



**Programme design document form for  
small-scale CDM programmes of activities  
(Version 03.0)**

*Complete this form in accordance with the Attachment "Instructions for filling out the programme design document form for small-scale CDM programmes of activities" at the end of this form.*

**PROGRAMME DESIGN DOCUMENT (PoA-DD)**

|   |  |
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| <b>Title of the PoA</b>   | Improved Cookstoves Program in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento"  |
| <b>Version number of the PoA-DD</b>   | Version 5  |
| <b>Completion date of the PoA-DD</b>  | 16/01/2015   |
| <b>Coordinating/ managing entity</b>  | Envirofit International Ltd  |
| <b>Host Party(ies)</b>  | Honduras   |
| <b>Sectoral scope(s) and selected methodology(ies), and where applicable, selected standardized baseline(s)</b> | Sectoral Scope 3, AMS-II.G. - <a href="#">Energy efficiency measures in thermal applications of non-renewable biomass</a> , version 06.0 |

## **PART I. Programme of activities (PoA)**

### **SECTION A. General description of PoA**

#### **A.1. Title of the PoA**

Improved Cookstoves Program in Honduras “Vida Mejor con Ecofogones de Alto Rendimiento”  
16/01/2015  
Version5

#### **A.2. Purpose and general description of the PoA**

1. Policy/measure or stated goal that the PoA seeks to promote:

The goal of the PoA is to facilitate the transition away from inefficient conventional firewood stoves by providing improved efficiency, clean burning firewood cooking stoves (ICS) to local households/SMEs (institutional/commercial). Several greenhouse gases (GHG), including carbon dioxide, are produced as a result of the combustion of non-renewable biomass in inefficient conventional firewood cook-stoves. ICS improve heat transfer efficiency thereby reducing the amount of fuel used by households and the associated emissions of GHGs from use of non-renewable biomass.

2. Framework for the implementation of the proposed PoA

Envirofit International Ltd is the coordinating/managing entity (“CME”) for this SSC-PoA. Envirofit International Ltd is a manufacturer of fuel efficient stoves and provider of services under a separate division called Envirofit Quality Testing Services (EQTS). The CME will communicate with the Executive Board and/or the pertinent Designated Operational Entity (“DOE”) on all matters, including submission of the PoA and making arrangements for the distribution of certified emission reductions. The CME will request the inclusion of new CPAs to the PoA through the DOE during the lifetime of the PoA. The CME will also ensure double counting of emissions does not occur by verifying that a CPA in the program is not registered as a separate CDM project activity, or as part of another registered CDM program. The CME will ensure CPA inclusion criteria are met, and coordinate with the Distribution Organisations (“DO”) to distribute improved cook-stoves (ICS) throughout the Host Country. Together, the CME and the DO will act as SSC-CPA Activity implementers/operators. The program actively seeks local partnerships to enable improved energy access for communities that previously have had limited access to new technologies. ICSs may be distributed directly by the CME or alternatively through the DOs or other partners, such as technicians, retailers, agents or other sub-contracted third parties. Different partners act as conduits for technologies to penetrate into communities.

All forms of distribution mechanisms may be leveraged to distribute ICS, including but not limited to the following distribution channels:

- Political institutions (i.e. councils, municipalities, mayoralties, etc);
- Civil society groups (i.e. neighbourhood associations, women groups, trusts, etc);
- Religious institutions (i.e. churches, etc);
- Private/public organizations (i.e. NGOs, MASECA enterprise, etc)
- Individual applications;
- Financial institutions (i.e. “Bono Diez Mil”, etc); and
- International cooperation groups (i.e. “Plan en Honduras”, government agencies, etc).

The PoA aims to leverage carbon finance to build robust supply chains that enable previously underserved communities to gain access to improved energy saving technologies. Additional partners and networks will be progressively added to the project activities. Local partnerships will allow for targeted campaigning and marketing to diverse distribution locations throughout the country. Each partner will be responsible for directly managing all parties under their partnership as well as collecting/maintaining appropriate monitoring and distribution records

generated by their direct sales partner networks, which will be submitted to the CME, independently for each SSC-CPA.

The CME will provide guidance and training to the partners to ensure that those implementing the SSC-CPA are aware and have agreed to their activity being subscribed to the SSC-PoA. The legal rights of the carbon credits generated by the ICS are transferred to the CME through carbon rights waivers (CRWs). Accordingly, carbon revenues generated by the project activity will reduce costs of ICS to end-users by supporting product dissemination activities such as the training of partners along the distribution chain, campaigning, marketing, management and maintenance of distribution logistics, and stove technology subsidies.

3. Confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity.

The CME confirms that the PoA, and all actions taken as part of it, are voluntary and coordinated. A review of the national energy policies of the country shows that there are no mandatory laws, policies or requirements mandating the use of ICS. Relevant national policies related to energy, focus primarily on electricity and list increasing energy efficiency and improving technologies as goals, but there is no reference to improved cook-stoves. The government has been promoting the use of improved cook-stoves, though they have not mandated their use. The government understands CDM as a potential way to increase energy efficiency.

4. Contribution to Sustainable development

This activity also achieves direct climate benefits as well as several co-benefits that contribute to sustainable development:

#### *Environmental Benefits*

The project reduces the demand for biomass required for cooking thus reducing the rate of deforestation associated with wood consumption. In addition, the decrease in fuelwood usage will yield a reduction in emissions from fuel combustion, thus improving air quality and reducing the emission of harmful gases which contribute to climate change.

#### *Social and economic benefits*

Project beneficiaries using the ICS will reduce their wood-fuel consumption. The reduction in the fuel needs will also save project beneficiaries' time and income. This means that biomass users who gather wood will see a reduction in the amount they dedicate to wood collection, leaving that time available for other productive activities. Biomass users that purchase their fuel will be able to direct more of their income to other needs. From the economic perspective, the project will contribute to the scale-up of local businesses and organizations, with the potential to create jobs in retail, marketing and distribution.

### **A.3. CMEs and participants of PoA**

Envirofit International Ltd is the coordinating/managing entity to the SSC-PoA, and Focal Point to all Scopes of Authority. Each CPA may be implemented in partnership with project participants.

### **A.4. Party(ies)**

| Name of Party involved (host) indicates host Party | Private and/or public entity(ies) project participants (as applicable) | Indicate if the Party involved wishes to be considered as project participant (Yes/No) |
|--|--|--|
|--|--|--|

|                 |   |    |
|-----------------|---|----|
| Honduras (host) | Envirofit International Ltd<br>(Private entity, CME of the<br>PoA, project participant) | No |
|-----------------|---|----|

#### A.5. Physical/ Geographical boundary of the PoA

The geographical area, within which all CPAs included in this PoA will be implemented, is the territorial boundary of Honduras, the Host Country of the PoA.

Each CPA will be limited by the territorial boundary of the Host Country in which it is located, and the physical location of stoves distributed in that CPA will form the actual CPA boundary.



Figure A.5. The physical/geographical boundary of the SSC-PoA: Honduras

#### A.6. Technologies/measures

A typical SSC-CPA will replace conventional firewood stoves with higher efficiency ICS models by leveraging resources provided by the PoA. ICSs are more efficient than conventional firewood stoves as they reduce heat loss and improve heat transfer and/or combustion efficiency. A standard manufacturer WBT test for each model implemented will substantiate stove performance (efficiency). Each respective SSC-CPA-DD will describe the technical specification of the cook-stove envisaged for dissemination under the CPA.

The ICS models are fuel efficient, resulting in a decrease in fuel use in comparison to conventional pre-project stoves while also reducing particulate matter and carbon emissions. Design considerations have also streamlined assembly and construction to reduce costs and production times.

The project activity will continually assess biomass stove technology options with the goal of providing the high performing, affordable and locally appropriate technologies to the local environments when possible. As the PoA expands, several models of biomass stoves produced by Envirofit International Ltd and/or other manufacturers may also be included in the PoA. Inclusion of such stoves would be subject to compliance with requirements of the methodology and the eligibility criteria of the PoA. The CME is committed to investing in research and development for the improvement of the current stoves being disseminated. Thus, during the life of the PoA, research and development may result in dissemination of more efficient ICS models, which shall be absorbed by this SSC-PoA, subject to methodological and eligibility criteria of the PoA. Upon inclusion into the project activity, all appliances will remain valid throughout the lifetime of the project period until the CME chooses to discontinue crediting of the improved stoves.

Each CPA will provide a detailed description on the specific stove model/s implemented/envisaged to be implemented and the target customers for each of them. See PoA-DD Appendix 3 for a description of potential target customers.

#### **A.7 Public funding of PoA**

This PoA has not received public funding from Annex I parties that could result in a diversion of official development assistance. This will be proven in each CPA of the program. See Appendix 2.

### **SECTION B. Demonstration of additionality and development of eligibility criteria**

#### **B.1. Demonstration of additionality for PoA**

According to EB55 Annex 38, each SSC-CPA included in this SSC-PoA is deemed additional as long as it satisfies the requirements established by the eligibility criteria. The assessment and demonstration of additionality for a typical SSC-CPA is done at the PoA level as shown in the PoA-DD. As per the Guidelines on the demonstration of additionality of small scale project activities version 09.0, paragraph 2(b), Project activities solely composed of isolated units where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs) and where the size of each unit is no larger than 5% of the small-scale CDM thresholds; are deemed automatically additional. The aforesaid requirement has been developed as eligibility criteria #15 for inclusion of a CPA in the PoA, thus ensuring that each CPA included in the PoA is additional and would not occur in absence of CDM.

#### **B.2. Eligibility criteria for inclusion of a CPA in the PoA**

Each SSC-CPA intends to make ICS available throughout the project boundary.

This document includes the minimum criteria to be undertaken for each CPA, as required by the CDM rules<sup>1</sup>, to be successfully included in this PoA.

Procedures for technical review of inclusion of CPAs according to the eligibility criteria are as follows:

| Eligibility Criteria |   |  | Accepted Mean of Proof / Evidence Document (to be checked at CPA inclusion)   | Compliance of eligibility criteria |
|----------------------|---|--|---|------------------------------------|
| #                    | Category                                      | Description  |   |                                    |
| 1                    | Geographical Boundary and location of the CPA | <p>All distributed ICS in each CPA shall be located within geographical boundary of Honduras.</p> <p>Please note that all ICS installations may not have been deployed at the CPA inclusion stage, however the location of the ICS can be checked during verification. In the event that any deployed ICS is found to be</p> | Location and boundary is specified in the specific CPA-DD stating that the ICS location is limited to Honduras and is supported by Sales records. | Yes/no and Justification           |

<sup>1</sup>EB 74Annex 5: "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Program of Activities".

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|   |  | outside of the PoA boundary / location, those ICS will not be counted in the emission reduction calculation.  |   |                          |
| 2 | No Double counting of ICS  | <p>A unique numbering or identification system for the ICS installed is applied. This shall ensure no double counting of stoves within the PoA and ensure that stoves can be identified as belonging to this PoA and not to a PoA managed by any other CME.</p> <p>Please note that all ICS installations may not have been deployed at the CPA inclusion stage, however the ICS' unique numbering can also be checked during verification. In the event that any deployed ICS is found not to be in line with CPA double counting criteria, those ICS will not be counted in the emission reduction calculation.</p> | <p>The ICS installed in the PoA shall be uniquely identifiable by unique numbering and will be supported by the distribution records</p> <p>Document:<br/>ICS Sales information in the Total Sales Records will include CPA assignment and end user details (i.e. name, address, if available). Additionally, unique id shall be displayed on the stove itself. The unique numbering or identification regime is included in the specific CPA-DD and will be verifiable by the DOE.</p> | Yes/no and Justification |
| 3 | No Double counting of CPA  | The CPA is exclusively bound to the PoA. Confirmation that the programme activity has not been and will not be registered either as a single CDM project activity or as a CPA under another PoA.  | <p>A statement by the CME is included in the CPA-DD that the specific CPA will not be part of another single CDM project activity or CPA under another PoA</p> <p>Evidence: Check UNFCCC website with date of access.</p>   | Yes/no and Justification |
| 4 | Awareness and agreement of those operating a CPA on PoA subscription | <p>Contractual provisions to ensure that those operating the CPA are aware and have agreed that their activity is being subscribed to the PoA.</p> <p>In the case that the CME is not responsible for implementing the CPA, the organization</p>  | Contractual agreement for CPA operators (DO) as part of their contract with the CME, stating that they are aware and have agreed that their activity is being subscribed to the PoA   | Yes/no and Justification |

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|   |  | <p>responsible for CPA implementation, known as the Distributing Organisation (DO), has signed a contractual agreement with the CME to participate in the PoA. This agreement:</p> <ul style="list-style-type: none"> <li>- Defines the ownership of the carbon emission reduction rights</li> <li>- Covers the DO's distribution and monitoring related responsibilities</li> <li>- Confirms that the ICS to be distributed under the CPA have not and will not be distributed under any other carbon project (CDM project, PoA or voluntary carbon market project)</li> <li>- Cedes the DO's rights to the carbon credits generated from CPAs under the PoA to the CME</li> </ul> |  |                          |
| 5 | Non-diversion of ODA in case of Public funding | The CME and the CPA operator (in case of being different from the CME) shall confirm that funding from Annex 1 party, if any shall not be diversion of Official Development Assistance.   | <p>A statement is included in the CPA-DD informing whether the specific CPA is funded with Annex I country funding.</p> <p>If Annex I country funding is used, then the following documents will be provided by each funding party (the donor/s):</p> <p>Signed statement by the Annex I country donor party confirming that funding from Annex I country is not a diversion of ODA funding.</p> | Yes/no and Justification |
| 6 | CPA Start Date                                 | CPA start date shall not be before PoA validation start date (i.e. 28 January 2012, date of   | Starting date as stated in the CPA-DD. Each CPA shall provide verifiable evidence of the CPA   | Yes/no and Justification |

