KEY PROJECT INFORMATION & PROJECT DESIGN DOCUMENT (PDD):

PUBLICATION DATE **14.10.2020**

VERSION **v. 1.2**

RELATED SUPPORT

- **TEMPLATE GUIDE Key Project Information & Project Design Document v.1.2**

This document contains the following Sections

KEY PROJECT INFORMATION

:

GS ID of Project	GS11724
Title of Project	Improved Cookstoves and Sustainable Fuel Dissemination Program in Ghana
Time of First Submission Date	13/06/2022
Date of Design Certification	xx/xx/2022
Version number of the PDD	01
Completion date of version	16/06/2022
Project Developer	CookClean Ghana Limited
Project Representative	CookClean Ghana Limited
Project Participants and any communities involved	Black Belt Advisory Partners
Host Country (ies)	Ghana
Activity Requirements applied	☒ Community Services Activities ☐ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Scale of the project activity	☐ Micro scale ☐ Small Scale ☒ Large Scale
Other Requirements applied	
Methodology (ies) applied and version number	Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC), version 4.0
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A
Project Cycle:	☒ Regular ☐ Retroactive

Table 1 – Estimated Sustainable Development Contributions

Sustainable Development Goals Targeted	SDG Impact (defined in B.6.)	Estimated Annual Average	Units or Products
13 Climate Action (mandatory)	Amount of Verified Emission Reductions (VERs)	518,897	tCO2e/yr
SDG 1No Poverty	Amount of money saved from fuel consumption per household per day	1.90	GHC/HH/day
SDG 7 Affordable and Clean Energy	Number of households with access to improved project cookstove	324,000	Number
SDG 8 Decent Work and Economic Growth	Number of jobs created by the project	70 (45 male and 25 female)	Number

SECTION A. DESCRIPTION OF PROJECT

A.1 Purpose and general description of project

The proposed Gold Standard project aims at the introduction, manufacture, promotion and sale of fuel-efficient charcoal cookstoves, herein referred to as Boja cookstoves. The Boja stoves will replace low-efficiency three- stone cookers and other traditional stoves popularly used in Ghana. The advanced design of the improved cookstoves allows quicker heating-up, less fuel use, high heat retention and lower quantities of combustion fumes. The use of the Boja stoves will result in the following benefits:

- ✓ Significant savings of charcoal and wood fuel costs
- ✓ Reduced indoor air pollution (IAP)
- ✓ Greenhouse gas emission reduction.

The project will be coordinated and implemented by CookClean Ghana Limited and will target the whole country of Ghana, starting with densely populated urban areas where charcoal consumption is high. The project will then expand to the wider peri-urban and rural areas where the utilization of wood fuel is high.

The project will disseminate, but not limited to, the BOJA improved stove which has been designed and manufactured by CookClean Ghana Limited.

The boundary covered by the large-scale project is the geographical boundary of Ghana.

The Boja stoves will displace baseline inefficient cooking devices that consume more non-renewable biomass. From the applied methodology (Technologies and Practices to Displace Decentralized Thermal Energy Consumption, Version 4.0), the baseline scenario is the consumption of non-renewable biomass using inefficient devices for thermal energy needs as those provided by the project devices.

A.1.1. Eligibility of the project under Gold Standard

Eligibility with GS4GG Requirements

The project activity falls under section 3.1.1 of *GS4GG Principles & Requirements* (Version 1.2), section 3 of *GS4GG Community Services Activity Requirements* (Version 1.2) and section 5 of *GS4GG GHG Emissions Reduction & Sequestration Product Requirements (Version 2.0)* with the following eligibility criteria:

No.	Eligibility Criterion	Description/ Required condition	Means of Verification
1.	Types of Project: Eligible projects shall include physical action / implementation on the ground. Pre-identified eligible project types are identified in the Eligibility Principles and Requirements section.	The project to demonstrate as per the activity Requirement that it is an end-use energy efficiency project activity that reduce energy requirements as compared to baseline the scenario without affecting the level and quality of services or products, where the end-user of the products and services are clearly identified and when the physical intervention is required at the user end.	Technology description in section A.3 of the PDD and stove technical specifications.
2.	Location of Project:	Projects may be located in any part of the world.	Project boundary confirmation. Stove database records showing end user locations
3.	Project Area, Project Boundary and Scale: The Project Area and	Project to document in the PDD the following:	Stove database records showing end user locations.

	Project Boundary shall be defined. Projects may be developed at any scale although certain rules, requirements and limitations may apply under specific Activity Requirements, Impact Quantification Methodologies and Products Requirements.	• The scale of the project activity • The area where the project will be located and be implemented • The project boundary and boundary which should be within the geographic boundary of Ghana	Excels sheet calculations showing project scale Project boundary confirmation in the PDD.
4.	Host Country Requirements: Projects shall be in compliance with applicable Host Country's legal, environmental, ecological and social regulations	The project will comply with all applicable laws and regulations of the host country of Ghana	An assessment on the project's compliance with the applicable host Country's legal, environmental, ecological, and social regulations has been assessed.
5.	Contact Details: As part of the Project Documentation the Project Developer shall provide (i) name and (ii) contact details of all Project Participants; AND in case of an organization (iii) the legal registration details and (iv) documentation by the governing jurisdiction that proves that the entity is in good standing (defined as being a legal or other appropriate entity registered in or allowed to operate within the	Contact details of the project developer and project participants are provided in the PDD in section Appendix 2.	PDD documentation in Appendix 2. The project participant is CookClean Ghana Limited and is legally registered to operate in the host country as proof that it is in good standing. The company's certificate of incorporation is provided as supporting evidence.

	required jurisdiction and with no evidence of insolvency or legal/criminal notices placed against it or any of its Directors). Gold Standard retains the right (at its own discretion) to refuse use of the Standard where reputational concerns are highlighted.		:
6.	Legal Ownership: Full and uncontested legal ownership of any Products that are generated under Gold Standard Certification, (for example carbon credits) shall be demonstrated. Where such ownership is transferred from project beneficiaries this must be demonstrated transparently and with full, prior and informed consent (FPIC). Note that for certain Project types there is a requirement for full and uncontested legal land title/tenure to be demonstrated. These are contained within specific Activity or Product Requirements. All projects shall	The project shall put in place measures to ensure that legal ownership is transferred by the end users to the project developer.	Carbon rights waiver Any carbon finance agreements signed where applicable

	immediately report to Gold Standard any land title/tenure disputes arising		:
7.	Other Rights: As well as legal title and ownership, the Project Developer shall also demonstrate where required uncontested legal rights and/or permissions concerning changes in use of other resources required to service the Project (for example, access rights, water rights etc.). Any known disputes or contested rights must be declared immediately to Gold Standard by the Project Developer and resolved prior to further project implementation in affected areas	The project to document in the PDD how changes in use of other resources required to service the Project is utilized and that there are not disputes on the same.	Documentation in the PDD any other requirements which might be met by the project where applicable.
8.	Official Development Assistance (ODA) Declaration: All Project Developers applying for project activities located in a country named by the OECD Development Assistance Committee's ODA recipient list and seeking Gold Standard Certification for carbon credits shall declare the Official Development	Confirmation of non-involvement of public funding or ODA from Annex I Parties in the project	Signed ODA declaration form

	Assistance (ODA) support.		:
9.	Demonstrate if project is pre identified as eligible by being referenced in Gold Standard Activity Requirements, Impact Quantification Methodologies or Product Requirements	The project shall confirm that it leads to climate change mitigation and/or adaptation by providing or improving access to services/resources at the household or community or institution level.	Project description in sections A.1, A.3 and B.4 Project to confirm in the PDD how Section b.2 how it meets all the applicability conditions.
10.	Demonstrate how the project meets the General Eligibility criteria of the applicable Activity Requirements	The project shall describe how it meets all the eligibility criteria matrix.	PDD to complete section A.1.1 of the PDD
11.	Confirm that the project is not registered with any other voluntary or compliance schemes.	The project shall give a declaration in the PDD that it is in not registered with any other voluntary or compliance schemes	The project to check other carbon registries and confirm that the project is not registered or planning to register with any other standard.
12.	Demonstrate the activity is NOT located in a host country, region, locality or state that has an emission reduction cap enforced OR has the possibility to trade emissions that include the scope of the proposed project	The project shall give a declaration in the PDD that it is located in a host country, region, locality or state that has an emission reduction cap enforced or a shall indicate that Ghana has got no emission reduction cap	Project to check host country regulations and confirm that there is no emission reduction cap requirement.
13.	Demonstrate that no potential for double counting of impacts if the Project Area	Identification of each device through a unique identification number.	Section B.2 of the PDD provides an explanation of how double counting is avoided.

	overlaps with that of another Gold Standard or other voluntary or compliance standard programme of a similar nature.	The project will show that it is exclusive and not registered as another project activity.	Project confirmation that it is not registered, nor its stoves are not counted in another carbon project.
14.	Demonstrate that the project is in compliance with applicable Host Country's legal, environmental, ecological and social regulations	The project will comply with all applicable laws and regulations of the host country of Ghana	Confirmation in the PDD how the project complies with host country regulations.
15.	Conditions to ensure no diversion of official development assistance;	Project to provide a declaration that it has not received ODA	Project have signed ODA declaration form. The signed form has been made available to VVB.

A.1.2. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project :

When each end user purchases the Boja stove, they will be required to sign a carbon rights waiver which transfers the carbon rights to CookClean Ghana Limited. By signing the waiver, the rights to the carbon are transferred to CookClean Ghana Limited and they remain uncontested.

The project does not lead to any changes and as such, the legal rights concerning changes in use of resources required to service the project are not necessary.

The project is a cook stove project which does not require legal rights on land title/tenure required to implement the Project.

A.2 Location of project

The project boundary for the proposed project is the Republic of Ghana. The project activity will be implemented in all the regions of Ghana. The geographical coordinates for Ghana are latitude of 7.9465° N, and longitude of 1.0232° W as shown in map below.

Figure 1: The geographical map for the Republic of Ghana

Source: https://www.ghanamissionun.org/map-regions-in-ghana/

The CookClean factory is located at Rainbow Street GW-0540-4354 on GPS Coordinates: 5°39'29.4"N, 0°17'07.1"W. :

A.3 Technologies and/or measures

The main stove to be disseminated under the project is the 'BOJA' cook stove, a locally designed and manufactured charcoal cook stove featuring a ceramic combustion chamber. The stove has a thermal efficiency of about 38%.

