CLEAN DEVELOPMENT MECHANISM
SMALL-SCALE PROGRAMME OF ACTIVITIES DESIGN DOCUMENT FORM
(CDM-SSC-PoA-DD) Version 01

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NOTE:

(i)This form is for the submission of a CDM PoA whose CPAs apply a small scale approved methodology.

(ii)At the time of requesting registration this form must be accompanied by a CDM-SSC-CPA-DD form that has been specified for the proposed PoA, as well as by one completed CDM-SSC-CPA-DD (using a real case).

SECTION A. General description of small-scale programme of activities (PoA)

A.1 Title of the small-scale programme of activities (PoA):

UpEnergy Open Access Improved Cookstoves Program in Latin America

12/12/2012
Version 2.0

A.2.Description of the small-scale programme of activities (PoA):

1. General operating and implementing framework of PoA

UpEnergy Group Inc. (hereby UpEnergy) is the coordinating/managing entity ("CME") for this SSC-PoA. The CME is the project participant providing the framework and incentives for the rest of parties involved to achieve the emission reductions. As per Annex 38 to EB55 Report, paragraph 8, "the operators of individual CPAs are not required to be project participants". As such, Partner Organizations (POs) are not required to be project participants and CDM program participation is only recorded at the PoA level.

The CME will communicate with the Executive Board and/or the pertinent DOE on all matters, including submission of the PoA and making arrangements for the distribution of certified emission reductions. The CME will also ensure double counting does not occur by verifying that emission reductions activities in the program are not registered as a separate CDM project activity, or as part of another registered CDM program. As the CME, UpEnergy will ensure CPA inclusion criteria are met, then coordinate the efforts of Partner Organizations to distribute improved cookstoves (ICS) throughout Latin America. The inclusion of new CPAs to the PoA will be requested by the CME to the Designated Operational Entity ("DOE") during the lifetime of the PoA.

The CME actively seeks local partnerships to enable access for communities that previously have had limited access to new technologies. Different partners act as conduits for technologies to penetrate into communities. All forms of distribution may be leveraged to distribute ICS, including but not limited to the following distribution channels:

- Direct sales through micro-entrepreneurs
- Sales through retail networks
- Sales through NGOs and distributors
- Sales through financial institutions
- Sales through local stove distribution partners

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 distribution partners and networks will be progressively added to the project activities. Local partnerships allow for targeted marketing, sales, and distribution to diverse markets found throughout Latin America. POs will provide to end-users the after sales servicing and support of technologies distributed by the project activity. Each SSC-CPA is responsible for directly managing POs and maintaining appropriate Sales Records to be submitted to the CME.

The CME will provide to POs guidance and training to ensure that local stakeholders involved in the implementation of SSC-CPA are aware and have agreed that their activity is being subscribed to the SSC-PoA. The legal rights of the carbon credits generated by the ICS are transferred to UpEnergy 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 training of POs, marketing activities, managing and maintaining distribution logistics, and stove technology subsidies.

2. Policy/measure or stated goal of the PoA

The goal of the PoA is to facilitate the transition away from inefficient conventional woodfuel stoves by providing high-efficiency and clean burning improved woodfuel cooking stoves to local households. 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 thereby reducing the amount of fuel used by households and the emission of GHGs.

This project activity 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, thereby saving 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.

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 each Host Country shows that there are no mandatory laws, policies or requirements mandating the use of ICS. Relevant national policies related to the development and or promotion of sustainable household energy efficiency are cited below:

Country	**Household Energy Law/Policy Consulted**	**Regulations mandating the adoption of ICS?**	**Notes**
El Salvador	Politica Nacional de Energia	No	National goals for energy efficiency and to develop new technologies[1], but

[1] Energy policies - El Salvador: Document provided to the DOE.

			does not include cookstoves in plans.
Nicaragua	National Energy Policy	No	Lists efficiency and renewable energy and the efficient use of woodfuel asa goal, but has no legislation requiring it[2].
Mexico	Regulatory Law for the Commission of Energy	No	Non-compulsory government promotion of energy efficiency programs; no mention of cookstoves.[3]

A.3. Coordinating/managing entity and participants of SSC-POA:

NAME OF KYOTO PARTY INVOLVED (HOST PARTY)	PUBLIC OR PRIVATE ENTITIES PROJECT PARTICIPANTS	PARTIES INVOLVED WISH TO CONSIDER AS PROJECT PARTICIPANT?
Mexico (Host) El Salvador (Host) Nicaragua (Host)	UpEnergy Group Inc. (CME of the POA)	No

A.4. Technical description of the small-scale programme of activities:

A.4.1. Location of the programme of activities:

A.4.1.1.Host Party(ies):

Country: El Salvador, Nicaragua, Mexico, (hereafter, collectively referred to as “Host Countries”).

Formal application for post-registration country inclusions will be requested upon registration of the PoA.

A.4.1.2.Physical/ Geographical boundary:

The physical/geographical boundary of all SSC-CPAs included in this PoA is defined as the national boundaries of El Salvador, Nicaragua and Mexico.

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.

[2] Energy policies – Nicaragua: Document provided to the DOE.
[3] Energy policies – Mexico: Document provided to the DOE.

Figure 1. *Map of the physical/geographical boundary of the Host Countries listed in A.4.1.1. Country inclusions occurring post-registration will provide updated maps.*

A.4.2. Description of a typical small-scale CDM programme activity (CPA):

A.4.2.1. Technology or measures to be employed by the SSC-CPA:

A typical SSC-CPA will replace traditional stoves with higher efficiency models of domestic and institutional ICS in the Host Countries by leveraging resources provided by the PoA. ICSs of both types (domestic and institutional) are more efficient than traditional stoves as they reduce the heat loss and improve heat transfer and/or combustion efficiency.

The ICS models to be implemented are fuel efficient, resulting in a decrease in fuel use in comparison to conventional stoves while also reducing particulate matter and carbon emissions. Design considerations have also sought to streamline 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 highest performing, most affordable, and most locally appropriate technologies to the local environments when possible. As the PoA expands, several biomass stoves produced by manufacturers may 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 as described in Section A.4.2.2. 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 project, research and development work may result in more efficient ICS models, which shall be included in this SSC-PoA, subject to methodological and eligibility criteria of the PoA as described in Section A.4.2.2.

At the time of inclusion, all new stove types will have a thermal efficiency of at least 20%. Aging stoves will be monitored to capture changes in efficiency and emission reductions will be adjusted accordingly. 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 stove.

Each CPA will provide a detailed description on the specific stove model/s implemented and the baseline scenarios applied to each of them. See PoA-DD Annex 3 for a description of typical baseline technologies.

A.4.2.2. Eligibility criteria for inclusion of a SSC-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[4], to successfully include every CPA considered to be part of 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)
#	Category	Description	
1	Boundary and location of the CPA	The CPA is located within one of the Host Countries. Please note that not all ICS installations may have been deployed at CPA inclusion stage, however the location of the ICS can also be checked during verification. In the event that any deployed ICS is found to be outside of the project boundary/location, those ICS will not be counted in the emission reduction calculation.	Location and boundary is described in the specific CPA-DD (section A.4.1.2) and supported with GPS coordinates.
2	No Double counting of ICS and CPAs within this PoA and across other PoAs	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. Please note that not all ICS installations may have been deployed at CPA inclusion stage, however the ICS unique	The unique numbering and PoA logo stamped on each ICS supported by the individual distribution record matching such information is included in the specific CPA-DD and consistent with the PoA-DD. Document: ICS Sales Receipts in Total Sales Record including CPA assignment and end user details (i.e. name, address). Additionally,