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|   |  | webhosting of PoA-DD for global stakeholder consultation).  | start date as demonstrated. Evidence may include but are not limited to: <ul style="list-style-type: none"> <li>- First ICS Sale Receipt, and/or</li> <li>- Shipping orders of ICS.</li> </ul>  |                          |
| 7 | CPA crediting period Life Time   | <p>CPA crediting period shall be within the life time of the PoA. The start date of the crediting period of a CPA shall be on or after:</p> <p>(i) The date of registration of the PoA, if the corresponding CPA-DD is submitted together with the request for registration;</p> <p>(iii) The date when the CPA was included in accordance with the Project cycle procedure;</p>  | A statement is included in the CPA-DD specifying the crediting period starting date and the duration of the crediting period substantiating that the CPA crediting period starts after the PoA registration date and will not exceed the PoA life time (this is 28 years after the start date of the PoA).  | Yes/no and Justification |
| 8 | Approval of CPA by CME   | CME approved each CPA to be included into its registered PoA.   | Statement of CME in each CPA-DD giving approval for the CPA to be included into its registered PoA<br>Document: CPA-DD  | Yes/no and Justification |
| 9 | Requirement of Methodology AMS-II.G – introduction of high efficiency biomass fired cook-stoves to replace existing devices or Efficiency improvements on existing biomass fired cook stoves | The CPA consists of replacement of conventional firewood cook-stoves for biomass fired ICS as defined in the PoA-DD. Conventional stoves replaced will be any of the types identified by each baseline scenario and as applied by the specific CPA. Stove types replaced and implemented will be defined in the CPA-DD, and hence appliances involving the efficiency improvements in the thermal applications of non-renewable biomass as per AMS II. G. | <p>Type of conventional cook-stoves replaced and ICS type/s implemented and compliance with the technological requirements of AMS II G will be described in the specific CPA-DD.</p> <p>Document:</p> <ul style="list-style-type: none"> <li>- Project product data sheets or specification or product information sheets from manufacturer / Stoves sales records</li> </ul> | Yes/no and Justification |



|    |  |   |   |                          |
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|    |  | Please note that not all ICS may have been deployed at CPA inclusion stage, the 'type and number of ICS deployed' will however also be checked during verification, and in case any deployed ICS type will be found not in line with the methodology requirement, those ICS will not be counted for emission reduction calculation.   |   |                          |
| 10 | Requirement of Methodology AMS-II.G – single pot or multi pot portable or in-situ cook stoves with rated efficiency of at least 20 per cent. | The ICS disseminated under the CPA will be single pot, multi pot or in-situ cook-stoves that have a specified efficiency of at least 20% at the time of CPA inclusion.  | Document:<br><br>Efficiency specification from manufacturer or certificate from a national standards body or alternatively, manufacturer specifications on efficiency based on water boiling test (WBT) may be used.  | Yes/no and Justification |
| 11 | Technical requirement  | <p>Only ICS of the types below will be disseminated:</p> <ul style="list-style-type: none"> <li>- Biomass fuelled ICS</li> <li>- Newly operational ICS</li> <li>- Either fix/portable operation</li> </ul> <p>Other requirements (i.e. efficiency, maximum capacity, level of service, distribution mechanisms...) are defined in the relevant eligibility criteria within this table.</p> <p>Please note that all ICS may not have been deployed at CPA inclusion stage, the technical requirement will however also be checked during</p> | <p>Specification of stove type and compliance with the technological requirements of AMS II G will be described in the specific CPA-DD.</p> <p>Document:</p> <ol style="list-style-type: none"> <li>1. Statement from CME that only new stoves will be disseminated under the CPA.</li> <li>2. First ICS Sales Receipt (first CPA of PoA), including specific language confirming the stove received by the end-user is new.</li> </ol> | Yes/no and Justification |

|    |   |  |   |                          |
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|    |   | verification, and in case any deployed ICS type will be found not to be in line with the technical requirement, those ICS will not be counted for emission reduction calculation.  |   |                          |
| 12 | Requirement of Methodology AMS-II.G - Non-renewability of biomass | In accordance with methodology AMS IIG:<br><br>Project participants are able to show that non-renewable biomass has been used since 31 December 1989, using survey methods   | Survey results or referring to published literature, official reports or statistics<br><br>This requirement has been demonstrated at the PoA level<br><br>Document: PoA-DD  | Yes/no and Justification |
| 13 | De-bundling   | In accordance with "Guidance for determining the occurrence of de-bundling under a Programme of Activities (PoA)" <sup>2</sup> , if each independent subsystem/measures included in the CPA of a PoA is no greater than 1% of the small scale threshold defined by the methodology applied <sup>3</sup> , then that CPA of PoA is exempted from performing de-bundling check, i.e. considered as being not a de-bundled component of a large scale activity. | Document:<br><br>1. Manufacturer specification.<br><br>2. CPA-DD to show energy saved by an ICS is less than 1.8 GWh <sub>th</sub> /year using excel sheet or similar tool.   | Yes/no and Justification |
| 14 | Requirement of Methodology AMS-II.G SSC Limit for CPAs            | The CPA will remain under the threshold of 180 GWh <sub>th</sub> /annum thermal energy savings throughout the crediting period of the CPA. If a CPA exceeds the applicable limit in any year, the claimable emission reduction shall   | The maximum number of ICS estimated is to be defined in the specific CPA-DD.<br>The number of ICs in operation per year will not exceed the "ICS installation cap" established in the specific CPA-DD. This cap in essence will be the maximum number of ICS installed up to the threshold of | Yes/no and Justification |

<sup>2</sup>According to the "Guidelines on assessment of debundling for SSC project activities, v03 (EB 54, Annex 13, par. 10) for determining the occurrence of debundling under a Programme of Activities (PoA)", if each of the independent subsystem/measures included in the CPA of a PoA is not larger than 1% of the small scale threshold defined by the methodology applied, then that CPA of the PoA is exempted from performing de-bundling check, i.e. considered as being not a de-bundled component of a large scale activity.

<sup>3</sup>180 GWh<sub>th</sub> energy savings per annum

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|    |               | <p>be capped based on the estimated GHG reductions in the CPA-DD<sup>4</sup>.</p> <p>Please note that all ICS may not have been deployed at CPA inclusion stage, the SSC limit for CPAs can however also be checked during verification.</p> | <p>180 GWh<sub>th</sub>/annum thermal energy savings.</p> <p>Each CPA-DD will establish the “ICS installation cap” through the ER calculation tool developed based on the relation between the “energy cap established for this type of activity” and the “energy savings per ICS”. This relation will vary according to the parameters monitored along the CPA life cycle, for instance <math>\eta_{\text{new}}</math> and <math>\mu_{y,i}</math>. Therefore an updated “ICS installation cap” will be provided at the time of verification according to the monitoring results.</p>   |                          |
| 15 | Additionality | <p>Additionality is demonstrated using EB68 Annex 27 “Guidelines on the demonstration of additionality of small-scale project activities”, 2(c) as described in the PoA DD.</p>  | <p>Each of the requirements listed below are proven to define the CPA as automatically additional. The specific CPA is eligible when all evidences are documented:</p> <ol style="list-style-type: none"> <li>1) Project size does not exceed small-scale CDM thresholds: This requirement is also checked through eligibility criteria #14</li> <li>2) The project activities are solely composed of isolated units where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs): CPA-DD to show description of the technology and specifies target population, and;</li> <li>3) Where the size of each unit is no larger than 5% of the small-scale CDM thresholds: CPA-DD to show energy saved by the ICS is less than <math>(180 \text{ GWh}_{\text{th}}/\text{year} * 0.05 =) 9 \text{ GWh}_{\text{th}}/\text{year}</math>. This requirement is also checked through de-bundling check (eligibility criteria #13)</li> </ol> | Yes/no and Justification |

<sup>4</sup>As per EB 65, Annex 5, paragraph 83.

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| 16 | Requirement of methodology-Generalities | Each CPA will ensure compliance with the applicability of the methodology and its requirements. Conditions of the applicability of the methodology and its requirements are specified at the PoA level in section E.2 through the assessment of “justification of the choice of the methodology and why it is applicable to the CPAs”.                         | The applicability requirements of the methodology are established in the PoA-DD. The CPA needs to meet all inclusion eligibility criteria named “Requirement of methodology” to meet the applicability criteria of the methodology. | Yes/no and Justification |
| 17 | Target groups                           | Target groups may be any of the following:<br>1. Residential biomass users<br>2. Commercial biomass users<br>3. Institutional biomass users<br><br>Assumptions made at the PoA level for any scope regarding these target groups are deemed valid through all CPAs (i.e. extent of baseline studies, ER calculation approach and monitoring systems and plan). | The selected target groups that shall be included in each CPA are distinguished in each CPA.  | Yes/no and Justification |
| 18 | Distribution Mechanisms                 | Distribution mechanisms have been specified in the PoA-DD by means of the “General operating and implementing framework of PoA” at the PoA level.  | The selected distribution mechanisms included in each CPA are distinguished in each CPA.  | Yes/no and Justification |
| 19 | Local Stakeholder Consultation          | The Local Stakeholder Consultation is established at the PoA level <sup>5</sup> as described in section D of the PoA-DD. No further actions needed at the CPA level to satisfy the eligibility criteria.   | Document: The conditions to meet the requirements on undertaking the local stakeholder consultation have been proven in section D of the PoA-DD.  | Yes/no and Justification |

<sup>5</sup>EB55 Annex 38, paragraph 6 (g).

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| 20 | Environmental Impact Assessment                    | The EIA is established at the PoA level as described in section C of the PoA-DD <sup>6</sup> . No further actions needed at the CPA level to satisfy the eligibility criteria.   | Document: The conditions to meet the requirements on undertaking the environmental impact assessment have been proven in the PoA-DD.  | Yes/no and Justification |
| 21 | Sampling Requirements                              | <p>Sampling of appliances within the CPA must meet the requirements of AMS-II.G and the “Standard on Sampling and Surveys for CDM Projects and Programmes of Activities” (the Sampling Standard).</p> <p>Each CPA will ensure compliance with the framework established for sampling requirements for quantification of parameters not established at the ex-ante and monitoring tasks during the crediting period. Conditions and its requirements are outlined for baselines and monitoring tasks at the PoA-DD.</p> | <p>Specification of the sampling methods applied and compliance with the sampling requirements are established at the PoA-DD.</p> <p>The CPA-DD either specifies that:</p> <ul style="list-style-type: none"> <li>a) Sampling will be undertaken as part of the PoA Sampling Plan, and in the CPA-DD describes how the PoA Sampling Plan is to be applied; or</li> <li>b) If CPA-specific sampling is to be undertaken, a CPA-specific Sampling Plan must be provided and meet the requirements of AMS-II.G and the Sampling Standard. The sampling approach shall follow the approach outlined in the PoA Sampling Plan except where specifically indicated otherwise in the CPA Sampling Plan.</li> </ul> | Yes/no and Justification |
| 22 | Baseline parameters to be established at CPA level | <p>Each CPA shall demonstrate the baseline parameters that are to be established at the CPA level have been determined, and shall do so applying the following approaches:</p> <ul style="list-style-type: none"> <li>a) <math>B_{old,i}</math>: as per the</li> </ul>   | CPA-DD shall outline the approach and provide supporting documents including copies of any official government reports, statistics or literature sources used for determining these parameters. If local surveys or representative sampling are used then copies of   | Yes/no and Justification |

<sup>6</sup>EB55 Annex 38, paragraph 6 (f).

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|  |  | <p>approach outlined in PoA-DD applying Option (a) of (paragraph 19) of AMS-II.G;</p> <p>And,</p> <p>b) <math>\eta_{old}</math> and /or <math>SC_{old}</math>:</p> <p><math>\eta_{old}</math> : When Option 2 of (paragraph 17) of AMS-II.G is applied</p> <p><math>SC_{old}</math> : When Option 3 of (paragraph 18) of AMS-II.G is applied</p> | questionnaires, sampling design etc shall be provided. |  |
|--|--|--|--|--|

### B.3. Application of technologies/measures and methodologies

AMS-II.G, version 06.0 requires that the technology used in the project shall be measures involving efficiency improvements in the thermal applications of non-renewable biomass, including efficient biomass cooking stoves, which is the technology disseminated under this PoA.

