



**Verified Carbon  
Standard**

## SMG – COOKSTOVE PROGRAM 20



|                      |                                                                                                                                                                                                                                                        |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project Title</b> | SMG - Cookstove Program 20                                                                                                                                                                                                                             |
| <b>Version</b>       | 1.5                                                                                                                                                                                                                                                    |
| <b>Date of Issue</b> | 17-September-2024                                                                                                                                                                                                                                      |
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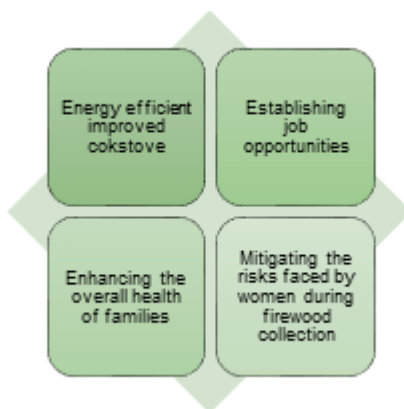
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# 1 PROJECT DETAILS

## 1.1 Summary Description of the Project

The central objective of this project activity is to improve the well-being of rural and tribal communities in the project boundary. This is achieved through the provision of improved cookstoves, job opportunities, and the promotion of awareness about greenhouse gas emissions. A core aspect of this community engagement effort is introducing and educating individuals on clean cooking practices, with the aim of reducing indoor air pollution and associated health risks for households in rural and tribal regions of project boundary. The location of project is Madhya Pradesh, India. Further location details are provided below in Section 1.10.

To achieve these aspirations, the project aims to replace traditional stoves, which are inefficient and releasing significant greenhouse gas emissions with project device. That exhibit higher thermal efficiency and generate lesser emission, thereby contributing to a reduction in air pollution. Nevertheless, the project's effects extend beyond environmental advantages, producing positive transformations within the community by providing:



The project activity is driven by a strong commitment to community well-being and holds official registration under the Companies Act with the Government of India. It will oversee the distribution of improved cookstoves manufactured by certified ICS project proponent, adhering to project standards. The central focus is to replace traditional mud stoves with efficient Improved Cook Stoves (ICS) that optimize combustion efficiency, conserving fuel and reducing emissions.

The project's starting point considers the ongoing use of firewood for thermal energy needs when the project is not yet operational. In its initial phase, the project aims to deliver 30,000 project devices, with the potential for adjustments during the implementation stage. The projected average 53,046 tCO<sub>2</sub>e and total reduction in greenhouse gas emissions resulting from this phase is estimated to be 371,319 tCO<sub>2</sub>e respectively, attributed to the deployment of 30,000 project devices.

The project activity has achieved a total of 61,146 tCO<sub>2</sub>e Emission Reduction during the first monitoring period i.e. 01-January-2023 to 30-September-2023.

| <u>Audit Type</u>                     | <u>Period</u>                                    | <u>Program</u> | <u>VVB Name</u>                                                     | <u>Number of years</u>           |
|---------------------------------------|--------------------------------------------------|----------------|---------------------------------------------------------------------|----------------------------------|
| Validation                            | 24- January--<br>2024                            | VCS            | LGAI<br>Technological<br>Center, S.A.<br>(Applus+<br>Certification) | -                                |
| Verification                          | 01-January-<br>2023 to 30-<br>September-<br>2023 | VCS            | LGAI<br>Technological<br>Center, S.A.<br>(Applus+<br>Certification) | 09 Months (Monitoring<br>Period) |
| <u>Total</u><br><u>(Validation)</u>   | 24- January--<br>2024                            | VCS            | LGAI<br>Technological<br>Center, S.A.<br>(Applus+<br>Certification) | -                                |
| <u>Total</u><br><u>(Verification)</u> | 01-January-<br>2023 to 30-<br>September-<br>2023 | VCS            | LGAI<br>Technological<br>Center, S.A.<br>(Applus+<br>Certification) | 09 Months (Monitoring<br>Period) |

## 1.2 Sectoral Scope and Project Type

This project involves the distribution of energy efficient cookstoves which fall under the category of efficiency improvements in thermal applications. The ICS which will be distributed under this project has a thermal efficiency of 35.4% or 0.354. The thermal efficiency is better than the traditional stoves and thus results in energy efficiency improvement and does not exceed the equivalent of 60 giga watt hour thermal (GWhth) per year of energy savings. Hence the project activity is eligible in Sectoral scope 3 i.e., energy demand under the scope of the VCS Program. The project activity is a grouped project where in multiple project instances will be added on the near future. The details are specified under section 1.4 of the Joint PD&MR.

|                              |                                                                               |
|------------------------------|-------------------------------------------------------------------------------|
| <b>Sectoral scope</b>        | 03                                                                            |
| <b>Project activity type</b> | Type II – Energy Efficiency Improvement Project<br>This is a grouped project. |

## 1.3 Project Eligibility

The project activity aims at distribution of 30,000 improved cookstoves to those households which were using less efficient stoves in the pre-project scenario. The project activity applies latest version of approved VCS methodology VMR0006 (v1.2) and its applicable tools. The project activity does not come under the category of those projects that can reasonably be assumed to have generated GHG emissions primarily for the purpose of their subsequent reduction, removal, or destruction. Also, the project activity does not come under the excluded type of projects listed in the Table 1 of section 2.1.3 of VCS standard v4.5. The scope of the VCS Program includes the seven Kyoto Protocol greenhouse gases emission and also Project activity supported by a methodology approved under the VCS Program mentioned in section 3.1 of Joint PD&MR. The project activity falls under Sectoral Scope 3, specifically in the realm of energy demand. This aligns with the eligibility criteria within the VCS Program's scope. The project activity excludes the circumstances indicated in Table 1 of VCS standard v4.5<sup>1</sup>.

As per the applied methodology, the aggregate energy savings of the project activity does not exceed the equivalent of 60 GWh per year or 180 GWh thermal per year in fuel input. Thus, the project is eligible under the VCS program. As per Registration and Issuance Process v 4.3 of Verra the project activity meets requirements under pipeline listing which includes complete project description, proof of contracting of the validation, and listing representation. Project proponent had a meeting with validation/verification body representing the beginning of the validation process. The project applies latest version VCS approved meth VMR0006 v1.2 and associated CDM methodology AMs II G v13.0.

## 1.4 Project Design

The project activity is a grouped project and additional information relevant to the design of the grouped project is mentioned below.

### Eligibility Criteria:

To incorporate new instances of project activities.

| No. | Criterion                                                                           | How the new project activity instances to comply                                                                                                                                                                                                                  |
|-----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | Meet the applicability conditions set out in the methodology applied to the project | New project activity instances (Energy Efficient Cook Stoves) will meet the applicability conditions set out in Section 3.2 of joint PD & MR where the target of the end-user is household and the project device deployed is at least 25% of thermal efficiency. |
| 2.  | Use the technologies or measures specified in the project description.              | The technology used for project activity is energy efficient improved cook stoves. Only energy efficient                                                                                                                                                          |

<sup>1</sup> VCS standard v4.5

|    |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |                                                                                                                                                                                                                                                      | cook stoves will be adopted in the project which will replace traditional cook stoves.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 3. | Apply the technologies or measures in the same manner as specified in the project description.                                                                                                                                                       | Only energy efficient cook stoves to be adopted in the project by replacing traditional cook stoves in household.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4. | Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area.                                                                                                                   | The new project activity instances will be installed within Madhya Pradesh, India and subject to the same baseline scenario determined in Section 3.4 of Joint PD&MR.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5. | Have characteristics with respect to additionality that are consistent with the initial instances for the specified project activity and geographic area.                                                                                            | <p>All new project activity instances will use the activity method for demonstration of additionality.</p> <p>Step 1: Regulatory Surplus</p> <p>There is no mandated government programme or policy in host country of this project activity ensuring the distribution/installation of new energy efficient cook stoves for each project activity instances.</p> <p>Step 2: Positive List</p> <p>The inclusion of new project activity instances will comply with positive list as it satisfies criterion 1 where it meets all the applicability conditions of the methodology. Project activity distributes stoves at zero cost to the end-user and has no other source of revenue other than the sale of GHG credits, the project activity shall be deemed additional.</p> <p>Project activity is not implemented as part of government schemes or supported by any multilateral funds; the project activity shall be deemed additional.</p> |
| 6. | Where a capacity limit applies to a project activity included in the project, no project activity instance shall exceed such limit. Further, no single cluster of project activity instances shall exceed the capacity limit, determined as follows: | <p>No project activity instance shall exceed the applicable limit, which is 180 GWh<sub>th</sub>/y.</p> <p>Since the project activity instance has the same model, hence expected annual energy saving for each instance is 0.0064GWh per year. As per section 2.2 para 4, AMS-II.G, the aggregate energy savings of a single project activity shall not exceed the</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p>Each project activity instance that exceeds one percent of the capacity limit shall be identified.</p> <p>Such instances shall be divided into clusters, whereby each cluster is comprised of any system of instances such that each instance is within one kilometer of at least one other instance in the cluster. Instances that are not within one kilometer of any other instance shall not be assigned to clusters.</p> <p>None of the clusters shall exceed the capacity limit and no further project activity instances shall be added to the project that would cause any of the clusters to exceed the capacity limit.</p>                                                                                                                            | <p>equivalent of 60 GWh per year in fuel input, which satisfies the condition.</p> <p>Each project activity instance is within the capacity limit of thermal energy saving of 180GWh<sub>th</sub>/y and does not exceed the capacity limit. Also, each project activity instance is not within 1 Km, thus cluster of project activity instances is not applicable.</p>                                                                                                |
| 7. | <p>Not be or have been enrolled in another VCS project.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>The project proponent declares that the respective project is not enrolled in any other GHG programs.</p> <p>Hence, the respective project is not enrolled in another VCS project.</p>                                                                                                                                                                                                                                                                             |
| 8. | <p>Adhere to the clustering and capacity limit requirements for multiple project activity instances as follows:</p> <ol style="list-style-type: none"> <li>1. The project proponent shall include in a singular project all project activity instances within ten kilometres of another instance of the same project activity and with the same project proponent</li> <li>2. Where a capacity limit applies to a project activity included in the project, no project activity instance shall exceed such limit. Further, no single cluster of project activity instances shall exceed the capacity limit, determined as follows: <ol style="list-style-type: none"> <li>a. Each project activity instance that exceeds one percent of the</li> </ol> </li> </ol> | <p>New project will adhere to the clustering and capacity limit requirements set out in Section 3.6.8 – 3.6.9 of the VCS Standard whereby the Project participant shall include all project activity instances within ten kilometers of another instance of the same project activity and with the same project proponent and where a capacity limit applies to a project activity included in the project, no project activity instance shall exceed such limit.</p> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  | <p>capacity limit shall be identified.</p> <p>b. Such instances shall be divided into clusters, whereby each cluster is comprised any system of such instances such that each instance is within one kilometer of at least one other instance in the cluster. Instances that are not within one kilometer of any other instance shall not be assigned to clusters.</p> <p>c. None of the clusters shall exceed the capacity limit and no further project activity instances shall be added to the project that would cause any of the clusters to exceed the capacity limit.</p> |  |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

Along with above points, the Inclusion of New Project Activity Instances follows below criteria.

Project activity instances complies the criteria of grouped project and are mentioned below:

| No. | Criterion                                                                                                                                                                                         | How the new project activity instances to comply                                                                                                                                                     |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | Occur within one of the designated geographic areas specified in the project description                                                                                                          | New project activity instances (Energy Efficient Cook Stoves) will be occurred in the designated geographic areas specified in the project description.                                              |
| 2.  | Comply with at least one complete set of eligibility criteria for the inclusion of new project activity instances. Partial compliance with multiple sets of eligibility criteria is insufficient. | New project activity instances will comply with the complete set of eligibility criteria as mentioned above for the inclusion of new project activity instances.                                     |
| 3.  | Be included in the monitoring report with sufficient technical, financial, geographic, and other relevant information to demonstrate compliance with the                                          | Project activity instances information will be included in the monitoring report with sufficient technical, financial, geographic, and other relevant information to demonstrate compliance with the |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                   |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | applicable set of eligibility criteria and enable sampling by the validation/verification body.                                                                                                                                                                                                                                                                                                                                                                                          | applicable set of eligibility criteria and enable sampling by the validation/verification body                                                                                                                                                    |
| 4. | Be validated at the time of verification against the applicable set of eligibility criteria                                                                                                                                                                                                                                                                                                                                                                                              | New project activity instances should be included by validating eligibility criteria as mentioned in Joint PD&MR.                                                                                                                                 |
| 5. | Have evidence of project ownership, in respect of each project activity instance, held by the project proponent from the respective start date of each project activity instance (i.e., the date upon which the project activity instance began reducing or removing GHG emissions)                                                                                                                                                                                                      | New project activity instances ownership needs to be used as an evidence from the start date of respective project activity instance.                                                                                                             |
| 6. | Have a start date that is the same as or later than the grouped project start date                                                                                                                                                                                                                                                                                                                                                                                                       | New project activity instances start date is after the start date of grouped project activity                                                                                                                                                     |
| 7. | Be eligible for crediting from the start date of the instance through to the end of the project crediting period (only). Note that where a new project activity instance starts in a previous verification period, no credit may be sought for GHG emission reductions or removals generated during a previous verification period (as set out in Section 3.4.4 of VCS standard version 4.1) and new instances are eligible for crediting from the start of the next verification period | <p>New project activity instances are eligible to claim credits from crediting period start date to the end of the project crediting period.</p> <p>Each project device is assigned a unique code to avoid double counting of project device.</p> |

## 1.5 Project Proponent

|                          |                                 |
|--------------------------|---------------------------------|
| <b>Organization name</b> | Shri Maa Marketing Pvt. Ltd.    |
| <b>Contact person</b>    | Mr. Deep Ram Gupta              |
| <b>Title</b>             | Vice President – Green Projects |

|           |                                                                      |
|-----------|----------------------------------------------------------------------|
| Address   | Plot 1, Sector C, Govindpura Industrial Area, Bhopal, India – 462023 |
| Telephone | +91- 989 375 8888                                                    |
| Email     | deep.gupta@shrimaagroup.in                                           |

## 1.6 Other Entities Involved in the Project

No other entities are involved hence section is not applicable.

|                     |                |
|---------------------|----------------|
| Organization name   | Not Applicable |
| Role in the project |                |
| Contact person      |                |
| Title               |                |
| Address             |                |
| Telephone           |                |
| Email               |                |

## 1.7 Ownership

The project proponent, Shri Maa Marketing Pvt. Ltd. has funded the entire project and has its full ownership including the VCUs.

