

TEMPLATE

KEY PROJECT INFORMATION & VPA DESIGN DOCUMENT (PDD)

PUBLICATION DATE **04.05.2022**

VERSION **v. 2.0**

RELATED SUPPORT

- Programme of Activity requirements

This document contains the following Sections

Key Project Information

SECTION A – Description of project

SECTION B - Application of approved Gold Standard Methodology (ies) and/or demonstration of SDG Contributions

SECTION C – Duration and crediting period

SECTION D – Summary of Safeguarding Principles and Gender Sensitive Assessment

SECTION E – Summary of Local stakeholder consultation

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Appendix 1 – Safeguarding Principles Assessment (mandatory)

Appendix 2 - Contact information of VPA Implementer (mandatory)

Appendix 3- LUF Additional Information

Appendix 4 - Summary of Approved Design Changes (VPA specific)

KEY PROJECT INFORMATION

Type of VPA	☒ Real case VPA ☐ Regular VPA
Scale of VPA Note that a VPA can be of one scale. Please select applicable scale accordingly.	☐ Microscale ☒ Small scale ☐ Large scale
Title of corresponding real case VPA (if applicable)	N/A
GS ID of real case VPA (if applicable)	N/A
GS ID of Project	GS 11631
Title of Project	GS10818 - Dissemination of Improved Cookstoves in India by Greenway - Dissemination of Improved Cookstoves in Karnataka by Greenway - VPA012
Time of First Submission Date	10/04/2022
Date of Design Certification	N/A
Version number of the VPA-DD	3.0
Completion date of version	27/01/2023
Coordinating/managing entity	Greenway Grameen Infra Pvt Ltd
VPA Implementer (s)	Greenway Grameen Infra Pvt Ltd
Project Participants and any communities involved	Greenway Grameen Infra Pvt Ltd
Host Country (ies)	India
GS ID and Title of applicable Design Certified VPA	VPA ID: GS 10825 GS10818 - Dissemination of Improved Cookstoves in India by Greenway - Dissemination of Improved Cookstoves in Karnataka by Greenway - VPA001
GS ID and Title of applicable Performance Certified VPA	N/A
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	Programme of Activity Requirements, Version 1.2 Community Service Activity Requirements, Version 1.2
Methodology (ies) applied and version number	AMS.II.G version 12
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
SDG 3: Good Health and Well Being	Mortality rate attributed to household and ambient air pollution	70%	Percentage decrease in household smoke
SDG 5: Gender Equality	Time spent collecting fuelwood from the forests.	1.15	Hours per household per day saved on firewood collection time
SDG :7 Affordable and Clean energy	Number of project households predominantly using clean cooking devices such as Improved Cook Stoves	15,500	Number of project households predominantly using clean cooking devices such as Improved Cook Stoves

8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Number of Employment	15	Number of Employment
SDG :13 Climate Change Mitigation measured as reduced tCO2e	GHG Emissions measured in tons CO ₂	39,126	tCO2e/annum

SECTION A. DESCRIPTION OF PROJECT

A.1. Purpose and general description of project

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The VPA 012 Dissemination of Improved Cookstoves in India by Greenway project is eligible under the CDM methodology AMS.II.G. The project will disseminate improved cook stoves (ICS) – to households within Karnataka. By providing clean cooking, the project will ensure that households consume less firewood during the process of cooking and as a result there shall be a reduction of carbon dioxide emissions from the combustion process.

Access to energy is still a huge challenge for rural India. Over 800 million Indians use traditional biomass cookstoves for their cooking needs. The widespread use of traditional cookstoves poses serious risks to health and women's empowerment which are avoidable if they get access to modern fuel-efficient cookstoves. Access to these basic resources and amenities is a prerequisite for healthy living and sanitation in rural India and are interconnected with the health and economic well-being of the people. Greenway Grameen Infra Private Limited is India's largest manufacturer of biomass cookstoves, which are designed with patented, air regulation technology. Greenway aims to continually develop products that solve some of the pressing needs of mass market households.

In addition to reducing Greenhouse Gas emissions, so contributing to the mitigation of climate change, this project will provide local benefits to communities:

- Reduced deforestation and degradation of surrounding forests, as less wood will be needed to cook;
- Reduced soil erosion and nutrient loss as trees protect the land;
- Reduced risk of flooding in hilly areas as trees and plants on slopes soak up rain;
- Reduced poverty, as the efficient wood stove reduces annual expenditure on cooking fuels;
- Reduced adverse health effects associated with smoke inhalation;
- Reduced cooking and wood collection time, which will allow more time to be spent on other important household tasks and/or supervising children;

In line to its vision of delivering high impact related to health, savings and convenience, Greenway is undertaking an extensive distribution programme to create a nation-wide access of Improved Cookstoves for low income consumer. Greenway is planning to support this programme through an innovative approach of climate financing, helping households to overcome barriers like affordability, availability, and financing. Greenway is providing modern energy-efficient replacements for traditional three stone stoves (chulhas) delivering 65% fuel savings and 70% smoke reduction. These modern cookstoves can run on all kinds of solid biomass fuels. Greenway clean cookstoves can play a vital role in eliminating severe health impacts and resource inefficiency arising out of traditional cookstoves. Greenway cookstoves minimise noxious CO, PM and GHG emissions in the kitchens. Leading to better health for active beneficiaries such as women and passive beneficiaries such as children, elderly and disabled who are usually confined to the home and suffer from indoor air pollution. Moreover, they facilitate income savings due to low fuel consumption and combating climate change by reducing deforestation.

The project will contribute in achieving SDGs including, SDG-3: Good Health and Well Being, SDG-5: Gender Equality, SDG 7- Affordable and Clean energy, SDG 8: Full and productive employment and decent work for all and SDG-13: Climate Action. The programme would result in GHG emission reductions and other impact outcomes which can be traded internationally, and the revenue collected from such trade will benefit the scaling up of the project and thereby assist other households who are still using traditional stoves.

Operational and management structure

Greenway Grameen Infra Private Limited will act as the Coordinating Managing Entity for the VPA. Greenway, directly or through its partners, undertakes manufacturing, distribution, maintenance services and other operations across the clean energy products value chain with a peak production capacity of 50,000 units per month and annual budget USD 4 million. Greenway's India team comprises of 103 staff members spread across 11 states in the country with the logistical network capacity to reach all states. The field teams further work with community-based organizations to generate awareness & demand via trained agents from the partner organizations. Greenway's team is from and located within the markets having many years of experience in clean energy products. Greenway's team speaks, reads and writes 14 languages and many more dialects from across the country. The current agent network comprises of over 700 active members who earn from product distribution.

Projects/VPAs within the PoA will be designed on an ongoing basis and may incorporate a single model of improved stove or a range of different models in case of cook stove projects. In addition, the approach taken with regards to the distribution model will be influenced by local conditions so that in some VPAs, technologies will be sold at a subsidized rate. In some project areas implementation partners, including national and international organizations may be involved; however, this will be decided on a case-by-case basis as projects are implemented.

The management system for this VPA comprises 2 types of entities, the CME and Project Partners (international and/or national). The distribution of work between these entities is as follows:

CME (Greenway Grameen Infra Private Limited):

- Manufacturing and/or procurement of cookstoves
- Technical review for inclusion of VPAs
- Records and documentation control
- Coordination of Project Partners and training when necessary
- Overall quality control and continual improvement
- Training and Capacity Building of personnel

Project Partners (identified in VPA level):

- Implementation of project activities
- Monitoring and maintenance of project activity

The start date of VPA is 20/11/2021, the date is when the first cookstove distribution under the VPA. The PoA registered with GS vide the PoA ID GS 10818, start date of PoA is 24/08/2020.

A.1.1. Eligibility of the project under approved PoA

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No.	Eligibility Criterion	Description/ Required condition	Means of Verification/Supporting evidence for inclusion
1	VPA Location and Project Boundary	The geographical boundary within which the technologies are installed will be within the Project Boundary outlined in Section A.3	Each VPA has been uniquely defined by current administrative maps to define the project boundary. The VPA-012 is implemented within the Indian State of Karnataka.
2	Avoiding Double Counting of Emission Reductions	Each VPA will ensure that double counting of emission reductions is avoided, through the unique identification of each ICS with an identification number.	Each cookstove installed in this VPA is provided a unique serial no. ensuring that they are uniquely identifiable to this project. These numbers are available in the sales database which will be submitted before the verification. The unique serial number follow a alphanumeric nomenclature, for example, JYYVIXXXXXX.
3	Avoiding Double Counting of Programme Activities	Each VPA will show that it is exclusive to the PoA and not registered as another project activity or VPA under another PoA.	A declaration by the CME is provided that VPA-012 is neither registered as a project activity with GS or any other standard or as a VPA of another PoA. Gold Standard and CDM registries were checked and confirmed that the project is not a part of

			any other CDM or GS PoA/Project.
4	Target Group	Each VPA involves the distribution and installation of efficient cook stoves to households and/or communities currently cooking with non-renewable biomass on a traditional stove. Distribution Mechanism: Via Local distribution agencies/VPA Implementer	VPA implementer has submitted that the project cook stoves are distributed to only households and/or communities who are traditionally using wood. This is also evident from the baseline survey conducted in Karnataka by the CME. Means of Verification: Data base has been submitted to the CME and VPA implementer has ensured that cookstoves are distributed only to households and communities. Project area proposal for VPA-012 has been submitted to CME
5	Technology	The technology involves energy-efficient cookstoves with a thermal efficiency of more than 20%. The technologies will deliver continuous energy output of less than 150kW per unit.	The evidence for thermal efficiency specifications or test results for the VPA have been submitted. Calculations (ER calculation) for the specific technology show that they are around 1.5kW per unit, hence within the 150kW Limit.
6	Start date	The start date of the VPA shall not be prior to the PoA period start date and the VPA crediting period	Details of the important dates- PoA period start date 20/11/2021

		shall start from the VPA start date or two years prior to the date of Design Certification – whichever is later.	VPA-012 start date 20/11/2021 VPA-012 crediting period start date 20/11/2021 The start date and crediting period start date of VPA is 19/10/2021 which is a after the start date as of PoA start date. Means of verification- Invoice of first cookstoves distributed under VPA-012.
7	Methodology	Each VPA is in compliance with CDM methodology AMS.II.G version 12.	The applicability of the methodology is justified in Section B.2 and applies to this VPA.
8	Additionality	Each VPA demonstrate additionality according to the criteria outlined in the PoA-DD.	The VPA meets the requirements of Positive List mentioned within the Community Services Activity Requirements V1.2. The proposed project falls under the automatic eligibility list of projects for proving additionality. It is mentioned in the Annex B- Positive list that project activities composed of isolated units where the users of the technology/measure are households, where each unit results in ≤ 600 MWh of energy savings per year will be deemed additional. As per the

			VPA-012ER calculation sheet, each cookstoves within the VPA will deliver 9.198MWh/yr of energy savings which is much less than the threshold of 600 MWh. (Ref: Emission reduction calculation sheet)
9	Non- Diversion of ODA	There is no diversion of ODA for any of the proposed VPAs	A declaration of non-use of ODA has been completed and submitted covering VPA-012.
10	Sampling	At the time of verification, random sampling shall be conducted on the basis of the age group of all the cookstoves. VPAs under the program will adhere to all requirements as mentioned in the latest standard of Standard: "Sampling and surveys for CDM project activities and programme of activities" at the time of inclusion.	Sampling plan is described in the VPA-DD.CME will make sure that during the sampling all cookstoves from all the VPAs shall be included in the sampling, and the sampling will be conducted in accordance with the latest version of "Sampling and surveys for CDM project activities and programme of activities".
11	Scale of the Activity	The PoA falls under type II energy efficiency improvement projects. The maximum limit for small-scale project is to achieve energy saving of 180 GWh thermal per year. Each VPA is designed to comply to small scale requirements by limiting	The specifications of the product-models and the calculations for the estimation of total thermal energy savings and the maximum number of cookstoves eligible under the VPA is submitted to the CME.

		the maximum number of cookstoves per VPA. Each VPA will estimate the aggregate annual energy savings based on the thermal efficiency gains achieved by each of the technology/product -model planned under the VPA. The maximum number of cookstoves will be fixed for each VPA based on the above calculation to limit the total energy savings upto 180 GWh per year.	Means of Verification: As per the calculations the maximum no. of cookstoves that have been added in a VPA is 15610 to be on the safer side CME decide to included only 15,500 per VPA. (Ref: ER calculation sheet)
12	SDG outcome assessment	VPA shall demonstrate a clear, direct contribution to sustainable development, defined as making demonstrable, positive impacts on at least three SDGs, one of which must be SDG 13 (defined herein as Emissions Reductions or Removals and/or Adaptation to climate change)	VPA-012 has demonstrated the positive impacts on SDG 3, SDG 5, SDG 7, SDG 8 and SDG 13.
13	Carbon Transfer	It is clearly communicated that Greenway Grameen Infra Pvt Ltd is the entity that is claiming ownership rights of and selling the emission reductions resulting from the project activity.	The stove recipients were clearly explained about carbon transfer and the invoice of sale for each unit describes this condition. This invoice is explained orally in the vernacular language of the user and physically signed by the

			user via mobile app before installation of the cookstove. The PP will provide samples of invoice stating that the rights to the carbon credits will be held by Greenway Grameen.
14	Safeguarding Principles Assessment	Each VPA will describe the implementation plan for ensuring safety of operational team/staff and the households.	VPA implementer has been provide a detailed plan on training and evaluation measures for the safety of the operating staff and the households. Means of Verification: Any of the following: Project area Proposal, Training Calendar submitted to the CME.
15	Retroactive Crediting Period	VPAs retroactive crediting period submit the required documents for Gold Standard Preliminary Review (time of first submission) within one year from the VPA start date.	Start date of VPA 20/11/2021 As evident, the VPA-012 was submitted for preliminary review within one year of the VPA start date.
16.	Grievance Mechanism	All VPAs shall have the methodology of addressing grievances of stakeholders as indicated in section F.3 of PoA DD.	Grievance mechanism is part of VPA and the methodology is in accordance with PoA DD.