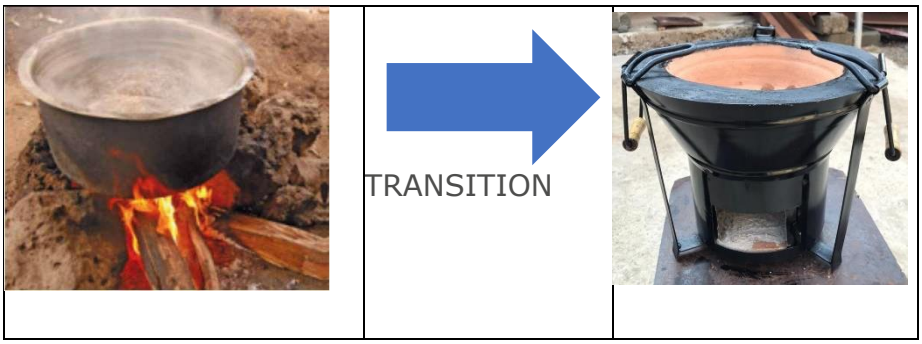


Figure 1: Image of the traditional baseline stove versus the project stove

The following are the stove specifications:

BOJA stoves specifications

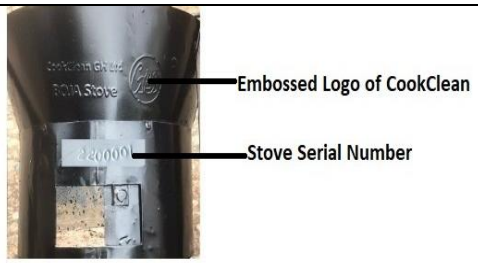
Weight	5-10 kg (stove in box)
Dimension	Approx. 30-45
Cooking power output	0.82– 2.5 kWth
Efficiency (WBT)	About 38 %
Biomass fuel savings	Up to 60 - 70%
Smoke and harmful gases reductions	Up to 60 - 80%
Cooking time reduction	Up to 50%
Adoption	Traditional cooking styles and posture

BOJA Technology

Compared to the replaced traditional cooking stove used by the end-user, the Boja stoves is more efficient while providing the same service. It allows better heat retention, i.e. quicker heating-up and longer cooking times with less wood fuel (and combustion fumes), curbing deforestation.

The principal and *locally produced* technology type used under this project is the so-called Jiko type improved cook stove. It is also known as the "BOJA", which is the brand name of the Jiko-type ICS produced by CookClean Ghana Limited.

CookClean BOJA Charcoal Stove

		
Logo Embossment & serial #	Cross-section of BOJA Stove	CookClean BOJA

The Boja stoves being introduced by the project consists of two different parts: the metallic body and the ceramic liner. The improved performance of Boja stove is largely based on the innovative liner, which is made of clay. The advanced- material combustion chamber retains the heat released by the combustion of the fuel efficiently. The BOJA stove has additional feature, which is a sliding air regulator, regulating the cooking speed to save fuel and thus avoids losses. The adoption of this technology results in significant savings of fuel and associated expenses.

The additional triangular positioned metal support gives the stove the rigidity to support local cooking of meals which require stirring.

Figure 2: *Boja design*

Indicative specifications of a typical medium-sized charcoal ICS are provided in the table below. All ICSs are new.

Technical manufacturer specifications of Boja Stove

Parameters	***Boja Charcoal Stove***
	
Manufacturer name	*CookClean Ghana Limited*
Size:	*9.8" x 7.6" x 11.6"*
Materials:	*Ceramic liner, with outer metal cladding*
Secondary Air Induction Mechanism:	*Yes*
Warranty:	*1 year*
Fuel Type	*charcoal*
Operational Lifetime	*60 months*
Application/service level	*Domestic cooking*
Efficiency	*38%*
Weight	*5-10 kg (stove in box)*
Dimension	*Approx. 30-45*
Cooking power output	*0.82– 2.5 kWth*
Adoption	*Traditional cooking styles and posture*

:

The project contributes to sustainable development through:

- ✓ Monetary gain (SDG1): Families spend a significant portion of their time and income on fuel purchase. As fuel becomes scarce, expenditure on fuel becomes more significant due to the increase in fuel prices and this leads to more household income being spent on meeting the household energy needs. This leads to a significant reduction in household disposable income. By reducing the fuel usage through the project technology, the project activity will contribute to a reduction in the fuel cost for the households which can be spent on other household needs.
- ✓ Affordable and clean energy (SDG 7): a lot of households are using baseline inefficient stoves which consume more fuel. With the project more households

will have access to the project device and will enjoy decreased fuel consumption when cooking and this will enable more households to cook cheaply.

- ✓ Environment & Climate Change (SDG 13): Traditional inefficient biomass cookstoves consume more fuel. Emissions associated with these stoves are a significant contributor to climate change. The project activity promotes use of improved cookstoves which will reduce the demand for non-renewable biomass. This will consequently reduce greenhouse gas emissions associated with use of biomass fuels for household cooking.
- ✓ Job creation (SDG 8): The project activity leads to job creation in the stove production and supply chain. This is expected to benefit many people especially locals within the host country in the project areas.

A.4 Scale of the project

The project is a large-scale project activity. As per the product activity requirements, end-use energy efficiency improvement projects are within the largescale limit if they have an annual energy saving of more than 180 GWh. The project intends to install 324,000 units for the next 5 years and as per the energy savings calculations, the project activity will have an annual average energy saving of 301.82 GWh which is more than 180 GWh.

A.5 Funding sources of project

There is no public funding utilized by the project. The project developer has signed the ODA declaration form which has been submitted to the Gold Standard as a supporting document.

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES) AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

B.1. Reference of approved methodology (ies)

The project applies the Gold Standard methodology "Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC), Version 4.0". In addition, the project uses the following latest versions of the tools and guidelines:

- Tool 30: Calculation of the fraction of non-renewable biomass, version 3.0"
- GHG Emissions Reduction & Sequestration Product Requirements, Version 2.0
- Community Services Activity Requirements, Version 1.2
- Programme of Activity Requirements, Version 1.2
- Stakeholder Consultation and Engagement Requirements, Version 1.2
- Stakeholder Consultation and Engagement Guidelines, Version 1.2
- GS4GG Principles & Requirements, Version 1.2
- Guideline for Sampling and surveys for CDM project activities and programmes of activities, version 4.0
- Usage Survey Guidelines, version 2.0.
- SDG Impact tool, version 1.0

B.2. Applicability of methodology (ies)

The project activity applies the GS methodology "Technologies and Practices to Displace Decentralized Thermal Energy Consumption, Version 4.0", which is applicable to technologies and or practices that reduce or displace greenhouse emissions from the thermal energy consumption of households and non-domestic premises.

The project involves the dissemination of improved charcoal cookstoves across Ghana. The stoves are known as Boja improved cookstoves. The Boja cookstoves are of high combustion efficiency compared with the baseline stoves they are replacing which leads to reduced consumption of non-renewable biomass and help in saving fuel while providing the same level of cooking service to households. Therefore, the project is applicable to apply the methodology.

The project meets the applicability criteria of the methodology as follows:

:

Applicability condition	**How Applicability condition is met by the project**
The scope of the methodology in section 2.1.1. provides that this methodology is applicable to project activities that introduce technologies and/or practices that reduce or displace greenhouse gas (GHG) emissions from the thermal energy consumption of households and/or residential, institutional, industrial, or commercial facilities. Throughout the methodology the term 'technology' should be read as the single or multiple technologies and/or practices applied in the project activity.	The project activity entails the distribution of Boja efficient charcoal cookstoves. Use of these technologies will reduce fuel consumption and displace GHG emissions from the thermal energy consumption of households. The project, therefore, meets the scope of the methodology and the project is therefore, eligible to apply the methodology and emission reductions shall be calculated using method 1.
The scope of the methodology in section 2.1.2: requires that where there is no installation of improved devices and project claims emission reductions from improved practices only, project shall provide a detailed discussion of the chosen monitoring approach to demonstrate that quantified emission reductions result exclusively from the practices introduced by the project activity.	The project activity entails the distribution of Boja efficient charcoal cookstoves which have higher efficiency compared to the baseline stove technologies and emissions reductions shall be claimed from the improved efficiency only.
The scope of the methodology in section 2.1.3: provides that the project may involve progressive distribution of technology where implementation of the technology may occur in a gradual manner and adoption can increase over the project's crediting period.	The project activity is designed to progressively sell Boja stoves in a gradual manner to domestic end users within the project boundary over the 5 year period. The implementation of the project requires sound logistical and finance planning hence the technologies will be distributed progressively until the target is reached. It is estimated that the

	project will distribute 324,000 stoves over the 5-year period. :
Section 2.2.1 (a) Project shall choose a technology design that has predictable performance in that it is proven to be efficient and durable under field conditions; for cookstoves, the rated thermal efficiency shall be at least 20%	The Boja stoves being distributed by the project have an estimated efficiency of 38%, which is above the minimum efficiency of 20% required under the methodology.
Section 2.2.1 (b) The technology shall have continuous useful energy output of less than 150kW per unit	The annual energy saving by the project stoves is less than 150kW as shown in the table in section A.3 of the PDD.
Section 2.2.1(c) The project activity is implemented by a project developer and can include additional project participants listed in Appendix 2 of the PDD template. The individual households and institutions may be represented collectively by community organizations, etc., but do not individually act as project participants.	The project activity is implemented by CookClean Ghana Limited who is the project developer. Individual households are not project representatives in the project.
Section 2.2.1(d) The project developer must design incentive mechanism(s), which should be effective as fast as possible, for the elimination of inefficient baseline stoves that are replaced by the project cooking devices and describe the incentive mechanism(s) in the PDD/VPA-DD at the time of validation.	The project activity will be distributing Boja stoves which will be subsidized using carbon finance in order to make the stove more affordable to the majority of the end users. By subsidizing the stove price, more people will be able to afford it and subsidy is not available to baseline stoves, hence, the approach will make end users abandon the purchase of baseline stoves. The project will also monitor the extent to which the baseline technologies continue to be used and where found, an appropriate discounting factor will be determined and be applied to account for the use of the baseline technology in the calculation of baseline emissions.