During the registration of the project device, the participating household (end user or stove owner) signs a declaration highlighting that they agree to transfer ownership rights of carbon credits generated using project device to Shri Maa Marketing Pvt Ltd. The project stove is completely manufactured by Shri Maa Marketing. So, there is no such funder details/debt/equity involved.

## 1.8 Project Start Date

The start date of the project is 01-January-2023, distribution of the first project device to the beneficiary took place on 01- January-2023 as per distribution database i.e., the actual usage of the project device started.

## 1.9 Project Crediting Period

01-January-2023 to 31-December-2029, seven years renewable crediting period. This will be renewed 2 more times bringing the total crediting period to twenty-one years.

## 1.10 Project Scale and Estimated GHG Emission Reductions or Removals

The project activity falls under project category since the annual average GHG emission reductions are less than 300,000 tCO<sub>2</sub>e.

| Project Scale |   |
|---------------|---|
| Project       | × |
| Large project |   |

| Year                                                            | Estimated GHG emission reductions or removals (tCO <sub>2</sub> e) |
|-----------------------------------------------------------------|--------------------------------------------------------------------|
| Year 1: 01-January-2023 to 31-December-2023                     | 86,042                                                             |
| Year 2: 01-January-2024 to 31-December-2024                     | 73,415                                                             |
| Year 3: 01-January-2025 to 31-December-2025                     | 61,835                                                             |
| Year 4: 01-January-2026 to 31-December-2026                     | 51,229                                                             |
| Year 5: 01-January-2027 to 31-December-2027                     | 41,530                                                             |
| Year 6: 01-January-2028 to 31-December-2028                     | 32,672                                                             |
| Year 7: 01-January-2029 to 31-December-2029                     | 24,596                                                             |
| Total estimated ERRs during the first or fixed crediting period | 371,319                                                            |
| Total number of crediting years                                 | 7                                                                  |
| Average annual ERs                                              | 53,046                                                             |

### 1.11 Description of the Project Activity

The project activity involves distribution of improved cookstoves (ICS) which are approved by Environmental management systems (ISO 14001:2015), and BIS (Bureau Indian Standard). Project device will replace the less efficient traditional cook stoves used in the project area. The project device with average lifespan of 7 years and thermal efficiency of 35.40%.

The project device deployed is a single pot, portable stove which improves the efficiency of combustion and the thermal transfer to the pot compared to the traditional stoves. This is made possible by incorporating energy efficient technology which provides a conductive environment for clean and efficient combustion of wood. This technology also helps in substantially reducing the wood consumption compared to the traditional stoves. Also, the portability of the project devices is instrumental in fulfilling the room heating requirements of the households as they can transfer the stove anywhere in their household premises.

Technical specifications of Cook Stoves for all project activity instance from manufacturer Shri Maa Marketing Pvt. Ltd.

| Technical details |                          |                             |                                                                                                                                                                                                                                                                                        |
|-------------------|--------------------------|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A                 | Cook Stove type/Category | Shri Stove<br>Natural Draft |                                                                                                                                                                                                                                                                                        |
| B                 |                          | Utensil Stand               | Utensil stands are designed to keep in mind the different vessel sizes that communities may use on a daily basis. It goes through a surface chemical treatment process post manufacturing, including 6-tank dips and a hot galvanizing dip to enhance its life and prevent corrosion.  |
|                   |                          | Covering Body               | Outer covering body is designed for higher durability, keeping in mind more-than-average wear and tear of the stove. It is made up of aluminum, which prevents corrosion and lasts longer. A set of heat insulating bake-lite handles is attached to the body to maneuver stove easily |
|                   |                          | Insulating Skirt            | Insulating skirt is designed using the aerodynamics principle to ensure oxygen-rich air reaches the top of stove to provide                                                                                                                                                            |

|   |                              |              |                                                                                                                                                                                                                                                                                                                     |
|---|------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <b>Shri Stove Components</b> |              | maximum heat at the surface of the utensil for faster and more efficient cooking. It is also designed to maximize the insulation of heat and prevent from corrosion.                                                                                                                                                |
|   |                              | Heat Chamber | Heating chamber is made up of stainless steel to maximize durability and minimize corrosion. The outer chamber has diamond-cut holes to control the flow of air. It also has a layer of our proprietary geo-thermal coating which is approved by an accredited institute to further insulate heat and enhance life. |
|   |                              | Stove Base   | Sturdy stove stands are placed at the base of the stove that has precision holes for primary flow of air. It goes through a surface chemical treatment process post manufacturing, including 6- tank dips and a hot galvanizing dip to enhance its life and prevent corrosion.                                      |
|   |                              | Glass Wool   | For extra insulation of heat, we give an option to add a layer of high-quality glass wool surrounding the conical skirt. It prevents heat leakages throughout the surface and enables communities to cook more efficiently.                                                                                         |
|   |                              | Wood Stand   | A heavy-duty stand that is built using steel wires is included with the stove for users to be able to have the flexibility to use longer wood sticks, without having to chop them                                                                                                                                   |
| C | <b>Operational Life</b>      | 7 Years      |                                                                                                                                                                                                                                                                                                                     |
| D | <b>Parameters</b>            | <b>Unit</b>  | <b>Shri Stove</b>                                                                                                                                                                                                                                                                                                   |
|   | Weight                       | g            | 3500+                                                                                                                                                                                                                                                                                                               |
|   | Top Diameter                 | cm           | 26                                                                                                                                                                                                                                                                                                                  |
|   | Bottom Diameter              | cm           | 26                                                                                                                                                                                                                                                                                                                  |
|   | Stove top thickness          | cm           | 0.1                                                                                                                                                                                                                                                                                                                 |

|   |                                     |        |          |
|---|-------------------------------------|--------|----------|
|   | Combustion chamber diameter         | cm     | 12       |
|   | Combustion chamber height           | cm     | 22.3     |
|   | Length of primary air inlet         | cm     | 15.5     |
|   | Height of primary air inlet         | cm     | 12.9     |
|   | Area of primary air inlet           | sq.cm  | 200      |
|   | Number of primary air holes         | cm     | 21       |
|   | Pot rest height                     | cm     | 2        |
|   | Pot rest length                     | cm     | 8        |
|   | Distance of handles from stove body | cm     | 6.5      |
|   | Stove height above ground           | cm     | 4        |
|   | Length/Diameter of the Grate        | cm     | 12       |
|   | Number of Holes on the Grate        | nos.   | 56 holes |
|   | Length of Wood Rest                 | cm     | 30       |
|   | Skirt Height                        | cm     | 21.2     |
|   | Skirt Thickness                     | cm     | 0.1      |
|   | Skirt Diameter – Top                | cm     | 13       |
|   | Skirt Diameter – Bottom             | cm     | 19       |
| E | <b>Energy efficiency</b>            | 35.4 % |          |

Data collection of the ICS end-user:

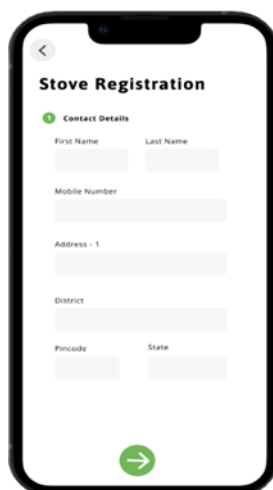
Each project device is assigned a distinct serial number, which is recorded within a mobile application developed by the project proponent. Throughout the distribution and installation process of the project device units, the project team employed mobile application to capture photographs of the installations, including the beneficiaries. The application also collect fundamental data for the purpose of tracking and monitoring, including:

- Name of the project device User
- Address of the project device User
- Contact Number of User
- The serial number of project device , wherever applicable along with pictures
- Date of installation

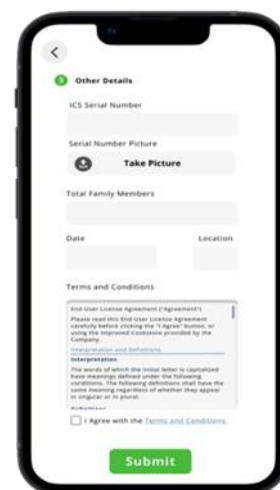
Here are some screenshots of the app used to register user and monitor project device usage:



People helping us distribute project device will be able to log-in to our app



App will help people register project device users with along with their



Stove serial number, its picture and terms & conditions for the project device

#### Measures undertaken:

The project proponent worked with local non-profits, head of tribes, and head of villages to identify families living in villages of the project area. Following parameters is set to select households: Type and condition of house, type of traditional stove, type of fuel used in project device, Source of livelihood goods, and households not covered under any government schemes related to clean cooking scheme.

The household filtered by these parameters will be provided with an improved cook stove (project device). These households considered as end users of project devices, are not being able to afford cook stoves and are also least interested in investment as plenty of firewood is available for free. So, in the absence of the project device the household would have continued with traditional cooking practice.

## 1.12 Project Location

The project initially undertakes within the boundary of Madhya Pradesh, India. The geographical boundary for the project activity Madhya Pradesh, India are in the form of extreme geographic coordinates as follows:

Latitude and longitude coordinates are - 23° 30' N, 80° 00' E<sup>2</sup>



## 1.13 Conditions Prior to Project Initiation

The conditions prior to the project activity is continued use of non-renewable biomass (firewood) to meet their cooking requirements. It is estimated that 90% of the rural India's population uses non-renewable biomass as cooking fuel<sup>3</sup>. The women spend over more than 10 hours every week collecting- firewood cooking<sup>4</sup>. The project activity aimed to reduce the use of biomass needed to meet their daily cooking needs. Initially, the project will be implemented in Madhya Pradesh, India. Over one-third population of Madhya Pradesh lives under poverty a recent report released by the NITI Aayog<sup>5</sup> terms its Multidimensional Poverty Index (MPI). The report says that MP is one of the poorest states in India. Roughly over 2.5 crore people in Madhya Pradesh are poor.<sup>6</sup> After conducting surveys among different communities in the project area, it was evident that a

<sup>2</sup> [https://www.mapsofindia.com/lat\\_long/madhyapradesh/](https://www.mapsofindia.com/lat_long/madhyapradesh/)

<sup>3</sup> <https://researchmatters.in/news/promoting-improved-cookstoves-can-benefit-rural-households>

<sup>4</sup> Baseline survey conducted by project proponent

<sup>5</sup> <https://niti.gov.in/sites/default/files/2023-08/India-National-Multidimensional-Poverty-Index-2023.pdf>

<sup>6</sup> <https://timesofindia.indiatimes.com/city/bhopal/1/3rd-population-under-poverty-in-madhya-pradesh/articleshow/87956675.cms>

substantial proportion of the population relies on traditional stoves for cooking. In the absence of project devices, beneficiaries continued using these traditional stoves for their daily cooking needs.

The baseline scenario in the project areas involves the predominant use of traditional cookstoves. These stoves have been in use for generations and are primarily utilized for cooking, heating, and boiling water. Baseline surveys were conducted to assess the practices in different region of Madhya Pradesh, India.

Baseline Survey identification, sampling and execution:

Survey conducted by project proponent in Sehore, Betul, Raisen, Bhopal, Jabalpur, Sagar, Damoh, Hoshangabad between 04-December-2022 to 29-December-2022 to analyse existing condition before implementation of project device. The sample size is determined, and a survey is undertaken to collect data including details of household, types of baseline device used, usage of fuel, and awareness about emissions and its effect in their health and well-being. To ensure the survey result is representative of the entire population. Sample size is calculated as per guidelines of CDM-EB67-A06-GUID “Sampling and survey for CDM project activities and programmes of activities” version 04.0. The surveys provided information on respondent family details, stove usage practices, fuel collection and consumption patterns, current issues faced, and perceptions of adopting a new Improved Cookstove (ICS) by trained local field teams (SMG Buddies).

Baseline Survey results:

From the baseline survey results, it was found that the majority of families use traditional stoves. The firewood is obtained directly from forests or their own farm, with some cases involving occasional purchases from other community members.

As per the baseline survey it was concluded that the average family size is 5 people per household and only one baseline stove was found in each household. The project activity aims to replace the baseline stove with the project stove. Hence, only one project stove is provided per household which is deemed sufficient to meet the energy demands of end users.

Traditional stoves are used for an average of more than 5 hours per day throughout the year, primarily for cooking, boiling water, and room heating. Additionally, more than 12 hours per week are spent on sourcing, carrying, and processing firewood. Women play a central role in stove usage and firewood gathering, with stove-related activities being primarily undertaken by female members in the community.

The baseline surveys revealed that all respondents were dissatisfied with their current stoves and expressed interest in receiving an improved cookstove (ICS). Respondents also highlighted the challenges of localized smoke, time-consuming tasks, and the significant quantity of firewood required. Reasons for continuing to use traditional stoves despite these issues included a lack of awareness about energy efficient stoves, the perceived expense of alternative fuel sources, the

abundance of firewood, and the manageability of their current stoves in terms of handling and maintenance.

Overall, the baseline surveys provide valuable insights into the baseline conditions and challenges associated with traditional cookstove usage in the project areas.

## 1.14 Compliance with Laws, Statutes and Other Regulatory Frameworks

This project is a voluntary initiative undertaken by the project proponent. There is no specific concern made about the improved cookstoves project from the above laws and regulations.

## 1.15 Participation under Other GHG Programs

### 1.15.1 Projects Registered (or seeking registration) under Other GHG Program(s)

The project is not registered under any other GHG programs.

### 1.15.2 Projects Rejected by Other GHG Programs

The project has not been rejected by any other GHG programs.

## 1.16 Other Forms of Credit

### 1.16.1 Emissions Trading Programs and Other Binding Limits

The project activity does not reduce GHG emissions from activities that are included in an emissions trading program or any other mechanism that includes GHG allowance trading.

### 1.16.2 Other Forms of Environmental Credit

The project activity has not sought or received another form of GHG-related credit, including renewable energy certificates. The project activity is eligible to participate under Gold standard ACR and CDM but not seeking any forms of credits.

### 1.16.3 Supply Chain (Scope 3) Emissions

Do the project activities specified in Section 1.11 affect the emissions footprint of any (improved cookstove) that are part of a supply chain?

☐ Yes

☒ No

Is the project proponent(s) or authorized representative a buyer or seller of the product(s) (improved cookstove) that are part of a supply chain?

☐ Yes

☒ No

Has the project proponent(s) or authorized representative posted a public statement on their website saying, "Carbon credits may be issued through Verified Carbon Standard project [4661] for the greenhouse gas emission reductions or removals associated with [Shri Maa Marketing Pvt Ltd] [Shri Stove]."

☐ Yes

☒ No

## 1.17 Sustainable Development Contributions

### 1.17.1 Sustainable Development Contributions Activity Description

The project makes diverse contributions that foster ongoing development, encompassing not only environmental but also societal, economic, and technological advancements within the country.