The compliance with respect to 'General Eligibility Criteria' as per section 3.1.1 of GS4GG 'Principle & Requirements is demonstrated below:

General Eligibility Criteria	Compliance
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(a) 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 falls under- Type II – Energy Efficiency Improved Projects
(b) Location of Project: Projects may be located in any part of the world.	Project is located in India
(c) Project Area, Project Boundary and Scale: The Project Area and 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 PoA has the default boundary as whole of India, Boundary- Territorial boundary of India and Scale- The project falls under small scale projects. Each of the improved cook stoves (ICS) will be having output below 150KW and aggregate of 180 GWh at VPA level. The VPA is located in Karnataka state of India, locations are provided in the prescribed section of VPA DD i.e. A.2. To avoid double counting, various measures have been taken by the CME at entity level and individual level, which are described in section B.1 below “Measures to avoid double counting”. In summary, each VPA implementer will declare that the proposed VPA is not part of any other PoA or carbon offset scheme at the time of inclusion, each user will declare that the relevant household has not been a beneficiary or participant of any other carbon offset project/programme and each household will be physically inspected for any indications of previous participation by the household in any carbon offset scheme. Local distribution partner of the CME will help in identifying the project areas which have not been part of any other similar carbon offset programme. Further, the project area will be checked during each VPA implementation to confirm that no similar projects are implemented in the region and if so, then appropriate measures are taken to avoid double counting. Hence, the double counting concerns related to the PoA are well addressed through a robust implementation & management system.

(d) Host Country Requirements: Projects shall be in compliance with applicable Host Country's legal, environmental, ecological and social regulations.	The project is in compliance with the host country's (India's) legal, environmental, ecological & social regulation. There are no objections for the implementation of these types improved cook stoves (ICS) project in the host country i.e., India and same can be checked from the MOEF (Ministry of Environment & Forest) & MNRE (Ministry of New & Renewable Energy) websites¹.
(e) 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 organisation (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 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.	The contact details of project developer & project participant are included under Appendix 1 of this report. Please refer Appendix 1.
(f) 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 immediately report to Gold Standard any land title/tenure disputes arising.	CME holds the legal right of claim for emission reduction offsets accrued due to the PoA operations and ensures avoidance of claims by other stakeholders through mutually agreed categorical declarations and/or contract agreements signed between the CME and other stakeholder entities for transfer of rights on emission reduction or other impact assets in favor of CME and no right of claim to the other stakeholders. For instance, CME has identified local distribution partner as a key stakeholder and has already signed an MoU with the existing partner for transfer of rights and claims on emission reduction or other impact assets in favour of the CME. The entitlement of the emission reductions generated by the project is transferred to the project developer from the beneficiary

¹ <http://164.100.94.214/national-biomass-cookstoves-programme>

	households through a signed copy of the covenants attached to the invoice. It shall also be noted that the complete mechanism of claiming carbon offsets due to cookstove operations and the requirement of transfer of rights from cookstove users to the CME was discussed during the local stakeholder consultation meeting conducted by the CME.
(g) 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 (<i>for example, access rights, water rights etc.</i>). 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.	There are no other rights involved in this project. Implementation of the proposed project doesn't involve any activity that causes alteration of any resource; therefore, acquiring any specific legal right to do so is not applicable.
(h) 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 Assistance (ODA) support. The Project Developer shall follow the GHG Emissions Reduction & Sequestration Product Requirements and submit the declaration at the time of Design Certification.	PP has provided a declaration of non-use of ODA by the project owner. It is to be noted that the PP has declared that the proposed GS project activity is not registered with any other scheme. The project doesn't fall under any mandatory regulatory requirements in India or the state wherein the project is being implemented. It's a sole voluntary activity. Therefore it also complies with 'GHG Emission Reduction & Sequestration Product Requirements'. By reducing the consumption of fuelwood for cooking in the project boundaries, the project and the VPAs adhere to Principle 1 of Contribution to Climate Security & Sustainable Development. By conducting a safeguarding principle assessment, the project adheres to Principle 2: Safeguarding Principles. By conducting Stakeholder consultation and considering the comments, CME also adheres to Principle 3: Stakeholder Inclusivity. By preparing the PDD and planning the monitoring reports, the CME also

	meets the Principle 4: Demonstration of real outcomes. The GS has published GG4GG Community Services Activity Requirements, therefore the proposed project falls under the automatic eligibility list of projects for proving additionality. It is mentioned in the Annex B- Positive list that project activities composed of isolated units where the users of the technology/measure are households, where each unit results in ≤ 600 MWh of energy savings per year or ≤ 600 tonnes of emission reductions per year (Ref: ER calculation sheet). In this way the project also meets the requirements of Principle 5: Financial Additionality & Ongoing Financial Need.
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Eligibility requirements (section 2 and 3) of the applied Community Service Activity Requirements is demonstrated below.

2.1.1 All Community Service Activities (CSA – as defined in this document) for which Gold Standard certification is being sought shall fulfil the requirements as set out in this document and those referenced or associated. 2.1.2 All CSA Projects shall lead to climate change mitigation and/or adaptation by providing or improving access to services/resources at the household or community or institution level. Eligible services include electricity and energy, water and sanitation, waste management, housing, etc. 2.1.3 In relation to the above, all Projects shall, therefore, conform to the Principles & Requirements (and associated documents).	The proposed project falls under End-use energy efficiency type as per clause 3.1.1 (b) of GG4GG Community Services Activity Requirements. And fulfils all the set forth requirements and the ICS under the VPAs are distributed to households/communities/institutions.
As per clause 3.1.1 of the GS4GG Principles and Requirements document automatic eligibility for a project “if there are Gold Standard published Activity Requirements and/or Gold Standard Approved Methodologies associated with it or as	As per clause 3.1.1 of GG4GG Community Services Activity Requirements, types of project eligible are Renewable energy, End-use energy efficiency, waste management & handling and water, sanitation and hygiene projects.

referenced in Gold Standard Product Requirements.”	The proposed project falls under End-use energy efficiency type as per clause 3.1.1 (b) of GG4GG Community Services Activity Requirements. The Improved Cook Stoves (ICS) of the project activity falls under End-use energy efficiency as per clause 3.1.1 (b), since the Project activities will reduce energy requirements as compared to baseline scenario without affecting the level and quality of services or products, where the end-user of the products and services are clearly identified i.e. individual household users and the physical intervention is required at the user end.
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A.1.2. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the VPA

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CME holds the legal right of claim for emission reduction offsets accrued due to the PoA operations and ensures avoidance of claims by other stakeholders through mutually agreed categorical declarations and/or contract agreements signed between the CME and other stakeholder entities for transfer of rights on emission reduction or other impact assets in favor of CME and no right of claim to the other stakeholders.

This VPA-01 involves two key stakeholders- Distribution agency (SKDRDP) and cookstove users.

CME has signed an MoU with SKDRDP which includes clauses for transfer of rights for emission reductions and also for prohibition that they will not claim any emission reductions on behalf of the operation of the cookstoves.

As described in the eligibility section that invoice is explained orally in the vernacular language of the user and physically signed by the user via mobile app before installation of the cookstove. Then, for the households, the entitlement of the emission reductions generated by the project is transferred to the CME from the beneficiary households through a signed copy of the covenants attached to the invoice.

A.2. Location of VPA

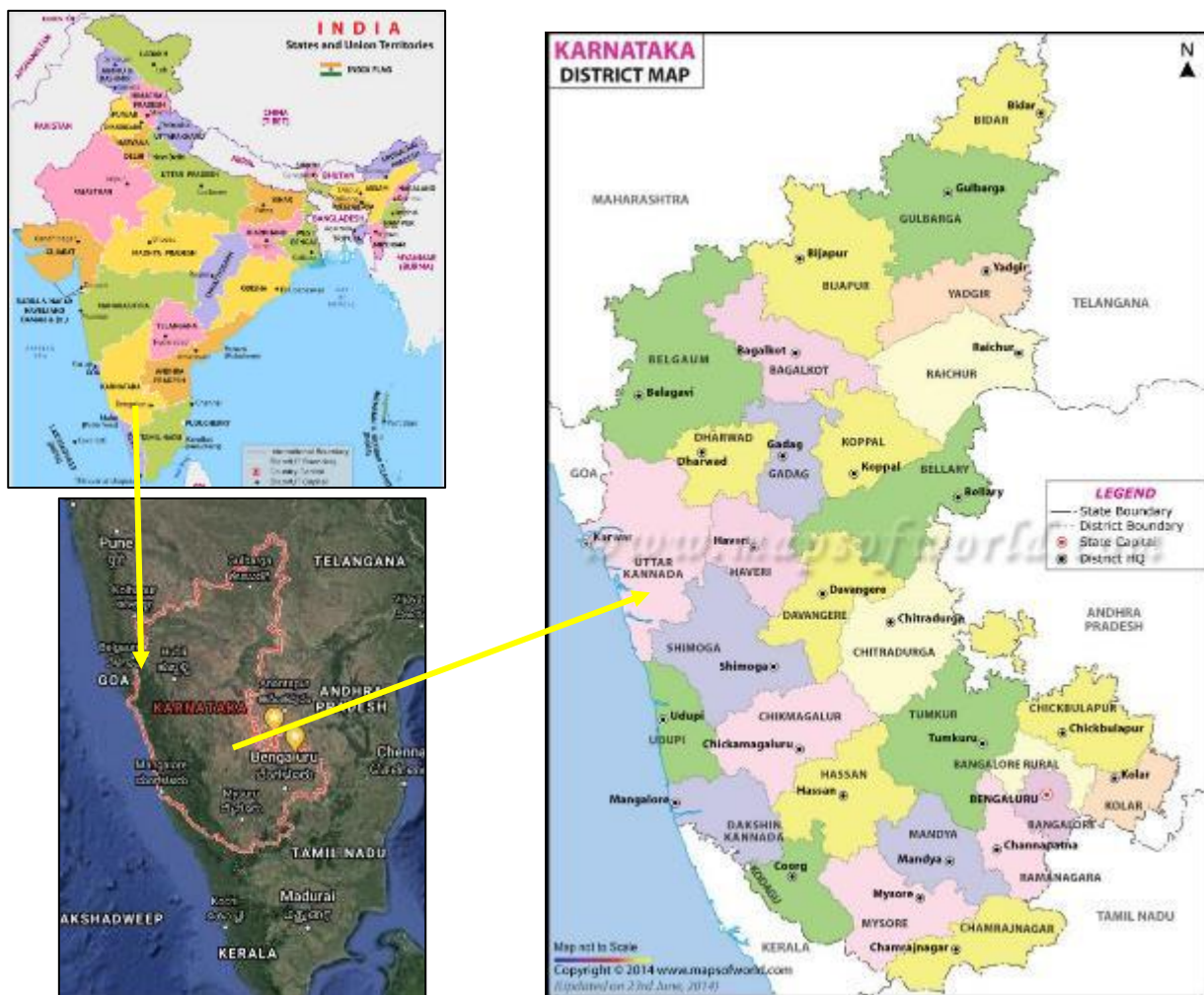
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The VPA is implemented in the host country – India, various districts of Karnataka state.

The VPA is planned to implement in the following areas of Karnataka:

Sr. No.	Name of Area/Towm
1	Bagalkote
2	Doddaballapur / BANGALORE RURAL
3	Belgaum
4	BELLARY
5	BIDAR
6	CHAMARAJANAGAR
7	CHANNARAYAPATTANA
8	CHIKKABALLAPURA
9	Chikodi
10	CHIKMAGALUR
11	CHITRADURGA
12	Dakshina Kannada
13	Davanagere
14	DHARWAD
15	GADAG
16	HASSAN
17	HAVERI
18	HOSAPETE
19	JAGALUR
20	Jamkhandi
21	Krishnarajanagara
22	KALABURAGI
23	KODAGU
24	KOLAR
25	KOPPAL
26	MANDYA
27	MYSORE
28	RAICHUR
29	RAMANAGARA
30	SHIMOGA
31	SIRSI
32	Tumkur
33	UDUPI
34	UTTARAKANNADA
35	Vijayapura
36	Yadgiri

Geographical coordinates of the Karnataka state (15.317° N, 75.714° E)



A.3. Technologies and/or measures

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The VPA involves the dissemination of cookstoves within various districts in the state of Karnataka in India. The improved cookstoves use patented air regulation technology to reduce the emissions generated while cooking.

CDM Methodology chosen for the PoA and the included VPAs is AMS.II.G. The project adheres to the following conditions.

The specific features of the stove design, in line with the key requirements as stipulated under section A.4, are:

Greenway Jumbo stove

- Single Fed (Single combustion chamber)
- Portable
- Fuels: All woody biomass (leaves and twigs, wood, cow dung, agricultural residue and wastage, etc.)
- Efficiency: Greenway Jumbo stove (JS1) - 38%
- Life expectancy: more than 5 years
- High durability
- Almost smokeless
- Designed by Greenway, Made in country

Sustainable Development

The project will positively contribute to the following 5 SDGs:

- SDG 3 – Good Health and Well-being
 - SDG 5 – Gender Equality
 - SDG 7 – Affordable and Clean Energy
 - SDG 8 - Full and productive employment and decent work for all
 - SDG 13 – Climate Action
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- **Environmental Benefits:** Reduction in firewood consumption and emission of greenhouse gases, forest and biodiversity conservation (SDG#13).
 - **Health Benefits:** Sufficiently enhance indoor air quality thereby improving health of women and children and reducing incidences of smoke and fire related injuries (SDG#3).
 - **Social Benefits:** Reduces drudgery of women, time saving and the use of saved time for other productive activities (SDG#3, 5 & 8)

A.4. Scale of the project

>>The project falls under small scale projects. Each of improved cookstoves (ICS) will be having output around 1.5 kW.

Likewise, Emission reductions achieved by each one of the activities considered under the small-scale programme is to achieve a maximum limit of energy saving of 180 GWh thermal per year.

