and project scenario. Therefore the LPG user will not switch back to charcoal due to the project activity, since they still use baseline stoves as the main cooking device and use LPG as convenient stove in the morning.
The project significantly impacts the NRB fraction within an area where other CDM or VER project activities account for NRB fraction in their baseline scenario	Very low	Demand for charcoal in the country is rising and due to rising demand. Other alternative forms of cleaner fuels are also becoming out of reach for ordinary people, due to rise of international oil price. As more people get urbanised, the demand for wood and charcoal will keep rising and this will impact the NRB factor of the country. Therefore the share of NRB will still be high and the project will not significantly impact it leading to other projects to account for it.
The project population compensates for loss of the space heating effect of inefficient technology by adopting some	No Risk	The climate conditions and weather in Kenya does not allow for space or room heating. In highland areas where space heating might be

other form of heating or by retaining some use of inefficient technology		required, the project will establish this during its annual surveys.
By virtue of promotion and marketing of a Burn Stove, the project stimulates substitution within households who commonly used a technology with relatively lower emissions, in cases where such a trend is not eligible as an evolving baseline	Very low	The Burn stove project target group is households using charcoal. It is highly unlikely that households using LPG or electricity for cooking would use project technology. Thus, there is no risk for this form of leakage.

Thus, leakage risks deemed very low and it has been ignored. Therefore $LE_{p,y} = 0$.

The following parameters will be assessed under leakage during KT to confirm if the above risk assumptions are valid or the project has created a leakage situation:

1. Increasing consumption of fuel savings associated with higher efficiency stoves
2. Use of a high emission fuel for cooking outside the project boundary
3. Substitution of a cooking stove type with relatively high emissions stove by households who commonly use a cooking fuel or stove type with relatively lower emissions
4. Respond to the loss of space heating effect of inefficient cook-stoves by adopting some other form of heating or by retaining some use of inefficient stoves
5. The traditional stoves displaced may be re-used outside the boundary

A. Total Sales Record/Project database

- i. The TSR/IR records volume of sales or installations and location for each project scenario.
- ii. The record will be kept electronically and/or in paper records and provided at verification. The sales record will contain the following information:
 1. From the product distribution partner:
 - a. Distribution partner name and contact information
 - b. Model/type of project technology sold
 - c. Quantity of project technology sold
 - d. Date of sale/installation
 - e. End user name, phone number, and address (if possible)
- iii. Frequency: Ongoing

B. Project Database

The project database is derived from the total sales record with project technologies differentiated by different project warranty activated serial numbers. The differentiation of the project database into sections is based on the results of the applicable monitoring studies for each project scenario, in order that ER calculations can be conducted appropriately section by section. Technologies aged beyond their useful lifetime, as established from the date of their sale in the project database will be removed from the project database and will no longer be credited.

The following on-going monitoring studies are conducted for each project scenario following the verification of the associated initial project studies. These monitoring studies investigate and define parameters that could not be determined at the time of the initial project studies or that change with time.

a) Monitoring Survey

The project will keep carrying out an on-going monitoring studies to investigate and define parameters that could not be determined at the time of the re-validation of the project. The surveys will investigate the following

- a) Monitoring Survey to be done annually, to provide information on year-to-year trends in end user characteristics such as technology use, fuel consumption and seasonal variations. The survey will be done by applying appropriate statistical sampling method, to identify households to be investigated.
- b) Usage Survey to be done biennially, or more frequently to identify the usage parameter that is weighted based on drop off-rates that are representative of the age distribution for project stoves in the total sales record. A usage parameter will be established to account for drop off rates as project technologies age and are replaced. This parameter will be applied when calculating the quantity of fuel consumed in project scenario p during year y ($B_{p,y}$).
- c) Project FT update to be done biennially to collect data on fuel consumption assessment representative of project technologies currently in use every two years.
- d) Baseline FT update to be completed biennially to provide data on fuel consumption assessment representative of project technologies currently in use every two years.
- e) Leakage Assessment will be carried out biennially in time for first verification
- f) The non-renewable biomass fraction for this crediting period is fixed based on the results of the NRB assessment. The NRB assessment for the project applied is calculated.

2. Economic Gain of Fuel savings

At each every period when the KT is carried out, the project will determine the fuel savings associated with use of the stove. The project will also determine the prevailing fuel prices and using the fuel savings values determined, the project will calculate the equivalent monetary gain associated with fuel saved for use of the stove by a household. This will give an indication of the project contribution to household effort in resilience towards poverty.

2-3. Adding a New Baseline or Project Scenario

The project proponent will continue to monitor the project and should it be established that a new baseline or project scenario has emerged, the project proponent will consider adding it to the project. The addition of the new baseline or project scenario will follow Gold Standard approval process.

3-4. Quality Assurance and Quality Control

The project proponent is responsible for accurate and transparent record keeping, monitoring and evaluation. All supporting documentation and records for the project are maintained by Burn Manufacturing and are easily accessible for spot checking and cross referencing.

Contact information in the total sales record allows a project auditor to easily contact and visit end users

The quality assurance and control also covers the project device, which the project proponent ensures that the devices being produced are of the same or comparable quality. The stoves are produced in a factory owned by Burn Manufacturing following well laid down manufacturing to ensure that all products are of the same quality.

4-5. Data Storage and Archiving

Each stove sold has a unique serial number and a customised manual which shows simple steps of activating the stove warranty by SMS. When a customer activates the stove warranty, his/her details are captured in Burn Manufacturing system and this is what constitutes the project database. All the data will be archived for the entire crediting period and two years after the end of crediting period.

SECTION D Duration and crediting period

D.1 Duration of project

D.1.1 Start date of project

>> 01/11/2007.

D.1.2 Expected operational lifetime of project

>>

7 years 0 Months

D.2 GS Crediting period of the project/activity

D.2.1 Start date of the ongoing GS crediting period

>> The Second Crediting Period starts 26th April 2017

Type of crediting period: Renewable

D.2.3 End date of the ongoing GS crediting period

>>

31/10/2024

D.2.3 Total length of the GS crediting periods

>> *(January 1st and run through December 31st Specify the total length of crediting period in years in line with GS4GG Principles & Requirements or relevant activity requirements)*

7 year 0 Months

SECTION E Stacking of new assets

>>

Project does not seek to stack new assets.

Appendix 1. Contact information of project participants

Organization name	Burn Manufacturing
Registration number with relevant authority	-
P.O. Box	1921
Building	New Horizons Industrial Park
City	Nairobi
State/Region	Nairobi
Postcode	00232
Country	Kenya
Telephone	+254 706 585 629
Fax	-
E-mail	peter@burnmanufacturing.com
Website	www.burnmanufacturing.com
Contact person	
Title	Chief Executive Officer
Salutation	Mr.
Last name	Scott
Middle name	-
First name	Peter
Department	Management
Mobile	+254 718 125 639
Direct fax	-
Direct tel.	+254718 125 639
Personal e-mail	peter@burnmanufacturing.com