#### Economic benefits:

- Employment opportunities will be created within the project area through the maintenance of the improved cook stoves.
- The project will lead to decreased expenses related to purchasing fuel wood, if applicable, and/or an increase in the equivalent value of time, as it reduces the time spent collecting firewood.

#### Social Benefits:

- Enhances the well-being of women and children by mitigating household air pollution (HAP), thereby reducing health risks.
- Decreases cooking duration due to the efficient heat transmission of the materials used in the ICS, resulting in faster meal preparation.
- Improves the cooking environment by minimizing kitchen smoke and carbon residue.
- Alleviates the burden on women, who often spend extended hours collecting fuel wood, by reducing the need for fuel wood use.
- Enhances the quality of life within rural communities, allowing families to spend more time together during mealtimes.

#### Technological Benefits:

- Facilitates the introduction of modern technologies to rural communities.

- Shares knowledge with users, trainers, and technicians regarding the use and maintenance of ICSs.
- Inspires other communities in various states to embrace improved and more efficient practices.

Environmental benefits:

- Attenuates global and local environmental pollution and environmental deterioration by reducing the consumption of non-renewable biomass, thereby leading to a decline in greenhouse gas (GHG) emissions.
- Mitigates indoor pollution significantly; the ICS emits minimal smoke in comparison to the traditional stoves commonly used in most of the project area. This reduced smoke contributes to the reduction of respiratory illnesses, health risks, and medical expenses.

### 1.17.2 Sustainable Development Contributions Activity Monitoring

The project brings about positive impacts in social, environmental, economic, and technological aspects. Socially, it improves health and family time, reducing women's drudgery. Environmentally, it combats deforestation, lowers pollution, and improves indoor air quality. Economically, it creates jobs, lowers fuelwood costs, and increases wage time. Technologically, it introduces modern methods, transfers knowledge, and inspires other communities to adopt efficient practices. Overall, the project contributes significantly to holistic development.

Table 1: Sustainable Development Contributions

| Row number | SDG Target | SDG Indicator                                                       | Net Impact on SDG Indicator        | Current Project Contributions                                                                                                                                                                                                                                                                | Contributions Over Project Lifetime                                                                                                                                                                                                                                             |
|------------|------------|---------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1)         | 1.1        | 1.1.1 Proportion of population below the international poverty line | Implemented activities to decrease | No further changes was recorded during monitoring period. The implemented activity help beneficiary reducing fuelwood monthly expense.                                                                                                                                                       | 30,000 households who got high-energy efficient project improved cook stoves saved fuel wood and cooking time, thereby reducing fuel wood monthly expenses, and providing extra time for alternate jobs.                                                                        |
| 2)         | 3.9        | 3.9.1 Mortality rate from air pollution                             | Implemented activities to decrease | Implemented activities to improve indoor air quality. The distribution of the project device reduced the emission of fine particulate matter and GHG during cooking, resulting in better health as mentioned by the beneficiary during the monitoring survey conducted by Project Proponent. | Around 30,000 individuals, were able to enjoy improved indoor air quality due to the use of improved cook stoves. These cook stoves reduced the emission of fine particulate matter and GHG during cooking, resulting in better health and wellbeing for the people using them. |

|    |     |                                                                                     |                                                                                                                              |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                    |
|----|-----|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3) | 5.4 | 5.4.1 Time spent on unpaid domestic and care work, by sex, age & location           | Implemented activities to decrease                                                                                           | Distributed ICS to reduce drudgery, and time spent by women/girls in 30,000 households on cooking or care work. From survey conducted by Project Proponent it was found that, an average of 1hour/day, per household was reduced in rural areas based on the monitoring survey conducted by Project Proponent of sample household. | The provision of improved cook stoves through the project has enabled women and girls in the 30,000 households to spend less time cooking food. This is because the cook stoves have faster cooking times, giving them more time to engage in other activities such as employment. |
| 4) | 7.1 | 7.1.2- Proportion of population with primary reliance on clean fuels and technology | Implemented activity to increase the proportion of population with primary reliance on clean technology (fuel efficient ICS) | Distribution of 30,000 number of ICS thereby replacing the use of baseline inefficient cookstoves has resulted in increase in population with reliance on clean technology                                                                                                                                                         | The project has resulted in increased reliance on clean technology through distribution of 30,000 numbers of improved cookstoves.                                                                                                                                                  |

|    |        |                                                                                  |                                    |                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                           |
|----|--------|----------------------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5) | 8.3    | 8.3.1<br>Proportion of informal employment in non-agriculture employment, by sex | Implemented activities to increase | This project has employed 35 SMG Buddies and staff to distribute and manage project activity in the rural areas. By providing meaningful employment opportunities, Project Proponent contribute to the broader objective of fostering entrepreneurship, creativity, and innovation, as outlined in SDG 8.3.          | The project provides training to 35 individuals who are employed to manage project activities. This initiative not only increases employment opportunities in rural areas but also equips these individuals with the skills to secure jobs in the future. |
| 6) | 13.2.1 | Quantity of emission reductions achieved from the project activity               | Emission reductions                | The project activity involves distribution of energy efficient cookstove to the rural population. The ICS distributed will burn wood more efficiently thereby improving thermal transfer to pots, hence saving fuel wood. The emission reduction achieved during the monitoring period is 61,146 tCO <sub>2</sub> e. | The expected average annual GHG emission reduction is 53,046 tCO <sub>2</sub> e and total 371,319 tCO <sub>2</sub> e for the group project activity over the entire crediting period achieved from the project activity.                                  |

## 1.18 Additional Information Relevant to the Project

### Leakage Management

Leakage is accounted in line with the requirements of the latest version of VMR0006 v 1.2 and AMSII.G version13.

### Commercially Sensitive Information

No commercially sensitive information has been hidden from this public version of the project description.

### Further Information

No further information.

## 2 SAFEGUARDS

### 2.1 No Net Harm

No potential negative environmental or socio-economic impact have been identified for the project, according Ministry of Environment, Forest and climate change (MoEF&CC), Government of India, under the Environment Impact Assessment Notification vide S.O. 1533 (E)<sup>7</sup>, dated 14-September-2006. Instead, the project will bring positive impacts on the environmental and socio-economic aspects to the project area as mentioned in section 1.14.

### 2.2 Local Stakeholder Consultation

The Efficient Cookstove (Shri Stove) Distribution Program aims to promote the use of clean and efficient cookstoves in households, which has the potential to improve the health and livelihoods of thousands of people, reduce carbon emissions, and support sustainable development. To ensure the program's success, it is crucial to engage with stakeholders, and understand their needs, concerns, and suggestions.

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<sup>7</sup> [https://environmentclearance.nic.in/report/EIA\\_Notifications.aspx](https://environmentclearance.nic.in/report/EIA_Notifications.aspx)

#### Time and Mode of Invitation:

A stakeholder consultation meeting was organized to raise awareness about the program, which took place in month of December-2022 to February-2023, in different Districts of Madhya Pradesh<sup>8</sup>, India mentioned in Local Stakeholder report shared with VVB. The local stakeholders and attendees invited through invitation note shared prior 30 days of the meeting.

#### Meeting Brief:

During the meeting, project proponent representatives discussed the program's details and benefits, including the positive outcomes for the entitled community and village households. The stakeholder consultation report summarizes the findings of the consultations and provides recommendations for the project activity. After understanding the program outline, stakeholders showed keen interest and believed that it has the potential to benefit the community and the environment. These insights are used to improve the program's design and implementation, ensuring that it meets the needs of the community and has a positive impact on the health and livelihoods of households. LSC meetings were conducted in different locations during project activity.

The SMG Buddies explained the advantages of the project device. They've highlighted the points that how the project device is better than the traditional cookstoves. Overall, the outcome of the consultation was, that the stakeholders showed keen interest in adopting the project device, after understanding its environmental and health benefits

#### Outcome documentation:

SMG buddies gathered the feedback and recommendations from the local stakeholder after the consultation process via feedback forms provided to the attendees. The feedback form includes questionnaire related to traditional stove, social and environmental impact to understand the stakeholder opinion. At the end attendees are informed about the ongoing communication process, grievance channels and project activity information where they can reach out with their queries if arises. Multiple channels for resolving any issues were available, including field team members contact number and their regular visit with beneficiaries, local stakeholder, and a contact number on the box cover. No negative feedback was received during the meeting. PP meticulously document the outcomes of local stakeholder consultations through detailed meeting minutes, attendance records, and feedback forms. All inputs, concerns, and suggestions raised during the consultation are recorded. This documentation helps us track the progress of the project and ensures transparency.

However, the impact of the project activity extends beyond environmental benefits, bringing about positive changes within the community by:

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<sup>8</sup> Dates of Local Stakeholder Consultation conducted in different locations attached in Appendix and detailed report is shared with VVB

- Reduce rate of local deforestation by limiting the usage of fuelwood
- Empower women by saving time from faster cooking that would otherwise be spend on gathering wood and cooking
- Uplift communities by generating employment through project installation, monitoring, maintenance, and data collection efforts.

Improve health conditions of communities by reducing indoor Air Pollution through the usage of Shri Stove.

#### Feedback and Input:

All input received during the consultation, including feedback from meetings, was given due consideration. A thorough review of the documented meetings was conducted to extract valuable insights and suggestions. The project design was discussed in detail during the meeting to get relevant feedback, ensuring that stakeholder concerns and recommendations were integrated effectively.

**Considering Stakeholder Input:** PP carefully review all feedback gathered during consultations, whether it's related to the effectiveness of our improved cookstoves, training programs, or the overall project design. This helps us ensure that the program is aligned with community needs. For instance, based on feedback regarding the ease of using and maintaining the cookstoves, we PP enhanced training and support programs to include more hands-on demonstrations.

#### Updates to Project Design:

- **Training Program Adjustments:** Many community members expressed interest in receiving more comprehensive training to better understand how to maximize the efficiency of the cookstoves. In response, PP updated training curriculum to focus more on practical skills, emphasizing how to reduce fuel consumption and maintain the cookstoves effectively, thus ensuring that households get the full economic and health benefits.
- **Environmental Awareness Campaigns:** In some consultations, stakeholders highlighted the need for greater awareness of the environmental benefits of using the stoves. As a result, PP incorporated additional outreach into our campaigns(like brochure, physical demonstration) reinforcing the stoves' role in reducing greenhouse gas emissions and preserving local forests.

**Justification for Non-Updates:** In cases where specific inputs have not led to changes in project design, a clear explanation was provided. For example, while some feedback suggested including more advanced technologies within the stoves, such updates were not deemed feasible due to cost and accessibility concerns. Instead, focusing on enhancing the current stove models to ensure affordability and practicality for widespread use.

#### Ongoing Communication:

When queries were raised by attendees, they were addressed comprehensively, and solutions were provided promptly, ensuring that the project design and implementation aligned with the needs and expectations of the stakeholders. Frequent meetings were conducted with beneficiaries to ensure performance of project device. The grievance procedure includes contact details of the Local Stakeholder and field teams through phone and a website. Grievances were promptly reviewed and resolved, considering beneficiaries' concern. A detailed record maintained by the field team. Continuous efforts were made based on feedback of beneficiaries taken by project proponent via call verification/field team/ LS ensuring effective grievance resolution.

## 2.3 Environmental Impact

No negative environmental impacts have been identified from the project and environmental impact assessment (EIA) is not required for the project as Environmental Impact assessment (EIA) is the assessment of the environmental consequences of a plan, policy, program, or actual projects prior to the decision to move forward with the proposed action.

## 2.4 Public Comments

No public comments were received during 30 day period i.e. 07-December-2023 to 06-January-2024.

## 2.5 AFOLU-Specific Safeguards

This section is not applicable as the project is a non-AFOLU project.

# 3 APPLICATION OF METHODOLOGY

## 3.1 Title and Reference of Methodology

| Type (methodology, tool or module). | Reference ID, if applicable | Title                                                                       | Version |
|-------------------------------------|-----------------------------|-----------------------------------------------------------------------------|---------|
| Methodology                         | VMR0006                     | Energy efficiency and fuel switch measures in thermal application           | 1.2     |
| Sectoral Scope                      | Scope 03                    | Efficiency Improvement                                                      |         |
| Methodology                         | AMS II.G                    | Energy efficiency measures in thermal applications of non-renewable biomass | 13      |

|           |                   |                                                                              |    |
|-----------|-------------------|------------------------------------------------------------------------------|----|
| Tool      | TOOL30            | Calculation of the fraction of non-renewable biomass”                        | 4  |
| Guideline | CDM-EB67-A06-GUID | Sampling and Surveys for CDM Project Activities and Programme of Activities  | 4  |
| Standard  | CDM-EB50-A30-STAN | Sampling and surveys for CDM project activities and programme of activities, | 09 |