(Ref. the energy saving project limit as prescribed by the in section B.2. of VPA DD under the applicability criteria)

A.5. Funding sources of project

>> The key funding requirement for implementing this VPA would be for consumer financing of the appliances. Since the target segment of the appliances are low income households, the only way of commercializing these modern home appliances is to provide consumer financing options and enabling payment by consumers via loan repayment instalments of minimum 6-12 months. The initial capital for the manufacturing of the cookstoves is funded by Greenway Grameen Infra Pvt Ltd and its financing partners. The complete financing of the initial capital requirement is done through private equity with no public involvement. Hence, there is no public funding involved in this project.

The biggest cost associated with this VPA would be monthly repayment collection cost and the interest on the working capital and consumer financing which will be borne by the CME. Since the sales revenue will make only partial recovery of the total investment, the VPA implementer relies heavily on carbon financing for implementation of this VPA. The distribution activities and repayments management activities are undertaken exclusively by women from the user communities. For these activities, local women are being compensated. The CME is consciously encouraging more women in groups or individually to join and generate income from these activities.

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

B.1. Reference of approved methodology (ies)

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Multiple technologies/measures

The PoA involves the dissemination of cookstoves technologies within India. The improved cookstoves uses air regulation technology to reduce the emissions generated while cooking up to 70% in some cases. The future VPAs in this PoA may include even advanced technologies achieving better results in terms of emission reduction and efficiency.

CDM approved small-scale methodology-AMS.II.G is chosen for the PoA.

AMS-II.G.: "Energy efficiency measures in thermal applications of non-renewable biomass" – (Version 12.0)

The project adheres to the following conditions making it methodologically eligible:

Methodological tools

Tool19: Demonstration of additionality of microscale project activities (version 09.0)

Tool21: Demonstration of additionality of small-scale project activities (version 13.1)

Tool20: Assessment of debundling for small-scale project activities (version 04.0)

Standard for sampling and surveys for CDM project activities and programmes of activities (version 09.0)

B.2. Applicability of methodology (ies)

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No.	Methodology requirement	Project justification
1	The methodology comprises efficiency improvements in the thermal applications of non-renewable biomass. Examples of these technologies and measures include the introduction of high efficiency biomass fired cook stoves or ovens or dryers and/or improvement of energy efficiency of existing biomass fired cook stoves or ovens or dryers.	VPA involves dissemination of high efficiency biomass fired cook stoves, which are improving the efficiency compared to the existing stove in use and improving the efficiency by avoiding the inefficient conversion of wood into charcoal. Therefore, the VPA will save non-renewable biomass, which would otherwise be consumed by less efficient cooking appliances.
2	In the case of cookstoves, the methodology is applicable to the introduction of single pot or multi pot portable or in-situ cookstoves with rated efficiency of at least 20 per cent.	VPA includes single feed portable stove (Greenway Jumbo Stove) having a specified efficiency of 38%.
3	The aggregate energy savings of a single project activity shall not	The small scale limit for AMS-II.G corresponds to 180 GWh of thermal

	exceed the equivalent of 60 GWh per year or 180 GWh thermal per year in fuel input.	energy savings. Each ICS is expected to save 3.83 tons of woody biomass annually, corresponding to 9.198 MWh/Cookstove (Ref: ER calculation sheet).The energy saving threshold is demonstrated in the ER sheet.
4	Non-renewable biomass has been used in the project region since 31 December 1989, using survey methods or referring to published literature, official reports or statistics	The forest cover of India has decimated from nearly 40% of India's geographical area a century ago to 22% in 1951 and to 20.55% in 2001.This indicates that large-scale deforestation is prevalent since 1989. Furthermore, it may be noted as per data (tables T1 and T11) from the Global Forest Resources Assessment 2010 (FRA 2010) that the wood removals (Industrial round wood removals + Woodfuel removals) have increased 23.56% from (35,055,000+ 213,169,000 =248,224,000) cubic meters in 1990 to (45,957,000+260,752,000=306,709,000) cubic meters in 2005. State of Forest Report (FSI) report in 1987 i.e., prior to 1989 clearly states for India that the firewood consumption in 1987 is estimated at157 million tonnes or 235 million cu.m.. However, the production of firewood from forests estimated by FSI (Forest Survey of India) is only 40 million cu.m.. Thus, there was a gap of 195 million cu.m. in demand and production of firewood. Thus, it is established that non-renewable biomass has been used in India since 31 December 1989, using

		official reports of the Government of India. Thus, it is clear from the above arguments that the wood resources in India are constrained with respect to extraction which has increase data much higher rate as compared to increase in forests (including outside forests/wooded land) and non-renewable biomass extraction is prevalent since 1989. Also at the state level, the research paper² 'Energy Utilisation in Karnataka: Part-I An Overview" demonstrates the reasonable share of firewood in the region since 1989. Refer the table 1 of the cited research. Further baseline survey undertaken by CME also demonstrates the current use of non-renewable biomass as on date on the project region. The details of surveys are reported in the ER spreadsheet.
5	For cases where the biomass is sourced from renewable sources, the project participants should use a corresponding Type I methodology.	N/A
6	The CDM-PDD or CDM-PoA-DD/CPA-DD shall explain the proposed method for distribution of project devices including the method to avoid double counting of emission reductions such as unique identifications of product	A unique serial numbering or identification system for the ICS disseminated under the VPA. The unique serial number would have a alphanumeric nomenclature, for example, JYYVIXXXXXX. This alphanumeric coding will enable easy

² https://www.researchgate.net/publication/257075889_Energy_Utilisation_in_Karnataka_Part-I_An_Overview

	and end-user locations (e.g. programme logo).	identification of the different vintages of the stoves.
7	The CDM-PDD or CDM-PoA-DD/CPA-DD shall also explain how the proposed procedures prevent double counting of emission reductions, for example to avoid that project stove manufacturers, wholesale providers or others claim credit for emission reductions from the project devices.	The specific stove numbering or identification regime will be applied for all ICS included in each specific VPA. A statement is included in the VPA-DD that no ICS distributed under the specific VPA will be part of another stand-alone project activity or another PoA under any of the carbon-offset schemes. Further, the default ICS purchase contract (invoice) with end users includes the clause that requires a declaration from them of non-participation in any other carbon offset scheme.

B.3. Project boundary

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Source		GHGs	Included?	Justification/Explanation
Baseline scenario	Combustion of non-renewable biomass for cooking	CO ₂	Yes	Major source of emission
		CH ₄	No	Important source of emission
		N ₂ O	No	Gas included in the calculations. Emissions factors for fuel in stationery combustion by the IPCC
Project Scenario	Combustion of non-renewable biomass for cooking	CO ₂	Yes	Major source of emission
		CH ₄	No	Important source of emission
		N ₂ O	No	Gas included in the calculations. Emissions factors for fuel in stationery combustion by the IPCC

B.4. Establishment and description of baseline scenario

>>

Use of three stone/open fire or conventional three stone stoves for cooking and boiling water by the project stove users is deemed as the realistic pre-project scenario. Traditional biomass remains the main energy source for cooking in rural areas and poor urban clusters. Around two-thirds of households use solid cooking fuels (e.g. firewood, crop residue, cow dung cake, and coal/lignite/charcoal)³. As per baseline survey undertaken by the CME, it was observed that the inefficient cooking in rural areas of Karnataka is common. Households using dung cake for cooking and kerosene and other oils for lighting were found to have significantly higher odds for ARIs (acute respiratory infections). Household air pollution is associated with increased risk of tuberculosis, asthma, mortality from cardio-respiratory illnesses, and non-respiratory problems such as adverse pregnancy outcomes, prematurity, and low birth weight⁴.

The statistics made available at the national level by National Institution for Transforming India (NITI Aayog) portrays the baseline scenario in India.

The proportion of population using solid fuels in India was 55.5% (54.8–56.2) in 2017 and 1.24 million (1.09–1.39) deaths in India in 2017, which were 12.5% of the total deaths, were attributable to air pollution⁵. The VPAs are premised on generating Emission Reductions by ensuring that users have cleaner cookstoves, thereby reducing the need for them to burn non-renewable biomass in order to cook food. Studies indicate that some 400-550 thousand premature deaths can be attributed annually to use of biomass fuels in these population groups⁶. Using a disability-adjusted lost life-year approach, the total is 4-6% of the Indian national burden of disease.

³ Kumar, P., & Igdalsky, L. (2019). Sustained uptake of clean cooking practices in poor communities: Role of social networks. *Energy research & social science*, 48, 189-193.

⁴ Jindal, S. K., Aggarwal, A. N., & Jindal, A. (2020). Household air pollution in India and respiratory diseases: current status and future directions. *Current Opinion in Pulmonary Medicine*, 26(2), 128-134

⁵ Balakrishnan, K., Dey, S., Gupta, T., Dhaliwal, R. S., Brauer, M., Cohen, A. J., ... & Sabde, Y. (2019). The impact of air pollution on deaths, disease burden, and life expectancy across the states of India: the Global Burden of Disease Study 2017. *The Lancet Planetary Health*, 3(1), e26-e39.

⁶ Smith, Kirk. (2000). National burden of disease in India from indoor air pollution. *Proceedings of the National Academy of Sciences of the United States of America*. 97. 13286-93. 10.1073/pnas.97.24.13286.

A community based cross-sectional survey was also conducted in four rural areas and one semi-urban area of Udupi district, Karnataka between August 2016 and September 2018 study comprises that 72.5% of the family's used biomass.

According to the National Family Health Survey (NFHS) of 2019-20 the penetration of 'Improved stoves' is at 2.3% in rural areas of Karnataka. This implies that the usage of modern appliances or the improved stoves by the households who are dependent on woody biomass is still very low. They are heavily dependent on biomass along with that they also using traditional cooking methods or appliances which is leading to inefficiency, so our cookstoves aims at replacing those traditional cookstoves from the households which are dependent on biomass for their primary cooking.

In line with paragraph 23 of applied methodology, it is assumed that in the absence of the project activity, the baseline scenario would be the projected use of fossil fuels to meet similar thermal energy needs as those provided by the project devices.

There is currently no law or policy which requires the use of fuel-efficient stoves in India. It follows that the PoA is a voluntary action.

The key reason for current cooking practice of traditional 3-stone chulhas or inefficient wood/charcoal stoves are: easy availability of wood through illegal logging (deforestation), lack of awareness about the fuel wastage and other harmful effects of low efficiency stoves and the capital cost of the efficient technologies. The CME is working on the latter 2 issues by creating awareness about the benefits of efficient cooking technologies and partnering with the micro-financing organizations to enable easy financing of the technology for the consumers. However, these steps are not sufficient to ensure smooth transition from energy-intensive cooking to low-carbon cooking as without any regular source of income or financial support, the poor rural household will not be able to repay the loan. Hence, it was essential for the CME to apply for Gold Standard registration to finance a part of the acquisition cost of the technology for consumer through carbon financing. To enable this, the CME has already signed an MoU with the partner financing agency to share part of the carbon revenue as subsidy on sold cookstoves. In absence of such subsidies, awareness initiatives and the operational support/capacity building activities organized by the CME, the poor households of India would not have purchased energy efficient cookstoves which is evident from the common practice in these regions.

Hence, in absence of the PoA, the current practice of cooking on traditional low efficiency cookstoves would have continued without interruption and none of the VPAs which are planned under this PoA would have been realized without the support of carbon financing.

B.5. Demonstration of additionality

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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).	The project meets the requirements of Positive List mentioned within the Community Services Activity Requirements V1.2. Principle 5- Financial Additionality & Ongoing Financial Need (4.1.9) states that 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: 1. 2. (a) Positive list (Annex B) (b) Projects located in LDC, SIDS, LLDC (c) Micro-scale projects
Describe how the VPA project meets the criteria for deemed additionality.	It is mentioned in the Annex B- Positive list that project activities composed of isolated units where the users of the technology/measure are households, where each unit results in ≤ 600 MWh of energy savings per year or ≤ 600 tonnes of emission reductions per year. The project is type-II project, where the technology units will be distributed to the households. The design thermal output of each unit is 1.5 KW, resulting in annual

energy savings of 9.198 MWh which is less than 600MWh of energy savings as stipulated in the above requirement. Hence the project is deemed additional.

To comply with the requirements of para 17-19 of methodology AMS IIG, version 12, in terms of technology penetration below 5% is substantiated below:

Requirement of para 17.

Demonstrate ex ante that the penetration³ of high efficiency biomass fired devices (e.g. energy efficient cookstoves⁴) is equal to or less than 5 per cent of the technologies/measures providing similar services in the region in order to be considered as automatically additional.

Substantiation

Following two statistics at national and regional level are attached to substantiate that the ICS having below 5% penetration in India as well as in Karnataka (region wherein the project devices are to be distributed).

1. The stove penetration for Karnataka is in the NFHS-5 survey for 2019-217 (latest data available in public domain) indicates that only 2.1% population is using stoves. The table on page number 40 of this document for stove usage in the rural/urban and total category.

⁷ http://rchiips.org/nfhs/NFHS-5Report_KA.shtml

3. NFHS-5 has not compiled a national scale report for India for that particular indicator. Although it has done so for individual states specifically. The NFHS-4 of 2015-16 (latest data available in public domain) has the India scale at 0.8% of stove usage for rural areas. Therefore, the study is complying the requirement of para 19 of methodology which requires the penetration level has to be demonstrated at host country level first and if not the chosen region with appropriate justification. Above two studies demonstrate the penetration is within threshold of 5% for national as well as the regional level.

18. The penetration shall be determined using one of the following options: (a) Official statistics or reports, relevant industry association reports or peer-reviewed literature; (b) Results of a sampling survey conducted by project participants or a third party as per the latest version of "Standard: Sampling and surveys for CDM project activities and programme of activities" covering technologies/measures providing similar services as the project technology/measure;

19. The region/applicable geographical area to determine the penetration should

⁸ <http://rchiips.org/nfhs/NFHS-4Reports/India.pdf>

	be the entire host country. If the project participants opt to limit the applicable geographical area to a specific geographical area (such as province, region, etc.) within the host country, then they shall provide justification on the essential distinction between the identified specific geographical area and rest of the host country. <u>Substantiation</u> (Refer above justifications for para)
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B.5.1 Prior Consideration

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The project was submitted to Gold Standard within 1 year of the project commencement. Hence, the prior consideration of carbon financing for commercial sustainability of the project is adequately demonstrated.