The methodology measures below constitute the justification for the choice of the selected methodology by showing that each generic CPA meets each applicability condition of the methodology<sup>7</sup>.

| CDM Methodology Requirement  | Project Justification  |
|--|--|
| This category comprises appliances involving the efficiency improvements in the thermal applications of non-renewable biomass. Examples of applicable technologies and measures include the introduction of high efficiency biomass fired cook stoves or ovens or dryers to replace the existing devices and/or energy efficiency improvements in existing biomass fired cook stoves or ovens or dryers. | <p>All project technology models implemented will provide efficiency improvement in the thermal application of the non-renewable biomass. Examples of these technologies and measures are the introduction of high efficiency biomass fuelled ICS.</p> <p>This will be ensured by recording the baseline stove (charcoal stove / firewood stove) used prior to ICS installation for ICS purchasers. This is in accordance with the approved methodology which is applicable only to users which were previously using biomass fuels. See section A.2 for more details.</p> |
| The efficiency of the project systems shall be at a minimum 20% as certified by a national standards body or an appropriate certifying agent recognized by it. Alternatively   | Every ICS model implemented in the CPA will present a certificate issued by manufacturer or an appropriate certifying agent at the time of CPA inclusion proving the thermal efficiency  |

<sup>7</sup>AMS-II.G, version 6

|   |   |
|---|---|
| <p>manufacturers' specifications on efficiency based on water boiling test (WBT) may be used. The sampling test of stoves by such certification bodies/agents or manufacturers shall be conducted following a 90/10 precision in accordance with the "Standard for sampling and surveys for CDM project activities and programme of activities"</p> | <p>as required by the CDM methodology. For more details see specific CPADD.</p>   |
| <p>The project participants<sup>8</sup> are able to show that non-renewable biomass has been used since 31 Dec 1989, using survey methods or referring to published literature, official reports or statistics.</p>   | <p>This requirement is being demonstrated at the PoA level. Forest degradation in the Host Country has been a persistent problem for decades, and non-renewable biomass has been used since 31 Dec 1989.</p> <p>The pattern of deforestation in the country is not new a new phenomenon. The FAO forest survey of 1962 serves as a baseline forest stock to determine the rate of deforestation, although data from the 1980s is more commonly used to determine the rate of deforestation (80,000 ha/yr)<sup>9</sup>. More recent data estimates the deforestation rate to be 54,000 ha/yr, based on new estimates of the growing stock conducted by ICF using satellite imagery<sup>10</sup>. Deforestation rates range from 54 thousand hectares per a year<sup>11</sup> to 80,000 hectares per a year<sup>12, 13</sup>. The Global Forest Resources Assessment 2010 reports that the carbon stock in living forest biomass in Honduras decreased 36% between 1990 and 2010, and the annual change of carbon stocks between 2005 and 2010 was 8 million tonnes per year.<sup>14</sup> Although the exact rate of deforestation is unclear all data demonstrates that there is a large amount of deforestation occurring and all recorded types of biomass in Honduras show a decline in volume, area, and carbon stored.</p> <p>This historical balance provides evidence that despite of the effort to promote sustainable management practices the level of carbon</p> |

<sup>8</sup> Project participant as per the AMS-II.G methodology and the CDM Glossary of Terms v03 is defined as (a) a Party involved, which has indicated to be a project participant, or (b) a private and/or public entity authorized by a Party involved to participate in a CDM project activity.

<sup>9</sup> Larios, Mario Vallejo. Evaluación Preliminar sobre Causas de Deforestación y Degradación de Bosques en Honduras. Jul 2011. Page 27

<sup>10</sup> Larios, Mario Vallejo. Evaluación Preliminar sobre Causas de Deforestación y Degradación de Bosques en Honduras. Jul 2011. Page 13

<sup>11</sup> Larios, Mario Vallejo. Evaluación Preliminar sobre Causas de Deforestación y Degradación de Bosques en Honduras. Jul 2011. Page 27 using data from the Duarte Alma et al. Anuario Estadístico Forestal 2010. Instituto Nacional de Conservación y Desarrollo Forestal, Áreas Protegidas y Vida Silvestre Vol 25. 2010 Page 12

<sup>12</sup> Evaluación de los Recursos Forestales Mundiales 2010. Informe Nacional Honduras. FAO 2010, Page 8

<sup>13</sup> Resultados del Inventario de Bosques y Árboles 2005-2006. Proyecto Apoyo al Inventario y Evaluación Nacional de Bosques y Árboles. Page 35

<sup>14</sup> Global Forest Resources Assessment 2010 (FRA 2010). Global Table 11 Trends in carbon stock in living forest biomass 1990-2010. <http://www.fao.org/forestry/fra/fra2010/en/>

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|--|--|
|  | <p>stocks on these land areas does systematically decrease over time.</p> <p>See NRB study for further reference.<sup>15</sup></p>   |
| The project boundary is the physical, geographical site of the efficient devices that burn biomass.  | The project location is defined as the country of Honduras, as described in the PoA-DD. The geographic boundary of the country is defined as the administrative boundaries set by government entities.   |
| <p>Monitoring shall ensure that:</p> <p>(a) Either the replaced low efficiency appliances are disposed of and not used within the boundary or within the region; or</p> <p>(b) If pre-project stoves continue to be used, monitoring shall ensure that the fuel-wood consumption of those stoves is excluded from <math>B_{old,i}</math>.</p>  | <p>The monitoring plan has been designed to identify and account for the potential use of baseline technologies as auxiliary technology in parallel with the ICS. The fraction of biomass consumed in pre-project stoves used in parallel with ICS in the project activity will be excluded from emission reduction calculations (<math>B_{old,i}</math>).</p> |
| <p>The use of this methodology in a project activity under a programme of activities is legitimate if the following leakages are accounted for, if required on a sample basis using a 90/30 precision for the selection of samples, and accounted for:</p> <p>(a) Use of non-renewable woody biomass saved under the project activity to justify the baseline of other CDM project activities can also be a potential source of leakage. If this leakage assessment quantifies a portion of non-renewable woody biomass saved under the project activity that is then used as the baseline of other CDM project activities then <math>B_{old,i}</math> is adjusted to account for the quantified leakage;</p> <p>(b) Increase in the use of non-renewable woody biomass outside the project boundary to create non-renewable woody biomass baselines can also be a potential source of leakage. If this leakage assessment quantifies an increase in the use of non-renewable woody biomass outside the project boundary then <math>B_{old,i}</math> is adjusted to account for the quantified leakage;</p> <p>(c) As an alternative to subparagraphs (a) and (b), <math>B_{old,i}</math> can be multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case</p> | <p>The CME chooses to account for all leakage in the project activity by applying the adjustment factor of 0.95 to the <math>B_{old,i}</math>. For more details see specific CPA-DD.</p>   |

<sup>15</sup>See Appendix 6 "NRB Study – Honduras"



|   |   |
|---|---|
| surveys are not required.   |   |
| The project proponent must clearly communicate to all project participants the entity that is claiming ownership rights of and selling the emission reductions resulting from the project activity. This must be communicated to the technology producers and the retailers of the improved technology or the renewable fuel in use in the project situation by contract or clear written assertions in the transaction paperwork, If the claimants are not the project technology end users, the end users should be notified that they cannot claim for emission reductions from the project. | <p>The project proponent is the CME. The CME will establish formal agreements with all project participants as per the PoA-DD and the CPA-DDs to ensure clear evidence of ownership of emission reductions resulting from the project activity. All rights are transferred to the CME through contracts and/or written assertions in the transaction paperwork.</p> <p>End users are notified of ownership rights through carbon waivers provided at the point of sale, which stipulate that they cannot claim for emission reductions from the project and that all emission reduction rights are transferred to the CME.</p>  |
| Type II: Total thermal energy savings from the sum of ICSs under a SSC-CPA will not exceed 180 GWh per year. <sup>16</sup>  | <p>The maximum number of ICS shall be defined for each CPA according to the specific ICS models distributed, and corresponding stove performance, to ensure a maximum energy saving of 180GWh<sub>th</sub>/year per CPA<sup>17</sup>. In cases where the number of ICSs in any CPA exceeds the energy limit, the number of ERs shall be capped at those generated by ICSs saving in aggregate a maximum of 180GWh<sub>th</sub> per year. Any additional emission savings will either not be counted in the program or included in another CPA as appropriate. During the life of the SSC-PoA the number of CPAs implemented will increase and will be monitored according to the monitoring plan. CPAs under this SSC-PoA are not a de-bundled component of a large scale activity.</p> |

**B.4. Date of completion of application of methodology and standardized baseline and contact information of responsible person(s)/ entity(ies)**

16/01/2015

Nick Marshall, Envirofit International, [nick.marshall@envirofit.org](mailto:nick.marshall@envirofit.org)

Rohit Lohia, Envirofit International, [rohit.lohia@envirofit.org](mailto:rohit.lohia@envirofit.org)

Envirofit International is also the CPA Implementer as specified in Appendix 1

**SECTION C. Management system**

The CME manages the PoA as a whole. The management system is designed as per the Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of

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Multiple Methodologies for Programme of Activities (Version 03.0 EB 74Annex 05), and includes all relevant information as per paragraph 19 therein.

The following is the description of the operational and management arrangements established by the CME for the implementation of the PoA:

**(i) A record keeping system for each CPA under the PoA,**

The operational and management plan of the PoA is illustrated below.

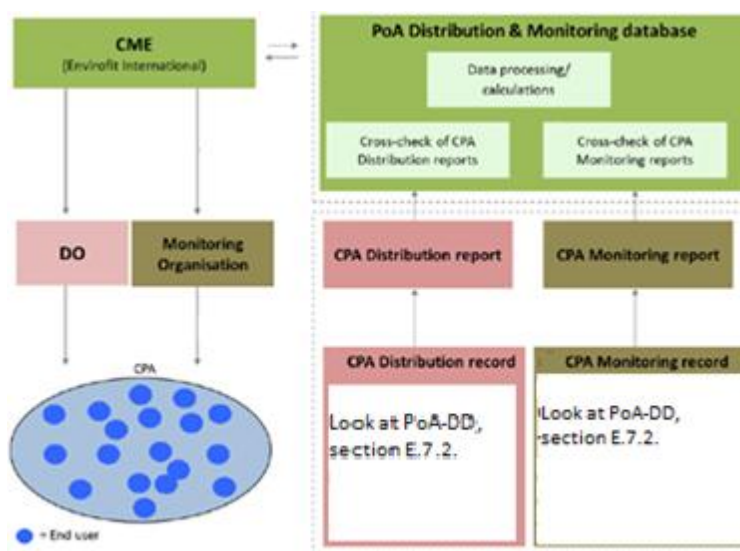


Figure C.i: ICS distribution and monitoring plan.

The CME will seek to develop partnerships with several DOs and their sub-Retailers. All DOs are managed by the CME as shown in the diagram above.

A sales record will be completed at the point of sale by the DO or Retailer. The information collected by the DO or Retailer from the end-user will be transferred to an electronic database which is updated regularly (may be in form of excel sheets). The sales record carries all the sales information listed above including the traditional stove type (charcoal stove/firewood stove) used prior to ICS installation..

Sales records are transferred from Retailers to each DO and from the DO to the CME. Likewise, monitoring records are transferred from each monitoring organisation, if any, to the CME. The CME will ensure that appropriate records are maintained for each SSC-CPA. Each SSC-CPA will use a record keeping tool as described in Part II, section B.7 of this PoA-DD; further details of the record keeping system are described in D.7 of the CPA-DDs.

The CME will screen and cross-check sales records in order to confirm that the sales record is authentic and that no double-counting occurs. The CME reserves the right to “upgrade” record keeping systems to electronic format using, for example, SMS or digital barcode scanners at any time to enhance transparency and recording efficiency. These systems are costly and not yet widely available in the marketplace, but would provide equally as accurate information, with higher accounting efficiency.

The values of the emission reduction parameters required for ex-post measurement is found by sampling ICS installations as described and documented in the monitoring record.

- (ii) ***A system/procedure to avoid double accounting e.g. to avoid the case of including a new CPA that has been already registered either as a CDM project activity or as a CPA of another PoA,***

The CME collects, stores and maintains master records for each CPA to clearly identify and distinguish CPAs and avoid double counting. This will be ensured by confirming all statements listed below:

1. Confirmation that the specific CPA within this program is not registered as an individual CDM project activity:
2. Confirmation that the specific CPA within this program is not part of another registered PoA.
3. Confirmation that every ICS within a specific CPA is not double counted across the PoA:

Points 1, 2 and 3 may be validated and verified via the stove sales records to end-users from each CPA and the unique serial numbers attributed to each stove sold. The end-users and unique serial numbers may be cross-checked against any other project activity. The unique serial numbers allocated to each ICS under the PoA shall allow unique identification and tracking of the ICS. Based on the serial numbers, an ICS can only be counted in one CPA. Stoves will have a serial number plate riveted to the stove itself to cross-check its uniqueness.

Envirofit will also supply (e.g. via physical/electronic database copy or a password protected section of Envirofit' website) to any DOE a master set of serial numbers of all Envirofit stoves distributed by country under the PoA, so that a validating/verifying DOE can check for the uniqueness of the stoves distributed under the PoA. This will enable a validating/verifying DOE to check the avoidance of double-counting and ensure that stoves can be identified as belonging to this PoA and its CPAs and not to a PoA/CPA managed by any other CME<sup>18</sup>.

4. Carbon waivers will be delivered to end users with each individual ICS clearly stating that all carbon credits generated from the purchase and use of the ICS will be owned by the managing entity (CME) of the PoA. All ICS under the PoA will be uniquely identified by the unique serial number<sup>19</sup> located on the riveted plate on each stove and noted in the Sales Database.

Signed contractual agreements with partner organizations transferring carbon rights ownership to the CME, along with carbon rights waived to the CME from end-users, will serve to transfer all rights of the carbon credits solely to the CME of the SSC-CPA. All carbon rights and agreements will be consolidated within the CME. To ensure that the installed appliances are claimed only once, the CME will conduct periodic cross-checks against sales invoices within the PoA. A sample<sup>20</sup> of sales records with legible end user details will be drawn from the project database for sampling, or alternatively if SMS or other electronic recording systems are used to collect warranty cards and user information, then the sample will be drawn from the electronic database.