### 3.2 Applicability of Methodology

| Methodology ID                                                                              | Applicability condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Justification of compliance                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VMR0006<br>Energy Efficiency And Fuel Switch Measures In Thermal Applications Version - 1.2 | <ul style="list-style-type: none"> <li>• Increase thermal efficiency to reduce the consumption of non-renewable biomass</li> <li>• Switch from fossil fuel (coal or kerosene) to renewable biomass in new or existing improved thermal energy generation units</li> </ul> <p>The methodology is applicable to both ‘Projects’ and ‘Large Projects’ under the following conditions:</p> <ol style="list-style-type: none"> <li>1. All applicability conditions of the latest version of AMS II.G. must be met.</li> <li>2. The project activities must be implemented in households, community-based kitchens, institutions (e.g., schools), or small and medium-sized enterprises (SMEs)</li> </ol> | <ul style="list-style-type: none"> <li>• Complies, as the project device (Shri Stove) having thermal efficiency of 34.5%(0.345) which will reduce the consumption of non-renewable biomass</li> <li>• Not Applicable, as project activity involves only wood for thermal energy generation.</li> </ul> <ol style="list-style-type: none"> <li>1. Complies, and explained below.</li> <li>2. The project activity is implemented in households</li> </ol> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>3. For fuel switch activities, the following additional conditions must be met:</p> <p>Projects must exclusively use renewable biomass, and meet the following additional conditions:</p> <p>(a) If biomass residues are used, they have been left for decay or burned without energy recovery before the implementation of the project activity.</p> <p>(b) If biomass residues from a production process are used, the implementation of the project does not result in an increase of the processing capacity of raw input or any other substantial changes (e.g., product change) in this process.</p> <p>(c) If biomass from dedicated plantations is used, the applicability conditions of TOOL16 “Project and leakage emissions from biomass” must be satisfied</p> <p>(d) The renewable biomass sources must be documented in the project description and monitoring periods, including origin, quantities, and pre-project conditions. If the biomass is sourced from a third-party, proof of purchase must be provided (e.g., contractual agreements or purchase receipts).</p> | <p>3. Not applicable, as project activity doesn't involve any fuel switch (wood is used as fuel both in project and pre project scenario).</p> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                           |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                           | (e) More than one type of biomass may be used (e.g., briquettes and wood chips).                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| AMS II G<br>Energy efficiency measures in thermal applications of non-renewable biomass<br>Version - 13.0 | Applicable to the introduction of single pot or multi pot portable or in-situ cookstoves with rated efficiency of at least 25 per cent.                                                | The single pot improved cookstoves that are deployed in the project boundary have a thermal efficiency of 35.40% as per the manufacturer's specifications and hence the project activity complies to the applicability requirement of the methodology.                                                                                                                                                                                                                                           |
|                                                                                                           | The aggregate energy savings of a single project activity shall not exceed the equivalent of 60 GWh per year or 180 GWh thermal per year in fuel input.                                | Since the project activity instance has the same model, hence expected annual energy saving for each instance is 0.0064 GWh per year. As per section 2.2 para 4, AMS-II. G, the aggregate energy savings of a single project activity shall not exceed the equivalent of 60 GWh per year in fuel input, which satisfies the condition.                                                                                                                                                           |
|                                                                                                           | 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 proof that the use of biomass has been popular since 31st December 1989 is available through widespread documentations, one of reports by National Sample Survey Organization (NSSO) <sup>9</sup> shows that 79% of the Indian population were dependent on firewood and chips in the year 1987-88. This clearly shows that the project region, the rural part of India, has been dependent on firewood and other non-renewable biomass as a source of thermal energy before and after 1989. |
|                                                                                                           | For the specific case of biomass residues processed as a fuel (e.g., briquettes, wood chips), it shall be demonstrated that:<br>(a) It is produced using exclusively renewable biomass | The ICS is being introduced as an energy efficient replacement to the traditional stoves and to also reduce the use of non-renewable biomass.                                                                                                                                                                                                                                                                                                                                                    |

<sup>9</sup> [https://www.mospi.gov.in/download-reports?main\\_cat=Nzly&cat=All&sub\\_category=All](https://www.mospi.gov.in/download-reports?main_cat=Nzly&cat=All&sub_category=All)

|  |                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                     |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>(more than one type of biomass may be used).</p> <p>(b) The consumption of the fuel should be monitored during the crediting period and</p> <p>(c) Energy use for renewable biomass processing (e.g., shredding and compacting in the case of briquetting) may be considered as equivalent to the upstream emissions associated with the processing of the displaced fossil fuel and hence disregarded.</p> | <p>The consumption of the fuel used in project activity is monitored.</p> <p>The utilization of fuel along with their manufacturing and transportation is monitored to calculate the emissions.</p>                                                                                                                 |
|  | <p>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 and end-user locations (e.g. programme logo).</p>                                                                                                                                     | <p>Every improved cookstove that is distributed with unique serial number. During the distribution, the serial number and the exact location of ICS sold will be recorded in our app.</p> <p>No double counting of emission reductions occurred due to unique identifications of product and end-user location.</p> |
|  | <p>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.</p>                                                                                                                     | <p>The project proponent make sure that no double counting for carbon emission takes place in specified period. All the credit generated from the project is owned by the project proponent, i.e., Shri Maa Marketing Pvt Ltd.</p>                                                                                  |

| Tool                                                  | Applicability condition                                                       | Justification of compliance |
|-------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------|
| Tool 30: Calculation of the fraction of non-renewable | DNAs to submit region- or country-specific default fNRB values, following the | Not applicable              |

|                         |                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| biomass<br>Version 04.0 | procedures for development, revision, clarification and update of standardized baselines (SB procedures) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                         | Project participants to calculate project- or PoA-specific fNRB values                                   | <p>Complies, Calculate <math>f_{NRB}</math> by determining the share of renewable and non-renewable woody biomass in the total quantity of woody biomass consumption for the project area and compare the calculated values against the values for <math>f_{NRB}</math> reported in relevant scientific literature as mentioned in monitored parameter.</p> <p>Justification:</p> <p>Detailed calculation of <math>f_{NRB}</math> with reference data is mentioned in section 5.4 in accordance with TOOL30, v.04.0, utilizing the latest data sourced from the "Socio-Economic Contribution of Forests: Production and Consumption of Forest Resources in India" and the "Indian Forest Report 2021. As per Tool 30, Version 4, there is a difference in the values of calculated <math>F_{NRb}</math> and the values mentioned in Bailis, R.; Drigo, R.; Ghilardi, A. &amp; Masera, O. (2015) due to the latest data from India. The value of <math>F_{NRb}</math> in Bailis, R.; Drigo, R.; Ghilardi, A. &amp; Masera, O. (2015) is calculated based on data available until 2015, while the recently updated IPCC and India Forest Survey for 2021 provide revised and more current information. The PP used the most recent available data to calculate the <math>F_{NRb}</math> for Madhya Pradesh, India.</p> |

### 3.3 Project Boundary

| Source   | Gas             | Included? | Justification/Explanation |
|----------|-----------------|-----------|---------------------------|
| Baseline | CO <sub>2</sub> | YES       | Major Source              |

| Source  |                                          | Gas              | Included? | Justification/Explanation |
|---------|------------------------------------------|------------------|-----------|---------------------------|
| Project | Use of non-renewable biomass/fossil fuel | CH <sub>4</sub>  | YES       | Major Source              |
|         |                                          | N <sub>2</sub> O | YES       | Major Source              |
|         | Use of non-renewable biomass/fossil fuel | CO <sub>2</sub>  | YES       | Major Source              |
| Project | Use of non-renewable biomass/fossil fuel | CH <sub>4</sub>  | YES       | Major Source              |
|         |                                          | N <sub>2</sub> O | YES       | Major Source              |
|         | Use of non-renewable biomass/fossil fuel | CO <sub>2</sub>  | YES       | Major Source              |

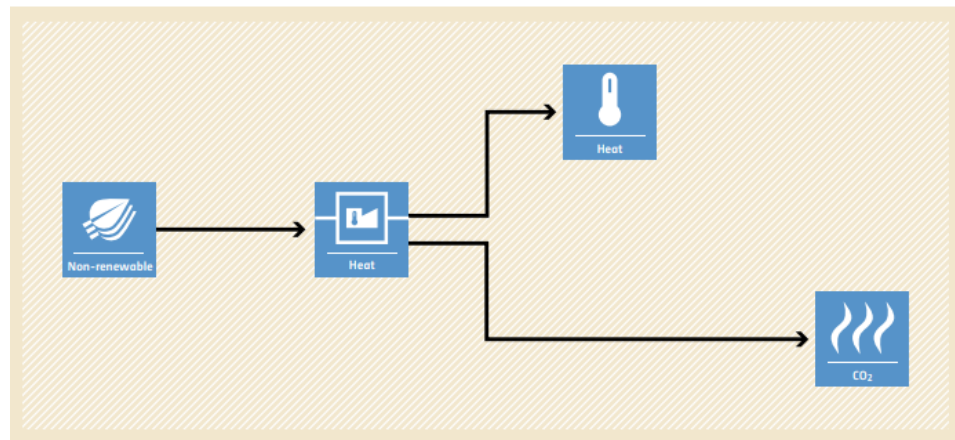
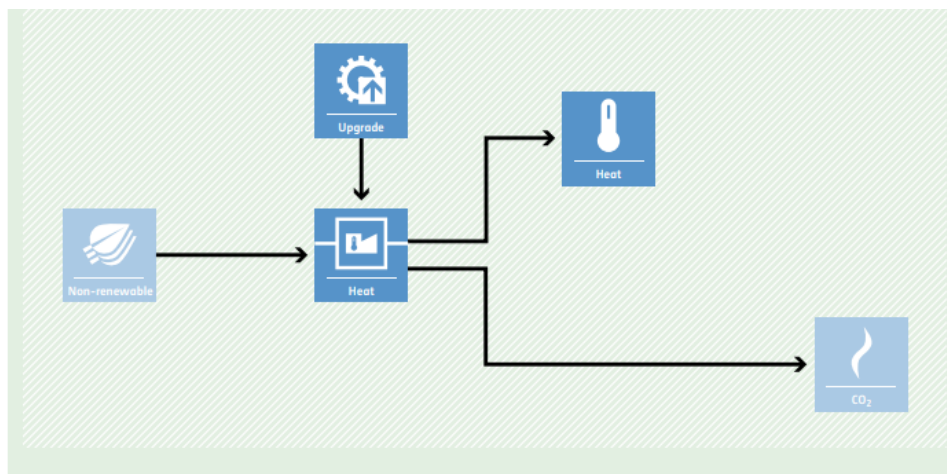


Fig - Baseline Boundary highlighting the usage of traditional cook stove



**Fig - Project Boundary highlighting the usage of Project Device**

### 3.4 Baseline Scenario

In the baseline scenario, the people were using the mud stoves and used wood as a fuel. From the usage of the traditional stoves people were facing several health problems due to indoor pollution, also the mud stoves consume more wood compared to the project device. The baseline scenario sample size, identification and outcomes are explained in section 1.13 and detailed report is shared with VVB. The baseline scenario for the project is the continued use of less efficient (traditional stoves) in the project area by the targeted people to meet their thermal energy needs as provided by our Improved Cookstoves (ICS) in absence of the project activity. As a result, rural households cannot afford or choose not to opt for improved cookstoves due to the aforementioned reasons, unless project device is made accessible to them. The baseline scenario sample size, identification and outcomes are explained in a detailed report shared with VVB.

As per the baseline survey it was concluded that the average family size is 5 people per household and only one baseline stove was found in each household. The project activity aims to replace the baseline stove with the project stove. Hence, only one project stove is provided per household which is deemed sufficient to meet the energy demands of end users.

Sample Size: as per guidelines of “Sampling and surveys for CDM project activities and programmes of activities” version 04.0<sup>10</sup>

In order to calculate the required sample size estimates for baseline survey, values for the proportions, mean values, and standard deviations are required. As per Guideline for Sampling and surveys for CDM project activities and programmes of activities, version 04.0, there are

<sup>10</sup> Meth\_GC48 (ver04.0).pdf (unfccc.int)

different ways available to obtain the estimates of the parameter of interest: Project proponent referred to option preliminary sample:

- Refer to the result of previous studies and use these results.
- In a situation where information from previous studies is not available, a preliminary sample as a pilot could be conducted and use that sample is used to provide the estimates.
- Use best guesses based on the researcher's own experiences.

### Proportion Parameter

To estimate the sample size for proportion parameters, the following equation is used:

| Sample size calculations using simple random sampling scheme                                                                                              |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| This spreadsheet presents calculation of sample sizes for Baseline included in the MP Cookstove Program. The parameters in question are:                  |                                                                                         |
| The sample size estimations follow Appendix 2 of Guideline for Sampling and surveys for CDM project activities and programmes of activities, version 04.0 |                                                                                         |
| Equations                                                                                                                                                 |                                                                                         |
| a) Baseline Sample Size Calculation                                                                                                                       |                                                                                         |
| The following equation is applied:                                                                                                                        |                                                                                         |
| where:                                                                                                                                                    | $n \geq \frac{1.645^2 N \times p(1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.645^2 p(1-p)}$ |
| $n$ = Sample size                                                                                                                                         |                                                                                         |
| $N$ = Population size (Total number of households/ICS)                                                                                                    |                                                                                         |
| $p$ = Expected proportion                                                                                                                                 |                                                                                         |
| 1.645 = Represents the 90% confidence required (In the case of 95% confidence, 1.96 shall be used)                                                        |                                                                                         |
| 0.1 = Represents the 10% relative precision                                                                                                               |                                                                                         |

Based on this sampling method, appropriate sample size for baseline survey was calculated.

|                                                                                                    |
|----------------------------------------------------------------------------------------------------|
| where:                                                                                             |
| $n = 38$                                                                                           |
| $N = 30,000$                                                                                       |
| $p = 0.9$                                                                                          |
| 1.645 = Represents the 90% confidence required (In the case of 95% confidence, 1.96 shall be used) |
| 0.1 = Represents the 10% relative precision                                                        |

Sample size achieved is 38 for the Baseline survey.

The baseline scenario sample size, identification and outcomes are explained in a detailed report shared with VVB.

### 3.5 Additionality

Activity Method:

The methodology uses activity method for the demonstration of additionality

Activity Method:

Step 1: Regulatory Surplus

There is no mandated government program or policy in the host country of this project ensuring the installation of domestic fuel-efficient cook stoves. The project is not mandated by any law, statute, or other regulatory framework, or for UNFCCC non-Annex I countries, any systematically enforced law, statute or other regulatory framework.

Step 2: Positive List

As per the section 3.2, this project meets the applicability conditions of the methodology which represents the positive list.

1. Project activity installs or distributes stoves that are accessible to the end-user and has no other source of revenue other than the sale of GHG credits, the project activity shall be deemed additional.
2. Project activity is not implemented as part of government schemes or supported by any multilateral funds,

Conclusion: As the project fulfils the conditions above, it is deemed additional.

### 3.6 Methodology Deviations

Not applicable as no methodology deviations took place.

## 4 IMPLEMENTATION STATUS

### 4.1 Implementation Status of the Project Activity

Project Proponent had distributed 30,000 project devices, the utilization of the project device has led to a decrease in the consumption of fuelwood and has brought about various advantages that have played a role in lowering greenhouse gas (GHG) emissions in the project areas. The distribution starting on 01-January-2023 with completing the distribution nearly 6 months after start of project activity, relevant information and database is shared with VVB. No events or activities due to project activity are impacting the GHG emission reductions or removals and monitoring.

## 5 ESTIMATED GHG EMISSION REDUCTIONS AND REMOVALS

### 5.1 Baseline Emissions

The methodology does not account for baseline emissions separately, but instead quantifies net emission reductions achieved by the project based on the reduced consumption of non-renewable biomass, as per methodology “Methodology for Installation of High Efficiency Firewood Cookstoves” VMR0006 v1.2 and the approach of “Energy efficiency measures in thermal applications of non-renewable biomass” AMS-II.G v13.0.

### 5.2 Project Emissions

The methodology does not account for project emissions separately, but instead quantifies net emission reductions achieved by the project based on the reduced consumption of non-renewable biomass, as per methodology “Methodology for Installation of High Efficiency Firewood Cookstoves” VMR0006 v1.2 and the approach of Energy efficiency measures in thermal applications of non-renewable biomass AMS-II.G v13.0.

### 5.3 Leakage

Leakage shall be considered in accordance with the applied methodology “VMR0006 v1.2: Methodology for Installation of High Efficiency Firewood Cookstoves”.