Project start date – 20/11/2021

Date of first submission to GS – 24/08/2020 (PoA DD) and the VPA DD is also submitted within a year.

B.5.2 Ongoing Financial Need

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Not required

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)
3 Good health and well being	3.9. By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Proportion of households perceiving less often smoke levels
5 Gender Equality	5.4. Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate	Time spent collecting fuelwood from the forests.
7 Affordable and Clean energy	7.1. By 2030, double the global rate of improvement in energy efficiency	Number of project households predominantly using clean cooking devices such as Improved Cook Stoves
8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.5. By 2030, achieve full and productive employment and decent work for all women and men, including for young people and	Number of Employment generated

	persons with disabilities, and equal pay for work of equal value	
13 Climate Action	13.3. Number of emission reductions achieved by the project	GHG Emissions measured in tons CO ₂

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

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Outcomes for SDG 3 (Good Health and Wellbeing):

The efficient cook stove leads to a reduction in fuel consumption and as a consequence to an improvement in indoor air quality. This has positive impacts on decreasing in health-related issues like respiratory problems, eye and throat irritations. The relevant indicator is: Mortality rate attributed to household and ambient air pollution.

The contribution to SDG 3 is calculated as the number of households confirming improvement in air quality. To collect information on the improvement of air quality, the Monitoring Kitchen Survey includes 2 questions related to that topic:

Do you think there is any difference in how much smoke is produced by the improved stove compared to the 3-stone fire?

Do you think the improved stove produces more or less smoke than the 3-stone?

The share of households confirming less smoke by the improved stove in the Monitoring Kitchen Survey will be multiplied with the number of stoves disseminated under the specific VPA and will result in the number of households confirming improvement in air quality.

$$S_{less\ smoke} = S_{install} \times HH_{less\ smoke,y} \times U_{p,y}$$

$S_{less\ smoke}$ = No of households with improved in-air quality

S_{install} =Number of stoves installed

$HH_{\text{less smoke},y}$ =Share of households confirming less smoke through improved stove

$U_{p,y}$ =Usage rate in year y

Outcome for SDG 5 (Gender Equality)

Women and girls perform the majority of unpaid domestic work. This leaves them with less time to rest, study and realise their economic potential, leaving them in time poverty. In regards to time, women are poorer than men as unpaid domestic duties, such as collecting firewood, must be added to their market productive work, making time much scarcer. Women are widely recognized as being principally responsible for natural resource collection.

These trends demonstrate that reducing the amount of firewood required by households has the potential to reduce the time poverty of women, because the time burden of collecting firewood, which falls disproportionately on women, will be reduced. The average % decrease per household in time spent gathering firewood will be taken as a proxy contribution towards the SDG target.

The overall reduction in time spent collecting firewood by the project activity are then calculated as follows:

$$TR_y = (T_{b,y} - T_{p,y}) / T_{b,y}$$

Where:

TR_y = Total reduction time spent collecting firewood for project activity in year y (%)

$T_{b,y}$ = Baseline time spent collecting firewood per household per day (hours)

$T_{p,y}$ = Project time spent collecting firewood per household per day (hours)

Outcomes for SDG 7 (Affordable and Clean Energy):

For this project, the baseline scenario is the number of households using traditional cook stoves. This project increases the adoption rate of efficient cookstoves. The outcome of SDG 7 will be measured by the number of efficient cookstoves distributed during the project.

N = The total number of clean device installed by the proposed project.

The value adopted is 15,500. Directly monitored by recording the numbers.

Outcomes for SDG 8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all):

The project aims to provide 15 employments annually for the men and women including for young people and persons with disabilities, and equal pay for work of equal value.

Outcome for SDG 13 (Climate Action)

The key components of AMS II.G are the calculation of the emission reductions, differentiation between non renewable biomass and demonstrable renewable biomass and the occurrence of leakage.

Emission reduction calculation

AMS II.G/v12 requires that the project participants assume that in the absence of the project activity, the baseline scenario would be the projected use of fossil fuels for meeting similar thermal energy needs. The actual baseline scenario is the use of NRB. Since NRB has higher carbon intensity than the fossil fuels proposed in AMS II.G, this assumption reduces the emission reductions significantly, making the outcome more conservative. According to paragraph 24 of methodology AMS II.G/v12, emission reductions would be calculated as:

$$ER_y = \sum_i \sum_j ER_{y,i,j} - LE_y \quad \text{Equation (1)}$$

Where:

i	=	Indices for the situation where more than one type of project device is introduced to replace the pre-project devices ⁹
j	=	Indices for the situation where there is more than one batch of project device
ER_y	=	Emission reductions during year y in t CO2e
$ER_{y,i,j}$	=	Emission reductions by project device of type i and batch j during year y in t CO2e
LE_y	=	Leakage emissions in the year y

For household cook stoves (as guided by the methodology):

$$ER_{y,i} = \sum_{a=i}^{a=y} B_{y,savings,i,a} \times N_{y,i} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil\ fuel} \quad (2)$$

Where:

$B_{y,savings,i,j}$	=	Quantity of woody biomass that is saved in tonnes per cookstove device of type i and batch j during year y
$f_{NRB,y}$	=	Fraction of woody biomass that can be established as non-renewable biomass (fNRB) ¹⁰
$NCV_{biomass}$	=	Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne, based on the gross weight of the wood that is 'air-dried')
$EF_{projected_fossilfuel}$	=	Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass by similar consumers. Use a value of 63.7 t CO2/TJ ¹¹
$N_{y,i,j}$	=	Number of project devices of type i and batch j operating during year y

9 For example, in some instances, full replacement of the pre-project device would require the implementation of more than one project device (e.g. one stove suitable for cooking and the other stove suitable for cooking/boiling water).

10 Default values endorsed by designated national authorities and approved by the Board are available at <http://cdm.unfccc.int/methodologies/standard_base/index.html>.

11 This value represents the emission factor of the substitution fuels likely to be used by similar users, on a weighted average basis. The value is calculated, based on the global average ratio of cooking fuels (the normalized ratio of kerosene and liquefied petroleum gas (LPG) excluding coal), i.e. 9 per cent for kerosene (71.5 t CO2/TJ) and 91 per cent for LPG (63.0 t CO2/TJ).

μ_y Adjustment to account for any continued use of pre-project
= devices during the year y when applying equations 6 and 8
(fraction). Use 1.0 in other cases

As stipulated in the paragraph 23 of AMS II.G/v12, $B_{(y,savings,i,j)}$ (Quantity of woody biomass that is saved) can be determined using one of the options:

PP has selected option 3: water boiling test (WBT)¹²:

$$B_{y,savings,i,j} = B_{old,i,j} \times \left(1 - \frac{\eta_{old,i,j}}{\eta_{new,i,j}}\right) \quad \text{Equation 3}$$

Also, as per AMS II G, ver 12, para 37 (d), PP will monitor annually the loss in efficiency annually from a representative sample of each batch and use the actual loss rate that is measured.

If any Improved Cookstove (ICS) got damaged after the warranty period (5 yrs) and before the lifetime, PP will encourage the HH user to buy a new ICS system and if they (HH) did not buy new ICS, then it will be not accounted for emission reduction calculation and ERs from this system will not be claimed.

Greenway's stoves are designed in a way that there are no moving parts and the individual components meet robust quality standards. Based on this fact, as well as Greenways 11+ years' experience in stove manufacturing, forms the basis of justifying a 7-year life span of the stoves. Greenway also gives a 2-year warranty to the buyers and provides spare parts beyond that period on a cost reimbursement basis. The field staff of Greenway who constantly monitors the stove usage and visit buyer households collect this information and act towards getting an issue redressed. Any reduction of the stove usage will be monitored in the surveys and shall be accounted as such.

Determining $f_{NRB,y}$

Step 1: - Annual Wood Consumption Calculation

¹² Based on whether $\eta_{new,i,j}$ or $B_{y=1,new,i,j,survey}$ is used for monitoring, either equation (6) or (7) may be used respectively.

As per Tool30 we have to calculate total annual wood consumption for the project area which is Karnataka state for this VPA and we calculated the total wood consumption by-

- i. Wood Consumption in Household (HH)
- ii. Wood Consumption in timber production

HH consumption was calculated as per the equation number 3 provided in Tool30 along with the help of the survey conducted by the Greenway while timber production value was directly extracted from the India State of Forest Report 2019 and using the number of HH who are dependent on fuelwood in Karnataka which was extracted from National Family Health Survey-5 Karnataka State Report 2019.

Parameter	Value	Unit	Source
Rural HH Population (N)	5153000	Number	NFHS-5 Karnataka State Reports 2019-2020
HH wood consumption	10.52	kg/day	Greenway Baseline Survey
Average household woodfuel consumption (HW)	3.8398	tons/HH/year	Greenway Baseline Survey
Wood Consumption in HH	19786.4894	tons/year	Calculated
Commercial woody biomass consumption for energy applications (CE)	0	tons	Conservative assessment. Value not available
Commercial woody biomass consumption for non-energy applications (Annual) (NE)	32.31	tons	India State of Forest Report 2019

Total Annual Wood Consumption (H)	19818796.75	tons	Calculated
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Step 2: - Renewable Biomass (RB) Availability Calculation

As per Tool30 RB is calculated by using this formula-

$$RB = \sum(MAI_{forest,i} \times (F_{forest,i} - P_{forest,i})) + \sum(MAI_{other,i} \times (F_{other,i} - P_{other,i}))$$

The data for the calculation of RB taken from the India State of Forest Report 2019.

We calculate RB availability by capturing the total biomass available for use from the forestland and from the wooded land.

For forest land below are the values we considered:

Parameter	Symbol	Unit	Value	Sources
Forestland				
Extent of Forest Area	F_Forest	ha	3828400	India State of Forest Report 2019 (Table 1.2 Page No. 4)
Protected Area in Forest	P_Forest	ha	2869000	India State of Forest Report 2019 (Table 1.2 Page No. 4)
MAI in Forest	MAI_Forest	tons/ha/yr	0.39	Calculated value based on a report 'Project Completion Report on Developing yield table for few tree species grown

				in farm settings'
Renewable Biomass Available from Forest	RB_Forest	tons	377094.6947	Calculated

For wooded land below are the values we considered:

Parameter	Symbol	Unit	Value	Sources
Wooded Land				
Extent of other land	F_Other	ha	2236100	India State of Forest Report 2019 (Table 6.2 Page No. 108)
Protected Area under Other Land	P_Other	ha	0	No data available, hence considered "NIL" as it will be conservative with respect to fNRB calculation
MAI in Other Land	MAI_Other	ha Tons/ha/yr	0.39	Calculated value based on a report 'Project Completion Report on Developing yield table for

				few tree speices grown in farm settings'
Renewable Biomass from Other Land	RB_Other	tons	878904.9895	Calculated
Total Renewable Biomass	RB	tons	1255999.684	Calculated

Step 3: - Calculation of fNRB

As per Tool30 fNRB calculated by using this formula-

$$fNRB = \frac{NRB}{NRB+RB}$$

Where:

fNRB = Fraction of non-renewable biomass (fraction or %)

NRB = Quantity of non-renewable biomass (t/yr)

RB = Quantity of renewable biomass (t/yr)

The values calculated above are used to calculate fNRB and the value comes out to be 93.66%.

Leakage

As per the paragraph 34 of the methodology AMS II.G/v12, the following leakages are to be considered:

The use/diversion of non-renewable woody biomass saved under the project activity by non-project households/users that previously used renewable energy sources. If this leakage assessment quantifies an increase in the use of non-renewable woody biomass used by the non-project households/users that is attributable to the project activity, then Bold is adjusted to account for the quantified leakage. Alternatively, B_s is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required. PP has opted to use the adjustment factor of 0.95 in order to account for leakage.

B.6.2. Data and parameters fixed ex ante

SDG13

Data/parameter	NCV _{biomass}
Unit	TJ/tonne
Description	Net calorific value of the non-renewable woody biomass that is substituted
Source of data	approved methodology AMS II.G/v12
Value(s) applied	0.0156
Choice of data or Measurement methods and procedures	Not applicable
Purpose of data	Baseline emission calculation
Additional comment	Not Applicable

Data/parameter	B _{old,HH}
Unit	Tonnes/household/year
Description	Quantity of woody biomass used per HH in the absence of the project activity
Source of data	Baseline Survey
Value(s) applied	3.83

Choice of data or Measurement methods and procedures	Baseline Survey
Purpose of data	Calculation of Quantity of woody biomass that is saved in tonnes per device
Additional comment	This parameter shall remain fixed for the crediting period.

Data/parameter	η_{old}
Unit	Percentage
Description	Efficiency of the system being replaced (Traditional Cooking Stoves). The cookstoves are designed for using wood as fuel and is not compatible with charcoal
Source of data	approved methodology AMS II.G/v12
Value(s) applied	10%
Choice of data or Measurement methods and procedures	The default value of 0.10 is used as the replaced system is a three stone fire, or a conventional device with no improved combustion air supply or flue gas ventilation, i.e. without a grate or a chimney.
Purpose of data	Calculation of share of non-renewable biomass
Additional comment	This parameter shall remain fixed for the crediting period.

Data/parameter	$f_{NRB,y}$
Unit	Percentage

Description	Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass
Source of data	State of forest report 2019
Value(s) applied	93.66%
Choice of data or Measurement methods and procedures	FSI report 2019 is the most recent nationally acceptable report, providing information on fuelwood production and usage in India and its states
Purpose of data	Baseline Emission calculation
Additional comment	This parameter shall remain fixed for the crediting period.