Section 2.2.1 (e) To avoid double counting or double claiming, the project developer must: i. clearly communicate its ownership rights and intention of claiming the emission reductions resulting from the project activity to the following parties by contract or clear written assertions in the transaction paperwork: all other project participants; project technology manufacturers; and retailers of the project technology other renewable fuel in use; and ii. inform and notify the end users that they cannot claim emission reductions from the project, and exclude from the project activity, cooking devices included in any other voluntary market or CDM project activity/PoA, and strive not to displace the cooking devices of another CDM or voluntary project/PoA. See data and parameters not monitored, Avoidance of double counting or double claiming with other mitigation actions, fordetails on this demonstration	i. The Project will communicate to the end users about carbon rights during the purchase of the stove and each end user will be requested to sign a carbon rights waiver to transfer the carbon rights to CookClean Ghana Limited who is the project developer. ii. All end-users will be informed how carbon credits are utilized to support the stove project, including the stove subsidy. They will also be informed that they cannot, therefore, claim emission reductions from the project. iii. The project stoves are identified by their serial numbers through which the stoves are uniquely traceable to the end users based on the sales database records. The project developer will ensure that the sales database is well maintained and only the serialized stoves in the sales database are included for emission reduction calculations. This way, double counting is avoided for the project stoves.
Section 2.2.1 (f) Project activities making use of solid fossil fuel in the project scenario or other improved fossil fuel cookstoves meeting certain conditions described in the footnote to Table 1 (e.g. switch from three-stone fire biomass stoves to LPG stoves) may only claim emission reductions for energy efficiency improvement aspect and shall assume the same baseline and project fuel for emission reduction calculations	Not applicable to the project. The project only uses non-renewable biomass.

Section 2.2.1 (g) Project activities making use of a new solid biomass feedstock in the project situation (e.g. switch to green charcoal or renewable biomass briquettes) must comply with relevant specific requirements for biomass related project activities, as defined in the latest version of the Community Services Activity Requirements. The specific requirements apply to both plantations established for the project activity and/or existing plantations that will supply biomass feedstock	Not applicable to the project. The project only uses non-renewable biomass.
Section 2.2.1 (h) Adequate evidence is supplied to demonstrate that indoor air pollution (IAP) levels are not worsened compared to the baseline, and greenhouse gases emitted by the project fuel/stove combination are estimated with adequate precision. Furthermore, for projects where cooking will move from outdoor to indoor or where the project technology reduces ventilation (for example, changing from a stove with chimney to improved stove with no chimney), indoor air pollution (IAP) levels shall not worsen in the project compared to the baseline, including PM 2.5 and carbon monoxide (CO) emissions. This may be demonstrated before project Design Certification or during project operation using the certification resulting from of a manufacturer's test, report of field testing of the technology's PM 2.5 and carbon monoxide (CO) emissions, report	The Boja stove is portable, and this makes it possible for the cooking to be moved from outdoor to indoor. The project stoves will be tested for PM2.5 as a way of determining their indoor air pollution levels. This will be compared with the PM 2.5 levels of the baseline stoves to be determined from published literature. Furthermore, the project will not reduce ventilation in the kitchens as they are improved stoves that will actually contribute to improved indoor air conditions among beneficiary households.

of lab testing of the technology, or results of modelling of the technology's operation under field conditions. If none of these are available, reference from published literature or report by independent agencies may be used as evidence, provided it is not more than 5 years old.	:
Safeguards section 2.3.1: The project shall not undermine or conflict with any national, sub-national or local regulations or guidance for thermal energy supply or fuel supply or use. The project shall document the national, regional and local regulatory framework for provision of thermal energy services of the type the project provides in the project boundary (parameter ICS 7).	There are no regulations in Ghana that require households to adopt efficient stoves.
Safeguards Section 2.3.2: If the expected technical life of project technology (parameter ICS 3) is shorter than the crediting period, the project developer shall describe measures to ensure that end users are provided replacement technology of comparable quality at the end of the technical life, by either replacing with comparable or better technology, or retrofitting essential parts with performance guarantee. If neither of the prior conditions can be demonstrated, no emission reductions can be claimed for the technology after its technical life has ended.	The technical life of the project stove is 5 years. Once a stove reaches this age, it will stop claiming carbon credits. However, the stoves will be distributed gradually and there will be actives stoves within the 5-year crediting period of Gold Standard.

Government Regulations

Energy performance standards and labelling (improved biomass cookstoves) regulations, 2019 (proposed and yet to be enacted): The regulations require all improved biomass cookstoves offered for sale in Ghana to meet the minimum performance requirement of 20% for thermal efficiency and a safety score of 70 measured in accordance with GS ISO 19867-1.

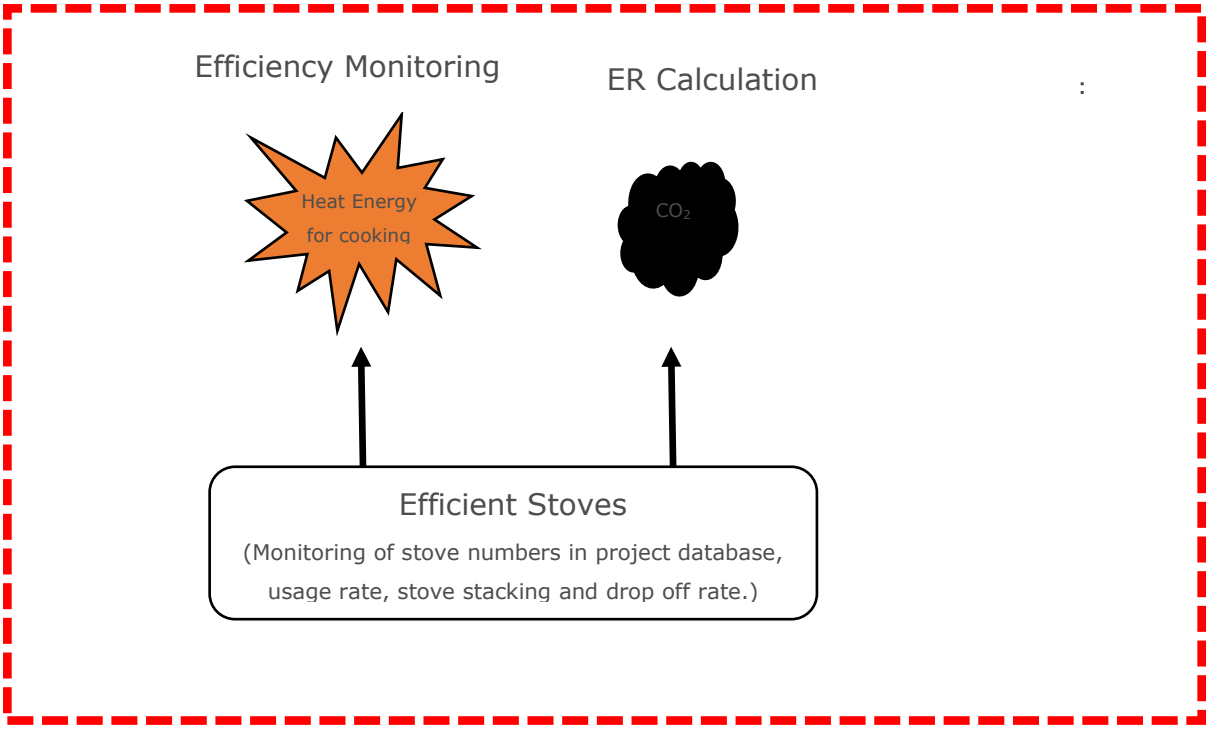
B.3. Project boundary

The project boundary of the proposed project encompasses the following:

a. The physical and geographical sites within the republic of Ghana where the Boja stoves will be utilized including the fuel collection and production area within the Republic of Ghana. The project boundary also encompasses areas within which woody biomass is grown and collected.
b. The target area of the project is the whole country of Ghana where the considered baseline scenario is deemed to be uniform across. This area could be within a single country, or across multiple adjacent countries.

The assessment of sources and gases included in the project boundary is given below.

Source		GHGs	Included?	Justification/Explanation
Baseline scenario	Delivery of thermal energy (fuelwood, biomass residues and animal dung, kerosene and LPG for cooking, majorly on inefficient cookstoves)	CO_2	Yes	Important source of emissions
		CH_4	No	Minor emission source excluded as a conservative measure
		N_2O	No	Minor emission source excluded as a conservative measure
Project scenario	Delivery of thermal energy (fuelwood using efficient cookstoves for cooking)	CO_2	Yes	Important source of emissions
		CH_4	No	Minor emission source excluded as a conservative measure
		N_2O	No	Minor emission source excluded as a conservative measure



B.4. Establishment and description of baseline scenario

In Ghana, solid fuel is the major source of energy for cooking purposes. Charcoal is the predominant fuel used majorly in urban areas, while fuel wood is predominantly used by rural households. Energy from Biomass provides about 64% of urban energy supply and about 80% of energy for cooking and heating in rural areas. Demand for energy from woody biomass is growing at a rate of 1.2% per annum.

Approximately 54.3% of households in Ghana use wood and charcoal as their main source of cooking according to Ghana 2021 Population and Housing Census –General Report Volume 3k. These are mainly firewood (33.1%) and charcoal (23.2%). Firewood is predominant in the rural areas (62%), while charcoal (27.9%) is dominate in the urban areas as the main cooking fuels. Large population of Ghana rely on wood for their energy provisions and based on the estimates on the number of households who were using the two types of fuel for cooking in 2020, wood was high than charcoal as shown below.

Table 2: Primary fuels used for cooking in Ghana, 2020 estimate

Parameters	Rural	Urban	Total
Population using wood	11,332,091	2,329,032	13,661,123
HHs using wood	2,378,985	518,148	2,897,133
Population using charcoal	2,741,635	7,091,605	9,833,240
HHs using charcoal	801,457	1,949,643	2,751,099
Population using LPG	959,572	5,165,674	6,125,247
HHs using LPG	348,144	1,699,351	2,047,495

Note: Projection from the Ghana Maternal Health Survey 2017.

Source: Cost-benefit Analysis of Interventions to Increase the Use of Clean Cooking Fuels in Ghana.

The government has had plans to ensure that clean fuels is utilized more by Ghana households by championing the use of LPG. The government launched a National LPG Promotion Programme in 1989 to achieve the policy objective of promoting the use of LPG as a clean cooking fuel alternative to charcoal and firewood, however, the utilization of LPG was low. The programme was re-launched in 2009 with a target of LPG penetration and use of 50% by 2030. However, the LPG penetration rate as at 2020 was 25.3% (Energy Commission -Charcoal Price Tracking Report – 2021), a clear sign that the government plan is not achieving its intended target. One of the causes of the slow growth in the use of LPG use by households as the main cooking fuel is the price as compared to other fuels such as charcoal and wood. Based on the above, therefore, it is clear that charcoal and wood have an advantage over cleaner fuels and the demand for use of wood and charcoal is more compared with other alternative fuels. This trend is expected to continue for some foreseeable future.

According to the methodology applied by the project activity, TPDDTEC, version 4.0, the baseline scenario is defined by the existing baseline technology/practice use and fuel consumption patterns for the type of service provided by the project technology in the population targeted for adopting the new project technology. Hence, this "target population" is a representative baseline for the project activity. The target population use mostly non-renewable biomass (wood and charcoal) in inefficient stoves or conventional devices without a grate or a chimney. The baseline scenario has therefore been determined as, the consumption of non-renewable fuel using inefficient baseline stoves or a conventional device without a grate or a chimney to meet thermal energy requirements for household cooking.