### 5.4 Estimated Net GHG Emission Reductions and Removals

Project activities that involve the replacement of baseline devices reliant on non-renewable biomass must employ the equations specified in AMS-II.G. (with the exception of Equations 1, 2, and 3) to calculate net GHG emission reductions. The subsequent equation serves as a substitute for Equations 1 and 2 of AMS-II.G.

$$ER_y = \sum_i \sum_j B_{y,savings,i,j} \times N_{0,i,j} \times n_{y,i,j} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times (EF_{wf,CO2} + EF_{wf,non\ CO2}) \times Adj_{LE} \times (1 - u_d) \quad (1)$$

Where:

|                       |                                                                                             |
|-----------------------|---------------------------------------------------------------------------------------------|
| $ER_y =$              | Emission reductions in year y (tCO <sub>2</sub> e)                                          |
| $B_{y,savings,i,j} =$ | Quantity of woody biomass that is saved per project device i and batch j in year y (tonnes) |

|                       |                                                                                                                              |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------|
| $NO_{i,j} =$          | Number of project devices of type i and batch j commissioned (number)                                                        |
| $ny_{i,j} =$          | Proportion of commissioned project devices of type i and batch j ( $NO_{i,j}$ ) that remain operating in year y (fraction)   |
| $\mu_y =$             | Adjustment to account for any continued use of pre-project devices during the year y                                         |
| $f_{NRB,y} =$         | Fraction of woody biomass that can be established as non-renewable biomass (%)                                               |
| $NCV_{biomass} =$     | Net calorific value of the non-renewable woody biomass that is substituted or reduced (TJ/tonne)                             |
| $ud =$                | Uncertainty deduction for fnrb (%)                                                                                           |
| $AdjLE =$             | Adjustment factor to account for leakage related to the non-renewable woody biomass saved by the project activity (fraction) |
| $EF_{wf,CO_2} =$      | CO <sub>2</sub> emission factor for non-renewable woody biomass (tCO <sub>2</sub> /TJ)                                       |
| $EF_{wf,non\ CO_2} =$ | Non-CO <sub>2</sub> emission factor for non-renewable woody biomass (tCO <sub>2</sub> e/TJ)                                  |

$$ER_y = \sum_i \sum_j ER_{y,i,j} - LE_y$$

Where:

$i$  Indices for the situation where more than one type of project devices is introduced to replace the pre - project devices

$j$  Indices for the situation where there is more than one batch of project device

$ER_y$  Emission reductions during year y in t CO<sub>2</sub>e

$ER_{y,i,j}$  Emission reductions by improved cook stove of type i and batch j during year y in t CO<sub>2</sub>e

$LE_y$  Leakage emissions in the year y (tCO<sub>2</sub>e)

The quantify of wood biomass saved  $B_{y,savings,i,j}$  due to implementation of improved cookstoves can be estimated by the following equation

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

Where:

$\eta_{old}$  Efficiency of the old devices being replaced by project devices of type I and batch I (fraction)

- $\eta_{new,y,i,j}$  Efficiency of the project device i and batch j (fraction)
- $B_{y=1,new,i,j,survey}$  Quantity of woody biomass used by project devices in tonnes per device of type i and batch j (tonnes)

For the scope our project area, following points are considered:

- The project activity distributed 30,000 Improved Cook Stoves in the first instance of project activity.
- Life span of Improved Cook Stoves is 7 years, as provided by the project device specifications.

#### **Calculation 1: Yearly new stove efficiency**

As per applied AMS II G v 13.0 “Energy efficiency measures in thermal applications of non-renewable biomass” 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. The thermal efficiency is 35.40 %, after linear decrease of 20 percent it will be 34.30 %.

• Output:

| <b>Year</b> | <b><math>\eta_{new,i,y}</math><br/>In %</b> |
|-------------|---------------------------------------------|
| 1           | 34.30%                                      |
| 2           | 32.10%                                      |
| 3           | 29.90%                                      |
| 4           | 27.70%                                      |
| 5           | 25.50%                                      |
| 6           | 23.30%                                      |
| 7           | 21.10%                                      |

### Calculation 2: Yearly number of operational stoves

$N_{0ij} \times N_{y,i,j}$  = Number of stoves in scope x (1-loss rate %)

Loss Rate: Annual stove loss rate is estimated at 5%. This is assumed as conservative as compared with survey results. This value will vary during actual verification based on survey results.

Example of calculation

If  $y = 1$ , for Project Stove

Stove operational = 30000 (All stoves are operational)

$Y=2$

$N_{y,i,j} = 30000 \times [1-0.05]$

=28,500

Outputs:

| STOVE OPERATIONAL (( $N_{0ij} \times n_{yij}$ )) |                                        |
|--------------------------------------------------|----------------------------------------|
| Year(y)                                          | ( $N_{0ij} \times n_{yij}$ )<br>Number |
| 1                                                | 30,000                                 |
| 2                                                | 28,500                                 |
| 3                                                | 27,075                                 |
| 4                                                | 25,721                                 |
| 5                                                | 24,435                                 |
| 6                                                | 23,213                                 |
| 7                                                | 22,053                                 |

### Calculation 3: Yearly wood biomass saved in tonne per Shri Stove per year

Assumptions:

- Upon initial survey with the households in our project region, it is concluded that estimated woody biomass consumption in households is ~4.02 kg, resulting into  $B_{y=1,new}$  to be 1.47tonne/stove/year; assuming stove being operational 365 days
- Efficiency of traditional stoves being replaced – 12.7%

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

Outputs:

| BIOMASS SAVED |                        |                  |              |                     |
|---------------|------------------------|------------------|--------------|---------------------|
| Year (y)      | $B_{y=1,new,i,survey}$ | $\eta_{new,i,y}$ | $\eta_{old}$ | $B_{y,savings,i,j}$ |
| 1             | 1.47                   | 34.30%           | 12.70%       | 2.50                |
| 2             | 1.47                   | 32.10%           | 12.70%       | 2.24                |
| 3             | 1.47                   | 29.90%           | 12.70%       | 1.99                |
| 4             | 1.47                   | 27.70%           | 12.70%       | 1.73                |
| 5             | 1.47                   | 25.50%           | 12.70%       | 1.48                |
| 6             | 1.47                   | 23.30%           | 12.70%       | 1.22                |
| 7             | 1.47                   | 21.10%           | 12.70%       | 0.97                |

#### Calculation 4: Yearly emission reductions by SHRI STOVE

$$ER_y = \sum_i \sum_j B_{y,savings,i,j} \times N_{0,i,j} \times n_{y,i,j} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times (EF_{wf,CO2} + EF_{wf,non\ CO2}) \times Adj_{LE} \times (1 - u_d) \quad (1)$$

Where:

$$f_{NRB,y} = 0.8628$$

$NCV_{wood}$  is 0.0156 TJ/ tonne, as per default value indicated in the (IPCC default value for wood fuel, 0.0156 TJ/tonne

$EF_{wf,2}$  to be 112 tCO<sub>2</sub>/TJ and  $EF_{wf, non\ CO2}$  to be 9.46 tCO<sub>2</sub>/TJ, as per default value indicated in the equation 2, methodology above

#### Calculation of the fraction of non-renewable biomass

As per equation 3, Tool 30 ver4,

$$H = HW \times N + CE + NE \quad \text{Equation (3)}$$

Where:

- HW** = Average consumption of wood fuel per household, including fuelwood and charcoal, in the applicable area in the relevant period (tonnes/household)
- CE** = Commercial woody biomass consumption for energy applications (e.g. commercial, industrial or institutional uses of woody biomass in ovens, boilers etc.) that are extracted from forests or other land areas in the applicable area in the relevant period (tonnes)
- NE** = Commercial woody biomass consumption for non-energy applications (e.g. construction, furniture) that are extracted from forests or other land areas in the applicable area in the relevant period (tonnes)
- N** = Number of households consuming wood fuel within the applicable area in the relevant period (number)

MAI<sub>forest, i</sub> and MAI<sub>other, i</sub> is calculated as per recent report of IPCC, Forest Land, Volume 4,

$$RB = \sum (MAI_{forest,i} \times (F_{forest,i} - P_{forest,i})) + \sum (MAI_{other,i} \times (F_{other,i} - P_{other,i})) \quad \text{Equation (4)}$$

Where:

- MAI<sub>forest,i</sub>** = Mean Annual Increment of woody biomass growth per hectare in sub-category *i* of forest areas in the relevant period (tonnes/ha/yr)
- MAI<sub>other,i</sub>** = Mean Annual Increment of woody biomass growth per hectare in sub-category *i* of other land areas in the relevant period (tonnes/ha/yr)
- F<sub>forest,i</sub>** = Extent of forest in sub-category *i* in the relevant period (ha)
- F<sub>other,i</sub>** = Extent of other land in sub-category *i* in the relevant period (ha)
- P<sub>forest,i</sub>** = Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within forest areas (in sub-category *i*) in the relevant period (ha)
- P<sub>other,i</sub>** = Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within other land areas (in sub-category *i*) in the relevant period (ha)
- i** = Sub-category *i* of forest areas and other land areas<sup>3</sup>

Table-4.9 and Extent of forest is calculated as per Chapter-13 India state of forest report-2021<sup>11</sup>.

$$f_{NRB} = \frac{NRB}{NRB + RB} \quad \text{Equation (1)}$$

Where:

- f<sub>NRB</sub>** = Fraction of non-renewable biomass in the applicable area in the relevant period (fraction or %)
- NRB** = Quantity of non-renewable biomass consumed in the applicable area in the relevant period (tonnes)
- RB** = Quantity of renewable biomass that is available on a sustainable basis in the applicable area in the relevant period (tonnes)

| Parameters                                                                                | Symbol | Description | Value  | Unit          |
|-------------------------------------------------------------------------------------------|--------|-------------|--------|---------------|
| Total consumption of woody biomass in the applicable area in the relevant period (tonnes) | H      | Calculated  | 30.539 | million tonne |

<sup>11</sup> <https://fsi.nic.in/forest-report-2021-details>

|                                                                                                                               |                  |            |                  |                     |
|-------------------------------------------------------------------------------------------------------------------------------|------------------|------------|------------------|---------------------|
| Quantity of renewable biomass that is available on a sustainable basis in the applicable area in the relevant period (tonnes) | RB               | Calculated | 4.190            | million tonne       |
| Quantity of non-renewable biomass consumed in the applicable area in the relevant period                                      | NRB              | Calculated | 26.348           | million tonne       |
|                                                                                                                               | F <sub>NRB</sub> |            | 86.28% or 0.8628 | Percent or Fraction |

Detailed calculation of fNRB with reference data is mentioned in joint PD & MR in accordance with TOOL30, v.04.0, utilizing the latest data sourced from the "Socio-Economic Contribution of Forests: Production and Consumption of Forest Resources in India" and the "Indian Forest Report 2021. As per Tool 30, Version 4, there is a difference in the values of calculated fNRB and the values mentioned in Bailis, R.; Drigo, R.; Ghilardi, A. & Masera, O. (2015) due to the latest data from India. The value of FNrb in Bailis, R.; Drigo, R.; Ghilardi, A. & Masera, O. (2015) is calculated based on data available until 2015, while the recently updated IPCC and India Forest Survey for 2021 provide revised and more current information. The PP used the most recent available data to calculate the FNrb for Madhya Pradesh, India."

| EMISSION CALCULATIONS |                          |                     |                              |                               |                                |                                |            |
|-----------------------|--------------------------|---------------------|------------------------------|-------------------------------|--------------------------------|--------------------------------|------------|
| Year                  | Biomass Savings (tonnes) | Wood NCV (TJ/tonne) | Non-renew Biomass (Fraction) | EF_CO2 + EF_nonCO2 (TJ/tonne) | (1 - <i>ud</i> ) (in fraction) | Operational Stoves (in number) | ER (tCO2e) |
| 1                     | 2.50                     | 0.0156              | 0.8628                       | 121.46                        | 0.74                           | 30,000                         | 86,042     |
| 2                     | 2.24                     | 0.0156              | 0.8628                       | 121.46                        | 0.74                           | 28,500                         | 73,415     |
| 3                     | 1.99                     | 0.0156              | 0.8628                       | 121.46                        | 0.74                           | 27,075                         | 61,835     |
| 4                     | 1.73                     | 0.0156              | 0.8628                       | 121.46                        | 0.74                           | 25,721                         | 51,229     |
| 5                     | 1.48                     | 0.0156              | 0.8628                       | 121.46                        | 0.74                           | 24,435                         | 41,530     |
| 6                     | 1.22                     | 0.0156              | 0.8628                       | 121.46                        | 0.74                           | 23,213                         | 32,672     |
| 7                     | 0.97                     | 0.0156              | 0.8628                       | 121.46                        | 0.74                           | 22,053                         | 24,596     |

| Year | Estimated baseline emissions or removals (tCO <sub>2</sub> e) | Estimated project emissions or removals (tCO <sub>2</sub> e) | Estimated leakage emissions (tCO <sub>2</sub> e) | Estimated net GHG emission reductions or removals (tCO <sub>2</sub> e) |
|------|---------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------|
|------|---------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------|

|                                     |                |          |          |                |
|-------------------------------------|----------------|----------|----------|----------------|
| 01-January-2023 to 31-December-2023 | 86,042         | 0        | 0        | 86,042         |
| 01-January-2023 to 31-December-2024 | 73,415         | 0        | 0        | 73,415         |
| 01-January-2023 to 31-December-2025 | 61,835         | 0        | 0        | 61,835         |
| 01-January-2023 to 31-December-2026 | 51,229         | 0        | 0        | 51,229         |
| 01-January-2023 to 31-December-2027 | 41,530         | 0        | 0        | 41,530         |
| 01-January-2023 to 31-December-2028 | 32,672         | 0        | 0        | 32,672         |
| 01-January-2023 to 31-December-2029 | 24,596         | 0        | 0        | 24,596         |
| <b>Total</b>                        | <b>371,319</b> | <b>0</b> | <b>0</b> | <b>371,319</b> |
| <b>Total Average Value</b>          | <b>53,046</b>  |          |          | <b>53,046</b>  |