Data/parameter	EFprojected_fossilfuel
Unit	tCO ₂ /TJ
Description	Emission factor for the substitution of non-renewable woody biomass by similar consumers.
Source of data	approved methodology AMS II.G/v12
Value(s) applied	64.40
Choice of data or Measurement methods and procedures	The value represents the emission factor of the substitution fuels likely to be used by similar users, on a weighted average basis. The value is calculated, based on the global average ratio of cooking fuels (the normalized ratio of kerosene and liquefied petroleum gas (LPG) excluding coal), i.e. 9 per cent for kerosene (71.5 t CO ₂ /TJ) and 91 per cent for LPG (63.0 t CO ₂ /TJ)
Purpose of data	Baseline Emission calculation

Additional comment	This parameter shall remain fixed for the crediting period.
Data/parameter	Ley
Unit	Fraction
Description	Net to Gross adjustment factor
Source of data	approved methodology AMS II.G/v12
Value(s) applied	0.95
Choice of data or Measurement methods and procedures	Default value as prescribed by methodology applied
Purpose of data	Baseline Emission calculation
Additional comment	This parameter shall remain fixed for the crediting period.

SDG3

Data/parameter	$S_{install}$
Unit	Number
Description	Number of stoves installed
Source of data	CME Data Based
Value(s) applied	15,500
Choice of data or Measurement methods and procedures	NA

Purpose of data	SDG3 monitored
Additional comment	It will be fixed for the crediting period

B.6.3. Ex ante estimation of SDG Impact

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SDG 3:

$$S_{less\ smoke} = S_{install} \times HH_{less\ smoke,y} \times U_{p,y}$$

Parameter	Description	Ex-Ante Value	Unit
$S_{install}$	Number of stoves installed	15,500	Number
$HH_{less\ smoke,y}$	Share of households confirming less smoke through improved stove	100%	Percentage
$U_{p,y}$	Usage rate in year y	100%	Percentage
$S_{less\ smoke}$	No of households with improved in-air quality	15,500	Number

SDG 5:

$$TR_y = (T_{b,y} - T_{p,y}) / T_{b,y}$$

Where:

TR_y = Total reduction time spent collecting firewood for project activity in year y (%)

$T_{b,y}$ = Baseline time spent collecting firewood per household per day (hours)

$T_{p,y}$ = Project time spent collecting firewood per household per day (hours)

Parameter	Description	Ex-Ante Value	Unit
$T_{b,y}$	Baseline time spent collecting firewood per household per day	3.86	Hours/week
$T_{p,y}$	Project time spent collecting firewood per household per day	2.71	Hours/week

TR _y	Total reduction time spent collecting firewood for project activity in year y	30%	Percentage
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SDG 7:

N_p=N

Where: N The total number of stoves installed by the proposed project

Parameter	Description	Ex-Ante Value	Unit
N _p	The total number of stoves installed by the proposed project	15,500	Number

SDG 8:

N_e

Where: N_e is the total employment generated for men & women

Parameter	Description	Ex-Ante Value	Unit
N _e	total employment generated for men & women	15	Number

SDG 13:

According to methodology AMS II.G/v12 emission reductions shall be calculated as:

$$ER_y = \sum_i \sum_j ER_{y,i,j} - LE_y \quad \text{Equation (1)}$$

$$ER_{y,i,j} = B_{y,savings,i,j} \times N_{y,i,j} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil\ fuel} \quad \text{Equation (2)}$$

Parameter	Description	Ex-Ante Value	Unit
NCV _{biomass}	Net calorific value of the non-renewable woody biomass that is substituted	0.0156	TJ/tonne
B _{old,HH}	Quantity of woody biomass used per HH in the absence of the project activity	3.83	Tonnes/household/year
η _{old}	Efficiency of the system being replaced (Traditional Cooking Stoves)	10	Percentage
f _{NRB,y}	Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass	93.66	Percentage
EF _{projected_fossilfuel}	Emission factor for the substitution of non-renewable woody biomass	64.40	Tco2/tJ

	by similar consumers.		
Ley	Net to Gross adjustment factor	0.95	Fraction

Where,

Description	Parameter	Unit	Type
Indices for the situation where more than one type of project device is introduced to replace the pre-project devices	i	NA	Calculated
Indices for the situation where there is more than one batch of project device	J	NA	Calculated
Emission reductions during the year y	$ER_{y,I,j}$	tCO ₂ e	Calculated
Quantity of woody biomass that is saved	$B_{y,savings,I,j}$	tonnes	Calculated
Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass	$f_{NRB,y}$	%	Fixed ex-ante
Net calorific value of the non-renewable woody biomass that is substituted (0.0156 TJ/tonne)	$NCV_{biomass}$	TJ/tonne	Fixed ex-ante
Emission factor for the substitution of non-renewable woody biomass by similar consumers. (64.40 tCO ₂ /TJ)	$EF_{projected_fossilfuel}$	tCO ₂ /TJ	Fixed ex-ante
Number of project devices of type i operating in year y	$N_{y,I,j}$	15,500 ¹³	Calculated

¹³ For ex-ante calculation, assuming that 100% operating days. This will be monitored and discounted in ex-post scenario.

Adjustment to account for any continued use of pre-project devices during the year y when applying equations 6 and 8 (fraction). Use 1.0 in other cases	μ_y	NA	Monitored
Leakage emissions in the year y	LE_y	%	Fixed ex ante

The quantity of woody biomass that is saved ($B_{y,savings,I,j}$) shall be calculated using option 3 above as follows:

$$B_{y,savings,i,j} = B_{old,i,j} \times \left(1 - \frac{\eta_{old,i,j}}{\eta_{new,i,j}}\right) \quad \text{Equation 6}$$

Where:

Description	Parameter	Unit	Type
Quantity of woody biomass that is saved	$B_{y,savings}$	Tonnes	Calculated
Quantity of woody biomass used in the absence of the project activity	B_{old}	Tonnes	3.83 (Baseline Survey)
Efficiency of the system being replaced	η_{old}	%	10% (Fixed ex-ante)
Efficiency of the system being deployed as part of the project activity	η_{new}	%	Test certificate (38%)

Therefore, baseline emissions per year = 39,126 tCO₂/y

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

SDG 3:

Year	Baseline estimate	Project estimate	Net benefit
Year 1	100%	30%	70% decrease in household smoke
Year 2	100%	30%	70% decrease in household smoke
Year 3	100%	30%	70% decrease in household smoke

Year 4	100%	30%	70% decrease in household smoke
Year 5	100%	30%	70% decrease in household smoke

Total	100%	30%	70% decrease in household smoke
Total number of crediting years	5		
Annual average over the crediting period	100%	30%	70% decrease in household smoke

SDG 5:

Year	Baseline estimate	Project estimate	Net benefit
Year 1	3.86 hours collecting firewood	2.71 hours collecting firewood	1.15 hours saved
Year 2	3.86 hrs	2.71 hrs	1.15 hours saved
Year 3	3.86 hrs	2.71 hrs	1.15 hours saved
Year 4	3.86 hrs	2.71 hrs	1.15 hours saved
Year 5	3.86 hrs	2.71 hrs	1.15 hours saved

Total	3.86 hrs	2.71 hrs	1.15 hours saved
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Total number of crediting years	5		
Annual average over the crediting period	3.86 hrs	2.71 hrs	1.15 hours saved

SDG 7:

Year	Baseline estimate	Project estimate	Net benefit
Year 1	0 (No ICS being used for cooking)	15,500 ICS will be distributed	15,500
Year 2	0	15,500	15,500
Year 3	0	15,500	15,500
Year 4	0	15,500	15,500
Year 5	0	15,500	15,500

Total	0	15,500	15,500
Total number of crediting years	5		
Annual average over the crediting period	0	15,500	15,500

SDG 13:

Year	Baseline estimate	Project estimate	Net benefit
Year 1	39,126	0	39,126
Year 2	39,126	0	39,126
Year 3	39,126	0	39,126

Year 4	39,126	0	39,126
Year 5	39,126	0	39,126
Total	195,630	0	195,630

Total number of crediting years	5		
Annual average over the crediting period	39,126	0	39,126

SDG 8:

Year	Baseline estimate	Project estimate	Net benefit
Year 1	0 employment	15 employments	15 employments
Year 2	0 employment	15	15 employments
Year 2	0 employment	15	15 employments
Year 4	0 employment	15	15 employments
Year 5	0 employment	15	15 employments
Total number of crediting years	5		
Annual average over the crediting period	0 employment	15 employments	15 employments

B.7. Monitoring plan

B.7.1 Data and parameters to be monitored

SDG 13

Data / Parameter	$N_{y,i,a}$
Unit	Number
Description	Number of project devices of type i and age a that are operating in year y
Source of data	Annual ICS users' survey
Value(s) applied	15500
Measurement methods and procedures	The information on the number of devices operational is determined by the ICS users' survey through monitoring of the user households drawn as random sample.
Monitoring frequency	Annually
QA/QC procedures	During the annual users' survey, survey team will inspect representative sample households to check if the devices are operating or not. Sample for this survey will be drawn as per the "Guidelines for sampling and surveys for CDM project activities and programme of activities, version 04".
Purpose of data	Emission reduction calculation
Additional comment	For the determination of ex-ante emission reductions 100% usage rate is considered for simplification, for ex-post the actual discount will be considered into

	calculation and discount will be monitored through sampling)
Data / Parameter	$\eta_{\text{new},i,j}$
Unit	Fraction
Description	Efficiency of the device (Stove) of each type i and batch j implemented as part of the project activity
Source of data	WBT Sample results/ default schedule of linear decrease in efficiency up to the terminal efficiency of 20% per para 37(a) of AMS II G ver 12
Value(s) applied	Initial efficiency of this type of stoves is 38% as tested by KIRDI for ex-ante ERs calculation
Measurement methods and procedures	Efficiency shall be measured/estimated as per the following: 1. The efficiency of the project devices shall be based on certification by a national standards body or an appropriate certifying agent recognized by that body. 2. Alternatively, manufacturer specifications on efficiency based on water boiling test (WBT) may be used. The WBT shall be carried out in accordance with national standards (if available) or international standards or guidelines (e.g. the WBT Protocol or ISO 19867-1 listed by Clean Cooking Alliance (See https://www.cleancookingalliance.org/technology-and-fuels/testing/protocols.html)). For 1 and 2 above, the sampling test of stoves by such certification bodies/agents or manufacturers shall be conducted following a 90/10 precision in accordance with the "Standard for sampling and surveys for CDM project activities and programme of activities"
Monitoring frequency	Annual

QA/QC procedures	Also, during the crediting period, in case PP is unable to monitored the efficiency due to various reasons (e.g. calibration not done of WBT testing equipment's etc), then as per AMS II G ver 12 para 37, (a), A default schedule of linear decrease in efficiency up to the terminal efficiency assumed as 20 per cent shall be applied through the life span of the project device.
Purpose of data	The monitored value of this parameter will be used in the determination of the ex-post emission reduction.
Additional comment	The Kenya Industrial Research and Development Institute (KIRDI) is a Government Organization under the Ministry of Industrialization and Enterprise Development which was established by National Council of Science and Technology (NCST). It was established since 1942, and they have worked extensively on cookstoves development as well as on research. KIRDI has followed International Protocol for many years, they have an established clean cooking laboratory which is in compliance with the relevant ISO-19867-1 standards. It shall be noted that the national standard body of Kenya KEBS doesn't provide any separate standard or protocol for measurement of thermal efficiency of cookstoves. The test conducted in 100% compliance with the ISO standard. Hence, it was accepted by the national body. These tests are used for the ex-ante calculations. For ex-post the tests will be undertaken by using one of the method mentioned above.

Data / Parameter	μ_y
Unit	Fraction

Description	Adjustment to account for any continued use of pre-project devices during the year y
Source of data	When applying equations 6 and 8, it is a fraction based on monitoring results. In other cases (i.e. applying equations 3, 5 and 7), use 1.0
Value(s) applied	1.000
Measurement methods and procedures	Surveys will be conducted since the use of data loggers to record the continued operation of baseline devices is not practical, because the baseline device is the three-stone fire.
Monitoring frequency	At least once every two years (biennial)
QA/QC procedures	NA
Purpose of data	For baseline emission
Additional comment	NA

Data / Parameter	Life Span
Unit	Number of years
Description	The operating lifetime of the project device. The life span should be reported in case where the PP are opting to account the efficiency loss as per paragraph 37.
Source of data	Manufacturer (certified by a national standards body or an appropriate certifying agent recognized by that body)
Value(s) applied	7

Measurement methods and procedures	NA
Monitoring frequency	Fixed and recorded at the time of commissioning/distribution
QA/QC procedures	NA
Purpose of data	Emission reduction calculation if using efficiency loss as per paragraph 37.
Additional comment	NA

Data / Parameter	Date of commissioning of project device i
Unit	Date
Description	Actual date of commissioning of the project device
Source of data	Internal records
Value(s) applied	To be monitored
Measurement methods and procedures	Sales records
Monitoring frequency	Fixed and recorded at the time of commissioning/distribution
QA/QC procedures	NA
Purpose of data	Emission reduction calculation
Additional comment	NA

Data / Parameter	$N_{d,HH}$
Unit	Number

Description	Number of project devices distributed per household
Source of data	Internal records
Value(s) applied	1
Measurement methods and procedures	Sales records
Monitoring frequency	Recorded at the time of commissioning/distribution of project devices
QA/QC procedures	NA
Purpose of data	Emission reduction calculation
Additional comment	NA

SDG 3

Data / Parameter	Air Quality
Unit	Qualitative (%)
Description	Users' perception on smoke reduction and Incidence of disease: perceived smoke levels, incidence of coughing, incidence of respiratory illness, Incidence of itchy eyes
Source of data	Sampling Surveys/ Annual usage survey/Monitoring survey
Value(s) applied	NA (Qualitative Method)
Measurement methods and procedures	Air quality will be assessed through users interviews during the ICS User Survey. Observations as to inside/outside cooking area to confirm answers. During the survey HH users will be interviewed for the number of diseases caused by the smoke and also the number of

	times they (HH) visit hospitals for treatment related to breathing problems in the monitoring year.
Monitoring frequency	Annually
QA/QC procedures	NA
Purpose of data	Sustainable Development Assessment.
Additional comment	-