In the absence of the proposed project, households in Ghana will continue to use traditional stoves for cooking with either firewood or charcoal.

The project intends to distribute the Boja charcoal stove. The baseline scenario has been defined as the consumption of non-renewable fuel using inefficient baseline stoves or a conventional device without a grate or a chimney to meet thermal energy requirements for household cooking.

As per the applied methodology, the project will calculate emission reduction using method 1. Method 1 has been chosen because the baseline and project fuel(s) are identical and emission reductions are exclusively from improved efficiency.

The concept of suppressed demand is not applied since the project is a large-scale project activity.

B.5. Demonstration of additionality

Specify the methodology, activity requirement or product requirement that establishes deemed additionality for the proposed project (including the version number and the specific paragraph, if applicable).	As per GS4GG Community services activity requirements, Version 1.2, Para 4.1.9, Projects that meet any of the following criteria are considered as deemed additional and therefore are not required to prove Financial Additionality at the time of design certification: (a) Positive list (Annex B of this document) (b) Projects located in LDC, SIDS, LLDC (c) Microscale projects
Describe how the proposed project meets the criteria for deemed additionality.	The project meets criterion 1. Positive list, Annex B of the Community Services Activity Requirements. Section 1.1.3 of Annex B states. "Project activities solely composed of isolated units where the users of the technology/measure are households or communities or institutions and where each unit results in <= 600 MWh of energy savings per year or <=600 tonnes of emission reductions per year". The project distributes cookstoves which are isolated units whose end-users are domestic households. Ex ante calculations have shown that each isolated unit (cook stove) result in 4.66 MWh/year which is less than 600 MWh per year. The project is therefore additional.

B.5.1 Prior Consideration :

The project is a regular project and is therefore not required to demonstrate prior consideration[1]. The key milestones of the project are as follows:

- 1st stove prototype developed on 12/01/2022
- Carbon finance legal agreements signed on 31/01/2022
- The first stakeholder meeting was held on 22/03/2022. The project has not started stove distribution and it is projected that the production and distribution will start on 01/07/2022.
- Second round of stakeholder feedback round planned for 01/07/2022-31/08/2022.

B.5.2 Ongoing Financial Need

Not Applicable[2]

B.6. Sustainable Development Goals (SDG) outcomes

Relevant Target/Indicator for each of the three SDGs

Sustainable Development Goals Targeted	Most relevant SDG Target	SDG Impact
		Indicator (Proposed or SDG Indicator)
SDG 13 Climate Action (mandatory)	13.2 Integrate climate change measures into national policies, strategies, and planning.	Amount of Verified Emission Reductions (VERs)
SDG 1 No Poverty	1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day	Amount of money saved from fuel consumption per household per day
SDG 7 Affordable and clean energy	7.1: By 2030, ensure universal access to affordable, reliable	Number of households with access to improved project cookstove

[1] *As per template guide, "only (non-CER) retroactive projects and all projects undergoing Design Changes to include new technologies/measures are required to demonstrate Prior consideration by submission timelines." As indicated in the "Key Project Information", the project is a regular project, and is not undergoing a Design Change.*

[2] As per template guide, "this information need only be included at Design Certification Renewal and only for those projects that are required to demonstrate financial additionality." As shown further above, this project is not required to demonstrate financial additionality since included in the positive list of Annex B of the CSA requirements V.1.2.

	and modern energy services	:
SDG 8 Decent Work and Economic Growth	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	Number of jobs created by the project

B.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact

SDG 13: Climate Action

Since the baseline fuel and project fuel are the same, emission reductions are exclusively from improved efficiency. The project, therefore, shall use Method 1 in calculating the emission reduction. Therefore, the GHG emissions reduction achieved by the project activity in year y is calculated using equation 1. Equation one has been adjusted to include leakage where the project has applied a default value of *0.95 to equation 1. In line with the applied methodology TPDDTEC, version 4.0, emission reductions can be estimated by using the following formulas.

$$ER_y = \sum_{b,p} (N_{b,p,y} \times U_{p,y} \times SFS_{p,b,y} \times NCV_{b,fuel} \times (f_{NRB,b,y} \times EF_{b,f,CO2} + EF_{b,f,nonCO2})) * \sum LE_{p,y} \quad \textit{Eq. 1}$$

Where:

ER_y	Emission reduction for total project activity in year y(tCO_2e/yr)
$\sum_{b,p}$	Sum over all relevant baseline b/project p pairs
$N_{b,p,y}$	Number of project technology-days included in the project database for baseline b/project p pair in year y (days)
Up,y	Cumulative Usage rate for technologies in project scenario p in year y (fraction)
$SFSp,b,y$	Specific fuel savings for an individual project technology of baseline b/project p pair in year y (mass or volume units/technology*day)
$NCVb,fuel$	Net calorific value of the fuel(s) that is substituted or reduced in baseline b (TJ/mass or volume units)
$fNRB,b,y$	Fractional non-renewability status of woody biomass fuel during year y (fraction). For biomass, it is the fraction of woody biomass that can be established as non-renewable. This parameter is omitted when f is a fossil fuel.
$EFb,f,CO2$	CO2 emission factor from use of fuel f (tCO2/TJ)
$EFb,f,nonCO2$	Non-CO2 emission factor arising from use of fuel f, when the baseline fuel f is biomass or charcoal (tCO2e/TJ). This parameter is

omitted when f is a fossil fuel.

LEp,y Leakage for project scenario p in year y (tCO2e/yr)

:

Parameter	Description	Value applied	Unit	Data source
$\Sigma_{b,p}$	Sum over all relevant (baseline b/project p) couples	1	Number	Internal assumption for ex-ante purposes
$N_{b,p,y}$	Cumulative number of project technology-days included in the project database for project scenario p against baseline scenario b in year y	365	Day	Internal assumption for ex-ante purposes
$U_{p,y}$	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)	1	Fraction	Internal assumption for ex-ante purposes
$SFSp,b,y$	Specific fuel savings for an individual project technology of baseline b/project p pair in year y (mass units/technology*day)	0.00155726	kg/day	Internal assumption for ex-ante purposes
$f_{NRB,b,y}$	Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass (drop this term from the equation when using a fossil fuel baseline scenario)	0.8240	Fraction	Calculated
$NCV_{b,fuel}$	Net calorific value of the fuel that is substituted or reduced (IPCC default for charcoal fuel, 0.0295 TJ/ton)	0.0295	TJ/ton	Default value as per applied methodology
$EF_{b,fuel,CO2}$	CO_2 emission factor of the fuel that is substituted or reduced. 165.22tCO_2/TJ for charcoal.	165.22	tCO2/TJ	Default value as per applied methodology

$EF_{b,fuel,nonCO2}$	CO2 emission factor arising from use of fuels in project scenario	44.83	tCO2/TJ	Default value as per applied methodology (AR5 GWP)
$NCV_{p,fuel}$	Net calorific value of the fuels used in the project	0.0295	TJ/ton	Default value as per applied methodology
$EF_{p,fuel,CO2}$	Non-CO2 emission factor arising from use of fuels in project scenario	165.22	tCO2/TJ	Default value as per applied methodology
$EF_{p,fuel,nonCO2}$	Non-CO_2 emission factor of the fuel that is reduced	44.83	tCO2/TJ	Default value as per applied methodology (AR5 GWP)
$LE_{p,y}$	Leakage for project scenario p in year y	0.95	tCO2e/yr	Internal assumption for ex-ante purposes
ER_y	Emission reduction for total project activity in year y	2.88	tCO2e/yr	Calculated

Methodological choices/approaches related to SDG 8: Decent Work and Economic Growth

Number of jobs created by the project: The project is expected to create jobs through the stove production and distribution process. This parameter will be monitored by checking the employment records to determine the number of people employed by the project. The reporting will also include data on the number of males and number of females involved in the project.

Net Benefit (SDG 8)= $QE_{Project}$ - $QE_{Baseline}$

Where:

$QE_{Baseline}$ Quantitative Employment (Number of persons (male and female) hired by the project in the Baseline scenario

$QE_{Project}$ Quantitative Employment (Number of persons (male and female) hired under the Project in the project scenario)

The project targets to employ 70 people including 45 male and 25 female in the stove production and supply chain.

Methodological choices/approaches related to SDG 7: Affordable and Clean Energy

Number of households with access to improved project cookstove

This parameter will be monitored based on the actual number of operational units sold as indicated in the sales database. The project implementer shall maintain an updated sale database for all the units sold by the project.

Net Benefit (SDG 7) = $ICS_{Project}$ - $ICS_{Baseline}$

Where:

$ICS_{Baseline}$ Number of operating ICS units under Baseline

$ICS_{Project}$ Number of operating ICS units under Project.

The project is expected to distribute about 324,0000 improved charcoal cookstoves among household end-users.

Methodological choices/approaches related to SDG 1: No poverty

Amount of money saved from fuel consumption per household per day

The project includes the distribution of fuel-efficient cookstove technologies to replace the inefficient baseline cooking stoves and thus result in a reduction in fuel consumption. By reducing their fuel consumption, households spend less on fuel purchases, therefore, making savings.

The contribution of the project to this target of SDG 1 will be measured by calculating the number of active fuel-efficient cookstoves disseminated by the project and computing the estimated household savings based on the prevailing fuel prices. This will be calculated as follows:

Net Benefit (SDG 1) = $HFE_{Project}$ – $HFE_{Baseline}$

Where:

$HFE_{Baseline}$ is the average household fuel expenditure on baseline fuel consumption in the baseline scenario.

$HFE_{Project}$ is the average household fuel expenditure on fuel consumption in the project scenario.

The project is expected to lead to saving of about 1.90 GHC/household/day on fuel costs, based on charcoal price of GH₵ 1.22 per kilogram of charcoal[3].