In the cases where usage monitoring surveys show that some appliances do not stay in use, the CME may choose to add to the Project Database of the specific CPA new ICS sales that meet all CPA requirements to substitute ICS estimated to no longer be in use, in order to maintain the optimal ICS installation cap allowed per CPA. These and all other ICS sold will be added to the

<sup>18</sup> Refer approved clarification SSC\_703 received by Envirofit International for PoA 5342

<sup>19</sup> The alpha numeric system indicates name of the manufacturer, product model, type of product (i.e. main product vs accessories), manufacturing factory location and unique serial number.

<sup>20</sup> Detailed sampling systems for this exercise are described in PoA-DD, Part I, section B.7 to be followed across the program.

Project Database of the specific CPA in a way to ensure that double counting does not occur and the data is verifiable during monitoring.

See Part II; section B.7 of this PoA-DD and D.7 of the CPA-DDs for further details on the record keeping system.

**(iii) *The SSC-CPA included in the PoA is not a de-bundled component of another CDM programme activity (CPA) or CDM project activity.***

This has been developed as CPA inclusion eligibility criteria. Thus, any CPA included in the PoA, will be checked for, not being a de-bundled component of a large scale project activity.

**(iv) *The provisions to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA;***

The CME will coordinate the activities to be undertaken by each DO involved in the PoA. As part of the inclusion of a CPA under the PoA, a legally-binding contractual agreement will be signed by the DO and the CME (unless the CME is also the DO for the CPA). Under the agreement, the roles and responsibilities of the CME and the DO will be clearly spelled out. Further, the DO will ascribe its activity to the PoA as part of entering into this agreement. Any party the DO contracts in its role as the CPA developer will also be required to enter into a contractual agreement with the DO, similarly ascribing their activities to the PoA. Suitable training will be conducted for DOs taking part in new CPAs to make them aware of the rules of the CDM and the PoA and their requirements in terms of distribution and data collection. Guidance will be provided to each DO on the correct procedures to be followed during distribution. The agreement will also define carbon ownership rights.

The coordinating entity will be responsible for identifying, developing, registering and managing all SSC-CPAs. Legal agreements with each DO will clearly specify that the activity operates under the PoA. The agreements will also be available to the DOE.

The methods described in section (ii) will also provide additional proof that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA.

CME will ensure that the involved parties in the CPAs (e.g. CPA operators if different from the CME) are trained adequately to meet the documentation requirements of the PoA. To ensure best practices, suitable training will be conducted by the CME/DO for partners taking part in the project activity to make them aware of the rules and requirements of the CDM and PoA in terms of distribution and data collection. The project activity will provide end-users with after-distribution service (warranty claims) and support of the technology by means of the DOs. In all cases the CME will support all parties and beneficiaries across the whole PoA and along the entire crediting period to ensure adequate training and maintenance of all CPAs. The CME may provide to the DOE with the materials generated from the meetings and trainings with various parties to demonstrate that they were conducted. The materials could be any of the following, but are not limited to, photos, emails, participation sheets, self-statements and training materials.

## **SECTION D. Duration of PoA**

### **D.1. Start date of PoA**

28/01/2012, date when the PoA-DD and associated documentation was made publicly available for the initial Global Stakeholder Consultation.

### **D.2. Duration of the PoA**

28 years

**SECTION E. Environmental impacts****E.1. Level at which environmental analysis is undertaken**

1. Environmental Analysis is done at the PoA level X
2. Environmental Analysis is done at the SSC-CPA level ☐

The objective of the SSC-PoA and the CPAs is the installation of ICS throughout the program boundary. Due to its positive social and environmental benefit, and acknowledging that the impact of the installation of millions of ICSs is best assessed from a macro perspective, as per the requirements of the CDM modalities and procedures, environmental analysis is undertaken at a PoA level.

**E.2. Analysis of the environmental impacts**

The proposed project is not required to undertake an Environmental Impact Assessment according to Honduran regulations. The project activity also only consists of an energy efficiency measure, it results in decreased wood consumption, and hence, it cannot lead to any type of negative environmental impact.

***Biodiversity***

The project reduces the demand for biomass required for cooking stoves thus reducing the rate of deforestation associated with fuelwood consumption. In addition, the reduction in the use of inefficient stoves will yield a reduction in emissions from fuel combustion thus improving air quality and reducing the emission of harmful gases that contribute to climate change.

***Air Quality and Environment***

A reduction in fuel usage means that less harmful pollutants are emitted. An improvement in indoor air pollution has been proven to have direct correlation with respiratory illness and mortality rates, especially among women and children, worldwide. Also from an economic perspective, the project will contribute to the scale-up of local business and organizations, with the potential to create jobs in retail, marketing and distribution.

No negative impacts can be identified.

**SECTION F. Local stakeholder comments****F.1. Solicitation of comments from local stakeholders**

1. Local stakeholder consultation is done at the PoA level X
2. Local stakeholder consultation is done at the SSC-CPA level ☐

Stakeholder comments were invited at the Host Country PoA level according to DNA requirements<sup>21</sup> for CDM PoAs. Information on how comments by local stakeholders were solicited is included below, as well as a summary of the comments received and how due account was taken of any comments received, as applicable.

**F.2. Summary of comments received**

A public consultation process was undertaken to receive comments from stakeholders, including individuals, groups or communities affected, or likely to be affected, by the proposed project activity. Invitations were provided via email, personal communication, and a public newspaper advertisement, as provided in Annex 3 of the Local Stakeholder Report.

<sup>21</sup> See supporting document provided to the DOE: "DNA Requirements for CDM PoAs".

The local stakeholder consultation meeting took place on the 07<sup>th</sup> Dec 2011 in Valle de Angeles, Francisco Morazan, Honduras.

In addition to the local stakeholder consultation meeting, the stakeholder process included:

- Interviews with NGOs, public authorities and private relevant parties.
- Pilot ICS delivered to gather feedback through focal groups and field surveys.
- Hosting a feedback round after the consultation meeting to allow for further comments from attendees and non-attendees. A summary of the meeting was disseminated among invitees and made publicly available for review and feedback.

At the stakeholder consultation, participants were informed about the project and given an opportunity to discuss the impact the project would have on individuals, the target community, and local environment. Stakeholder comments and feedback was largely positive and in support of the project. Repeated questions were raised by stakeholders around the eligibility of the communities/individuals to become beneficiaries, the final cost of the product for the end-user, and the details around stove performance. Other comments included requests for greater access to new technologies for the most remote communities in Honduras, how the project intends to support and ensure local, high quality employment, and acknowledging the many sustainable development benefits of the project.

### **F.3. Report on consideration of comments received**

The comments and requests from the stakeholder meeting emphasized the importance of local involvement, benefits to the poor, and good and quality design. These comments and how due account has been taken are noted in the stakeholder consultation report<sup>22</sup>. Comments from the stakeholder meeting further substantiate that the project activity will contribute strongly to the sustainable development in the Host Party.

## **SECTION G. Approval and authorization**

A letter of approval (LoA) was issued by DNA of Honduras **Error! Reference source not found.** on 17 May 2012, authorizing Envirofit International Limited as project participant and confirming that the PoA assists in achieving sustainable development.

The coordinating/managing entity has obtained a letter of authorization of its coordination of the proposed CDM PoA from the host Party.

<sup>22</sup> See the full local stakeholder report provided to the DOE: "Memoria de la Consulta Pública de Vida Mejor con Ecofogones".

## **PART II. Generic component project activity (CPA)**

### **SECTION A. General description of a generic CPA**

The PoA includes energy efficiency measures in thermal application of non renewable biomass only. Hence, the application of the methodology and the inclusion criteria do not change from one CPA to another and Generic component of the CPA is provided once.

#### **A.1. Purpose and general description of generic CPAs**

The goal of this small-scale CPA (SSC-CPA) is to facilitate the transition away from inefficient conventional biomass stoves by providing improved efficiency, clean burning biomass cooking stoves (ICS) to [target population per type]

The baseline scenario was identified using [method].

Several greenhouse gases (GHG), including carbon dioxide, are produced as a result of the combustion of non-renewable biomass as used in cooking stoves. ICS improve heat transfer efficiency as compared to the baseline conventional stoves, thereby reducing both the amount of wood fuel used by unit appliance implemented and the emission of GHGs.

In addition to direct climate benefits, this SSC-CPA achieves several co-benefits that contribute to sustainable development:

#### Environmental Benefits

The project reduces the demand for biomass required for cooking stoves thus reducing the rate of deforestation connected to wood consumption. In addition, the reduction in use of less efficient stoves will yield a reduction in emissions from fuel combustion thus improving air quality and reducing the emission of harmful gases that contribute to climate change.

#### Social and economic benefits

Project beneficiaries using the ICS reduce their wood consumption. The reduction in fuel needs will also save project beneficiaries time and income. This means that biomass users who gather wood will see a reduction in the amount that they have to collect, leaving that time available for other activities. Biomass users that purchase their fuel will be able to direct more of their income to other needs. From the economic perspective, the project will contribute to the scale-up of local businesses and organizations, with the potential to create jobs in retail, marketing and distribution.

### **SECTION B. Application of a baseline and monitoring methodology and standardized baseline**

#### **B.1. Reference of methodology(ies) and standardized baseline(s)**

This small scale CPA applies the methodology: AMS-II.G. Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass Version 06.0, Sectoral Scope 03. The approved SSC baseline and monitoring methodology is approved for use in a PoA by the EB.

#### **B.2. Applicability of methodology(ies) and standardized baseline(s)**

A unique methodology is applied for all the CPAs under the PoA. Therefore the methodology measures established in the PoA-DD, Part I, section B.3 constitutes the justification for the choice and applicability of the selected methodology.

**B.3. Sources and GHGs**

|                 | Sources   | Gas              | Included? | Justification/Explanation  |
|-----------------|---|------------------|-----------|--|
| <b>Baseline</b> | Combustion of non-renewable biomass for cooking | CO <sub>2</sub>  | Yes       | Important source of emissions  |
|                 |   | CH <sub>4</sub>  | No        | Not considered as per the methodology. Exclusion is conservative assumption. |
|                 |   | N <sub>2</sub> O | No        | Not considered as per the methodology. Exclusion is conservative assumption. |
| <b>Project</b>  | Combustion of non-renewable biomass for cooking | CO <sub>2</sub>  | Yes       | Important source of emissions  |
|                 |   | CH <sub>4</sub>  | No        | Not considered as per the methodology. Exclusion is conservative assumption. |
|                 |   | N <sub>2</sub> O | No        | Not considered as per the methodology. Exclusion is conservative assumption. |

Figure II.B.3: Emission sources included in or excluded from the project boundary

**B.4. Description of baseline scenario**

As per the AMS.II.G, it is assumed that in the absence of the project activity, the baseline scenario would be the use of fossil fuels for meeting similar thermal energy needs. As specified in the methodology, a value of 81.6 tCO<sub>2</sub>/TJ is used as the emission factor for the substitution of non-renewable biomass by similar consumers ( $EF_{projected\_fossilfuel}$ )<sup>23</sup>.

**B.5. Demonstration of eligibility for a generic CPA**

The assessment and demonstration of eligibility for a typical SSC-CPA is demonstrated in PoA-DD Section C.2 and specifically determined at the CPA level as shown in each CPA-DD, section D.5.

**B.6. Estimation of emission reductions of a generic CPA****B.6.1. Explanation of methodological choices**

A typical SSC-CPA under the PoA consists of the installation of ICS, which by definition are small appliances providing energy efficiency improvements in the thermal applications of non-renewable biomass, in accordance with AMS-II.G. In accordance with the methodology, it is assumed that in the absence of the project activity, the baseline scenario would be the use of fossil fuels for cooking.

The quantity of biomass used in absence of the project activity for target consumers will be determined at the CPA level. Assessments, information used in initial CPAs may be used in subsequent CPAs in lieu of conducting fresh assessments at each CPA level.

A number of choices have been made in applying specific options provided for in the methodology, as is described below in the equations to be used for calculation of emissions reductions.

<sup>23</sup> This value represents the emission factor of the substitution fuels likely to be used by similar users, on a weighted average basis. It is assumed that the mix of present and future fuels used would consist of a solid fuel (lowest in the ladder of fuel choices), a liquid fossil fuel (represents a progression over solid fuel in the ladder of fuel use choices) and a gaseous fuel (represents a progression over liquid fuel in the ladder of fuel use choices). Thus a 50% weight is assigned to coal as an alternative solid fossil fuel (96 tCO<sub>2</sub>/TJ) and a 25% weight is assigned to both liquid and gaseous fuels (71.5 tCO<sub>2</sub>/TJ for Kerosene and 63.0 tCO<sub>2</sub>/TJ for Liquefied Petroleum Gas (LPG)).