SDG 5

Data / Parameter	Gender Equality: Number of Hours
Unit	Hours
Description	Time Saving per household in collecting fuelwood
Source of data	Monitoring Survey
Value(s) applied	1.15
Measurement methods and procedures	Number of hours consumed in collecting fuelwood will be quantified through ICS user survey.
Monitoring frequency	Annual
QA/QC procedures	NA
Purpose of data	Sustainable Development Assessment
Additional comment	NA

SDG 7

Data / Parameter	Access to affordable and improved energy services
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Unit	Numbers
Description	Number of ICS under the project
Source of data	Commissioning records
Value(s) applied	15500
Measurement methods and procedures	Sample survey to confirm if project ICS are operational. Operational status will confirm that the users are accessed to affordable and improved energy
Monitoring frequency	Annually
QA/QC procedures	N/A
Purpose of data	Sustainable Development Assessment.
Additional comment	NA

Data / Parameter	NCVBiomass
Unit	Tj/tonne
Description	Net calorific value of the non-renewable woody biomass, briquettes or charcoal used in project devices
Source of data	IPCC 2006 Guidelines for National Greenhouse Gas Inventories
Value(s) applied	0.0156
Measurement methods and procedures	The value of NCVBiomass comes from IPCC 2006 GHG Inventories
Monitoring frequency	Annually

QA/QC procedures	NA
Purpose of data	Sustainable Development Assessment.
Additional comment	NA

SDG 8

Data / Parameter	Number of employments generated (Ne)
Unit	Numbers
Description	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.
Source of data	Employment records
Value(s) applied	To be monitored
Measurement methods and procedures	The HR records shall be monitored
Monitoring frequency	Annually
QA/QC procedures	N/A
Purpose of data	Sustainable Development Assessment.
Additional comment	NA

B.7.2 Sampling plan

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(a) Sampling Approach:

i. Objectives and reliability requirements:

The objective of the sampling plan is to achieve unbiased and reliable estimates of the proportion or the mean value of the key variables over the crediting period. As per the sampling and survey standard V 09.0 in case “where there is no specific guidance in the applicable methodology, project proponents shall use 90/10 confidence/precision as the criteria for reliability of sampling efforts for small-scale

project activities and 95/10 for large scale project activities." The methodology applied for the project (AMS.II.G version 12/para 48 requires the project proponent achieving 95 percent confidence interval and a 10 percent margin of error while for annual inspection 90 per cent confidence interval and a 10 per cent margin of error shall be achieved for the sampled parameters.

The requirement mentioned in paragraph 22 of Sampling & Surveys Standard states that, parameter values shall be estimated by sampling in accordance with the requirements in the applied CDM methodologies separately and independently for each of the CPAs included in the PoA except when a single sampling plan covering a group of CPAs is undertaken applying 95/10 confidence/precision for the sample size calculation.

The table below provides the monitoring parameters that will be monitored annually:

Parameter	Type	Description
$N_{y,i}$	Proportional parameter	Number of project devices (cookstoves) of type <i>i</i> and operating in year <i>y</i> (<i>this also accounts the baseline stoves that are still in use</i>)
$\eta_{new,i,j}$	Mean value parameter	Efficiency of the device (cookstoves) of type <i>i</i> being deployed as part of the project activity
μ_y	Proportional parameter	Adjustment to account for any continued use of pre-project devices during the year <i>y</i>

ii. **Target Population:** The target population for different parameters discussed in the table above are given below:

- For the proportional parameter; the target population is the ICS users listed in the project database.
- For the mean value parameter; the target population is the total number of operational ICS for which the emission reductions will be accounted for the monitoring period in question. The mean value parameter, unless and otherwise required by the estimated number of samples (if it is greater than the sample estimate for the proportional parameter) will be the subset of the operational ICS as identified during the annual monitoring surveys.

- iii. **Sampling frame:** All the households availed with the improved cooking stoves by the project will be the sampling frame.
- iv. **Sampling Method:** A simple random sampling will be adopted for estimating the sample size for the monitoring surveys. Simple random sampling is suited to populations that are homogenous (EB 94 annex 02). From the population of ICS, the random numbers will be assigned for each ICS using excel function and the sample ICS will be extracted accordingly. The schema of the sampling method is given below:
- v. **Sample Size:** The calculation of the required sample size for each parameter will be calculated at 90/10 confidence/precision as required for the annual monitoring. The sample size is determined using the Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0 (EB86, Annex 4)¹⁴. As required by AMS II.G Ver 12, for annual surveys, the level of precision of 10% and a confidence level of 90% will be assessed for the monitoring parameters; efficiency of ICS, number of ICS in operation and displacement of traditional stoves.

The minimum sample size to determine number of ICS in operation and displacement of tradition stoves using the procedure outlined in para 12 of appendix 1, EB 86 Annex 4, Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0.

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

Where:

n= Sample size

N = Total number of ICS of type *i* installed under the project

p = expected proportion (0.5)¹⁵

¹⁴Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0 (EB 86, Annex 4)

¹⁵The expected proportion has been taken as 0.5 for the first monitoring period. For the successive monitoring periods, the sample size will be deducted in accordance with the monitoring results of the first monitoring period.

1.645 = represents the 90% confidence required

0.1 = represents the 10% relative precision ($0.1 \times 0.5 = 0.05 = 5\%$ points either side of μ)

Substituting the values of “N” in equation above, the sample size will be deducted.

$\eta_{\text{new},i,j}$: Efficiency of the device of each type i and batch j implemented as part of the project activity (Applicable exclusively to VPAs, not opted linear depreciation approach)
(Applicable for WBT)

$$n \geq \frac{1.96^2 NV}{(N - 1) * 0.1^2 + 1.96^2 V}$$

Where

V	= SD/mean
n	= sample size
N	=Total population
mean	= expected mean
SD	= expected standard deviation
1.96	= represents the 95% confidence interval
0.1	= represents the 10% relative precision

(b) Data:

(i) Field Measurements:

1. Checking of a representative sample of each type of ICS installed every year to ensure that they are still operating ($N_{y,i,a}$).
2. Determination of the efficiency of a representative sample of each type of ICS either using field measurement or other approach given in the methodology.
3. The replaced low efficiency appliances are disposed of and not used within the boundary
4. The survey will be conducted annually with the objective to target 10 percent precision and to achieve 90 percent confidence.

(ii) Quality Assurance/Quality Control:

A survey questionnaire will be prepared to seek responses of operating status (yes or no) of ICS units by ICS using households. The survey will be performed by the project developer. During the survey, in order to anticipate any low response rate and answers bias, 10% oversampling will be applied.

(iii) Analysis:

1. Checking of a representative sample of ICS installed every year to ensure that they are still operating ($N_{y,i}$)
2. Determination of the efficiency of a representative sample of all devices
3. The replaced low efficiency appliances are disposed of and not used within the boundary;
 - The Project developer will collect, compile and analyze the data to derive the number of ICS disseminated, the percentage of ICS in operation, displacement of traditional cooking stoves. The developer will prepare "monitoring report" based on the survey report.
 - The data collected will be compiled in Excel sheets and/or other software and analyzed to derive the percentage of ICS in operation and the efficiency of the ICS installed by households. The values of efficiency of ICS disseminated are used for emission reductions calculation.

(c) Implementation:

- The survey questionnaire will be prepared, pre-tested and field personnel will be trained in conducting the survey to ensure the quality of data collected and the survey will be carried out once a year. The schedule for implementing the sampling effort shall be defined prior to the field activity.

Parameter	Objective	Timeframe/Frequency	Method of Data Collection	Use of Data	Target Population	Sampling Frame
$N_{y,i,a}$ ¹⁶	Total number of ICS that are operational	Measurement taken every year	Semi Structured questionnaire survey conducted among the	Monitoring will ensure that the ICS implemented through the project	ICS user households	List of households having ICS installed/purchased.

¹⁶ The parameters apart than SDG#13 which are to be monitored annually viz; air quality, reduction in fuel collection time shall be the same samples which are for this parameter.

			user households	is operational and has displaced low efficiency appliances from the project boundary.		
$\mu_{y,i,j}$	Adjustment to account for any continued use of pre-pre-project devices during the year y	Biennial Monitoring	survey conducted among the user households in line with the requirement of AMS IIG	Pre project device only is in use then fraction to be used to calculate total number, however if pre project device is used along with project ICS, proportion of usage of each will be determined by cooking habits evaluated by survey questionnaire during the monitoring period.	ICS user households	List of households having ICS installed/purchased.

$\eta_{new,i,j}$	Efficiency of device of type <i>i</i> and batch <i>j</i> implemented as part of the project Activity (Applicable for CPAs opting for option 3 in line with para 32 of methodology)	Measure ment taken every year	Semi Structured questionnaire survey conducted among the user households	Monitoring will ensure that the ICS implemented through the project is operational and has displaced low efficiency appliances from the project boundary.	ICS user households	List of households having ICS installed/purchased.
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B.7.3 Other elements of monitoring plan

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Installation Record

A comprehensive Installation Record will record the following information in paper format and will be backed up electronically. The original documentation will be stored in the local office. Paper records will be filled out by Greenway Grameen Ltd along with the sales record and supervise educating, cookstove recipients on proper usage.

The installation records will be backed up electronically, with original documentation being stored in the appropriate office for the respective VPAs.

Project Database

The project database will be derived from the Installation Record, with project technologies differentiated by different project scenarios (if required).

All data collected in relation to the project will be held in the local office and/or on the Project Database for the entire life cycle of the project and a period of 2 years afterwards. The data may be archived during the project in order to maintain clarity and security. The end users of the cookstoves are identified and included in the cookstove user list for the duration of the project and updated when required.

The roles and responsibilities of personnel involved are:

CME Managing Director	a) Signing of agreements with Project Partners b) Approval of VPAs
CME Carbon Asset Manager	a) Identification of new potential VPAs b) Technical review for inclusion of VPAs c) Preparation of relevant documentation d) Records and documentation control e) Coordination of Project Partners and training when necessary f) Overall quality control
Project Partner	a) Implementation of project activities b) Monitoring and maintenance of project activity

Ongoing Monitoring Studies

The following ongoing monitoring studies are conducted for each project scenario following verification of the associated initial project studies.

- a. Usage Survey- Completed annually, on time for any request of issuance

The usage survey provides a single usage parameter $U_{p,y}$ that is weighted based on drop off rates that are representative of the age distribution for project technologies in the installation record.

- b. Monitoring Project Survey – Completed annually, on time for any request of issuance

The project survey surveys end users using project technologies to explore changes in the project scenario over time.

- c. Leakage Assessment- Completed every other year

The potential sources of leakage will be investigated ($LE_{p,y}$). If the assessment quantifies an increase in fuel consumption by the non-project households attributable to the project activity, then calculations will be adjusted to account for this.

d. Non-renewable Biomass Assessment Update- Reassessed at renewal of crediting period

In accordance with the methodology, the NRB assessment will remain fixed for the entire crediting period, although the project proponent may choose to re-examine the assessment at any time.

e. Project Technology Days ($N_{p,y}$)

of the total number of people using each cookstove in the project multiplied by the number of days crediting each cookstove earns in this monitoring period. The total number of households using each cookstove will be determined through information collected by us. Using this method, the total number of people using each cookstove will be known and hence a figure for person days can be calculated. All monitoring tasks will be selected at random.

SECTION C. DURATION AND CREDITING PERIOD

C.1 Duration of project

C.1.1 Start date of project

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20/11/2021 (Date of First ICS sale)

C.1.2 Expected operational lifetime of project

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7 years

C.2 Crediting period of project

C.2.1 Start date of crediting period

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20/11/2021 (retroactive crediting period date, based on the first distribution date under the VPA)

C.2.2 Total length of crediting period

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5 years (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 7.1 Emissions	Monitoring of Co2 emission will be done annually.
Principle 7.2 Energy Supply	Fuel wood consumption will be monitored
Principle 3 Community Health, Safety and Working Conditions	Workplace Health & Safety trainings will be conducted regularly during the project operation

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 respects the key gender issues and requirements of gender-sensitive design and implementation of the project. SDG#3 is one of the impact areas of the project. The project is aimed to replace conventional cook stoves with Improved cook stoves. This will result in reducing use of firewood consumption.
Question 2 - Explain how the project aligns with existing	The project does not involve in any form of based on gender, race, religion, sexual orientation or any

country policies, strategies and best practices	other basis as per the country policies, strategies and best practices. The Government of India reaffirms its commitment to work for the realization of constitutional guarantee of equality, social justice and non-discrimination on the basis of sex, caste, community, language and religion. The project positively contributes towards the national mission for empowerment of women through improvement of health and attaining vision for empowerment of women under national policy for women¹⁷ (<i>Women participation will be ensured in the efficient use and spreading the use of solar energy, biogas, smokeless chulas and other technological applications to have positive influence on their life styles and a long term impact on meeting sustainable development goals</i>). The VPA under the programme of activity is distributing the improved cook stoves to households/communities wherein the women are the main users therefore the project is aligned with the cited policy above which ensures the women participation in <i>smokeless chulas</i>.
Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	No gender expert will be required for the Gender Safeguarding Principles & Requirements, as this requirement is not mandatory. However, the team will redouble its efforts to fit the project into the gender policy required by the GS methodology.
Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	No gender experts will be present at the Stakeholder Consultation, as this requirement is not mandatory. However, the sustainable carbon team, which will be present on the day of the consultation, has extensive experience in conducting this type of

¹⁷ <https://www.npc.gov.np/images/category/Study-the-effectiveness-of-programmes-targeted-to-women.pdf>

meeting, and will follow the Gold Standard Stakeholder Consultation and Engagement Requirements, which includes gender guidelines, and specifies which social groups must be included in the consultation. Therefore, the team will be able and willing to address and assist any gender issues at the Stakeholder Consultation.