B.6.2 Data and parameters fixed ex ante

[3] https://energycom.gov.gh/planning/data-center/charcoal-tracking-in-ghana?download=147:charcoal-price-tracking-report-2021 (Accessed on 16/06/2022)

SDG13

:

Data/parameter ID	**SDG 13** **ICS 1**
Data/parameter	Baseline scenario survey results
Unit	N/A
Description	Report of the results of the baseline scenario survey
Source of data	The report presents the results of the Baseline Scenario Survey, relevant for the baseline scenario definition.
Value(s) applied	The project is in the process of carrying out a baseline survey and the values obtained will be updated
Choice of data or Measurement methods and procedures	The applied data to be applied will be informed by the findings of the baseline survey.
Purpose of data	Calculation of baseline emissions
Additional comment	Baseline survey exercise being planned at the time of project listing

<table>
<tr><td>Data/parameter ID</td><td>SDG 13

ICS 2</td></tr>
<tr><td>Data/parameter</td><td>Project technology description</td></tr>
<tr><td>Unit</td><td>NA</td></tr>
<tr><td>Description</td><td>Detailed description of the project technology</td></tr>
<tr><td>Source of data</td><td>The description of the technology is based on the manufacturer specifications</td></tr>
<tr><td>Value(s) applied</td><td>
<table>
<tr><th>Parameters</th><th>Boja Charcoal Stove</th></tr>
<tr><td>Manufacturer name</td><td>CookClean Ghana Limited</td></tr>
<tr><td>Size:</td><td>9.8" x 7.6" x 11.6"</td></tr>
<tr><td>Materials:</td><td>Ceramic liner, with outer metal cladding</td></tr>
<tr><td>Secondary Air Induction Mechanism:</td><td>Yes</td></tr>
<tr><td>Warranty:</td><td>1 year</td></tr>
<tr><td>Fuel Type</td><td>charcoal</td></tr>
<tr><td>Operational Lifetime</td><td>60 months`</td></tr>
<tr><td>Application/service level</td><td>Domestic cooking</td></tr>
<tr><td>Efficiency</td><td>38%</td></tr>
<tr><td>Weight</td><td>5-10 kg (stove in box)</td></tr>
<tr><td>Dimension</td><td>Approx. 30-45</td></tr>
<tr><td>Cooking power output</td><td>0.82– 2.5 kWth</td></tr>
<tr><td>Adoption</td><td>Traditional cooking styles and posture</td></tr>
</table>
</td></tr>
<tr><td>Choice of data or Measurement methods and procedures</td><td>CookClean Ghana Limited is the manufacturer of the project technology, and the manufacturer’s specifications provide a detailed description of the product technology.</td></tr>
<tr><td>Purpose of data</td><td>Calculation of baseline emissions</td></tr>
<tr><td>Additional comment</td><td>For any information not available at the time of validation, validating VVB shall include a FAR.</td></tr>
</table>

Data/parameter ID	**SDG 13** **ICS 3**
Data/parameter	Expected technical life of project technology
Unit	years
Description	The expected technical life of an individual project technology is defined in section A.3 of PDD.
Source of data	The expected life of the project technology is based on the manufacturer specifications.
Value(s) applied	5
Choice of data or Measurement methods and procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	The project developer shall provide a warranty of 1 year.

Data/parameter ID	**SDG 13** **ICS 4**
Data/parameter	Indoor air pollution (IAP) levels of the project technology
Unit	N/A
Description	For projects where cooking will move from outdoor to indoor or where the project technology reduces ventilation (for example, changing from a stove with chimney to improved stove with no chimney), demonstration that Indoor air pollution (IAP) levels are not worsened in the project scenario compared to the baseline, including PM 2.5 and carbon monoxide (CO) emissions.
Source of data	WBT testing report for project stoves Publish literature for baseline stoves.
Value(s) applied	To be determined
Choice of data or Measurement methods and procedures	-
Purpose of data	Reporting on SDGs
Additional comment	Any information not available at validation shall be included as a FAR and provided before completion of verification report. Only for project types where this evidence is required, no issuance shall be requested for project technologies for which IAP levels have not been verified by the verifying VVB prior to completion of verification report.

Data/parameter ID	**SDG 13** **ICS 5**
Data/parameter	Avoidance of double counting or double claiming among project participants
Unit	NA
Description	Evidence of avoidance of double counting or double claiming with other parties directly involved with the project
Source of data	Carbon rights waiver signed by end-user transferring carbon rights to CookClean Ghana Limited.
Value(s) applied	The PP has provided proof that the procedure for the carbon rights transfer with end-users of the project technology is in place.
Choice of data or Measurement methods and procedures	The mechanism for the carbon rights transfer has been put in place and the same shall be verified to ensure there is no double counting or claiming by the project participants.
Purpose of data	Calculation of baseline emissions
Additional comment	Any written assertions not available at validation shall be included as a FAR and be provided and verified at the time of first verification

Data/parameter ID	**SDG 13** **ICS 6**
Data/parameter	Avoidance of double counting or double claiming with other mitigation actions
Unit	NA
Description	Review and analysis of mitigation actions in other voluntary markets or UNFCCC/compliance mechanisms
Source of data	The PP has reviewed the Gold Standard and Verra and UNFCCC CDM project & PoA registries and can confirm that the project is not registered or seeking registration with other carbon standards.
Value(s) applied	-
Choice of data or Measurement methods and procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	The project will only be registered with the Gold Standard.

Data/parameter ID	**SDG 13** **ICS 7**
Data/parameter	Regulatory framework for provision of thermal energy services
Unit	NA
Description	Evidence that the project does not undermine or conflict with any national, sub-national or local regulations or guidance for thermal energy supply/devices or fuel supplyor use
Source of data	Relevant government institutions or departments
Value(s) applied	See section B.2 of the PDD
Choice of data or Measurement methods and procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	Undertaken at the start of each crediting period

Data/parameter ID	**SDG 13** **ICS 8**
Data/parameter	$EF_{b,f,CO2}$
Unit	tCO_2/TJ
Description	CO_2 emission factor arising from use of fuels in baseline scenario
Source of data	Charcoal: Methodology default (includes charcoal production emissions)
Value(s) applied	Charcoal: 165.22
Choice of data or Measurement methods and procedures	The methodology AR5 GWP default values are applied
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/parameter ID	**SDG 13** **ICS 9**
Data/parameter	$EF_{b,f,nonCO2}$
Unit	tCO_2/TJ
Description	Non-CO2 emission factor arising from use of fuels in baseline scenario
Source of data	Charcoal: Methodology defaults value (AR5 GWP) (includes charcoal production emissions)
Value(s) applied	Charcoal: 44.83
Choice of data or Measurement methods and procedures	The methodology AR5 GWP default values are applied
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/parameter ID	**SDG 13** **ICS 10**
Data/parameter	EFp,f,CO2
Unit	tCO_2/TJ
Description	CO_2 emission factor arising from use of fuels in project scenario
Source of data	Charcoal: Methodology defaults value (AR5 GWP) (includes charcoal production emissions)
Value(s) applied	Charcoal: 165.22
Choice of data or Measurement methods and procedures	The methodology AR5 GWP default values are applied
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/parameter ID	**SDG 13** **ICS 11**
Data/parameter	**$EF_{p,f,\ nonCO2}$**
Unit	tCO_2/TJ
Description	Non-CO_2 emission factor arising from use of fuels in project scenario
Source of data	Charcoal: Methodology defaults value (AR5 GWP) (includes charcoal production emissions)
Value(s) applied	Charcoal: 44.83 (AR5 GWP)
Choice of data or Measurement methods and procedures	The methodology AR5 GWP default values are applied
Purpose of data	Calculation of baseline emission reductions.
Additional comment	-

Data/parameter ID	**SDG 13** **ICS 12**
Data/parameter	$NCV_{b,fuel}$
Unit	TJ/ton
Description	Net calorific value of the fuels used in the baseline
Source of data	Charcoal: Methodology defaults value
Value(s) applied	Charcoal: 0.0295
Choice of data or Measurement methods and procedures	The methodology default values are applied
Purpose of data	Calculation of baseline emissions
Additional comment	The methodology default emission factor must be applied when the methodology default NCV is applied.

Data/parameter ID	**SDG 13** **ICS 13**
Data/parameter	**$NCVp_{,fuel}$**
Unit	TJ/ton
Description	Net calorific value of the fuels used in the project
Source of data	Charcoal: Methodology defaults value
Value(s) applied	Charcoal: 0.0295
Choice of data or Measurement methods and procedures	The methodology default values are applied
Purpose of data	Calculation of baseline emissions
Additional comment	The methodology default emission factor has been applied since methodology default NCV is applied.

Data/parameter ID	**SDG 13** **ICS 14**
Data/parameter	$SFSb,y$
Unit	Tons/baseline technology*day
Description	Specific fuel consumption for an individual baseline technology in baseline scenario b during year y
Source of data	Published literature
Value(s) applied	0.0033
Choice of data or Measurement methods and procedures	Calculated based on the estimated 2 bags of charcoal (50 kg) per month[4]
Purpose of data	Calculation of baseline emissions
Additional comment	The value applied is estimated and after completion of baseline survey, the value will be updated during design certification.

[4] https://mecs.org.uk/wp-content/uploads/2021/02/The-landscape-of-energy-for-cooking-in-Ghana-A-review.pdf (Accessed on 16/06/2022)

Data/parameter ID	**SDG 13** **ICS 17**
Data/parameter	$f_{NRB,I,y}$
Unit	Percentage
Description	Fractional non-renewability status of woody biomass fuel during year *y*, in case the baseline fuel is biomass or charcoal
Source of data	Determined by following the CDM TOOL30, Calculation ofthe fraction of non-renewable biomass
Value(s) applied	0.8240
Choice of data or Measurement methods and procedures	Calculated
Monitoring frequency	Determined ex-ante and fixed for a given crediting period
QA/QC procedures	Requirements of the CDM TOOL30
Purpose of data	Calculation of baseline emissions
Additional comment	Value updated based on FAO Forestry Resources Assessment (FRA) 2020 report.

Data/parameter ID	**SDG13** **ICS 28**
Data/parameter	$LE_{p,y}$
Unit	tCO_2e per year
Description	Leakage in project scenario p during year y
Source of data	Methodology default value
Value(s) applied	0.95
Choice of data or Measurement methods and procedures	Methodology default value is applied
Monitoring frequency	Default discount value of 0.95 applied to emission reductions
QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	The methodology default value of 0.95 is applied to account for any leakage and hence no monitoring will be required for the parameter. The parameter value is fixed ex-ante for the crediting period.

B.6.3 Ex ante estimation of SDG Impact

:

SDG 13: Emission reductions

The transparent ex-ante calculations of the outcomes of SDG 13 (i.e. CO_2e reductions) are provided in a separate Excel Spreadsheet. For data/parameters available before design certification values contained in section B.6.2 above have been applied and for data/parameters not available before design certification the estimates contained in section B.7.1 below have been used.