## 6 MONITORING

### 6.1 Data and Parameters Available at Validation

|                                                                                              |                                                               |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| Data / Parameter                                                                             | NCV <sub>wood fuel</sub>                                      |
| Data unit                                                                                    | TJ/Tonne                                                      |
| Description                                                                                  | Net calorific value of the non-renewable wood biomass that is |
| Source of data                                                                               | Default as per applied approved methodology VMR0006 v1.2      |
| Value applied                                                                                | 0.0156                                                        |
| Justification of choice of data or description of measurement methods and procedures applied | Default value as per applied approved methodology             |
| Purpose of Data                                                                              | Calculation of emission reduction                             |
| Comment                                                                                      | NA                                                            |

|                                                                                              |                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | $f_{NRB}$                                                                                                                                                                                                                                                                                        |
| Data unit                                                                                    | Fraction                                                                                                                                                                                                                                                                                         |
| Description                                                                                  | Fraction of woody biomass saved by the project activity during year y that can be established as non-renewable biomass                                                                                                                                                                           |
| Source of data                                                                               | As per CDM TOOL30 v4.0                                                                                                                                                                                                                                                                           |
| Value applied                                                                                | 0.8628                                                                                                                                                                                                                                                                                           |
| Justification of choice of data or description of measurement methods and procedures applied | <p>This parameter must be determined ex-ante. As per Tool 30 Version 4, IPCC, Forest Land, Volume 4, <a href="#">SFR Chapter 7.pdf (fsi.nic.in)</a>, Table-4.9 and <a href="#">fsi.nic.in/isfr-2021/chapter-13.pdf</a> the value parameter fnrb is calculated.</p> $H = (HW \times N) + CE + NE$ |
| Purpose of Data                                                                              | Calculation of $ERY_{i,j}$                                                                                                                                                                                                                                                                       |

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comments | $f_{NRB} = \frac{NRB}{NRB + RB}$ <p style="text-align: right;">Equation (1)</p> <p>Where:</p> <p><math>f_{NRB}</math> = Fraction of non-renewable biomass in the applicable area in the relevant period (fraction or %)</p> <p>NRB = Quantity of non-renewable biomass consumed in the applicable area in the relevant period (tonnes)</p> <p>RB = Quantity of renewable biomass that is available on a sustainable basis in the applicable area in the relevant period (tonnes)</p> |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                              |                                                                               |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Data / Parameter                                                                             | EF <sub>WF, CO2</sub>                                                         |
| Data unit                                                                                    | tCO <sub>2</sub> /TJ                                                          |
| Description                                                                                  | CO <sub>2</sub> emission factor for the use of wood fuel in baseline scenario |
| Source of data                                                                               | Default as per applied approved methodology VMR0006 version 1.2               |
| Value applied                                                                                | 112                                                                           |
| Justification of choice of data or description of measurement methods and procedures applied | Default value from IPCC 2006                                                  |
| Purpose of Data                                                                              | Calculation of emission reductions                                            |
| Comments                                                                                     | -                                                                             |

|                  |                                                                                    |
|------------------|------------------------------------------------------------------------------------|
| Data / Parameter | EF <sub>WF, non-CO2</sub>                                                          |
| Data unit        | tCO <sub>2</sub> /TJ                                                               |
| Description      | Non- CO <sub>2</sub> emission factor for the use of wood fuel in baseline scenario |

|                                                                                              |                                                                 |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Source of data                                                                               | Default as per applied approved methodology VMR0006 version 1.2 |
| Value applied                                                                                | 9.46                                                            |
| Justification of choice of data or description of measurement methods and procedures applied | Default value from IPCC 2006                                    |
| Purpose of Data                                                                              | Calculation of emission reductions                              |
| Comments                                                                                     | -                                                               |

|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | $\eta_{old}$                                                                                                                                                                                                                                                                                                                                                                                                               |
| Data unit                                                                                    | Fraction                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description                                                                                  | Efficiency of baseline cookstove                                                                                                                                                                                                                                                                                                                                                                                           |
| Source of data                                                                               | Measured value as per VMR0006 version 1.2 in conjunction with AMS II G v13.0. Water Boiling Test was conducted                                                                                                                                                                                                                                                                                                             |
| Value applied                                                                                | 0.127                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Justification of choice of data or description of measurement methods and procedures applied | Test results from accredited laboratories(Maulana Azad National Institute of Technology (MANIT)) following national or international standards                                                                                                                                                                                                                                                                             |
| Purpose of Data                                                                              | Calculation of emission reductions                                                                                                                                                                                                                                                                                                                                                                                         |
| Comments                                                                                     | <p>Stove efficiency is assessed through the Water Boiling Test (WBT) in accordance with the guidelines specified in Table 2: Data/Parameter <math>\eta_{PJ,BL}</math>, Section 9.2 of VMR0006 Energy Efficiency and Fuel Switch Measures in Thermal Application v1.2.</p> <p>In accordance with version 4.2.3 of the WBT Protocol mentioned in the applied methodology<sup>12</sup> a minimum of three project devices</p> |

<sup>12</sup> <https://cleancooking.org/research-evidence-learning/standards-testing/protocols>

|  |                                                                                                                                                                                                           |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | with three tests per device were evaluated by a third-party accredited laboratory (Maulana Azad National Institute of Technology). The samples were randomly selected from the Baseline survey conducted. |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                              |                                                                                                                                                 |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | $\eta_p$                                                                                                                                        |
| Data unit                                                                                    | Fraction                                                                                                                                        |
| Description                                                                                  | Efficiency of project stove at the start of project activity                                                                                    |
| Source of data                                                                               | Manufacturer specification                                                                                                                      |
| Value applied                                                                                | 0.354                                                                                                                                           |
| Justification of choice of data or description of measurement methods and procedures applied | Test results from accredited laboratories (Maulana Azad National Institute of Technology (MANIT)) following national or international standards |
| Purpose of Data                                                                              | Calculation of emission reductions                                                                                                              |
| Comments                                                                                     | -                                                                                                                                               |

|                  |                                                                                                                  |
|------------------|------------------------------------------------------------------------------------------------------------------|
| Data / Parameter | $Adj_{LE}$                                                                                                       |
| Data unit        | Fraction                                                                                                         |
| Description      | Adjustment factor to account for leakage related to the non-renewable wood biomass saved by the project activity |
| Source of data   | The procedures from the latest version of AMS-II.G. must be applied.                                             |
| Value applied    | 0.95                                                                                                             |

|                                                                                              |                                                      |
|----------------------------------------------------------------------------------------------|------------------------------------------------------|
| Justification of choice of data or description of measurement methods and procedures applied | Procedure of underlying methodology AMS-II.G v 13.0. |
| Purpose of Data                                                                              | Calculation of emission reductions                   |
| Comments                                                                                     | -                                                    |

|                                                                                              |                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | $u_d$                                                                                                                                                                                                      |
| Data unit                                                                                    | %                                                                                                                                                                                                          |
| Description                                                                                  | Uncertainty deduction for fnrb                                                                                                                                                                             |
| Source of data                                                                               | As per VMR0006 v 1.2 “Energy Efficiency and Fuel Switch Measures In Thermal Applications”, Conservative discount factor based on uncertainty for fnrb.<br>The value of fnrb is estimated from Tool 30 v 4. |
| Value applied                                                                                | 0.26                                                                                                                                                                                                       |
| Justification of choice of data or description of measurement methods and procedures applied | The following uncertainty deduction must be applied, depending on the procedure for fnrb used from AMS-II.G.:<br>fnrb is calculated as per TOOL30 then,<br>$ud = 26\%$ (As per VMR0006 ver 1.2)            |
| Purpose of Data                                                                              | Calculation of emission reductions                                                                                                                                                                         |
| Comments                                                                                     | -                                                                                                                                                                                                          |

## 6.2 Data and Parameters Monitored

|                  |             |
|------------------|-------------|
| Data / Parameter | $N_{y,i,j}$ |
| Data unit        | Number      |

|                                                                 |                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description                                                     | Proportion of commissioned project devices of type i and batch j ( $NO_{i,j}$ ) that remain operating in year y (fraction)                                                                                                                                                                       |
| Source of data                                                  | Monitoring                                                                                                                                                                                                                                                                                       |
| Description of measurement methods and procedures to be applied | Measured directly or based on a representative sample. Sampling standard shall be used for determining the sample size to achieve 90/10 confidence precision according to the latest version of Standard for sampling and surveys for CDM project activities and program of activities.          |
| Frequency of monitoring/recording                               | At least once every two years                                                                                                                                                                                                                                                                    |
| Value applied                                                   | For ex-ante emission reduction calculation, it is assumed that the project will distribute up to 30,000 ICS for project activity instance                                                                                                                                                        |
| Monitoring equipment                                            | Monitoring Survey                                                                                                                                                                                                                                                                                |
| QA/QC procedures to be applied                                  | Measured directly based on a representative sample. Sampling standard is used for determining the sample size to achieve 90/10 confidence precision according to the latest version of Standard for sampling and surveys for CDM project activities and program of activities. where applicable. |
| Purpose of data                                                 | Calculation of emission reductions                                                                                                                                                                                                                                                               |
| Calculation method                                              | Proportion of operational stoves obtained from the survey is multiplied by the total commissioned stoves to arrive at this value                                                                                                                                                                 |
| Comments                                                        | -                                                                                                                                                                                                                                                                                                |

|                                                                 |                                                                                                                                                                                                 |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                | <b><math>NO_{i,j}</math></b>                                                                                                                                                                    |
| Data unit                                                       | Number                                                                                                                                                                                          |
| Description                                                     | Number of commissioned project devices of type i and batch j                                                                                                                                    |
| Source of data                                                  | Monitoring                                                                                                                                                                                      |
| Description of measurement methods and procedures to be applied | Measured directly or based on a representative sample. Sampling standard shall be used for determining the sample size to achieve 90/10 confidence precision according to the latest version of |

|                                   |                                                                                         |
|-----------------------------------|-----------------------------------------------------------------------------------------|
|                                   | Standard for sampling and surveys for CDM project activities and program of activities. |
| Frequency of monitoring/recording | -                                                                                       |
| Value applied                     | Fixed and recorded at the time of distribution of project device                        |
| Monitoring equipment              | -                                                                                       |
| QA/QC procedures to be applied    | -                                                                                       |
| Purpose of data                   | Calculation of emission reductions                                                      |
| Calculation method                | -                                                                                       |

|                                                                 |                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                | $\eta_{new,i,j}$                                                                                                                                                                                                                                                                                                                                                      |
| Data unit                                                       | Fraction                                                                                                                                                                                                                                                                                                                                                              |
| Description                                                     | Efficiency of the device of each type i and batch j implemented as part of the project activity                                                                                                                                                                                                                                                                       |
| Source of data                                                  | Manufacturer specification or Certification by a national standards body or an appropriate certifying agent recognized by that body                                                                                                                                                                                                                                   |
| Description of measurement methods and procedures to be applied | As per AMS II G v 13.0 "Energy efficiency measures in thermal applications of non-renewable biomass" To adopt Option V given in the methodology: "Efficiency of the improved cookstoves to be estimated using equation 5 of applied approved methodology where loss in efficiency per year is calculated, and therefore this parameter does not need to be monitored" |
| Frequency of monitoring/recording                               | Annual                                                                                                                                                                                                                                                                                                                                                                |

| Value applied                  | 0.354 at start of operations <sup>13</sup>                                                                                                                                                                                                                                                                                                                                             |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                | <table> <tr> <th>Year (y)</th><th><math>\eta_{\text{new},i,j}</math></th></tr> <tr> <td>Year 1</td><td>34.30%</td></tr> <tr> <td>Year 2</td><td>32.10%</td></tr> <tr> <td>Year 3</td><td>29.90%</td></tr> <tr> <td>Year 4</td><td>27.70%</td></tr> <tr> <td>Year 5</td><td>25.50%</td></tr> <tr> <td>Year 6</td><td>23.30%</td></tr> <tr> <td>Year 7</td><td>21.10%</td></tr> </table> | Year (y) | $\eta_{\text{new},i,j}$ | Year 1 | 34.30% | Year 2 | 32.10% | Year 3 | 29.90% | Year 4 | 27.70% | Year 5 | 25.50% | Year 6 | 23.30% | Year 7 | 21.10% |
| Year (y)                       | $\eta_{\text{new},i,j}$                                                                                                                                                                                                                                                                                                                                                                |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Year 1                         | 34.30%                                                                                                                                                                                                                                                                                                                                                                                 |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Year 2                         | 32.10%                                                                                                                                                                                                                                                                                                                                                                                 |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Year 3                         | 29.90%                                                                                                                                                                                                                                                                                                                                                                                 |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Year 4                         | 27.70%                                                                                                                                                                                                                                                                                                                                                                                 |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Year 5                         | 25.50%                                                                                                                                                                                                                                                                                                                                                                                 |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Year 6                         | 23.30%                                                                                                                                                                                                                                                                                                                                                                                 |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Year 7                         | 21.10%                                                                                                                                                                                                                                                                                                                                                                                 |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Monitoring equipment           | Not Applicable                                                                                                                                                                                                                                                                                                                                                                         |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| QA/QC procedures to be applied | Not Applicable                                                                                                                                                                                                                                                                                                                                                                         |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Purpose of data                | Calculation of emission reductions                                                                                                                                                                                                                                                                                                                                                     |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Calculation method             | As per equation para 37 of AMS II G: 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                                                                                                                                                                             |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Comments                       | 2.2 % of linear decrease in efficiency is applied                                                                                                                                                                                                                                                                                                                                      |          |                         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |

|                  |                                                                                                                                                                                                  |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter | $B_{y=1, \text{ new},i,j,\text{survey}}$                                                                                                                                                         |
| Data unit        | Tonnes                                                                                                                                                                                           |
| Description      | Annual quantity of wood biomass used by improved cookstoves in tones per device of type i and batch j, determined in the first year of the implementation of the project through a sample survey |
| Source of data   | Monitoring Data                                                                                                                                                                                  |

<sup>13</sup> Calculated as per AMS II G" Energy efficiency measures in thermal applications of non-renewable biomass" version 13 and mentioned in ER sheet 'stove efficiency'