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

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The Local Stakeholder meeting was conducted both physically as well in an online mode. The invitations were sent out on email and the newspaper advertisements in English and local language (Gujarati) were published on 17/06/2020. This ensured that the project adhered to the criteria of giving one-month notice to stakeholders invited. For those who cannot attend the physical local stakeholder consultation meeting, an online link for joining was arranged. The advertisement material signed and stamped by the CME on the company letterhead has been included in this document.



The local stakeholder consultation meeting was organized on 18/07/2020 at the venue Greenway Grameen Infra Pvt. Ltd, 23/A, GIDC Manjusar, Savli Road, Vadodara, Gujarat 371775 at PoA level. The meeting also conducted at VPA level at Karnataka, wherein the ICSs are distributed, the details are mentioned in the stakeholder consultation report submitted. The meeting was organized informally in order to encourage participants post their views on the project more openly and without hesitation of protocol. Due to the prevailing COVID-19 situation, stakeholders also joined using online modes. Most of the participants attending the meeting were women which were local beneficiary of the project.

The method for inviting the local stakeholders involved announcement in the local and national newspapers, over email, as well as delivery by hand. This was to ensure that all categories of stakeholders are reached including those without the means of internet/email. And for those who cannot attend the physical local stakeholder consultation meeting, an online link for joining was arranged.

During the meeting, the planned project activities were presented to stakeholders and they were invited to make comments and raise questions. A sustainable development and safeguarding exercise was then conducted to solicit the stakeholders' views on any risks within the project and the contributions that it should make to sustainable development. Stakeholders were also consulted on their recommendations for monitoring the project and on the best approach for conducting the continuous input/grievance mechanism.

The findings of the meeting are currently being documented to be shared with stakeholders and a Stakeholder Feedback Round will be conducted to solicit further feedback.

Some of the key comments received are listed below:

- Mr Rajawat from Ananya Microfinance asked about the involvement of microfinance institutions in the distribution model of Greenway.
- Mr Bhasin asked about the source of the materials used in the manufacture of products.
- He also enquired who is covering this fee for Gold Standard? Is it the users of stoves and filters ?
- The project should ensure the methods to incentivize the households using stoves.
- The project should have included a component of training where all level of stakeholders are trained to understand the project properly.

- Ms Rebello asked about existence of prior evidence of environmental/gender impact of improved cooking
- Ms Surbhi asked how this program is estimating carbon emission reduction?
- Mr Bhasin asked whether the portability in filtration solutions been considered?
- Project proponent should coordinate with other actors involved in the sector to get rid of duplication of efforts
- Project should not only focus on the marginalized households but also other households for better results

All these questions were answered and doubts were cleared to the satisfaction of the stakeholder, the detailed description of each comment raised by the stakeholder and its response by the CME is provided below: -

S.N o.	Comment	Organization	Response to comment
1	What is climate change?	Desar	The concept of climate change being long-term shift in the average weather conditions of a region, such as its typical temperature, rainfall, and windiness. Climate change means that the range of conditions expected in many regions will change over the coming decades. This was explained to the participant. And how the emissions generated by the baseline cooking practices are contributing to them was also conveyed.
2	How the Gold Standard registration will help the users of the stove?	Kapurai	The concept of carbon financing using Verified Emission Reductions VERs and Carbon Credits were explained to participant. The Gold Standard certification places a financial value on carbon emissions and allows companies wishing to offset their own emissions to buy carbon credits earned from

			sustainable projects was elaborated. It was explained how Greenway project would contribute to the reduction in GHG emissions and this the cookstoves project will be eligible for carbon financing. This could help scaling up the projects implemented in the area and add many more users to this project.
3	How will Greenway ensure that these products reach all the potential users?	Parara	The awareness campaigns by Greenway and its partner organizations and eventual scaling up of the project would lead to more reach. Especially after the certification of the project, the carbon financing received would help Greenway to increase the manufactured units. This was thoroughly explained to the stakeholder by laying out the plan of awareness campaign.
4	Are there any harms to potential users?	Tundar	No, there will be no harm from the usage of these products. This was explained to the stakeholder by letting them know about how all Greenway products have undergone rigorous testing standards by 3rd parties. It would instead eliminate the harms of the baseline technology by reducing the amount required to be spent in kitchen.
5	Mr Rajawat asked about the involvement of microfinance institutions in the distribution model of Greenway.	Ananya Microfinance	A meeting with the organization has been arranged at a later date. This will help financing requirements of end user.

6	Mr Bhasin asked about the source of the materials used in the manufacture of products. He also enquired who is covering this fee for Gold Standard? Is it the users of stoves and filters?	SPA Bhopal	The source of materials was explained to him to be Steel and Aluminium with Bakelite Handles. The fee is to be born by the Project Proponent. Which is affordable given the potential carbon finance it will receive, once the project is certified.
7	The project should ensure the methods to incentivize the households using stoves and purifiers, as people were unaware about the products.	ASM	The PP would undertake awareness drives in the areas of distribution. The awareness campaigns by Greenway and its partner organizations and eventual scaling up of the project would lead to more reach. This was thoroughly explained to the stakeholder by laying out the plan of awareness campaign. The benefits of the stove and purifiers explained in the meeting would also be communicated to other potential users. This is an enough incentive in itself for users to shift towards Greenway Products.
8	The project should have included a component of training where all level of stakeholders is trained to understand the project properly.	N/A	The stakeholder meeting included the demonstration and it was assured that every user would receive appropriate training. Demonstration using each model was showcased for the stakeholder. And it was guaranteed that every user will be familiar with the proper usage of the product due to training provided by the partner organisations while distributing.

9	Ms Rebello asked about existence of prior evidence of environmental/gender impact of improved cooking	N/A	It was explained that since women are involved mostly in cooking practices across the project boundary, they will be the most benefited from any such project. The NITI Aayog data for fuel use for cooking was cited and the smoke generated will be most harmful to the person involved in cooking. That is mostly women in India. The existing evidence was verbally communicated and she was further informed about literature as well.
10	Ms Surbhi asked how this program is estimating carbon emission reduction?	Indian Institute of Forest Management	The methodology of emissions calculation according to TPPDEC was explained. The baseline and project scenario estimates according to the Emission Reduction Calculation sheets was shared. And how the baseline and project surveys will help in arriving at the final calculations was also explained in as much detail as possible.
11	Mr Bhasin asked whether the portability in filtration solutions been considered?	SPA Bhopal	This is one of the crucial factors in designing the water filters. Hence it was assured that this would be taken care of by the CME and its partners. Greenway will conduct regular market research to develop such products which balance functionality, convenience, and price.

Based on Mr. Rajawat's comment, a follow up meeting with Ananya Microfinance has been arranged. The other comments made by the stakeholders regarding project were already considered by the project design team and therefore no modifications in the project was required. The participants were informed about the feedback round after two months, where any changes if made on the basis of comments, will be

communicated. And stakeholders were also informed about the continuous input/grievance mechanism using which they can raise any issue in the future. The comments received do not solicit any immediate changes in the design of the project. Hence, PP has made no changes at the PoA or VPA level on the basis of comments received.

“To further strengthen the stakeholder engagement during project implementation, additional state-level physical consultations for local stakeholders were also organized by the CME. The physical meetings were conducted on 07/12/2020 in Kolar and on 11/01/2021 in Tumkur district in Karnataka state respectively. All the relevant local stakeholders were invited through public notice, telephone calls and personal invitations to attend the meeting. The local stakeholders meeting was attended by local persons including local villagers, local vendors, and technology suppliers. The stakeholders identified by the project participant were local villagers who are the major population of the particular area, local communities and gram panchayat (Village head), CME representatives.” The details of the same is reported in the ‘Local Stakeholder ‘STAKEHOLDER CONSULTATION REPORT’.

Stakeholder Feedback Round

The Stakeholder Feedback Round (SFR) was organized between 26th November 2020 and 27th April 2021. This was a public consultation on the project conducted via greenway website - <https://www.greenwayappliances.com>, where project documents were made available from 26/11/2020 to 27/04/2021 (4-month period). The email invitations for the feedback round were also sent to the persons/groups who had been originally invited for the 1st LSC meeting dated 18/07/2020. The local stakeholders meeting at the VPA level were also taken into account while inviting the feedbacks. To further strengthen the stakeholder engagement during project implementation, additional state-level physical consultations for local stakeholders were also organized by the CME. The physical meetings were conducted on 07/12/2020 in Kolar and on 11/01/2021 in Tumkur district in Karnataka state respectively. The details of process undertaken at VPA level is part of LSC report as per GS4GG template. All the relevant local stakeholders were invited through public notice, telephone calls and personal invitations to attend the meeting. The local stakeholders meeting was attended by local persons including local villagers, local vendors, and technology suppliers. The

stakeholders identified by the project participant were local villagers who are the major population of the particular area, local communities and gram panchayat (Village head), CME representatives.

Screenshots of the email enclosed as an example.

5/27/2021

Greenway Mail - Greenway | Stakeholder Consultation - Information Note



Saanaee Naik <saanaee.naik@greenwayappliances.com>

Greenway | Stakeholder Consultation - Information Note

Saanaee Naik <saanaee.naik@greenwayappliances.com>

Wed, Dec 2, 2020 at 1:45 AM

Bcc: sahiyar@gmail.com, rahini.ngo@gmail.com, collector-vad@gujarat.gov.in, teatechos@gmail.com, meena.sr@nic.in, dgfindia@nic.in, snburha.ifs@assam.gov.in, parveen_dhamija@hotmail.com, "Valerie R. Mendonca" <valeriem@iima.ac.in>, Vipul Patel <vipulp@iima.ac.in>, chris@esaf.in, svati.bhogle@gmail.com, 2csharma@gmail.com, anirula@ckinetics.com, Guruprakash_Sastry@infosys.com, Deepali_Dhuliya@infosys.com, Keshav Bagri <kbagri@acumen.org>, nusrat.pathan@hdfcbank.com, Gaurav Gupta <gaurav.gupta@ananyafinance.com>, satya.chakrapani@shikharfin.com, Rema Subramanian <rema@ankurcapital.com>, s.moharram@asabhopal.org, paul@esafmicrofin.com, mandla.fes@ecologicalsecurity.org, Adwait Joshi <adwait@thecleannetwork.org>, anuj@thecleannetwork.org, Pugazenthi Dhananjayan <Pugazenthi.Dhananjayan@ashden.org>, Hemant Lamba <hemant@auroville.org.in>, ADass@theclimategroup.org, agarg1@ifc.org, snath@tatatrusters.org, smistree@tatatrusters.org, amitabha@ide-india.org, sn.srinivas@undp.org, kidskottapuram@gmail.com, primavela@gmail.com, rajeshreejoshi@baif.org.in, neena.jain@oneacrefund.org, prerana.langa@yesbank.in, beenoxi.arora@axisbank.com, ketaki.saksena@planindia.org, Arockia_Nathan@wvi.org, bethanyngo@rediffmail.com, SAvi@cleancookingalliance.org, Santosh Singh <santosh.singh@intelcap.net>, shubhankar.sengupta@arohan.in, bread@bread.org, tatasustainabilitygroup@tata.com, foundation@infosys.com, swapan@ioraecological.com, dsweeney@mit.edu, ipsita26@gmail.com, latha.sankamarayan@greenevangelist.com, Hannah Girardeau <hannah@seforall.org>, rekhak.work@gmail.com, debaleena@sbifoundation.co.in, help@goldstandard.org, syadav@globaloffsetresearch.com, david@cedesol.org, Impsindore@gmail.com, info@ncmaindia.org, thomas.finsterwald@myclimate.org, cnil@goodplanet.org, info@carbonmarketwatch.org, info@careclimatechange.org, binod@winrock.org, rajeev.j@nic.in, apama@ashaimpact.org, olakh.space@gmail.com

Greetings!

I hope this finds you well.

I'm writing today to share with you the information note on the project undertaken by Greenway for the distribution of clean cookstoves and water purifiers. We had conducted a stakeholder consultation meeting for the same on 18 July 2020.

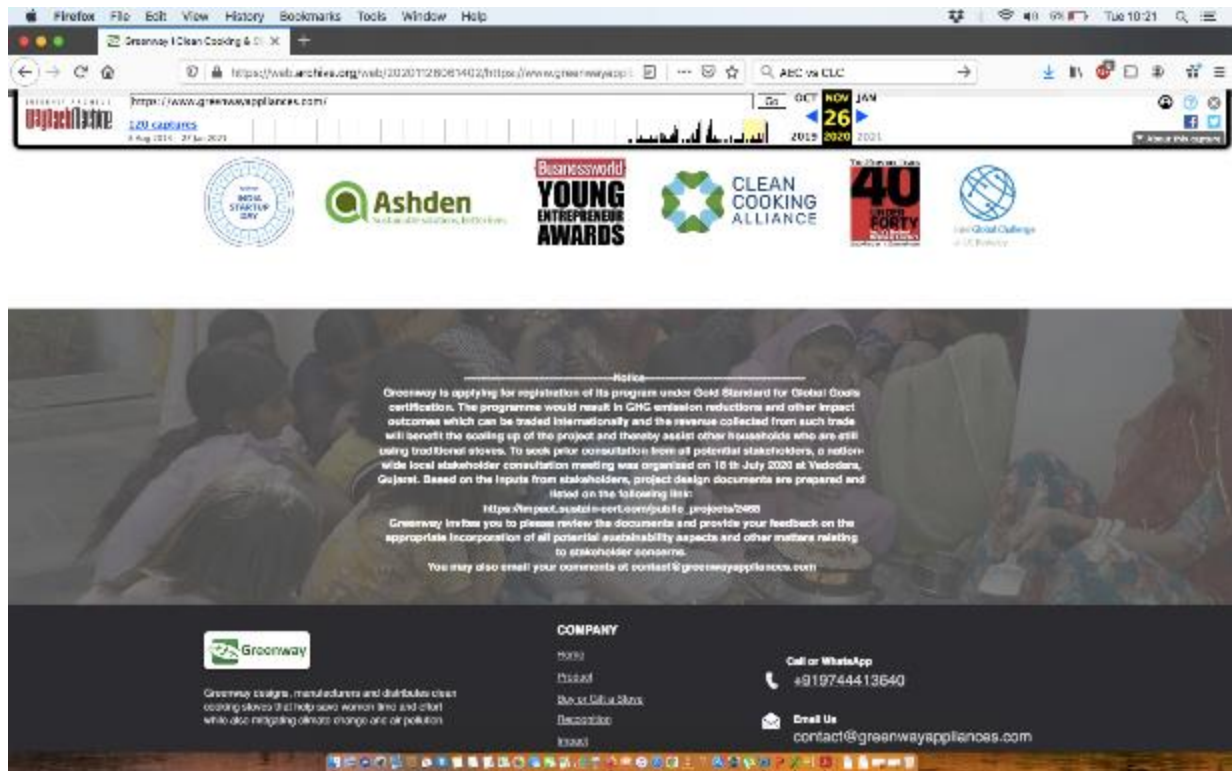
Please refer to the attached document, and please feel free to reach out if you have any questions.