The following calculation steps is followed for each stove type:

$$ER_y = \sum_{b,p} (N_{b,p,y} \times U_{p,y} \times SFS_{p,b,y} \times NCV_{b,fuel} \times (f_{NRB,b,y} \times EF_{b,f,CO2} + EF_{b,f,nonCO2})) * \sum LE_{p,y} \quad \text{Eq. 1}$$

= 1*1* 0.00155726*0.0295*(0.8240*165.22+44.83) *0.95

= 2.88

SDG 1: No Poverty

The ex-ante estimate for SDG 1 has been calculated based on estimated household savings by assessing the prevailing fuel prices in the host country. This has calculated as follows:

Monetary savings	
Average daily expenditure on fuel	GH₵ 4.01
Expenditure with project stove	GH₵ 2.11
Savings (GHC)	GH₵ 1.90

Source: Charcoal Price Tracking March 2021 Report-Energy Commission Ghana.

The project is expected to lead to saving of about 1.90 GHC/household/day on fuel costs.

SDG 7: Affordable and Clean Energy

Number of households with access to improved project cookstove

This ex-ante estimation for the parameter has been derived from the projected stove sales provided by the project developer. The project is expected to distribute 324,000 improved charcoal cookstoves among household end-users

SDG 8: Decent Work and Economic Growth

Total number of jobs split by gender

The project activity is expected to create jobs through the stove production and distribution process. The ex-ante estimation for this parameter has been determined from the projection provided by the project implementer. The project is expected to employ about 70 people including 45 males, and 25 females.

B.6.4 Summary of ex ante estimates of each SDG Impact

SDG 13

:

Year	Baseline estimate (tCO_2e)	Project estimate (tCO_2e)	Net benefit (tCO_2e)
01/07/2022-31/12/2022	109,620	57,731	51,890
2023	657,720	346,382	311,338
2024	1,096,200	577,303	518,897
2025	1,534,680	808,224	726,456
2026	1,973,160	1,039,144	934,016
01/01/2027-30/06/2027	109,620	57,731	51,890
Total	**5,481,000**	**2,886,514**	**2,594,486**
Total number of crediting years	5		
Annual average over the crediting period	**1,096,200**	**577,302**	**518,897**

SDG 1

Year	Baseline estimate	Project estimate (GHC/year/household)	Net benefit (GHC/year/household)
01/07/2022-31/12/2022	0	693.47	693.47
2023	0	693.47	693.47
2024	0	693.47	693.47
2025	0	693.47	693.47
2026	0	693.47	693.47
01/01/2027-30/06/2027	0	693.47	693.47
Total	**0**	**3,467.37**	**3,467.37**
Total number of crediting years	5		
Annual average over the crediting period	**0**	**693.47**	**693.47**

SDG 7

Year	Baseline estimate	Project estimate (number)	Net benefit (number)
01/07/2022-31/12/2022	0	36,000	36,000
2023	0	72,000	72,000
2024	0	72,000	72,000
2025	0	72,000	72,000
2026	0	72,000	72,000
01/01/2027-30/06/2027	0	0	0
Total	**0**	**324,000**	**324,000**
Total number of crediting years	5		
Annual average over the crediting period	**0**	**64,800**	**64,800**

SDG 8

Year	Baseline estimate	Project estimate (number)	Net benefit (number)
01/07/2022-31/12/2022	0	70 (45 male, 25 female)	70 (45 male, 25 female)
2023	0	70 (45 male, 25 female)	70 (45 male, 25 female)
2024	0	70 (45 male, 25 female)	70 (45 male, 25 female)
2025	0	70 (45 male, 25 female)	70 (45 male, 25 female)
2026	0	70 (45 male, 25 female)	70 (45 male, 25 female)
01/01/2027-30/06/2027	0	70 (45 male, 25 female)	70 (45 male, 25 female)
Total	**0**	**350 (225 male, 125 female)**	**350 (225 male, 125 female)**
Total number of crediting years	5		
Annual average over the crediting period	**0**	**70 (45 male, 25 female)**	**70 (45 male, 25 female)**

B.7. Monitoring plan

B.7.1 Data and parameters to be monitored :

Data / Parameter ID	**SDG 13** **ICS 5**
Data / Parameter	Avoidance of double counting or double claiming among project participants
Unit	NA
Description	Evidence of avoidance of double counting or double claiming with other parties directly involved with the project
Source of data	Carbon rights waiver signed by end-user transferring carbon rights to CookClean Ghana Limited.
Value(s) applied	N/A
Measurement methods and procedures	The mechanism for the carbon rights transfer has been put in place and the same shall be verified to ensure there is no double counting or claiming by the project participants.
Monitoring frequency	Monitored whenever project technology is sold or otherwise disseminated
QA/QC procedures	Cross check using general internet search and search of public records of Gold Standard and other voluntary market and UNFCCC mechanisms
Purpose of data	Calculation of baseline emissions
Additional comment	Any written assertions not available at validation shall be included as a FAR and be provided and verified at the time of first verification

:

Data / Parameter ID	**SDG 13** **ICS 16**
Data / Parameter	Presence of stove stacking
Unit	NA
Description	Descriptive statistics of the presence and usage practices of baseline- and other non-project-technology by project technology end users.
Source of data	Usage Survey exercise where the use of other stoves, to capture cooking habits and stove usage of households in the region, including quantification of use of baseline devices, by formulating questions and/or collecting evidence to determine the frequency of usage of both the project devices and baseline devices, or monitoring surveys to capture the number of meals cooked. The surveys will be integrated with the usage survey
Value(s) applied	0
Measurement methods and procedures	Surveys
Monitoring frequency	Annual
QA/QC procedures	The calculation of $SFS_{p,b,y}$ shall be cross-checked with the observed presence of stove stacking. Project will ensure any stove stacking is considered so that emission reductions are calculated only from real reduction of, or replacement of, baseline fuel use.
Purpose of data	Calculation of emission reductions
Additional comment	As required under the methodology, whether or not the existing baseline technology is surrendered, when an old technology remains in use in parallel with the improved technology, or another technology is put in use in parallel, the corresponding emissions shall be accounted for so that emission reductions are not overestimated. The PP assumes that there will be no presence of stove stacking in the project scenario and a value of 0 is applied for ex-ante estimation purposes. Further, each household is only entitled to one project stove type to ensure there is no double counting. The number of stoves sold to each household shall be recorded on the sales database and cross-checked during monitoring.

:

Data / Parameter ID	**SDG 13** **ICS 18**
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	Published literature
Value(s) applied	0.0033
Measurement methods and procedures	Measured
Monitoring frequency	Once at the start of crediting period (fixed for one crediting period)
QA/QC procedures	Compliance with the general requirements for sampling (Section 4.4), general requirements for QA/QC (Section 4.5) and Annex 2 Kitchen performance test.
Purpose of data	Calculation of emission reductions
Additional comment	Used to calculate SFS under method 1 Applicable adjustment factors may be applied. The value applied is an estimate, actual value to be determined once the KPT survey is completed and be updated during design certification.

Data / Parameter ID	**SDG 13** **ICS 19**
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	Calculated
Value(s) applied	0.00173
Measurement methods and procedures	Measured
Monitoring frequency	Updated every two years, or more frequently
QA/QC procedures	Compliance with the general requirements for sampling (Section 4.4), general requirements for QA/QC (Section 4.5) and Annex 2 Kitchen performance test.
Purpose of data	Calculation of emission reductions
Additional comment	Used to calculate SFS under method 1. Applicable adjustment factors may be applied. The value applied is an estimate, actual value to be determined once the KPT survey is completed and be updated during design certification.

Data / Parameter ID	**SDG 13** **ICS 20**
Data / Parameter	$SFS_{b,p,y}$
Unit	tonnes/unit/year
Description	Specific fuel savings for an individual project technology of baseline b/project p pair in year y
Source of data	Calculated from $P_{b,y}$, $P_{p,y}$ and other information to obtain the savings in the required units
Value(s) applied	0.00156
Measurement methods and procedures	Calculated
Monitoring frequency	Updated every two years, or more frequently
QA/QC procedures	The calculation method, inputs and their sources are described in detail in the PDD and monitoring report. Cross-check with proportional efficiency of baseline and project technology.
Purpose of data	Calculation of emission reductions
Additional comment	Applies when using Method 1. Savings will be calculated per technology. The value applied is an estimate, actual value to be determined once the KPT survey is completed and be updated during design certification.

:

Data / Parameter ID	**SDG 13** **ICS 26**
Data / Parameter	$U_{p,y}$
Unit	Percentage
Description	Weighted average usage rate in project scenario p during year y
Source of data	Usage survey exercise
Value(s) applied	100%
Measurement methods and procedures	Calculated. The survey result shall provide the statistically valid proportion of users actively using the project technology for each project technology age cohort and by stove type.
Monitoring frequency	At least annually
QA/QC procedures	Compliance with the general requirements for sampling (Section 4.4) and general requirements for QA/QC (Section 4.5)
Purpose of data	Calculation of emission reductions
Additional comment	This parameter is also used in the monitoring of SDG 7: Affordable and clean energy

TEMPLATE

Data / Parameter ID	**SDG 13** **ICS 27**
Data / Parameter	$N_{b,p,y}$
Unit	days
Description	Number of project technology-days included in the project database for baseline b/project p pair in year y
Source of data	Calculated from the Project database as the sum of the number of project technology units times the calendar days during the yeary that they were present at the end user locations
Value(s) applied	365
Measurement methods and procedures	Calculated
Monitoring frequency	Annually
QA/QC procedures	Cross check the results of the usage survey with the contents of the project database to confirm whether the project technology units surveyed are present at end user cations as expected, or not. If there is discrepancy, this must be explained or corrected.
Purpose of data	Calculation of emission reductions
Additional comment	-

SDG 1

Data / Parameter	**SDG 1** No poverty
Unit	Cedis/household/day
Description	Amount of money saved from fuel consumption per household per day
Source of data	Project surveys
Value(s) applied	1.9 GHC
Measurement methods and procedures	Surveys
Monitoring frequency	Annual
QA/QC procedures	Questions will be included in the survey questionnaire to assess the parameter. Survey results will determine the prevailing fuel prices and convert it into monetary savings.
Purpose of data	Reporting on SDG impacts
Additional comment	-

SDG 8

Data / Parameter	**SDG 8** Decent Work and economic growth
Unit	Number
Description	Total number of jobs created by the project
Source of data	Employment records
Value(s) applied	70 (45 male, 25 female)
Measurement methods and procedures	To be determined from employment records
Monitoring frequency	Annual
QA/QC procedures	The project implementer shall maintain up to date employment records to confirm the number of people employed per department, split by gender.
Purpose of data	Reporting on SDG impacts
Additional comment	-

SDG 3

Data / Parameter	**SDG 7** Affordable and clean Energy
Unit	number
Description	Number of households with access to improved project cookstove
Source of data	project sales/distribution database
Value(s) applied	324,000
Measurement methods and procedures	Determined from sales and survey records
Monitoring frequency	Annual
QA/QC procedures	The survey will be carried out to determine stove usage rates and its frequency of use
Purpose of data	Reporting on SDG impacts
Additional comment	This parameter will also be used in conjunction with usage rate parameter

B.7.2 Sampling plan

Sampling Objective and Parameter to be monitored

Section 4.4. of the applicable methodology outlines the general requirements for sampling and provides that when sampling is applied to determine mean (average) parameter values or proportion (yes/no) parameter values for both ex-ante and monitored data and parameters, the outlined guidelines shall always be applied. Furthermore, specific requirements apply for the sampling related to some parameters.