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description of measurement methods and procedures to be applied</b> | <p>Minimum sample size of each type i and batch j should be in line with the latest version of Standard for sampling and surveys for CDM project activities and programme of activities or guidelines provided in methodology Section 8.4 option (b).</p> <p>Determined in the first year of the introduction of the devices (e.g. during the first year of the crediting period, <math>y=1</math>) through measurement campaigns at representative households and/or sample survey. Sample surveys to estimate this parameter, that are solely based on questionnaires or interviews (i.e. that do not implement measurement campaigns) may only be used if the following conditions are satisfied. (i) Baseline cookstoves have been completely decommissioned and only improved cookstoves are exclusively used in the project households; (ii) If multiple devices are used in the project, it is possible from the results of the survey questions to clearly differentiate the quantity of firewood being used by each device. In other words, if more than one device, or another device that consumes firewood, are in use in project households, then the sample survey needs to distinguish the quantity of firewood used by the project device and the other devices that use firewood.</p> |
| <b>Frequency of monitoring/recording</b>                               | Determined in the first year of project implementation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Value Applied</b>                                                   | 1.650 tonnes/device/year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Monitoring equipment</b>                                            | Monitoring Survey                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>QA/QC procedures to be applied</b>                                  | Not Applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Purpose of data</b>                                                 | Calculation of emission reductions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Calculation method</b>                                              | Not Applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Comments</b>                                                        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Data / Parameter</b>                                                | Life Span                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Data unit</b>                                                       | Number of years                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|                                                                        |                                                                                                                                                                                                                          |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description</b>                                                     | The operating lifetime of the project device. The life span should be reported if the methodology equation 5 is adopted to determine the project stove efficiency                                                        |
| <b>Source of data</b>                                                  | Manufacturer specification                                                                                                                                                                                               |
| <b>Description of measurement methods and procedures to be applied</b> | The data source as per manufacturer specification                                                                                                                                                                        |
| <b>Frequency of monitoring/recording</b>                               | Not Applicable as the project life span is of 7 years as per manufacturers specifications.                                                                                                                               |
| <b>Value Applied</b>                                                   | 7                                                                                                                                                                                                                        |
| <b>Monitoring equipment</b>                                            | Not Applicable                                                                                                                                                                                                           |
| <b>QA/QC procedures to be applied</b>                                  | Not Applicable                                                                                                                                                                                                           |
| <b>Purpose of data</b>                                                 | Calculation of emission reductions                                                                                                                                                                                       |
| <b>Calculation method</b>                                              | Not Applicable                                                                                                                                                                                                           |
| <b>Comments</b>                                                        | The cookstoves will be replaced with new ones at the end of technical lifespan of the cookstove. However, in case of any damages, the stoves will be checked and repaired/ replaced based on the severity of the damage. |

|                         |                                                                                                                                                                                                                                              |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Data / Parameter</b> | Date of commissioning of batch j                                                                                                                                                                                                             |
| <b>Data unit</b>        | Date                                                                                                                                                                                                                                         |
| <b>Description</b>      | To establish the date of commissioning, the Project Participant may opt to group the devices in “batches” and the latest date of commissioning of a device within the batch shall be used as the date of commissioning for the entire batch. |
| <b>Source of data</b>   | Project Database                                                                                                                                                                                                                             |

|                                                                 |                                                                                                                                                   |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Description of measurement methods and procedures to be applied | Fixed and recorded at the time of commissioning/distribution of the project device                                                                |
| Frequency of monitoring/recording                               | Not Applicable as the batch is recorded during the distribution of the entire population (referred as number of total project device distributed) |
| Value Applied                                                   | Start Date 01-January-2023                                                                                                                        |
| Monitoring equipment                                            | Not Applicable                                                                                                                                    |
| QA/QC procedures to be applied                                  | Not Applicable                                                                                                                                    |
| Purpose of data                                                 | Calculation of emission reductions                                                                                                                |
| Calculation method                                              | Not Applicable                                                                                                                                    |
| Comments                                                        | -                                                                                                                                                 |

|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                | $\mu_y$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Data unit                                                       | Fraction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Description                                                     | Adjustment to account for any continued use of pre-project devices during the year y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Source of data                                                  | Monitoring survey                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Description of measurement methods and procedures to be applied | <p>This parameter should be monitored using one of the following methods:</p> <p>The baseline cookstoves are decommissioned and no longer used, as determined by the monitoring survey its value is 1.</p> <p>If both the improved cookstove and baseline cookstoves are used together then surveys shall be conducted to record the average continued operation of baseline cookstoves in a sample of households. The surveys should be designed to capture the cooking habits and stove usage of households in the region, including quantification of use of baseline cookstoves, by</p> |

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   | formulating questions and/or collecting evidences to determine the frequency of usage of both the improved cookstoves and baseline cookstoves.                                                                                                                                                                                                                                                                              |
| Frequency of monitoring/recording | At least once in 2 years                                                                                                                                                                                                                                                                                                                                                                                                    |
| Value Applied                     | 1                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Monitoring equipment              | Monitoring survey                                                                                                                                                                                                                                                                                                                                                                                                           |
| QA/QC procedures to be applied    | A 95 /10 confidence / margin of error shall be achieved for the sampling parameter irrespective of annual / biennial monitoring frequency as per para 22 of Standard: Sampling and surveys for CDM project activities and program of activities, Version 09.0. In the case the desired precision is not met, lower bound values shall be used against repeating the survey to determine the operational fraction of stoves. |
| Purpose of data                   | Calculation of emission reductions                                                                                                                                                                                                                                                                                                                                                                                          |
| Calculation method                | Not Applicable                                                                                                                                                                                                                                                                                                                                                                                                              |
| Comments                          | The baseline stoves are decommissioned during the distribution of the project devices. However, regular monitoring will be conducted by the field team to check the regular usage and the grievances related to the project devices.                                                                                                                                                                                        |

### 6.3 Monitoring Plan

Monitoring in an Improved Cook stove Distribution Program is essential for measuring performance, ensuring quality, assessing impact, and making informed decisions to enhance the program's effectiveness and sustainability. Here the main purpose is to ensure a successful monitoring of carbon emission reduction in the above-mentioned project area. The overall monitoring will be conducted by project participant: Shri Maa Marketing Pvt Ltd.

Monitoring is crucial in an Improved Cookstove Distribution Program for several reasons, such as Performance Evaluation, Resource Allocation, Feedback and Improvement etc.

The project participant has created a cloud-based mobile application specifically for collecting data from end-users, which includes customer contact information and, when applicable, photographs of customers receiving Improved Cookstoves (ICS). The following details are stored on the app and are accessible in real-time for analysis:

- Customer's name
- Customer's address
- Customer's phone number
- Customer's government identification
- Total number of family members
- Date of Distribution

After distribution monitoring will involve choosing a sample of ICS customers from several districts/ villages where ICS has been distributed and these locations will be visited for verification. Other methods that will be used for monitoring will involve calls to random customers to get updates about ICS and its performance. All the data collection and handling will be done in a transparent way on the mobile application and will be available on the cloud server to be accessed anytime. If any uncertainty occurs, it will be rectified, and a revised monitoring plan will be implemented.

Attaching below the screenshots of mobile application that will be used to store, analyze, and monitor customer and ICSs:



Figure 1 Screenshot of mobile application

The Monitoring Plan applied in this project involves several key elements that ensure that the Project Proponent and/or project Implementer have high-quality, unbiased, and reliable information regarding the performance of the project in terms of implementation and outcomes,

and for the purposes of calculating Verified Carbon Units (VCUs) following VMR 0006 version 1.2 on the basis of the amount of fuel saved by the ICS in the project activity. The key elements are the following: -

1. Data collection procedures
2. Distribution and Monitoring Database
3. Spot Checking of ICS (ongoing)
4. Sample Plan for the Monitoring Survey
5. Data Quality, Consistency and Duplication Checks
6. Monitoring Reporting

**User Registration:**

- Project implementers collect necessary information during the registration process.
- Information may be collected through physical cards, filled by project staff, or Application.
- Accuracy is verified, and additional clarifications are sought if needed.

**Data Logging:**

- Trained staff input data into the database manually and automatically (application).
- Information is double-checked, and duplicates are investigated and corrected or excluded.

**Spot-Checking (Ongoing):**

- Field staff randomly check units in the database against factual evidence in the field.
- Inconsistencies are updated; unused stoves are marked and excluded from emission calculations.

**Monitoring:**

- Project implementers follow PD requirements to collect necessary information for monitoring reports.

**Monitoring Report Preparation:**

- The project implementers or Project Proponent prepare the final monitoring report for VVB verification.
- A copy of the report is retained by the Project Proponent.

**Overall Coordination:**

- The Project Proponent coordinates and manages each project implementer, ensuring adherence to the monitoring plan.

- Regular audits throughout the project lifespan ensure stove functionality and determine their lifespan.
- Training is provided to the field team prior to the monitoring
- Regular campaigns and trainings provided for the optimum uses of project device.

As per the Guideline for Sampling and Surveys for CDM Project Activities and Programme of Activities, version 04, the sampling plan is the following:

(1) **Sampling Design:**

Due to the large number of ICS envisioned to be distributed as part of the project activity, it is not economically feasible to monitor each individual ICS unit distributed. Therefore, representative sampling will be undertaken as part of a project instance-wide Sampling Plan (by grouping and sampling across project activities) that is designed in line with the requirements of the “Sampling and surveys for CDM project activities and programme of activities”, version 04.

o **Objective and Reliability Requirements:**

The objective is to obtain an unbiased and reliable estimate of the proportion or mean value of the following key variables over the course of the crediting period. As per CDM Methodology AMS-II.G, 90/10 confidence/precision shall be applied for annual sampling requirement and 95/10 for biennial sampling inspection. As per Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities, 90/10 confidence/precision to be adopted for small-scale project and 95/10 for large-scale project. Given that the size of the project is under the category of small projects, hence 90/10 confidence/precision shall be adopted for all parameters unless the average annual emission reductions of the project below the threshold

**Monitored Parameters:**

| S. No. | Monitoring Parameters    | Sampling Parameters                                        | Parameter Type | Monitoring Frequency                                   |
|--------|--------------------------|------------------------------------------------------------|----------------|--------------------------------------------------------|
| 1.     | $N_{y,i,j}$              | Proportion of ICS still in operation                       | Proportion     | Biennially                                             |
| 2.     | $B_{y=1,new,i,j,survey}$ | Daily consumption of woody biomass per ICS                 | Mean Value     | Determined in the first year of project implementation |
| 3.     | $\mu_y$                  | Adjustment to account for any continued use of pre-project | Proportion     | Biennially                                             |

|    |                                  |                                                                                                 |                            |                                                                  |
|----|----------------------------------|-------------------------------------------------------------------------------------------------|----------------------------|------------------------------------------------------------------|
|    |                                  | devices during the year y                                                                       |                            |                                                                  |
| 4. | Date of commissioning of batch j | Once at the time of installation of batch of type of stove                                      | Distribution database      | Once at the time of installation of batch of type of stove       |
| 5. | $NO_{i,j}$                       | Fixed and recorded at the time of distribution of project device                                | Distribution database      | Fixed and recorded at the time of distribution of project device |
| 6. | $\eta_{new,i,j}$                 | Efficiency of the device of each type i and batch j implemented as part of the project activity | Manufacturer specification | Annually                                                         |
| 7. | Life Span                        | Operating lifetime of the project device                                                        | Manufacturer specification | Fixed and recorded at the time of distribution of project device |

#### Target Population:

The target population will be set of ICS deployed under the project.

#### Sampling Method:

The project involves distribution of ICS throughout the project area where it will replace the traditional cookstoves and the traditional cooking practices. The population is heterogeneous in nature i.e., common technology with similar operating characteristics but dispersed i.e., distribution of ICS is spread across different districts within Madhya Pradesh. The population consists of sub-populations which are homogeneous called Strata. The survey of sample of representative population was conducted after the installation of project device during the month of March- 2023 to April -2023. The characteristics of population (for example quantity of biomass consumed) are more similar within the stratum (ICS of same type, vintage and zone in which they are operating) than across the strata. Therefore, Stratified Sampling technique will be used to conduct sampling survey among ICS batches.

The populations of each batch will be combined together, the sample size is determined, and a single survey will be undertaken to collect data. To ensure the survey result is representative of the entire population, the dissimilarity (such as ICS type, vintage and zone in which they are operating) within the included CPAs will be taken into account in the sample size calculation. The ICS of same type, vintage and zone in which they are operating will be grouped in the same strata. Samples will be drawn by using the random number generator.

To determine the parameters, sampling will involve the following approaches (outcome in brackets):

|                             |                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $N_{y,i,j}$                 | Visual inspection of the premises to see if ICS is operational and in use.<br>Interview with end user if required to verify that ICS is still in use (Yes/No)                                                                                                                                                                         |
| $B_{y=1,new,i,j}$<br>survey | Interview with end user and estimate the daily consumption of wood biomass of ICS (Daily consumption of wood biomass). This parameter is monitored as per the measurement procedures of data/ parameter table 18 of AMS II G v13.0. The wood consumption is measured through a calibrated weighing balance for the sample households. |

### Sample Size:

The procedure to determine the sample of households will ensure that they adequately represent the broader project population, minimizing sampling error. Using, a 90 per cent confidence level, and a 10 per cent margin of error, a random sample will be selected from each stratum.

In order to calculate the required sample size estimates, values for the proportions, mean values, and standard deviations are required. As per Guideline for Sampling and surveys for CDM project activities and programmes of activities, version 09.0, there are different ways available to obtain the estimates of the parameter of interest:

- Refer to the result of previous studies and use these results.
- In a situation where information from previous studies is not available, a preliminary sample as a pilot could be conducted and use that sample is used to provide the estimates.
- Use best guesses based on the researcher's own experiences.

### Proportion Parameter

To estimate the sample size for proportion parameters, the following equation is used for

#### **A) Monitoring survey:**

|                                                                                                    | Equations                                                                               |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <b>a) Parameters <math>N_{y,l,j}</math> and</b>                                                    |                                                                                         |
| The following equation is applied:                                                                 | $n \geq \frac{1.645^2 N \times p(1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.645^2 p(1-p)}$ |
| where:                                                                                             |                                                                                         |
| $n$ = Sample size                                                                                  |                                                                                         |
| $N$ = Population size (Total number of households/ICS)                                             |                                                                                         |
| $p$ = Expected proportion                                                                          |                                                                                         |
| 1.645 = Represents the 90% confidence required (In the case of 95% confidence, 1.96 shall be used) |                                                                                         |
| 0.1 = Represents the 10% relative precision                                                        |                                                                                         |
| <b>b) Parameter <math>B_{y=1,new,l,j,survey}</math></b>                                            |                                                                                         |
| The following equation is applied:                                                                 | $n \geq \frac{1.645^2 N \times p(1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.645^2 p(1-p)}$ |
| where:                                                                                             |                                                                                         |
| $n$ = Sample size                                                                                  |                                                                                         |
| $N$ = Population size (Total number of households/ICS)                                             |                                                                                         |
| $p$ = Expected proportion                                                                          |                                                                                         |
| 1.645 = Represents the 90% confidence required (In the case of 95% confidence, 1.96 shall be used) |                                                                                         |
| 0.1 = Represents the 10% relative precision                                                        |                                                                                         |

where:

$n = 38$

$N = 30,000$

$p = 0.9$

1.645 = Represents the 90% confidence required (In the case of 95% confidence, 1.96 shall be used)

0.1 = Represents the 10% relative precision

Sample size achieved is 38 for the monitoring survey.

The sample selected randomly from the distribution database. The sample size was determined by randomizing the project database using MS Excel's random number generator. The randomized sample was then shared with the ground team prior to the survey for logistical planning.