**B.6.2. Data and parameters fixed ex-ante**

|   |  |
|---|--|
| <b>Data / Parameter:</b>                                    | $B_{old,i}$  |
| <b>Data unit:</b>   | tonnes / year / project device   |
| <b>Description:</b>   | Quantity of woody biomass that would be used in the absence of the project activity  |
| <b>Source of data:</b>                                      | <p>Historical data or survey of local usage will be conducted for each target consumer group included in a given CPA as per Para 19(a) of AMS II.G.</p> <p>All data will be kept for 2 years following the crediting period or the last issuance of the CERs of the project activity.</p>  |
| <b>Value applied:</b>                                       | <p>XX for residential</p> <p>XX for commercial</p> <p>XX for institutional</p> <p>To be determined at the first CPA involving the target consumer groups</p>   |
| <b>Choice of data or Measurement methods and procedures</b> | Established in CPA-DD. Combination of literature and/or field survey by a dedicated expert team.   |
| <b>Purpose of data</b>                                      | Calculation of Baseline Emissions  |
| <b>Additional comment</b>                                   | <p>Assessments, information and results established in initial CPAs may be used in subsequent CPAs in lieu of conducting fresh assessments at each CPA level in absence of new data.</p> <p>Also, if at the CPA-level it is assumed ex-ante that there is only one project stove being used per household for calculating <math>B_{old,i}</math>, then, ex-post sampling based monitoring shall also include assessment of presence of multiple operational project stoves in a sampled household. The number of project stoves in the CPA shall be adjusted accordingly to claim emissions reduction only for one project stove per household to ensure equivalence with the baseline established.</p> <p>Refer section B.7.1, parameter table <math>N_{y,i,a}</math> additional comment for detail on adjustment to be applied in case multiple project devices in a household are identified during monitoring.</p> |

|                          |   |
|--------------------------|---|
| <b>Data / Parameter:</b> | $\eta_{old}$  |
| <b>Data unit:</b>        | Percentage  |
| <b>Description:</b>      | Efficiency of the system being replaced as part of the SSC-CPA  |
| <b>Source of data:</b>   | <p>Reference literature, survey, and/or default value for each baseline technology as per AMS II.G., equation (3) / (4). Weighted averages applied if more than one appliance is being replaced.</p> <p>In case of surveys, Lab or field tests by a dedicated team by means of a WBT will be conducted for representative baseline appliance types.</p> <p>All data will be kept for 2 years following the crediting period or the last issuance of the CERs of the project activity. Once a baseline is established for a target consumer group in a given CPA it may be used in subsequent CPAs as default.</p> |
| <b>Value applied:</b>    | To be determined at the first CPA applying this value   |

|  |   |
|--|---|
| Choice of data or Measurement methods and procedures | Survey and/or historical data and/or default value, weighted average if multiple systems.         |
| Purpose of data                                      | Calculation of Baseline Emissions   |
| Additional comment                                   | This parameter is applicable only when AMS-II.G step-6 <u>option-2</u> is chosen for a given CPA. |

|  |  |
|--|--|
| <b>Data / Parameter:</b>                             | LE <sub>y</sub>  |
| Data unit:   | tCO <sub>2</sub> e   |
| Description:   | Leakage  |
| Source of data:                                      | AMS-II.G.. Paragraph 30  |
| Value applied:                                       | 0  |
| Choice of data or Measurement methods and procedures |  |
| Purpose of data                                      | Account for leakage adjustment in calculation of baseline emissions  |
| Additional comment                                   | A default leakage correction factor of 0.95, as per AMS II.G. paragraph 30, has already been applied to adjust the B <sub>old,i</sub> during period y instead of separate calculation of LE <sub>y</sub> |

|  |   |
|--|---|
| <b>Data / Parameter:</b>                             | NCV <sub>biomass</sub>  |
| Data unit:   | TJ/tonne  |
| Description:   | Net calorific value for biomass   |
| Source of data:                                      | IPCC default value for wood fuel as per AMS-II.G  |
| Value applied:                                       | 0.015   |
| Choice of data or Measurement methods and procedures | Adopt IPCC default values as per CDM methodology.<br><br>Reference: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 2:<br><a href="http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol2.html">http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol2.html</a> |
| Purpose of data                                      | Calculation of Baseline Emissions   |
| Additional comment                                   | None  |

|  |   |
|--|---|
| <b>Data / Parameter:</b>                             | EF <sub>projected fossil fuel</sub>   |
| Data unit:   | t CO <sub>2</sub> /TJ   |
| Description:   | Emission factor for the substitution of non-renewable woody biomass by similar consumers. |
| Source of data:                                      | AMS-II.G , default value  |
| Value applied:                                       | 81.6  |
| Choice of data or Measurement methods and procedures | Default value as prescribed by methodology applied  |

|                    |                                   |
|--------------------|-----------------------------------|
| Purpose of data    | Calculation of Baseline Emissions |
| Additional comment | None                              |

|  |  |
|--|--|
| <b>Data / Parameter:</b>                             | $SC_{old}$   |
| Data unit:   | tonnes wood/ year  |
| Description:   | Specific fuel consumption or the fuel consumption rate of the baseline system/s replaced   |
| Source of data:                                      | When AMS-II.G Para 18 is chosen for a given CPA, a standard Controlled Cooking Test (CCT) will be conducted by a dedicated expert team. This value will be used for ex-post emission reduction calculations. Weighted averages applied if more than one appliance is being replaced.<br><br>All data will be kept for 2 years following the crediting period or the last issuance of the CERs of the project activity. Once a baseline is established for a target consumer group in a given CPA it may be used in subsequent CPAs as default. |
| Value applied:                                       | To be established at the first CPA applying this value.  |
| Choice of data or Measurement methods and procedures | Specific fuel consumption or fuel consumption rate are to be determined using the controlled cooking test (CCT) protocol carried out in accordance with national standards (if available) or international standards or guidelines.  |
| Purpose of data                                      | Calculation of Baseline Emissions  |
| Additional comment                                   | This parameter is applicable only when AMS-II.G Para 18 is chosen for a given CPA.   |

|  |   |
|--|---|
| <b>Data / Parameter:</b>                             | $f_{NRB,y}$   |
| Data unit:   | Fraction  |
| Description:   | Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable  |
| Source of data:                                      | Study or published literature   |
| Value applied:                                       | 0.8382 as per Envirofit International Ltd: <i>NRB Study Honduras</i> -, version03 dated 22 July 2013  |
| Choice of data or Measurement methods and procedures |   |
| Purpose of data                                      | Calculation of Baseline Emissions   |
| Additional comment                                   | Fixed ex-ante at the PoA level, In case of absence of recent published data, use the default value provided by CDM SSC Small Scale working group or the data established in the previous years' / previous CPAs |

### B.6.3. Ex-ante calculations of emission reductions

Emission reductions are calculated<sup>24</sup> as follows:

$$ER_y = \sum_i ER_{y,i}$$

Equation (1)

<sup>24</sup> See Appendix 5 of each specific CPA for actual values.

Where:

- $i$  = Indices for the situation where more than one type of project device is introduced to replace the pre-project devices
- $ER_y$  = Emission reductions during year  $y$  in tCO<sub>2</sub>e
- $ER_{y,i}$  = Emission reductions by project device of type  $i$  during year  $y$  in tCO<sub>2</sub>e

(a) For household cook stoves:

Equation (2)

$$ER_{y,i} = \sum_{a=1}^{a=y} B_{y,savings,i,a} \times N_{y,i,a} \times \frac{\mu_{y,i}}{365} \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossilfuel} - LE_y$$

(b) For ovens or dryers<sup>25</sup>:

Equation (3)

$$ER_{y,i} = B_{y,savings,i} \times N_{y,i} \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossilfuel} - LE_y$$

Where:

- $a$  = 'a' is the indices for the age (in years) of the cook stoves that are operating in the year 'y' of the crediting period. At any year  $y$  of the crediting period (e.g.  $y = 1, 2, 3 \dots 7$  or  $10$ ) there will be a population of  $N_{y,i,a}$  operational devices of the type  $i$  with age varying from  $a=1$  (the cook stoves installed during the current year  $y$ ) up to the age  $a=y$  (the cook stoves installed during the first year of the crediting period). Since the lifetime of cook stoves is often shorter than the length of the crediting period and cook stoves are likely to show significant efficiency losses over time, this aspect needs to be captured through the monitoring plan
- $B_{y,savings,i,a}$  = Quantity of woody biomass that is saved in tonnes per cook stove device of type  $i$  and age  $a$  in year  $y$  (tonnes)
- $f_{NRB,y}$  = Fraction of woody biomass saved by the project activity in year  $y$  that can be established as non-renewable biomass using survey methods or government data or default country specific fraction of non-renewable woody biomass ( $f_{NRB}$ ) values available on the CDM website.<sup>26</sup> The parameter value may be fixed ex ante at the beginning of each crediting period.
- $NCV_{biomass}$  = Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.015 TJ/tonne, based on the gross weight of the wood that is 'air-dried') (TJ/tonnes)

<sup>25</sup> If the project activity is for industrial/institutional cook-stoves (e.g. schools, hospitals, etc.), this approach may be used, provided that project participants are able to demonstrate that the maintenance program is in place.

<sup>26</sup> Default values endorsed by designated national authorities and approved by the Board are available at <<http://cdm.unfccc.int/DNA/fNRB/index.html>>.

|                              |   |
|------------------------------|---|
| $EF_{projected\_fossilfuel}$ | = Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass by similar consumers. Use a value of 81.6 tCO <sub>2</sub> /TJ <sup>27</sup>                              |
| $N_{y,i,a}$                  | = Number of project devices of type <i>i</i> and age <i>a</i> operating in year <i>y</i>  |
| $\mu_{y,i}$                  | = Number of days of utilization of the project device during the year 'y'. Its value may be considered as 365 where it can be demonstrated that the pre-project device has been decommissioned and is no longer used. |
| $LE_y$                       | = Leakage emissions in the year <i>y</i> , to be taken as 0 as leakage correction factor of 0.95 shall be directly applied to $B_{y,savings,i,a}$   |

**When using AMS-II.G, Option 1 (Para 15):**

Equation (4)

$$B_{y,savings,i,a} = B_{old,i} - B_{a=1,i,KPT} \times \Delta B_{y,i,a}$$

Where:

|                    |  |
|--------------------|--|
| $B_{old,i}$        | = Annual quantity of woody biomass that would be used in the absence of the project activity to generate thermal energy equivalent to that provided by the project device type <i>i</i> , if the project device operates throughout the year <i>y</i> . (tonnes)   |
| $B_{a=1,i,KPT}$    | = Annual quantity of woody biomass used in tonnes per device of type <i>i</i> , measured as per the KPT protocol, for the initial efficiency determined in the year of its installation ( <i>a</i> =1). The KPT shall be carried out in accordance with national standards (if available) or international standards or guidelines |
| $\Delta B_{y,i,a}$ | = Factor to consider the efficiency loss of the project device type <i>i</i> due to its aging at the year <i>y</i> , expressed as follows:   |

$$\Delta B_{y,i,a} = \frac{B_{a,i,KPT}}{B_{a=1,i,KPT}}$$

Where  $B_{a,i,KPT}$  is the biomass consumption of the device '*i*' with age '*a*' determined using the KPT (in tonnes per year per device) and  $B_{a=1,i,KPT}$  is the biomass consumption of the device at its first year of operation.  $\Delta B_{y,i,a}$  may be determined through sample surveys of project device type *i* for batches of stoves with the same age at each year of the crediting period. Alternatively, the monitoring may determine annually the biomass consumption of the devices installed at the first year of the crediting period, through the

<sup>27</sup> This value represents the emission factor of the substitution fuels likely to be used by similar users, on a weighted average basis. It is assumed that the mix of present and future fuels used would consist of a solid fossil fuel (lowest in the ladder of fuel choices), a liquid fossil fuel (represents a progression over solid fuel in the ladder of fuel use choices) and a gaseous fuel (represents a progression over liquid fuel in the ladder of fuel use choices). Thus a 50 per cent weight is assigned to coal as the alternative solid fossil fuel (96 t CO<sub>2</sub>/TJ) and a 25 per cent weight is assigned to both liquid and gaseous fuels (71.5 t CO<sub>2</sub>/TJ for kerosene and 63.0 t CO<sub>2</sub>/TJ for liquefied petroleum gas (LPG)).

crediting period and the efficiency loss of this population may be used to correct the initial efficiency of the population of stoves installed later on. For example, the loss rate of year 2016 for the project device of type  $i$  installed in 2015 can be considered the same as that of year 2014 for the project device of the same type installed in 2013. In this way, the monitoring at any year  $y$  during the crediting period will consist of the determination of the biomass consumption for the devices installed during the current year (the initial value  $B_{a=1,i,KPT}$  for the population commissioned during this year), and the values of  $B_{a,i,KPT}$  and of  $\Delta B_{y,i,a}$  for oldest population (i.e. the devices from the first year that have now reached the age  $a=y$ )

**When using AMS-II.G, Option 2:**

$$B_{y,savings,i,a} = B_{old,i} \times \left(1 - \frac{\eta_{old}}{\eta_{new,i,a=1} \times \Delta \eta_{y,i,a}}\right) \quad \text{Equation (5)}$$

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

Where:

$B_{y=1,new,i,survey}$  = Annual quantity of woody biomass used by project devices in tonnes per device of type  $i$ , determined in the first year of the introduction of the devices (e.g. during the first year of the crediting period,  $y=1$ ) through a 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:

- (a) Pre-project devices have been completely decommissioned and only efficient project devices are exclusively used in the project households;
- (b) If multiple devices are used in the project, it is possible from the results of the survey questions to clearly differentiate the quantity of woody biomass being used by each device. In other words, if more than one device, or another device that consumes woody biomass, are in use in project households, then the sample survey needs to distinguish the quantity of biomass used by the project device and the other devices that use biomass.