Warm regards,
Saanaee

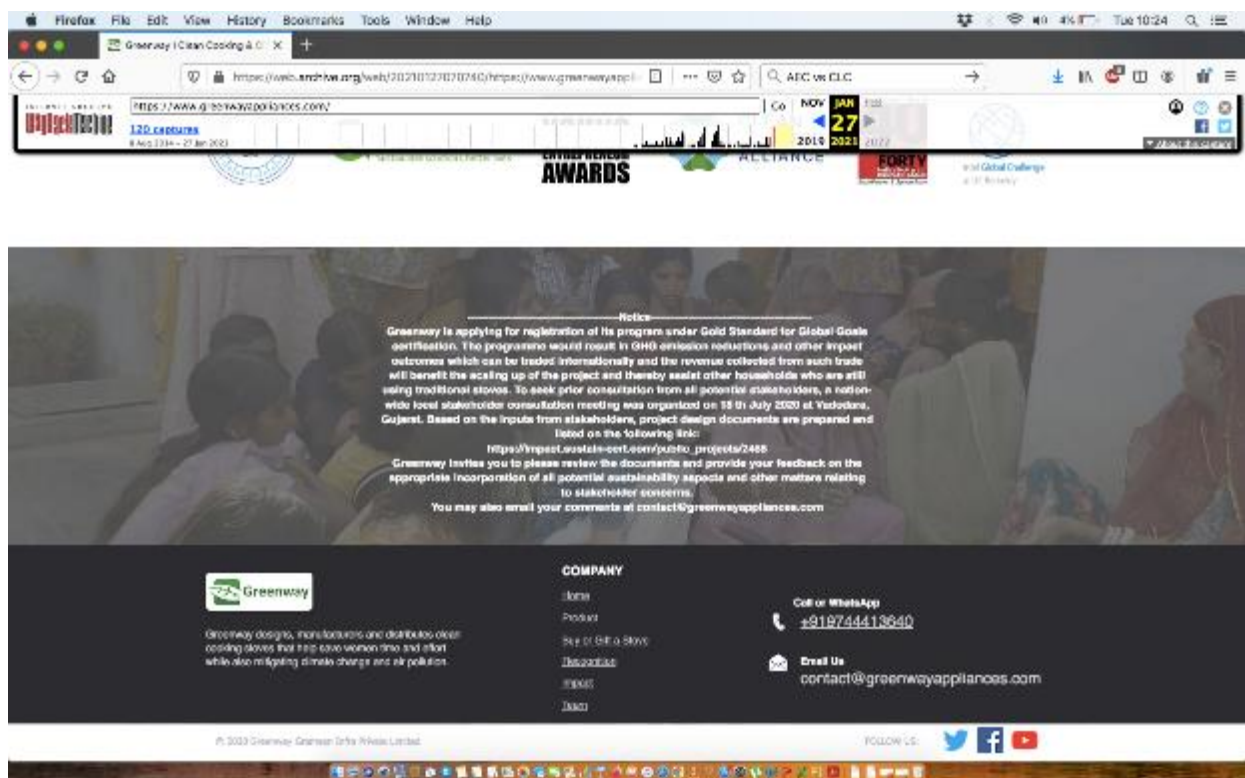
Saanaee Naik
Impact Associate, Greenway
#501-502, Makani Centre, 35th road, T.P.S. III, Bandra (W), Mumbai - 400050
Tel: +91 22 60522638 | +91 9871140713
www.greenwayappliances.com, www.easynow.in
Learn more about our work on [Facebook](#), [LinkedIn](#), [Instagram](#), and [Twitter](#).



Information Note.pdf
214K



Screenshot of Notice Published on CME Website for Stakeholder Feedback Round dated 26th November 2020



Screenshot of Notice Published on CME Website for Stakeholder Feedback Round dated 27th January 2021

During the SFR no comments were received from the stakeholders.

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)	Continuous input and grievance expression can be directly communicated to the proponent's office in-person. Greenway Grameen Infra Pvt. Ltd, 23/A, GIDC Manjusr, Savli Road, Vadodara, Gujarat 371775 This method is chosen to encompass the stakeholders who wish to physically post their comments/grievances are not acquainted to other means of communication, largely the category A stakeholders.
GS Contact (mandatory)	help@goldstandard.org
Other	Mr. Sujeet Kumar can be contacted via the following number: 02667-264434 Complaints could be lodged on the personal email id sujeet.k@greenwayappliances.com , or saanaee.naik@greenwayappliances.com or company mail id contact@greenwayappliances.com

SECTION F. Eligibility and inclusion criteria for VPAs inclusion

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All eligibility criteria set forth in the design certified real case VPA (GS 10821) are applicable to the real case VPAs in terms of technology (same ICS model), host country and other aspects. Therefore, the same criteria which are justified/substantiated in section A.1.1 and there is no change. Moreover, VPA is going through the validation cycle by VVB.

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 below.

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	No	Not relevant 1. The constitution of host country (India) considers it a legal offence to violate human rights during any business activity. India endorses the United Nations Guiding Principles (UNGPs) on Business and Human Rights adopted in	NA

2. The Project shall not discriminate with regards to participation and inclusion.		the UN Human Rights Council (UNHRC) in 2011. The CME complies with the legal requirements of the host country. This is not violated at any point during the project. 2. The targeted segment for facilitating improved cooking under this project is the rural household of India. The economically backward and marginalized, who form a majority of these households, will witness enhanced opportunities for participation in this programme, as this project by scaling up will reach areas where improved	
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		cooking solutions were previously unaffordable.	
Principle 2. Gender Equality			
1. The Project shall not directly or indirectly lead 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	No	Not relevant 1. No, the project doesn't directly or indirectly lead to/contribute to adverse impacts on gender equality. In contrast, the project will contribute to health and well-being of women. Moreover, the project will deploy adequate measures to foster social status of women. 2. The project shall embrace the spirit of the Indian Labour	NA

4. (where required) Summary of opinions and recommendations of an Expert Stakeholder(s)		Regulations and ILO guidelines. The project does apply the principles of non-discrimination and equal treatment in the production, distribution and the usage of the products. The CME also ensures equal pay for equal work during any activity in the project. 3. The project developer abides by the National Gender Policy of India enshrined in the Constitution of India. It has a powerful mandate for equality and rights of women. India has endorsed the SDG 2030 Agenda as	
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		well. The project developer recognises and respects these commitments in the course of the project as well. There are no specific gender risks identified during the project design. Howsoever, if any assessment is required to frame gender risks associated with the project, the project participant ensures its full commitment to do so. 4. Not required.	
Principle 3. Community Health, Safety and Working Conditions			
1. The Project shall avoid community exposure to	No	Not relevant	Workplace Health & Safety trainings conducted during

increased health risks and shall not adversely affect the health of the workers and the community.		Dissemination activity under the project doesn't involve any activity that triggers safety requirements. On the contrary the project is expected to alleviate existing health risks due to indoor pollution	the project operation
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	Not relevant The project units will be simple and small in dimension. The project will not result in any change in cooking habits because of substitution of fuel. Therefore, the result of this project won't damage or remove cultural heritage, since the project is implemented in the households of families.	NA
>>			

Principle 4.2 Forced Eviction and Displacement			
Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	No	Not relevant	NA
>>			
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	Not relevant. The project does not involve any land tenure arrangements and/or other rights.	NA

>>			
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	Not relevant. The project does not involve any land tenure arrangements and/or other rights.	NA
>>			
Principle 5. Corruption			
1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects	No	There are strict internal policies of Greenway which prohibit any kind of corruption at individual or organizational level.	NA
Principle 6.1 Labour Rights			
1. The Project Developer shall ensure that all employment is in	No	Not relevant	NA

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 per week on a regular basis), AND b) Duties and tasks, AND		1. India has ratified 6 out of the 8 core ILO conventions including relating to abolition of forced labour, equal remuneration and no discrimination between men and women in employment and occupation. 2. Factories Act 1948 & Inter-State Migrant Workers Act 1979 ensure the basic rights of workers are met. The project developer and its partner comply with the national labour regulations and guidelines. All the health and safety related laws are abided by in the production and distribution process. Hence, this	
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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		safeguarding principle is not triggered. 3. The working conditions of the employees and workers are in compliance with national guidelines of the host country (India). Hence, this safeguarding principle will not be triggered. 4. The project does not employ and is not complicit in any form of child labour in any way. Plants are built & maintained with the help of trained staffs and not child labour. 5. Adequate safety measures are undertaken while manufacturing the products to be	
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requires an <u>Expert Stakeholder</u> opinion) 5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures		disseminated under the project. Hence the safeguarding principle is not triggered.	
Principle 6.2 Negative Economic Consequences			
1. Does the project cause negative economic consequences during and after project implementation?	No	The project design ensures financial sustainability by a combination of revenue sources (majorly from carbon credit sales and revenue from stove sales). It is expected that as the users have already benefited the economic	NA
>>			

		savings by using the fuel efficient stoves, majority of them would purchase these again even after the certification period. The project does not possess any threat to the local economy, instead it catalyses several aspects relating to it's growth (eg., monetary savings on fuel, job creation, etc)	
Principle 7.1 Emissions			
Will the Project increase greenhouse gas emissions over the Baseline Scenario?	No	The project will deploy efficient cooking stoves against the traditional cooking stoves will replace traditional methods which will ultimately result in GHG emissions reduction.	NA
>>			
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 project will deploy efficient cooking stoves that results in reduced consumption of firewood. Installation and use of both don't result in access, consumption, availability of firewood and reliability of energy supply to other users.	
>>			
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 project doesn't involve any activity related to discharge of waste-water, extraction of surface or ground water. This would not involve affecting the existing watercourses, watersheds or flow variability. Hence, this safeguarding principle will not be triggered.	NA
>>			
Principle 8.2 Erosion and/or Water Body Instability			

a. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion?	No	Not relevant	NA
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 the crops or other products. Therefore, the safeguarding principle under consideration will not be triggered by the project.	NA
>>			
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	Not relevant	
>>			
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	Not relevant	NA
>>			
Principle 9.4 Release of pollutants			

Could the Project potentially result in the release of pollutants to the environment?	No	Not relevant The project activity involves installation of improved cookstoves hence reduction in firewood amount.	NA
>>			
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	Not relevant	NA
>>			
Principle 9.6 Pesticides & Fertilisers			
Will the Project involve the application of pesticides and/or fertilisers?	No	Not relevant The project does not involve any activity that requires the use of pesticides or fertilizers.	NA
>>			
Principle 9.7 Harvesting of Forests			

Will the Project involve the harvesting of forests?	No	Not relevant. The project activity does not involve harvesting of forests. On the other hand, the project activity will utilize renewable biomasses, such as non-fossil residues from industrial or municipal waste.	NA
>>			
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	Not relevant. The project does not affect the quantity or nutritional quality of food available.	NA
>>			
Principle 9.9 Animal husbandry			
Will the Project involve animal husbandry?	No	Not relevant. The project does not involve animal husbandry.	NA
>>			

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	Not relevant. The project does not affect any of these aspects.	NA
>>			
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	No	Not Relevant The project area and its surroundings does not have any endangered species.	NA

present through transboundary affects?			
>>			

APPENDIX 2- CONTACT INFORMATION OF VPA IMPLEMENTER

Organization name	Green Grameen Infra Private Limited
Registration number with relevant authority	CIN: U70102MH2010PTC210549
Street/P.O. Box	#501-502, Plot No.522, CTS No. F/355, Makani Centre, 35th road, T.P.S. III
Building	Makani Centre
City	Bandra (W) Mumbai, Mumbai City
State/Region	Maharashtra
Postcode	400050
Country	India
Telephone	+91-22-60522638
E-mail	contact@greenwayappliances.com
Website	https://www.greenwayappliances.com/
Contact person	Mr. Achal Mehra
Title	CEO
Salutation	Mister
Last name	Mehra
Middle name	-
First name	Achal
Department	NA
Mobile	+91 97539 00000
Direct tel.	NA
Personal e-mail	achal.m@greenwayappliances.com

APPENDIX 3- LUF ADDITIONAL INFORMATION

Risk of change to the Project Area during Project Certification Period:	N/A
Risk of change to the Project activities during Project Certification Period:	N/A
Land-use history and current status of Project Area:	N/A
Socio-Economic history:	N/A
Forest management applied (past and future)	N/A
Forest characteristics (including main tree species planted)	N/A
Main social impacts (risks and benefits)	N/A
Main environmental impacts (risks and benefits)	N/A
Financial structure	N/A
Infrastructure (roads/houses etc):	N/A
Water bodies:	N/A
Sites with special significance for indigenous people and local communities - resulting from the Stakeholder Consultation:	N/A
Where indigenous people and local communities are situated:	N/A
Where indigenous people and local communities have legal rights, customary rights or sites with special cultural, ecological, economic, religious or spiritual significance:	N/A

APPENDIX 4-SUMMARY OF APPROVED DESIGN CHANGES

Please refer to [Design Changes Requirements](#) for more information on procedures governing Design Changes

Revision History

Version	Date	Remarks
2.0	4 May 2022	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
1.1	7 October 2020	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
1.0	10 July 2017	Initial adoption