This project will apply Simple Random Sampling. This will be done in accordance with the Guideline for Sampling and surveys for CDM project activities and programme of activities, version 4. However, during operation, the project will have different stove vintages. As per the methodology, samples will be drawn from each vintage and therefore, the project will apply stratified sampling when drawing samples from each vintage.

The project developer shall maintain an updated distribution record for all the units sold, and this will identify the end-users and their locations within the project activity. This will enable random sampling and testing of subjects to be identified from the distribution records.

The parameters to be monitored by the project activity will be the fuel consumption trends, drop-off rates and project usage rates. The target population monitored parameters (proportion of stoves in operation ($U_{p,y}$), presence of stove stacking and fuel consumption and savings ($P_{p,b,y}$)) for this project shall be all the households within the project activity database using the Boja charcoal stoves. The determination of the presence of stove stacking will be conducted together with the usage survey.

Target population

The target population will be the total stove population in the project activity.

Sampling Methodology

One unit of baseline cookstove will be replaced in each household with one Boja stove in this project. Since the baseline cooking patterns and behaviours are the same across the project boundary, the usage pattern is expected to be similar. The project will employ a simple random sampling method when drawing up a sample.

Sample Size

The minimum sample sizes for the determination of the monitored parameters will be determined as per '*The Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities',* Version 04.0 and the registered PDD. The minimum sample sizes required for the determination of the different types of parameters (proportion and mean) will be determined using different methods as described below.

$U_{p,y}$ survey sample size calculation (proportion parameter), presence of stove stacking and Specific fuel savings for an individual technology of project ($P_{p,b,y}$) (mean parameter)

When determining the values of interest i.e. proportion parameter and mean parameter, the following equation for the sample size will be used to calculate sample size when applying stratified random sampling (*As provided in the Guidelines for*

Sampling and Surveys for CDM Project Activities and Programme of Activities', Version 04.0).

Proportion parameter

$$n \geq \frac{1.645^2 N \times p(1-p)}{(N-1)\times 0.1^2 \times p^2 + 1.645^2 p(1-p)}$$ Equation (1)

Mean parameter.

$$n \geq \frac{1.645^2 NV}{(N-1)\times 0.1^2 + 1.645^2 V}$$ Equation (18)

Baseline and project survey

When carrying out baseline and project surveys, the following sample size guidelines should be applied, unless otherwise stated for specific parameters:

- Group size <300: Minimum sample size 30 or population size, whichever is smaller.
- Group size 300 to 1000: Minimum sample size 10% of group size
- Group size > 1000 Minimum sample size 100

General Requirements for Quality Assurance and Quality Control

i. The project developer is responsible for accurate and transparent record keeping, monitoring and evaluation. All supporting documentation and records for the project must be easily accessible for spot checking and cross referencing by a third-party auditor.

ii. Contact information in the total sales/distribution record shall allow a project auditor to easily contact and visit end users.

iii. An auditor must be able to cross reference pertinent project documentation, including archives such as production records (e.g., materials purchases,

internal logs), financial accounts and sales records, as well as wholesale customer invoices, observations of retailer activities and sales performance.

B.7.3 Other elements of monitoring plan

The project developer Carbon Manager is responsible for the overall monitoring of the project. The sampling plan, data collection & consolidation and results analysis will be undertaken by a trained monitoring team. In some cases, external expertise or support may be required, in such cases, the external team will be required to have requisite skills and experience in carrying out project monitoring and surveys.

Monitoring team and responsibilities

Role	Responsibilities
Carbon manager	- Ensuring that the project follow the monitoring plan - Ensure that the equipment used for measurements are in line with the measurement methods and recording frequency as per the monitoring plan - Ensure that monitoring data collected is consolidated and entered in electronic database - Ensure that monitoring team receives proper training where applicable
Data manager	- Collect monitoring data - Enter data in electronic database and archive hardcopies - Carry out sample size determination and emission reduction calculations

Confidence and Precision

Whenever annual inspection is applied, a 90% confidence interval and a 10% margin of error will be achieved for the sampling parameters. In cases where biennial inspection is chosen, then a 95% confidence interval and a 10% margin of error will be achieved for the sampling parameters. In case the 90/10 or 95/10 precision is not achieved, the lower bound of a 90%/or 95% confidence interval of the parameter value will be chosen.

Data Archiving

Data collected for the purposes of monitoring the project will be archived in electronic format and where possible in hard copies. The same will be availed to VVB during verification when required.

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1 Start date of project

01/07/2022 (date when the first unit will be sold). This project is a regular project

C.1.2 Expected operational lifetime of project

15 years 0 Months

C.2. Crediting period of project

C.2.1 Start date of crediting period

01/07/2022 (start date of project operation).

C.2.2 Total length of crediting period

5 years 0 Months (renewable twice)

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1 Safeguarding Principles that will be monitored

A completed Safeguarding Principles Assessment is in Appendix 1, ongoing monitoring is summarised below.

Principles	Mitigation Measures added to the Monitoring Plan
Principle 2	No mitigation measure proposed as the project is designed to enhance gender equality. During monitoring, the number of people employed by the project will be monitored and be desegregated by occupation and gender.
Principle 3	The PD shall ensure workers are trained to minimise on potential risks. Training records to be provided as supporting evidence. Stove artisans will be provided with safety gear for use when working.
Principle 6	No mitigation measures proposed but the project will monitor the adherence to labour rights and ensure that all workers are treated fairly and equally.
Principle 7	No mitigation measures proposed. During monitoring, the project will check the usage rates and the operating efficiencies of the stove to determine the emission reductions achieved by the project.

D.2. Assessment that project complies with GS4GG Gender Sensitive requirements

Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	The project developer work policy requires non-discrimination of employees and has put measures in place for equal treatment of all its workers. The non-discrimination covered by the policy encompasses discrimination based on gender. This policy will continue to be enforced and appropriate measures will be undertaken to ensure that the same is complied with. The policy provides for means of addressing discrimination whenever it arises.

Question 2 - Explain how the project aligns with existing country policies, strategies and best practices	The project developer abides by the principle of gender equality and the government of Ghana has set up a National Gender Policy (Ministry of Gender, Children and Social Protection, 2015), which empowers both genders and provides the rights of women, justice and leadership. The project developer will enhance gender equality and will align its work in line with the Government policy. The Ghana constitution also requires equal treatment without any discrimination, which the project which adhere to.
Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	No
Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	No.

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

The below is a summary of the 2 step GS4GG Consultation for monitoring purposes. Please refer to the separate Stakeholder Consultation Report for a complete report on the initial consultation and stakeholder feedback round.

E.1 Summary of stakeholder mitigation measures

Gender of Stakeholder	Stakeholder comment	Was comment taken into account (Yes/ No)?	Explanation (Why? How?)
Male	How will the project address the challenges of women in fishing communities.? Chibeze Ezekiel - SYNDA	YES	There exists a special stove for which was designed for women in fishing communities called the Ahotor stove. CookClean can produce same to assist these women when the timed is due but in the meantime the team would like to concentrate on the Boja Cook stove.
Male	How will the marketing strategy and project implementation plan be carried out? Chibeze Ezekiel - SYNDA	YES	The project boundary will be the whole of Ghana and the production site will be at Asofan, Ofankor in the Greater Accra Region. The distribution will be done by women distributors who are spread across the country together with distribution Vans that will move from place to place to deliver the stoves and also enable information gathering from users to be easy. Coupled with this, programs will be organized for women groups,

			institutions, communities and youth groups to increase awareness and strengthen advocacy on the use of the Boja Cook stove. He added that, after selling the stoves, monthly monitoring exercises will be undertaken through random phone calls to monitor the stove usage and also address special concerns from customers. Mr. Nicholas finally added that, there will be a Validation and Verification Body (VVB) an external auditor who will visit the country to verify the stove usage as part of the monitoring process.
Male	How will the project address the issue of recent price hikes in LPG in urban areas and how can the project reduce the financial burden on users.? Kojo Peterson - CSO	YES	The Boja stove has been heavily subsidized to make it affordable for all, that notwithstanding, the idea of the project is not to remove the use of LPG since its much cleaner but rather to lessen the burden on the use of firewood, to reduce carbon emission and to reduce fuel cost.
Female	How will the project bring on board women and youth in terms of employment	YES	There are about150 women distributors and women sales agents who will be assisting in the sale of the stoves. This will serve as a good source of

	opportunities to enable them to improve on their livelihood? Priscilla Ahiada - SYNDA		income to enable them to improve their lives
Female	How can the Stove be made accessible to the general public? Dr.Laryea CSIR - IIR	YES	There are women distributors across the country where buyers or customers can buy directly from. Also, there will be delivery vans and dedicated phone lines that can be contacted for orders and deliveries.
Female	How can the Boja cookstove be distinguished from other fake or imitated ones to create customer confidence in the brand? Lizzy – Food vendor	YES	The CEO affirmed and assured that the production team will emboss CookClean's Logo and a distinct serial number on the stoves to distinguish them from fake ones.
Male	What is the carbon profile of CookCleans' Boja stove and briquettes? Can the briquettes be sold along with the stove to increase the usage? Benjamin Batinge.	YES	The Institute for Industrial Research (IIR) has done the test on the carbon profile of the stove which is very encouraging (see results in Technical Summary). The carbonized briquettes are no longer on the market due to its high cost of production. Also, the non-carbonized briquettes are only

	University Of Energy and Natural Resource.		sold along with CookCleans' Institutional stoves which is used by Secondary schools and therefore not suitable for households. The carbonized briquettes are not yet certified for carbon credit issuance
Female	Can there be a bigger stove for commercial food vendors who cook on large scale? Priscilla SYNDA	Yes	CookClean will factor that in its production plans
Female	Aside the sustainable development outcomes, can this project have a closer look at the Africa agenda 3 63 to help achieve both regional, national, and global impact of clean cook stoves? Chibeze -SYNDA	YES	At the moment Ghana's Nationally determined contribution (NDC's) has not been streamlined but CookClean is ready to assist in the achievement of these goals
Male	What sustainability plan is underway to ensure the continuity of the stove usage? George GIZ	YES	The project will operate for 15 years and after this period, a much more advanced and better stove will be introduced to ensure sustainability
Female	The project can be decentralized to	YES	Noted

	incorporate community heads such as queen mothers. These heads can be encouraged to assist in the advocacy and awareness of the usage and benefits of the Boja stove as part of the project implementation plan. Chibeze - SYNDA		
Female	The media, Local authorities and district assemblies can also be involved in the advocacy work to lessen the burden on CookClean. Priscilla - SYNDA	YES	Noted
Female	The use of information centers as well as radio stations as a means of reaching out to people in remote areas will	YES	Noted

	help strengthen advocacy work. Sarah Daniels - NPA		

From the comments raised by the stakeholders, no mitigation measures are required.