$\eta_{old}$  = Efficiency of the pre-project device (fraction), determined using one of the following options:

- (a) Measured using representative sampling methods or based on literature reporting results of measurements relevant for the type of pre-project devices. Use weighted average values (taking the amount of woody biomass consumed by each device as the weighting factor) if more than one type of device is being replaced;
- (b) A default value of 0.10 may be optionally used if the pre-project device is a three stone fire using firewood (not

charcoal), or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney; for other types of devices, a default value of 0.2 may be optionally used. Use weighted average values (taking the amount of woody biomass consumed by each device as the weighting factor) if more than one type of device is being replaced.

$\eta_{new,i,a=1}$  = Thermal efficiency of the device of type  $i$  being deployed as part of the project activity (fraction), using the WBT protocol carried out in accordance with national standards (if available) or international standards or guidelines, for the initial efficiency determined in the year of its installation ( $a=1$ )

$\Delta\eta_{y,i,a}$  = Factor to consider the efficiency loss of the project device type  $i$  due to its aging at the year  $y$ , as expressed as follows:

$$\Delta\eta_{y,i,a} = \frac{\eta_{new,i,a}}{\eta_{new,i,a=1}}$$

where  $\eta_{new,i,a}$  is the thermal efficiency of the device ' $i$ ' with age ' $a$ ' determined using the WBT and  $\eta_{new,i,a=1}$  is the thermal efficiency of the device at its first year of operation.  $\Delta\eta_{y,i,a}$  may be determined through sample surveys of project device type  $i$  for batches of stoves with the same age at each year of the crediting period. Alternatively, the monitoring may determine annually the thermal efficiency of the devices installed at the first year of the crediting period, and the efficiency loss of this population may be used to correct the initial efficiency of the population of devices installed later on. For example, the loss rate of year 2016 for the project device of type  $i$  installed in 2015 can be considered the same as that of year 2014 for the project device of the same type installed in 2013. In this way, the monitoring at any year  $y$  during the crediting period will consist of the determination of the thermal efficiency for the devices installed during the current year (the initial value  $\eta_{new,i,a=1}$  for the population commissioned during this year), and the values of  $\eta_{new,i,a}$  and of  $\Delta\eta_{y,i,a}$  for oldest population (i.e. the devices from the first year that have now reached the age  $a=y$ )

When using AMS-II.G, Option 3:

Equation (7)

$$B_{y,savings,i,a} = B_{old,i} \times \left(1 - \frac{SC_{new,i,a=1} \times \Delta SC_{y,i,a}}{SC_{old}}\right)$$

Where:

$SC_{old}$  = Specific fuel consumption or fuel consumption rate of the pre-project devices, that is fuel consumption per quantity of item/s processed (e.g. food cooked) or fuel consumption per hour, respectively. Specific fuel consumption or fuel consumption rate are to be determined using the CCT protocol carried out in accordance with national standards (if available) or international standards or guidelines. Use weighted average values if more



than one type of device is being replaced (taking the amount of woody biomass consumed by each device as the weighting factor)

$SC_{new,i,a=1}$  = Specific fuel consumption or the fuel consumption rate of the devices of type  $i$  deployed as part of the project, that is fuel consumption per quantity of item/s processed (e.g. food cooked) or fuel consumption per hour respectively, for the initial efficiency determined in the year of its installation ( $a=1$ ). Specific fuel consumption or fuel consumption rate shall be determined using the same CCT protocol used to test the pre-project devices. If more than one project devices are necessary to replace the pre-project device, woody biomass consumption should be calculated per device (taking the amount of woody biomass consumed by each device as the weighting factor)

$\Delta SC_{y,i,a}$  = Factor to consider the efficiency loss of the project device type  $i$  due to its aging at the year  $y$ , as expressed as follows:

$$\Delta SC_{y,i,a} = \frac{SC_{new,i,a=1}}{SC_{new,i,a}}$$

where  $SC_{new,i,a}$  is the specific fuel consumption of the device ' $i$ ' with age ' $a$ ' determined using the CCT and  $SC_{new,i,a=1}$  is the specific fuel consumption of the device at its first year of operation.  $\Delta SC_{y,i,a}$  may be determined through sample surveys of project device type  $i$  for batches of stoves with the same age at each year of the crediting period. Alternatively, the monitoring may determine annually the specific fuel consumption of the devices installed at the first year of the crediting period, and the efficiency loss of this population may be used to correct the initial efficiency of the population of devices installed later on. As an example, the loss rate of year 2016 for the project device of type  $i$  installed in 2015 can be considered the same as that of year 2014 for the project device of the same type installed in 2013. In this way, the monitoring at any year  $y$  during the crediting period will consist of the determination of the specific fuel consumption for the devices installed during the current year (the initial value  $SC_{new,i,a=1}$  for the population commissioned during this year), and the values of  $SC_{new,i,a}$  and of  $\Delta SC_{y,i,a}$  for oldest population (i.e. the devices from the first year that have now reached the age  $a=y$ )

### Generalities

$B_{old,i}$  is calculated as (option a from paragraph 19 of the methodology) the estimate of average annual consumption of biomass per appliance (tonnes/year) as derived from historical data or survey of local usage.

$B_{y,savings,i,a}$  may be determined by any of the 3 options listed above which lead to the involvement of specific field and/or lab test. The parameters to be considered for each option are assessed according to the program requirements established in Part II section B.6.2 and B.7 of the PoA-DD and the specific requirements established in section D.7.2 and D.6.2 of the specific CPA.

Adjustment factors described in Part II, section B.6.2 and Part II, B.7.1 of the PoA-DD are used for ex-ante calculations. Ex-post parameters will be applied following the results of the monitoring plan.



**B.7. Application of the monitoring methodology and description of the monitoring plan****B.7.1. Data and parameters to be monitored by each generic CPA**

|   |   |
|---|---|
| <b>Data / Parameter:</b>                  | $N_{y,i,a}$   |
| <b>Data unit:</b>                         | number  |
| <b>Description:</b>                       | Number of project devices of type $i$ and age $a$ that are operating in year $y$  |
| <b>Source of data:</b>                    | Stove sales database and Survey records   |
| <b>Value(s) applied</b>                   | An assumed value will be applied at the CPA level for the purposes estimating emissions reductions ex-ante.   |
| <b>Measurement methods and procedures</b> | <p><i>Target population:</i> All systems deployed (therefore all populations).</p> <p><i>Objective:</i><br/>To establish the number of devices of type <math>i</math> and age <math>a</math> that are still operating;</p> <p><i>Description and Reliability Requirements:</i> Primary data collection, weighted average if multiple systems.</p> <p>The total number of appliances by type and age deployed during period <math>y</math> is tracked in the Project Database of the specific CPA, which is updated regularly. All appliances distributed will be recorded for installation date and recipient / location. The sales date for each appliance listed in the Project Database of each CPA signifies the start of operation<sup>28</sup> for each appliance type.</p> <p><i>Sampling Frame:</i> Project Database of each CPA (or combined PoA database in case of PoA level sampling) as defined by sales date, appliance type, serial number, and end-user information.</p> <p><i>Sample Size and Desired Precision:</i> see PoA-DD, Part II, Section B.7.2.</p> <p><i>Sample Method:</i> see PoA-DD, Part II, Section B.7.2.</p> <p>The number of stoves still operating will be determined based on representative sampling. The total number of operational stoves shall be calculated as the fraction of stoves of type <math>i</math> and age <math>a</math> found operational in the sampling survey multiplied by total number of stoves of type <math>i</math> and age <math>a</math> in the project database.</p> |
| <b>Monitoring Frequency</b>               | At least once every two years as per section 5.1 and para 39 of the methodology   |
| <b>QA/QC procedures:</b>                  | <p>Each SSC-CPA project implementer shall maintain a sales record to calculate this parameter.</p> <p>Stove sales records received from each DO will be cross-checked against CME's sales records to each DO. The cross-checking of all DOs will be led by the CME.</p> <p>The CME supervises the activities of each SSC-CPA DO (when not the CME itself), and provides training, guidelines and templates to facilitate accurate testing and record keeping.</p> <p>In the case the desired precision is not met, lower bound values shall be</p>  |

<sup>28</sup>In case of sales via intermediaries, the information regarding start of operation for each appliance may not be available for all stoves. Thus, in case of absence of operation start date of a give unit a 120 day default lag shall be applied from the date of sale to intermediary as a conservative measure.

|                    |   |
|--------------------|---|
|                    | used against repeating the survey to determine the operational fraction of stoves of type $i$ and age $a$ .   |
| Purpose of data    | Calculation of Baseline Emissions.  |
| Additional comment | <p>All data sources will be transparent and verifiable. Also, if at the CPA-level it is assumed ex-ante that there is only one project stove being used per household for calculating <math>B_{old,i}</math>, then, ex-post sampling based monitoring shall also include assessment of presence of multiple operational project stoves in a sampled household. The number of project stoves in the CPA shall be adjusted accordingly to claim emissions reduction only for one operational project stove per household to ensure equivalence with the baseline established.</p> <p>For example, if during the survey to check operational status, 10% of the households are found using more than one stove, then the stove population in the PoA / CPA shall be adjusted by 10%.</p> |

|                                    |  |
|------------------------------------|--|
| Data / Parameter:                  | $B_{a,i,KPT}$  |
| Data unit:                         | tonnes wood/ year  |
| Description:                       | Annual Quantity of woody biomass used during the project activity in tonnes per device of type $i$ with the age $a$  |
| Source of data:                    | Primary data collection  |
| Value(s) applied                   | An assumed value will be applied at the CPA level for the purposes estimating emissions reductions ex-ante.  |
| Measurement methods and procedures | <p>Project fuel consumption will be determined using KPT. The KPT should be carried out in accordance with national standards (if available) or international standards or guidelines (e.g. the KPT procedures specified by the Partnership for Clean Indoor Air (PCIA) - <a href="http://www.pciaonline.org/node/1049">http://www.pciaonline.org/node/1049</a>)</p> <p><i>Target population:</i> project stove users.</p> <p><i>Objective:</i> To establish the quantity of woody biomass used during the project activity in tonnes for each target population.</p> <p><i>Description and Reliability Requirements:</i> Primary data collection, weighted average if multiple systems.</p> <p><i>Sampling Frame:</i> Project Database of each CPA (or combined PoA database in case of PoA level sampling) as defined by sales date, appliance type, serial number, and end-user information.</p> <p><i>Sample Size and Desired Precision:</i> Mean Value determination; see PoA-DD, Part II, Section B.7.2.</p> <p><i>Sample Method:</i> see PoA-DD, Part II, Section B.7.2.</p> <p><i>Implementation:</i> Sampling will be conducted for representative appliance types</p> <p>A weighted average of stove sales for each vintage will be applied. This value will be used for ex-post emission reduction calculations.</p> <p>In accordance to AMS-II.G methodological requirements, subsequent KPTs on aging stoves (<math>\Delta B_{y,i,a}</math>) will measure changes in project fuel consumption</p> |

|                      |   |
|----------------------|---|
|                      | and will be used for emission reduction calculations for associated stove vintages.<br><br>Once applied to a single CPA, all applicable future CPAs within the same PoA may use such data to define the value. All data will be kept for 2 years following the crediting period or the last issuance of the CERs of the project activity. |
| Monitoring Frequency | Annually as per section 5.1 and Para 34 of the methodology  |
| QA/QC procedures:    | CME/DO conducts testing with expert party assistance. Training will be provided to enumerators and testers. Conducted by dedicated monitoring team. Database maintenance: managing entity.  |
| Purpose of data      | Calculation of Baseline Emissions.  |
| Additional comment   | This parameter is applicable only when option 1 (Para 15) of methodology is chosen for a given CPA.   |

|                                    |   |
|------------------------------------|---|
| <b>Data / Parameter:</b>           | $B_{y=1, new, i, survey}$   |
| Data unit:                         | tonnes wood/ year   |
| Description:                       | Quantity of woody biomass used during the project activity in tonnes per device of type <i>i</i> , determined through a sample survey   |
| Source of data:                    | Primary data collection   |
| Value(s) applied                   | An assumed value will be applied at the CPA level for the purposes estimating emissions reductions ex-ante.   |
| Measurement methods and procedures | <p>Project fuel consumption will be determined using surveys</p> <p><i>Target population:</i> project stove users.</p> <p><i>Objective:</i> To establish the quantity of woody biomass used during the project activity in tonnes for each target population.</p> <p><i>Description and Reliability Requirements:</i> Primary data collection, weighted average if multiple systems.</p> <p><i>Sampling Frame:</i> Project Database of each CPA (or combined PoA database in case of PoA level sampling) as defined by sales date, appliance type, serial number, and end-user information.</p> <p><i>Sample Size and Desired Precision:</i> Mean Value determination; see PoA-DD, Part II, Section B.7.2.</p> <p><i>Sample Method:</i> see PoA-DD, Part II, Section B.7.2.</p> <p><i>Implementation:</i> Sampling will be conducted for representative appliance types</p> <p>A weighted average of stove sales for each vintage will be applied. This value will be used for ex-post emission reduction calculations.</p> <p>In accordance to AMS-II.G methodological requirements, subsequent surveys on aging stoves will measure changes in project fuel consumption and will be used for emission reduction calculations for associated stove vintages.</p> <p>Once applied to a single CPA, all applicable future CPAs within the same</p> |

|                      |   |
|----------------------|---|
|                      | POA can use such data to define the value.  |
|                      | All data will be kept for 2 years following the crediting period or the last issuance of the CERs of the project activity.  |
| Monitoring Frequency | Once in the first year  |
| QA/QC procedures:    | CME/DO conducts testing with expert party assistance. Training will be provided to enumerators and testers.<br><br>Conducted by dedicated monitoring team. Database maintenance: managing entity. |
| Purpose of data      | Calculation of Baseline Emissions   |
| Additional comment:  | This parameter is applicable only when option 2 (Para 17) of the methodology is chosen for a given CPA.   |