The project proponent collected more samples than the required/ calculated sample size from the above method.

## B) Baseline survey:

### a) Baseline Sample Size Calculation

The following equation is applied:

where:

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

$n$  = Sample size

$N$  = Population size (Total number of households/ICS)

$p$  = Expected proportion

1.645 = Represents the 90% confidence required (In the case of 95% confidence, 1.96 shall be used)

0.1 = Represents the 10% relative precision

where:

$n = 38$

$N = 30,000$

$p = 0.9$

1.645 = Represents the 90% confidence required (In the case of 95% confidence, 1.96 shall be used)

0.1 = Represents the 10% relative precision

Sample size achieved is 38 for the Baseline survey.

The representatives will check the identified sample stoves. These details will include name, number, address, government ID, etc. The data collection will take after 3-month of distributing the project devices.

## 7 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

### 7.1 Data and Parameters Monitored

| Data / Parameter | $N_{y,i,j}$                                                                   |
|------------------|-------------------------------------------------------------------------------|
| Data unit        | Fraction                                                                      |
| Description      | Number of project devices of type $i$ and batch $j$ operating during year $y$ |

|                |                                                                                                                                                                                                                                                   |                                                        |                                                        |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------|
| Value applied: |                                                                                                                                                                                                                                                   |                                                        |                                                        |
|                | Number of ICS distributed                                                                                                                                                                                                                         | Proportion of ICS operational (based on sample survey) | Number of ICS operational during the monitoring period |
|                | 30,000                                                                                                                                                                                                                                            | 95% or 0.95                                            | 28,500                                                 |
|                | The ICS operational status based on survey results will be considered for second year of operation.                                                                                                                                               |                                                        |                                                        |
| Comments       | Proportion of operational stoves obtained from the survey is multiplied by the total commissioned stoves to arrive at this value. The survey will be conducted at least once every years basis after implementation of project activity instance. |                                                        |                                                        |

|                  |                                                                                                                          |
|------------------|--------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter | $\eta(\text{new}, y, i, j)$                                                                                              |
| Data unit        | Fraction                                                                                                                 |
| Description      | Efficiency of the improved cookstove type i and batch j determined using equation 5 of applied methodology during year y |
| Value applied:   | 34.30%                                                                                                                   |
| Comments         | No comments                                                                                                              |

|                  |                                                                                                                                                                                                   |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter | $B_{y=1, \text{new}, i, j, \text{survey}}$                                                                                                                                                        |
| Data unit        | Tonnes                                                                                                                                                                                            |
| Description      | Annual quantity of wood biomass used by improved cookstoves in tonnes per device of type i and batch j, determined in the first year of the implementation of the project through a sample survey |
| Value applied:   | 1.650 tonnes/device/year Estimated based on survey result                                                                                                                                         |
| Comments         | The survey is conducted in Determined in the first year of project implementation.                                                                                                                |

## 7.2 Baseline Emissions

The methodology does not account for baseline emissions separately, but instead quantifies net emission reductions achieved by the project based on the reduced consumption of non-renewable biomass, as per methodology VMR0006 v1.2 and the approach of AMS-II.G v 13.0.

### 7.3 Project Emissions

The methodology does not account for project emissions separately, but instead quantifies net emission reductions achieved by the project based on the reduced consumption of non-renewable biomass, as per methodology VMR0006 v1.2 and the approach of AMS-II.G v 13.0.

### 7.4 Leakage

Leakage shall be considered as per latest version of AMS-II. G version 13 in accordance with the methodology.

### 7.5 Net GHG Emission Reductions and Removals

Project participant has calculated the emission reduction by each ICS installed in the project area under the project activity. In this section, we are giving an example on the ICS serial number AI6688:

For year

Date of installation: 08-February-2023

For year 2023, Vintage for the stove: Vintage 1

No. of the days for vintage 1: 273 (from (01-January-2023) to (30-September-2023))

Year fraction:  $273/365 = 0.747$

$B_{y=1, \text{new}, i, \text{survey}} = 1.650$

$\eta_{\text{new}, y, i, j} = 0.3430$

$B_{y, \text{savings}, i, j} = 2.806 \text{ tonnes}$

$ER_{y, i, j} = 2.806 \times 0.8628 \times 0.0156 \times (112 + 9.46) \times 1 \times 0.3430 \times 1 \times (1 - 0.26)$

For all the stoves installed till the year 2023 i.e., 30000 stoves total VCU's calculated to be 64,364 same can be further cross checked in the Actual ER sheet under worksheet "ER\_year 2023"

The project proponent has considered that not all meals might have been cooked on the first day of receiving the project device. Hence the PP has forgone the credits for the first day and has claimed credits starting the next day of distribution of project device

For non-AFOLU projects, use the following table:

| Year                          | Baseline emissions or removals (tCO <sub>2</sub> e) | Project emissions or removals (tCO <sub>2</sub> e) | Leakage emissions (tCO <sub>2</sub> e) | Net GHG emission reductions or removals (tCO <sub>2</sub> e) |
|-------------------------------|-----------------------------------------------------|----------------------------------------------------|----------------------------------------|--------------------------------------------------------------|
| 01-Jan-2023 to 30-Sept - 2023 | 61,532                                              | 0                                                  | 0                                      | 61,532                                                       |
| Total                         | 61,532                                              | 0                                                  | 0                                      | 61,532                                                       |

| Period | Ex-ante emissions | Achieved emissions | Percent difference | Justification for the difference |
|--------|-------------------|--------------------|--------------------|----------------------------------|
|--------|-------------------|--------------------|--------------------|----------------------------------|

|                                             | <u>reductions/<br/>removals</u> | <u>reductions/remov<br/>als</u> |       |                                                                                                                    |
|---------------------------------------------|---------------------------------|---------------------------------|-------|--------------------------------------------------------------------------------------------------------------------|
| 1-January -2023<br>to 30-September-<br>2023 | 64,532                          | 61,146                          | -5.54 | There is a decrease in ER<br>due to staggered<br>commissioning dates and<br>change in monitored<br>parameter value |
| Total                                       | 64,532                          | 61,146                          | -5.54 | There is a decrease in ER<br>due to staggered<br>commissioning dates and<br>change in monitored<br>parameter value |

# 8 APPENDIX

## Baseline Survey of sample beneficiaries

**OYU GREEN PRIVATE LIMITED**  
Plot No. 1/91, Sector C, Industrial Area, Gurgaon  
Bhopal MP 462023 IN, Ph. +91-954-4302755

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**OYU GREEN**

**SMG Cookstove Program 3**

**वेससाइन सर्वे**

| क्र. | प्रश्न                                                                 | उत्तर |
|------|------------------------------------------------------------------------|-------|
| 1    | कौन की वधि                                                             |       |
| 2    | कौनसे वधि के लिए है                                                    |       |
| 3    | कौनसे का नाम                                                           |       |
| 4    | कौन की वधि (उत्तरों के लिए) (Unit of measurement for consumption rate) |       |
| 5    | उत्तरदाता का पता                                                       |       |
| 6    | उत्तरदाता का पता                                                       |       |
| 7    | उत्तरदाता का पता                                                       |       |
| 8    | कौन उत्तरदाता की वधि 14 वर्ष से अधिक है?                               |       |
| 9    | उत्तरदाता का मोबाइल नंबर                                               |       |
| 10   | कौन की वधि                                                             |       |
| 11   | उत्तरदाता का पता                                                       |       |
| 12   | कौन की वधि                                                             |       |
| 13   | कौन की वधि                                                             |       |
| 14   | कौन की वधि                                                             |       |
| 15   | कौन की वधि                                                             |       |

|    |            |            |
|----|------------|------------|
| 16 | कौन की वधि | कौन की वधि |
| 17 | कौन की वधि | कौन की वधि |
| 18 | कौन की वधि | कौन की वधि |
| 19 | कौन की वधि | कौन की वधि |
| 20 | कौन की वधि | कौन की वधि |
| 21 | कौन की वधि | कौन की वधि |
| 22 | कौन की वधि | कौन की वधि |
| 23 | कौन की वधि | कौन की वधि |
| 24 | कौन की वधि | कौन की वधि |
| 25 | कौन की वधि | कौन की वधि |
| 26 | कौन की वधि | कौन की वधि |
| 27 | कौन की वधि | कौन की वधि |

**कौन की वधि**

| कौन की वधि | कौन की वधि | कौन की वधि | कौन की वधि |
|------------|------------|------------|------------|
| कौन की वधि | कौन की वधि | कौन की वधि | कौन की वधि |
| कौन की वधि | कौन की वधि | कौन की वधि | कौन की वधि |
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| कौन की वधि | कौन की वधि | कौन की वधि | कौन की वधि |

**कौन की वधि**

**कौन की वधि**

## Monitoring Survey form

**OYU GREEN PRIVATE LIMITED**  
Plot No. 1/91, Sector C, Industrial Area, Gurgaon  
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**OYU GREEN**

**Monitoring Survey Questionnaire**

**Beneficiary Details**

| Code | Background Information                        |
|------|-----------------------------------------------|
| 1    | IC3 Serial number                             |
| 2    | Date of IC3 Receipt                           |
| 3    | Improved cookstove model                      |
| 4    | Address (Village, Block, District)            |
| 5    | Beneficiary Name/Respondent Name              |
| 6    | Sex of Respondent                             |
| 7    | Relation of Respondent to Beneficiary         |
| 8    | Daily Income                                  |
| 9    | Age of Respondent                             |
| 10   | ID Number (Aadhar/PAN Card/Voter ID/BPL card) |
| 11   | Number of people in the family                |

**Improved cook stove IC3 (Shri Chulha) Specific Information**

|   |                                    |
|---|------------------------------------|
| 1 | Do you regularly use Shri Chulha?  |
| 2 | If yes for how many days in a week |

|    |                                                                                                 |
|----|-------------------------------------------------------------------------------------------------|
| 3  | From when you are using Improved Cookstove(IC3)                                                 |
| 4  | Is Improved Cookstove Shri Chulha used for cooking of all meals of the days                     |
| 5  | How does your Shri Chulha function?                                                             |
| 6  | At what frequency the scheduled check and maintenance of your cookstove is being carried out    |
| 7  | Has there any replacement of Improved cookstove is carried out                                  |
| 8  | How much smoke is generated from Shri Chulha, as compared with used stove?                      |
| 9  | How much is your daily consumption of wood used in Shri Chulha Kg                               |
| 10 | From where do you collect wood?                                                                 |
| 11 | How much time it will take to collect fuel wood for daily meal preparation on IC3?              |
| 12 | If you purchase wood, what is the cost of wood/Kg                                               |
| 13 | Is smoke emission reduced after using IC3?                                                      |
| 14 | Did you get any training/informative sessions on improved cookstove from Shri Manoj(OYU Green)? |
| 15 | Did you feel any health improvement after using Improved cookstove?                             |

|    |                                                                         |
|----|-------------------------------------------------------------------------|
| 16 | How much time it will take to cook food a day on Shri Chulha?           |
| 17 | Who collects fuel wood in your home?                                    |
| 18 | Who is responsible for cooking in your home?                            |
| 19 | Traditional Cookstove information                                       |
| 20 | Do you still use Traditional Cookstove                                  |
| 21 | If yes for how many days in a week                                      |
| 22 | Who you have used Traditional Cookstove                                 |
| 23 | Smoke emission levels generated from Traditional cookstove              |
| 24 | How much time does it take to cook meal in a day Traditional cookstove? |
| 25 | Did you feel any health issues after using a mud cookstove?             |
| 26 | Did you use any other fuel for cooking your food?                       |
| 27 | If yes for how many days in a week                                      |

**Signature of respondent/Thumb impression**

**Signature of SMG Body**

| S. No | EmployeeUnique code |  | S. No | Employee Unique Code |
|-------|---------------------|--|-------|----------------------|
| 1     | 100174              |  | 1     | 425                  |
| 2     | 100175              |  | 2     | 423                  |
| 3     | 100178              |  | 3     | 424                  |
| 4     | 100228              |  | 4     | 419                  |
| 5     | 100275              |  | 5     | 418                  |
| 6     | DW0001              |  | 6     | 416                  |
| 7     | DW0002              |  | 7     | 414                  |
| 8     | DW0007              |  | 8     | 410                  |
| 9     | DW0008              |  | 9     | 413                  |
| 10    | DW0011              |  | 10    | 409                  |
| 11    | DW0018              |  | 11    | 412                  |
| 12    | DW0019              |  | 12    | 411                  |
| 13    | DW0025              |  | 13    | 408                  |
| 14    | DW0026              |  | 14    | 407                  |
|       |                     |  | 15    | 403                  |
|       |                     |  | 16    | 401                  |
|       |                     |  | 17    | 398                  |
|       |                     |  | 18    | 400                  |
|       |                     |  | 19    | 395                  |
|       |                     |  | 20    | 394                  |
|       |                     |  | 21    | 390                  |

#### Local stakeholder meeting conducted at various locations:

| S. No | Location                                  | Meeting Date |
|-------|-------------------------------------------|--------------|
| 1.    | Acharpura, Bhopal, Madhya Pradesh, India  | 20/12/2022   |
| 2.    | Dhabla, Sehore Madhya Pradesh, India      | 07/01/2023   |
| 3.    | Bilkisganj, Sehore, Madhya Pradesh, India | 10/01/2023   |
| 4.    | Sehore, Madhya Pradesh, India             | 06/02/2023   |
| 5.    | Amjara, Raisen Madhya Pradesh, India      | 26/12/2022   |
| 6.    | Jabalpur, Madhya Pradesh, India           | 27/12/2022   |
| 7.    | Sagar, Madhya Pradesh, India              | 27/12/2022   |
| 8.    | Damoh, Madhya Pradesh, India              | 02/01/2023   |

Invitation letter sent to local stakeholder and attendees

| S. No | Location                                 | Invitation sent on |
|-------|------------------------------------------|--------------------|
| 1.    | Acharpura, Bhopal, Madhya Pradesh, India | 20/11/2022         |

|    |                                           |            |
|----|-------------------------------------------|------------|
| 2. | Dhabla, Sehore Madhya Pradesh, India      | 05/12/2022 |
| 3. | Bilkisganj, Sehore, Madhya Pradesh, India | 09/12/2022 |
| 4. | Sehore, Madhya Pradesh, India             | 02/01/2023 |
| 5. | Amjara, Raisen Madhya Pradesh, India      | 22/11/2022 |
| 6. | Jabalpur, Madhya Pradesh, India           | 22/11/2022 |
| 7. | Sagar, Madhya Pradesh, India              | 22/11/2022 |
| 8. | Damoh, Madhya Pradesh, India              | 03/12/2022 |