E.2 Final continuous input / grievance mechanism

Method	Include all details of Chosen Method (s) so that they may be understood and, where relevant, used by readers
Continuous Input / Grievance Expression Process Book (mandatory)	C112-14 Blohum Rd, Dzorwulu-Accra, Ghana
GS Contact (mandatory)	help@goldstandard.org
Telephone access (optional)	Portia Addison Tel: 0302.777.055
Internet/email access (optional)	info@cookclean.net
Nominated Independent Mediator (optional)	N/A
Other	N/A

APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

Complete the Assessment below and copy all Mitigation Measures for each Principle into SECTION D above. Please refer to the instructions in the Guide to Completing this Form.

Assessment Questions/ Requirements	Justification of Relevance (Yes/potentially/no)	How Project will achieve Requirements through design, management or risk mitigation.	Mitigation Measures added to the Monitoring Plan (if required)
Principle 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 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	The project protects human rights including cultural freedoms and property rights and is not complicit in violence or rights abuses. The project developer has a code of conduct which guides the conduct of its workers and business practices. Ghana has ratified the Universal Declaration of Human Rights and the African Charter on Humans and People's Rights, by ratifying them, human rights are protected in all areas.	Not required
Principle 2. Gender Equality			
1. The Project shall not directly or indirectly lead	No	Ghana has adopted a National Gender Policy (Ministry of Gender, Children and	Not required

to/contribute to adverse impacts on gender equality and/or the situation of women 2. Projects shall apply the principles of non-discrimination, equal treatment, and equal pay for equal work 3. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks 4. (where required) Summary of opinions and recommendations of an Expert Stakeholder(s)		Social Protection, 2015) for "mainstreaming gender equality and women's empowerment into Ghana's development efforts. This ensures that there is no discrimination against people based on their gender and the project adheres to the policy. The production of Boja stoves, their manufacture, distribution and use by the end users is a gender-friendly activity which results in positive impacts on women and children who benefit the most from cleaner cooking and lower fuel consumption. The use of the project also enables families to make savings from fuel expenditure. The projects do not directly nor indirectly lead to/contribute to adverse impacts on gender equality. The stove production and sale do not discriminate and all employees who will be employed by the project will be remunerated as per their skills and job descriptions while adhering to local employment rules and regulations.	

Principle 3. Community Health, Safety and Working Conditions			
1. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community	Potentially	The project stoves parts will be manufactured in a centralised factory where the production process will not expose any community to increased health risks. These parts will then be distributed to several artisans who will assemble them with the ceramic liner to complete the stove production. The artisans will be trained or safety working and also be provided with safety gear for use while making the stoves.	The PD shall ensure workers are trained to minimise on potential risks. Training records to be provided as supporting evidence.
Principle 4.1 Sites of Cultural and Historical Heritage			
Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture?	No	The project units will be simple and small in dimension. The project will not result in any change in cooking habits because of the substitution of fuel. Therefore, the implementation of this project won't damage or remove cultural heritage, since the project is implemented in the households of families	Not required
>>			
Principle 4.2 Forced Eviction and Displacement			
Does the Project require or cause the physical or economic relocation of peoples	No	The project will not involve relocation both physical or economic.	No required

(temporary or permanent, full or partial)?			
>>			
Principle 4.3 Land Tenure and Other Rights			
a. Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership? b. For Projects involving land use tenure, are there any uncertainties with regards to land tenure, access rights, usage rights or land ownership?	No	The project does not involve acquisition of land nor does it involve land use or tenure changes.	Not required
>>			
Principle 4.4 - Indigenous people			
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 is not operating in areas claimed by indigenous people.	Not required
>>			
Principle 5. Corruption			

1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects	No	The project developer is not complicit in corruption. The project will adhere to government regulations and all business practices will be done as per the rules and regulations. As such, the project will not contribute to corruption.	Not required
Principle 6.1 Labour Rights			
1. The Project Developer shall ensure that all employment is in compliance with national labour occupational health and safety laws and with the principles and standards embodied in the ILO fundamental conventions 2. Workers shall be able to establish and join labour organisations 3. Working agreements with all individual workers shall be documented and implemented and include: a) Working hours (must not exceed 48 hours	No	CookClean employees who will be employed by the project will sign contracts outlining their roles and benefits. The contracts will also outline their job descriptions and their respective remuneration. The working conditions follow laid down guidelines. All the health and safety related laws will be abided by in the production and distribution process. Hence, this safeguarding principle is not triggered. All workers under the direct control of the project are subject to labour laws of Ghana and are free to join unions of their choice.	Not required

per week on a regular basis), AND b) Duties and tasks, AND c) Remuneration (must include provision for payment of overtime), AND d) Modalities on health insurance, AND e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave. 4. No child labour is allowed (Exceptions for children working on their families' property requires an Expert Stakeholder opinion) 5. The Project Developer shall ensure the use of		The stoves are manufactured in the CookClean factory which employs only adults. The distribution of stoves is done by CookClean staff/appointed dealers. All the above activities do not involve the use of child labour. The working conditions of the employees and workers are in compliance with the national guidelines of the host country (Ghana). Hence, this safeguarding principle will not be triggered. As per occupational and safety guidelines, all workers using any equipment are trained on how to handle that equipment and any incident is documented.	

appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures			
Principle 6.2 Negative Economic Consequences			
1. Does the project cause negative economic consequences during and after project implementation?	No	The project distributes stoves which help end users reduce their fuel consumption. By reducing their fuel consumption, their associated expenses on fuel collection and purchases is reduced. Therefore, the project will not cause negative economic consequences during and after implementation.	Not Required
>>			
Principle 7.1 Emissions			
Will the Project increase greenhouse gas emissions over the Baseline Scenario?	No	The project will deploy efficient cooking stoves whose efficiency is higher compared with the baseline stoves. Their use will ultimately result in GHG emissions reduction. The project is	Not Required
>>			

		expected to reduce GHG emissions by 518,897 tCO_2/year on average.	
Principle 7.2 Energy Supply			
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 risk or expected issue is not relevant to the Project.	Not required
>>			
Principle 8.1 Impact on Natural Water Patterns/Flows			
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 risk or expected issue is not relevant to the Project.	Not required
>>			
Principle 8.2 Erosion and/or Water Body Instability			
a. Could the Project directly or indirectly cause additional erosion and/or water body	No	The risk or expected issue is not relevant to the Project.	Not required

instability or disrupt the natural pattern of erosion? b. Is the Project's area of influence susceptible to excessive erosion and/or water body instability?			
>>			
Principle 9.1 Landscape Modification and Soil			
Does the Project involve the use of land and soil for production of crops or other products?	No	The project involves the dissemination of units of cookstoves which does not involve landscape modification. Therefore, the safeguarding principle under consideration will not be triggered by the project	Not required
>>			
Principle 9.2 Vulnerability to Natural Disaster			
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 risk or expected issue is not relevant to the Project.	Not required
>>			
Principle 9.3 Genetic Resources			

Could the Project be negatively impacted by or involve genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?	No	The risk or expected issue is not relevant to the Project.	Not required
>>			
Principle 9.4 Release of pollutants			
Could the Project potentially result in the release of pollutants to the environment?	No	The project involves the dissemination of units of cookstoves which does not involve the release of pollutants.	Not required
>>			
Principle 9.5 Hazardous and Non-hazardous Waste			
Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	No	The project involves the dissemination of units of cookstoves which does not involve hazardous and non-hazardous waste. Therefore, risk or expected issue is not relevant to the Project.	Not required
>>			
Principle 9.6 Pesticides & Fertilisers			

Will the Project involve the application of pesticides and/or fertilisers?	No	The risk or expected issue is not relevant to the Project.	Not required
>>			
Principle 9.7 Harvesting of Forests			
Will the Project involve the harvesting of forests?	No	The project helps reduce household fuel consumption and in turn reduces pressure on forests. Therefore, risk or expected issue is not relevant to the Project.	Not required
>>			
Principle 9.8 Food			
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 risk or expected issue is not relevant to the Project.	Not required
>>			
Principle 9.9 Animal husbandry			
Will the Project involve animal husbandry?	No	The risk or expected issue is not relevant to the Project.	Not required
>>			
Principle 9.10 High Conservation Value Areas and Critical Habitats			

Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?	No	The risk or expected issue is not relevant to the Project.	Not required
>>			
Principle 9.11 Endangered Species			
a. Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? b. Does the Project potentially impact other areas where endangered species may be present through transboundary affects?	No	The risk or expected issue is not relevant to the Project.	Not required
>>			

APPENDIX 2- CONTACT INFORMATION OF PROJECT PARTICIPANTS

Organization name	CookClean Ghana Limited
Registration number with relevant authority	CS 335 622 014 TIN C 000 304 5498
Street/P.O. Box	C112-14 Blohum Rd, Dzorwulu-Accra, Ghana
Building	
City	Accra
State/Region	Greater Accra Region
Postcode	
Country	Ghana
Telephone	+233-302-777 055
E-mail	info@cookclean.net
Website	www.cookclean.net
Contact person	Nicholas Manu
Title	CEO
Salutation	Mr
Last name	Manu
Middle name	Sarkodie-Addo
First name	Nicholas
Department	
Mobile	+233549213073
Direct tel.	+233302777055
Personal e-mail	nicholas@cookclean.net

APPENDIX 4-SUMMARY OF APPROVED DESIGN CHANGES

Please refer to Design Change Requirements for more information on procedures governing Design Changes

Revision History

Version	Date	Remarks
1.2	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Inclusion criteria table added Gender sensitive requirements added Prior consideration (1 yr rule) and Ongoing Financial Need added Safeguard Principles Assessment as annex and a new section to include applicable safeguards for clarity Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on Stakeholder Consultation information required Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.1	24 August 2017	Updated to include section A.8 on 'gender sensitive' requirements
1.0	10 July 2017	Initial adoption