|                                    |   |
|------------------------------------|---|
| <b>Data / Parameter:</b>           | $\eta_{new,i,a}$  |
| Data unit:                         | %   |
| Description:                       | Efficiency of the device of type i and age a being deployed as part of the project activity   |
| Source of data:                    | WBTs results conducted on a sampling basis  |
| Value(s) applied                   | An assumed value will be applied at the CPA level for the purposes estimating emissions reductions ex-ante.   |
| Measurement methods and procedures | <p>The WBTs should be carried out in accordance with national standards (if available) or international standards or guidelines</p> <p><i>Target population:</i> project stove users.</p> <p><i>Objective:</i> To establish the operating efficiency of project stove during the project activity for each target population.</p> <p><i>Description and Reliability Requirements:</i> Primary data collection, weighted average if multiple systems.</p> <p><i>Sampling Frame:</i> Project Database of each CPA (or combined PoA database in case of PoA level sampling) as defined by sales date, appliance type, serial number, and end-user information.</p> <p><i>Sample Size and Desired Precision:</i> Mean Value determination; see PoA-DD, Part II, Section B.7.2.</p> <p><i>Sample Method:</i> see PoA-DD, Part II, Section B.7.2.</p> <p><i>Implementation:</i> Sampling will be conducted for representative appliance types</p> <p>A weighted average of stove sales for each vintage will be applied. This value will be used for ex-post emission reduction calculations.</p> <p>In accordance to AMS-II.G methodological requirements, subsequent WBTs on aging stoves (<math>\Delta\eta_{y,i,a}</math>) will measure changes in project stove efficiency and will be used for emission reduction calculations for associated stove vintages.</p> <p>Once applied to a single CPA, all applicable future CPAs within the same PoA may use such data to define the value. All data will be kept for 2 years</p> |

|                      |   |
|----------------------|---|
|                      | following the crediting period or the last issuance of the CERs of the project activity.  |
| Monitoring Frequency | Annually as per section 5.1 and Para 34 of the methodology  |
| QA/QC procedures:    | CME/DO conducts testing with expert assistance. Training may be provided to enumerators and testers. Database maintenance: managing entity. |
| Purpose of data      | Calculation of Baseline Emissions.  |
| Additional comment   | This parameter is applicable only when option 2 (Para 17) of methodology is chosen for a given CPA.   |

|                                    |  |
|------------------------------------|--|
| <b>Data / Parameter:</b>           | $SC_{new,i,a}$   |
| Data unit:                         | tonnes fuel/output or t fuel/hour  |
| Description:                       | Specific fuel consumption or fuel consumption rate in year y of the device(s) of type i deployed as part of the project that is fuel consumption per quantity of item/s processed (e.g. food cooked) or fuel consumption per hour respectively with the age a  |
| Source of data:                    | Primary data collection (by means of the CCT), weighted average if multiple systems.   |
| Value(s) applied                   | An assumed value will be applied at the CPA level for the purposes estimating emissions reductions ex-ante.  |
| Measurement methods and procedures | <p>Project fuel savings will be determined using CCTs. The CCTs should be carried out in accordance with national standards (if available) or international standards or guidelines</p> <p><i>Target population:</i> project stove users.</p> <p><i>Objective:</i> Establish the specific fuel consumption or the fuel consumption rate of the system/s deployed for each target population.</p> <p><i>Description and Reliability Requirements:</i> A selection system will be used to select samples from the Project Database. If a selected household opts out of the study, a new household will be selected and the failure rate recorded.</p> <p><i>Sampling Frame:</i> Project Database of each CPA (or combined PoA database in case of PoA level sampling) as defined by sales date, appliance type, serial number, and end-user information.</p> <p><i>Sample Size and Desired Precision:</i> Mean Value determination; see PoA-DD, Part II, Section B.7.2.</p> <p><i>Sample Method:</i> see PoA-DD, Part II, Section B.7.2.</p> <p><i>Implementation:</i> Sampling will be conducted for representative appliance types. Weighted averages applied if more than one appliance.</p> <p>Primary data collection, weighted average if multiple systems.</p> <p>A standard test (Controlled Cooking Test) by a dedicated expert team on each technology type that measures aging stove performance (<math>\Delta SC_{y,i,a}</math>) per stove type.</p> <p>A weighted average of stove sales for each vintage will be applied.</p> <p>All data will be kept for 2 years following the crediting period or the last</p> |

|                      |   |
|----------------------|---|
|                      | issuance of the CERs of the project activity.   |
| Monitoring Frequency | Annually as per section 5.1 and Para 34 of the methodology  |
| QA/QC procedures:    | CME/DO conducts testing with expert party assistance  |
| Purpose of data      | Calculation of Baseline Emissions.  |
| Additional comment   | This parameter is applicable only when option 3 (Para 18) of the methodology is chosen for a given CPA. |

|                                    |   |
|------------------------------------|---|
| <b>Data / Parameter:</b>           | $\mu_{y,i}$   |
| Data unit:                         | days  |
| Description:                       | number of days of utilization of the project device during the year 'y'   |
| Source of data:                    | Primary data collection as measured through ex-post surveys/ user feedback.   |
| Value(s) applied                   | An assumed value will be applied at the CPA level for the purposes estimating emissions reductions ex-ante.   |
| Measurement methods and procedures | <p><i>Target population:</i> Systems deployed by type and vintage (for example: residential).</p> <p><i>Objective:</i> To establish the average utilization of the project device deployed as part of the SSC-CPA per stove type, measured ex-post through survey/user feedback.</p> <p><i>Description and Reliability Requirements:</i> Primary data collection, weighted average if multiple systems.</p> <p><i>Sampling Frame:</i> Project Database of each CPA (or combined PoA database in case of PoA level sampling) as defined by sales date, appliance type, serial number, and end-user information.</p> <p><i>Sample Size and Desired Precision:</i> Proportional Value determination, see PoA-DD, Part II, and Section B.7.2.</p> <p><i>Sample Method:</i> see PoA-DD, Part II, Section B.7.2.</p> <p><i>Implementation:</i> A system will be used to select samples from the Project Database. If a selected household opts out of the study, a new household will be selected and the failure rate recorded.</p> <p>In case the pre-project device is found decommissioned and no longer used for a given sampled user, this shall be considered as 365 days for the sample.</p> <p>In case the pre-project devices are found in use otherwise, the monitoring surveys should be better designed to capture cooking habits and stove usage of households in the region, by formulating questions and/or collecting evidences to determine the frequency of usage of both the project devices and baseline devices (in case they are continued). For example: fuel consumption by pre-project stoves may be determined on the basis of ratio of number of meals cooked over pre-project cookstoves Vs that on project stoves during a day/week/month determine the ratio of baseline stove usage Vs project stove. This will be multiplied by 365 to determine the utilization of project stove.</p> |

|                      |   |
|----------------------|---|
|                      | In case the surveys do not reflect an accurate usage of pre-project/project stoves a 50:50 usage rate (pre-project: project) for such samples may be taken. |
| Monitoring Frequency | At minimum every two years as per Para 39 of the methodology  |
| QA/QC procedures:    | CME/DO to conduct surveys with expert party assistance. Training will be provided to enumerators and testers.   |
| Purpose of data      | Calculation of Baseline Emissions.  |
| Additional comment   |   |

### B.7.2. Description of the monitoring plan for a generic CPA

#### Sampling Plan across CPAs within the PoA

Due to the large number of ICS envisaged to be distributed as part of the CPAs to be included in the PoA, it is not economically feasible to monitor each individual ICS unit distributed. Therefore, representative sampling will be undertaken as part of a PoA-wide Sampling Plan that is designed in line with the requirements of the methodology applied and the “Standard for sampling and surveys for CDM project activities and programme of activities” version 03.0 (the Sampling Standard). The Sampling Standard (paragraph 20, footnote 18) allows for sampling across a group of CPAs, provided the homogeneity of population can be demonstrated, or differences are taken into account in the sample size calculation and 95/10 confidence/precision is applied.

Flexibility to apply cross-CPA sampling is critical for the feasibility of the proposed PoA due to the large number of CPAs envisaged. In particular, this is the case for monitoring the parameter  $\eta_{\text{new},i,a=1}$  which involves carrying out WBTs in the field and therefore involves considerable time and cost. For this parameter there is likely to be a very high level of homogeneity amongst CPAs involving distribution of the similar stoves, since the ICS to be distributed have been designed to meet stringent efficiency specifications and are manufactured in modern factories to specification. There is no reason to think the actual efficiency of the similar ICS models will vary significantly from CPA to CPA or even region to region. For the other parameters, the CME will define a sampling frame for each group of CPAs such that the homogeneity of the group can be expected to be sufficient to allow for cross-CPA sampling.

Given the multi-target population groups and multi-regional nature of the proposed PoA, it is not feasible to pre-define a common sampling approach for all CPAs that could be included in the PoA over time. Some aspects of the sampling plan will remain fixed and these are identified clearly below. However, the sampling plan will also be elaborated further over time as additional CPAs are included. The sampling plan therefore provides: a framework for the sampling of all parameters contained in the Monitoring plan, the approach for sampling of these parameters, and an approach for integrating future CPAs to be included in the PoA into the Sampling Plan.

The monitoring activity provides a framework for project preparation and monitoring processes that will be undertaken at the CPA level for each CPA, as required by the CDM rules. This schedule takes into account the key parameters that are needed during the crediting periods of the project. All required monitoring and documentation will be implemented, reported, consolidated and managed by the CME or a qualified expert partner to meet verification requirements. Monitored data will be stored in a suite of monitoring databases including the Total Sales Record, the Project Database, and the Stove Monitoring Database. These will be updated each monitoring period.

#### Sampling Methodology

**Sampling Objective** – The sampling objective for each parameter is to determine via survey a statistically significant value for the emission reduction calculations. These parameters are defined in the tables presented in PoA-DD, Part II, Section B.7.1 under “Data / Parameter”.

**Field Measurement Objective and data to be collected** – This is defined in the tables in PoA-DD, Part II, Section B.7.1 under “Description”.

**Target population and sampling frame** – The target population is the total population served under the PoA, and the sampling frame consists of end-users of the ICS as recorded in the Project database / Sale Record. The sampling frame will be kept for 2 years following the crediting period or the last issuance of the CERs of the project activity. In developing sampling frames the implementer of the survey effort shall compile a clear description of the target population, including those characteristics of the population which define membership. From the description and characteristic the implementer can then select a sampling frame appropriate for the study.

**Sample method** – Sampling will be conducted using stratified random sampling techniques, and detailed calculations are provided within the monitoring plan as per CDM guidelines “Sampling and surveys for CDM project activities and programmes of activities”. the ICS shall be stratified by region, target user group, stove category (fuel), ICS model combination (model and age)<sup>29</sup> etc as deemed appropriate by CME.

**Implementation** - The sampling for surveyed or monitored data will be implemented consistent with the approach described above unless survey results necessitate additional or alternative statistical analysis techniques. Monitoring shall be carried out by the operating entity of the CPA according to the procedures and monitoring framework as follows and will be submitted to the managing entity. The managing entity will store the data in an electronic database or other appropriate data archive. Primary data will be stored by the implementing entities/operators.

**Desired precision / expected variance and sample size** – unless otherwise noted in the description of the monitored parameter in PoA-DD, Part II, Section B.7.1, and as allowed by the methodology, the sample size will be chosen for annual monitoring with 90/10 precision (90% confidence interval and 10% margin of error) if the sampling plan is developed for each CPA. When a single sampling plan covering a group of CPAs is undertaken, 95/10 confidence/precision is applied for the sample size calculation. On the other hand when a single CPA is sampled and the project proponent chooses to inspect biennially, then a 95% confidence interval and a 5% margin of error shall be achieved for the sampled parameters. For all cases where survey results indicate that desired precision is not achieved, the lower bound of the confidence interval of the parameter value may be chosen as an alternative to repeating the survey efforts to achieve the desired precision.

Stratified Random Sampling will be used to select samples from the Project Database for monitored parameters. Optionally, other sampling approaches may be used in accordance with “Sampling and surveys for CDM project activities and programmes of activities” and Guideline for Sampling and Surveys for CDM Project Activities and Programme of Activities, when sampling techniques or statistical analysis necessitates it.

The sample size shall be determined using the following formula:

$$n \geq \frac{z^2 * N * V}{(N-1) * precision^2 + z^2 * V}$$

<sup>29</sup> Stove models having efficiency values variation of +/-5% shall be treated as same category for determining clusters.



Where,

$n$  = number of stoves to be sampled

$N$  = Total number of ICS in the population

$Z$  = Constant referring to level of confidence (e.g. 1.645 for 90 %; 1.96 for 95 % confidence)

Precision = Required precision (e.g. 10% = 0.1)

For Proportion based parameters

$$V = \frac{SD^2}{p^2} \text{ Where:}$$

$$SD^2 = \frac{\sum_{i=1}^k g_i * p_i * (1 - p_i)}{N}$$

$$\bar{p} = \frac{\sum_{i=1}^k g_i * p_i}{N}$$

Where,

$g_i$  = weight of strata i in the population

$p_i$  = expected proportion of strata i in the population

$k$  = total number of strata in the population

For Mean based parameters

$$V = \left( \frac{SD}{Mean} \right)^2$$

Where

$$SD^2 = \frac{\sum_{i=1}^k g_i * SD_i^2}{N}$$

$$Mean = \frac{\sum_{i=1}^k g_i * m_i}{N}$$

Where

$SD_i$  = expected standard deviation of strata i in the population

$m_i$  = expected mean of strata i in the population

### Sample Size Calculation

Sample sizes will be sufficient to ensure that the precision of the sample means/proportions are in accordance to the Sampling Frame established for the CPA within the PoA to estimate emissions reductions. In cases where survey results indicate that desired precision is not achieved, the lower bound of corresponding confidence interval of the parameter value may be used as an alternative to repeating the survey. Alternatively, the survey may be expanded to reach the required confidence/precision. Technology types from a given project scenario are selected using representative sampling techniques to ensure adequate representation of technologies types of different ages.

The sampling methodology will be accordance with the representative sampling methods provided by the methodology AMS-II.G and other CDM sampling guidelines and standards as indicated along this section, with the applicable methodology having precedence. Thus, the sampling plan will be provided to the DOE with a description of the objectives and reliability requirements, target population, sampling approach, sample size, sample frame, field measurements and implementation, quality assurance and control, data analysis, important assumptions, and justification for the selection of the chosen approach.

Actual survey results will inform whether fewer or greater surveys will be needed to meet the required confidence/precision. Although the monitoring team will undertake monitoring of various parameters simultaneously and on the same sample, the CME may decide to stop monitoring of a particular parameter during the campaign once the required precision for this parameter is achieved. The monitoring team will continue to monitor appliances in the sample with respect to the remaining parameter(s) until the required precision for these parameters is achieved again.

In the case of parameters monitored for the first time the expected variation for that measure in the sample may be based on results from similar studies, pilot studies, or from the project planner's own knowledge of the data.

To ensure a random stratified sample selection, random number generators shall be applied. Each ICS in the target population is uniquely identifiable by its Serial ID number. Each ICS can thus be allocated a Sample Selection Number in each monitoring period, starting at 1 and increasing up to the total number of ICS in the Database for that pre-defined stratified sampling frame. Applying the random number generators, the ICS can then be randomly chosen from the defined population up to the required sample size as calculated by the CME.

During sampling there may be non-response from the target population. Over-sampling by 20% may be used to avoid non-response; however, sampling may be ceased once required confidence/precision is met.

### Monitored Systems

1. **Total Sales Record:** The total sales record documents the information listed below of stove sales to retailers for the technologies implemented under the CPA. The total sales record will be kept electronically and/or in paper records and provided to the DOE at verification. The Total Sales Record contains:
  - a. Distributing Organization name, address and telephone
  - b. Date of sale and model/type of project technology sold
  - c. Quantity of project technology sold as evidenced by invoices

*Frequency:* Ongoing

2. **Project Database:** Each CPA will have a specific Project Database that records each ICS crediting in that CPA. Every ICS listed in the Total Sales Record will be transferred into the

Project Database of one CPA as needed to grow the number of ICS until the maximum threshold for that CPA is reached. In addition to the information provided in the Total Sales Record, the CPA-specific Project Database will record user details (enough for end-user identification and household follow-up) for all, or a subset of all, appliances deployed. An individual sales record will be collected from each stove user at the point of sale. The CME makes every effort to retrieve this information (paper form or electronically (e.g. SMS)) but cannot guarantee the collection of information with every stove due to challenges such as high rates of illiteracy and logistical challenges. ICS with end-user details recorded will serve as the sampling frame for monitored parameters.

Stove user details recorded are:

- a. Name
- b. Government department, village, telephone, or address (as available)
- c. Stove model and Unique Serial Number
- d. Type of pre-project stove
- e. Name of Organization, address and telephone

*Frequency:* Ongoing

### **Sampling Methodology**

To reduce monitoring efforts a single sample is drawn based on which all of the parameters determined via sampling shall be monitored. The CME will determine the number of users/appliances monitored during sampling for each of the parameters separately. The reason is that the variation within the values obtained will be different for each parameter. Since the precision of a sampled parameter depends on the variation of its values, the necessary number of users/appliances to be monitored in order to achieve the 5% or 10% precision will also depend on the variation of values. Therefore, although the monitoring team will undertake monitoring of various parameters simultaneously and on the same sample, the managing entity may decide to stop monitoring of a particular parameter during the campaign once the required precision for this parameter is achieved. The monitoring team will continue to monitor appliances in the sample with respect to the remaining parameter(s) until again the required precision for these parameters is achieved.

A series of steps will be carried out for representative sampling, in consideration of the Standards and Guidelines described along this section for sampling and surveys for small-scale CDM project activities. For each monitoring period the same sampling procedures will be followed. These steps and procedures are specific to each possible sampling approach as detailed in the Sampling Size Calculation Tool provided.

### **Monitored Parameters:**

Specific parameters to be monitored and methods are listed in the specific CPA. The on-going monitoring is conducted for each project scenario following approval of the PoA and inclusion of the specific CPA DD. The source of data is based on the sales of ICS. To ensure completeness and accuracy of monitoring information, electronic database(s) will be operated and maintained by the coordinating managing entity.

Training will ensure that all monitoring staff has the appropriate skills and experience to administer relevant tests and quality checks will ensure the integrity of information flow to the CME. On an annual basis, the CME shall review the efficacy of information gathering techniques and information flow, and assess enumerator and partner feedback pertaining to the management structure. This information will inform necessary systems and management improvements required for future monitoring. This continuous process of review will help to ensure robust data tracking and reporting.

**Organizational structure of monitoring and inclusions:**

| Person                                 | Role   |
|--|--|
| Managing Entity database administrator | The database administrator is responsible for updating and maintaining all electronic databases and inclusions. Required competencies include experience with data management systems (e.g. Excel, STATA, or SPSS)   |
| Monitoring team                        | <p>The monitoring team will be assigned by the CME to conduct the user interviews and appliance tests during the periodic sampling and reports the results to the database administrator.</p> <p>The skills and experience required for the data collection activities include:</p> <ul style="list-style-type: none"> <li>• Experience conducting WBTs</li> <li>• Experience conducting door-to-door surveys of biomass consumption</li> <li>• Local language skills (especially important for input to questionnaire design and interviewing of end users)</li> <li>• English language skills</li> <li>• Cultural awareness</li> <li>• Numerical proficiency</li> <li>• Data entry skills</li> </ul> |

**Quality Assurance/Quality control**

As the PoA is intended to include multiple regions within a country with a high level of cultural diversity as well as different end user groups, there is no “one size fits all” approach for dealing with these issues. However, in order to avoid many of these problems the CME will undertake the following strategies, tailoring the specific approach to the local circumstances:

- 1) **Ensuring end user awareness.** At the time of sale, the ICS customer is made aware that they are required to participate in monitoring activities. This will be via a written statement (in English and local language where appropriate) on the carbon waiver form, or via alternative means such as training sales personnel to explain the importance of monitoring to each customer.
- 2) **Questionnaire design.** The design of the questionnaire will ensure that the questions are non-intrusive and easy to understand for both the interviewee and interviewer. For example, when conducting sampling to estimate the parameter  $\mu_{y,i}$  a simplified approach has been designed to avoid the need for asking customers how much money they spend on fuel.
- 3) **Drawing on local knowledge.** The local contractors to be hired by the CME in each country will play an important role in tailoring the approach to suit local circumstances. For example, in some instances, it may be essential for a local person to conduct the interview in order to obtain accurate results, e.g. to explain to the end user that their old stove will not be removed if they admit to its continued use.
- 4) **Quality of contractors.** Any third parties hired by the CME to carry out sampling will be required to demonstrate a high level of cultural awareness, local language skills and appropriate experience with data entry and data management. The CME will ensure that contractors are adequately trained for the tasks they are contracted for (e.g. carrying out of WBTs in line with a methodology supported by an appropriate international body such as PCIA). Training will also be provided on how to deal with non-responses, refusals and other problems should these occur.

Outliers will be dealt with by applying the CDM materiality principles outlined in CMP7. That is, the outliers will be disregarded provided that doing so does not lead to an overestimation of the emissions reductions of a group of CPAs of higher than:

- 5% in the case of SSC-CPAs (CMP 7, Paragraph 4(d))

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## Appendix 1. Contact information of coordinating/managing entity and responsible person(s)/ entity(ies)

|  |  |
|--|--|
| <b>CME and/or responsible person/ entity</b> | <input checked="" type="checkbox"/> CME<br><input checked="" type="checkbox"/> Responsible person/ entity for application of the selected methodology(ies) and, where applicable, the selected standardized baseline(s) to the PoA |
| <b>Organization</b>                          | Envirofit International Ltd  |
| <b>Street/P.O. Box</b>                       | 109 N College Ave Suite 200  |
| <b>Building</b>                              |  |
| <b>City</b>                                  | Fort Collins   |
| <b>State/Region</b>                          | Colorado   |
| <b>Postcode</b>                              | CO 80524   |
| <b>Country</b>                               | USA  |
| <b>Telephone</b>                             | +001 970-372-2874  |
| <b>Fax</b>                                   | +001 970 221-2874  |
| <b>E-mail</b>                                | nathan.lorenz@envirofit.org  |
| <b>Website</b>                               | www.envirofit.org  |
| <b>Contact person</b>                        | Nathan Lorenz  |
| <b>Title</b>                                 | Vice-President - Engineering   |
| <b>Salutation</b>                            |  |
| <b>Last name</b>                             | Lorenz   |
| <b>Middle name</b>                           |  |

## Appendix 2. Affirmation regarding public funding

See specific CPA, Appendix 2.

## Appendix 3. Applicability of methodology(ies) and standardized baseline(s)

### BASELINE INFORMATION

#### I. Baseline Description

According to Methodology AMS-II.G, the baseline is the assumed use of fossil fuels for meeting similar thermal energy needs in the absence of the project activity. The baseline is determined through a review of publicly available historical data and surveys. Specifically, baseline information is established for:

(a)  $\eta_{old}$  – Efficiency of the system being replaced. As described in AMS-II.G, the CPA will use a default value of 0.1 or 0.2 as per the stoves being replaced by the CPA or a weighted average

in case of a mix of them or conduct surveys to determine the same, if desired

(b)  $B_{old,i}$  – Quantity of woody biomass per appliance used in the absence of this project activity to be determined using published literature or surveys at CPA level.

## **II. Identification of target populations**

The PoA identifies three target populations (consumers) as described below. Woody biomass used in the absence of the project activity shall be identified for each target population at the CPA level. End-users will be categorized into one of the following groups based on the characteristic of their fuel consumption patterns:

- Target consumer group 1: “Residential biomass users”, which consists of people using biomass for household for residential purposes.
- Target consumer group2: “Commercial biomass users”, which consists of people using biomass for commercial purposes.
- Target consumer group3: “Institutional biomass users”, which consists of people using biomass for institutional purposes, excluding industrial use.

Given that a baseline stove efficiency, fuel consumption scenario is defined by the typical baseline kitchen regime and fuel consumption pattern of an end-user, baseline studies and/or review of historical data and literature will be conducted for each SSC-CPA depending upon the target consumers in a given CPA. Assessments, information used in previous CPAs may be used in subsequent CPAs against conducting new assessments at each CPA level in case of absence of new data.

Emission reductions will be credited for a new target consumer group only after appropriate project studies or baseline studies have been conducted. Alternatively, adjustment factors may be applied to existing baseline and project scenarios to determine baseline scenarios in the absence of a new baseline or project scenario. A baseline or project scenario is not necessarily associated with a specific technology. Thus, different improved stove models may be included in the same CPA with the same baseline scenario.

## **Appendix 4. Further background information on ex ante calculation of emission reductions**

See CPA emission reduction calculator.

## **Appendix 5. Further background information on the monitoring plan**

Details of the monitoring plan are described in the PoA-DD Part II, section B.7.

## Appendix 6. Summary of post registration changes

Not Applicable

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### Document information

| <i>Version</i>             | <i>Date</i>   | <i>Description</i>  |
|----------------------------|---------------|---|
| 03.0                       | 25 June 2014  | <p>Revisions to:</p> <ul style="list-style-type: none"> <li>• Include the Attachment: Instructions for filling out the programme design document form for small-scale CDM programme of activities (these instructions supersede the "Guideline: Completing the programme design document form for small-scale CDM programme of activities" (Version 03.0));</li> <li>• Include provisions related to standardized baselines;</li> <li>• Add contact information on a responsible person(s)/ entity(is) for the application of the methodology (is) to the PoA in B.4 and Appendix 1;</li> <li>• Add general instructions on post-registration changes in paragraphs 2 and 3 of general instructions and Appendix 6;</li> <li>• Change the reference number from <i>F-CDM-SSC-PoA-DD</i> to <i>CDM-SSC-PoA-DD-FORM</i>;</li> <li>• Editorial improvement.</li> </ul> |
| 02.0                       | 13 March 2012 | <p>EB 66, Annex 13</p> <p>Revision required to ensure consistency with the "Guidelines for completing the programme design document form for small-scale CDM programmes of activities".</p>   |
| 01.0                       | 27 July 2007  | <p>EB33, Annex43</p> <p>Initial adoption.</p>   |
| Decision Document Business |               | <p>Class: Regulatory Form</p> <p>Type: Registration</p> <p>Function: Registration</p> <p>Keywords:programme of activities, project design document, SSC project activities</p>  |