[4] EB 65 Annex 3: "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Program of Activities". http://www.mem.gob.gt/ http://www.cnee.gob.gt/pdf/marco-legal/Ley de incentivos Recursos Renovables Decreto-52-03.pdf

		numbering can also be checked during verification. In the event that any deployed ICS is found not in line with CPA double counting criteria, those ICS will not be counted in the emission reduction calculation.	the PoA logo and the unique id 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.
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.	A statement by the CME is included in the CPA-DD section A.3 that the specific CPA will not be part of another single CDM project activity or CPA under another PoA Evidence: Check UNFCCC website with date of access. In the case that other ICS activities are implementing the same ICS model as per the current CPA, the CME will provide the database for all ICS of that model implemented in any CDM activity. The CME will also facilitate as much information as possible on the distribution of those ICS to the extent possible.
4	Awareness and agreement of those operating a CPA on PoA subscription	Contractual provisions to ensure that those operating the CPA are aware and have agreed that their activity is being subscribed to the PoA. In the case that the CME is not responsible for implementing the CPA, the organization 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: - Defines the ownership of the carbon emission reduction rights - Covers the DO's distribution	Contractual agreement for CPA operators 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

		and monitoring related responsibilities - 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) - Cedes the DO's rights to the carbon credits generated from CPAs under the PoA to the CME.	
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 there is no public funding or in the case of public funding, the annex I party will confirm that funding is not a diversion of Official Development Assistance.	A statement is included in the CPA-DD section A.4.5 informing whether the specific CPA is funded with public funding. If Annex I country funding is used, then the following documents will be provided by each funding party (the donor/s): Signed statement by the Annex I country donor party confirming that funding from Annex I country is not a deviation of ODA funding.
6	CPA Start Date	CPA start date shall not be before PoA validation start date (i.e. not prior to webhosting for global stakeholder consultation which was on 14/02/2012).. Please note that not all ICS installations may have been deployed at CPA inclusion stage, however the ICS start date can also be checked during verification. In the event that any deployed ICS is found not in line with CPA start date, those ICS will not be counted in the emission reduction calculation	Starting date as stated in the CPA-DD. Document: Each CPA shall provide verifiable evidence of the CPA start date as demonstrated by: First ICS Sale Receipt

7	CPA Crediting Period	CPA crediting period not to exceed the PoA end date and the start date of the crediting period of a CPA shall be on or after: (i) The date of registration of the PoA, if the corresponding CPA-DD is submitted together with the request for registration; (iii) The date when the CPA was included in accordance with the Project cycle procedure;	A statement is included in the CPA-DD section A.4.2 specifying the crediting period starting date and that the crediting period will not exceed the PoA end date (this is 28 years after the date of registration of the PoA).
8	Approval of CPA by CME	CME approves each CPA to be included into its registered PoA.	Statement of CME in each CPA-DD section A.3 giving approval for the CPA to be included into its registered PoA. Document: CPA-DD section A.3.
9	Applicabilit of Methodology AMS-II.G - Efficiency improvements on existing biomass fired appliances	The CPA consists of replacement of conventional firewood cookstoves for biomass fired ICS as defined in section A.4.2.1 of 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, ver. 3. 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	Specification of conventional cookstoves replaced and ICS type/s implemented and compliance with the technological requirements of AMS II G will be described in the specific CPA-DD section A.3. Document: Product data sheets or specification or product information sheets from manufacturer.

		not in line with the methodology requirement, those ICS will not be counted for emission reduction calculation.	
10	Applicability of Methodology AMS-II.G – Minimum efficiency of the ICS / specificacion of technology including the level and type of service	The ICS disseminated under the CPA will be single pot, multi-ot or in-situ cookstoves that have a specified efficiency of at least 20% at the time of CPA inclusion.	Document: Efficiency specification from manufacturer, certificate from a national standards body, or a certifying agent recognised by it.
11	Technical requirement	Only new ICS will be disseminated. Please note that not all ICS may have been deployed at CPA inclusion stage, the technical requirement will however also be checked during verification, and in case any deployed ICS type will be found not in line with the technical requirement, those ICS will not be counted for emission reduction calculation.	Specification of stove type and compliance with the technological requirements of AMS II G will be described in the specific CPA-DD. Document: 1. Statement from CME that only new stoves will be disseminated under the CPA section A.4. 2. First ICS Sales Receipt, including specific language confirming the stove received by the end-user is new.
12	Aplicability of Methodology AMS-II.G - Non-renewability of biomass	In accordance with methodology AMS IIG: Project participants are able to show that non-renewable biomass has been used since 31 December 1989, using survey methods.	Document: PoA-DD section E.2.
13	De-bundling	In accordance with "Guidance for determining the occurrence of de-bundling under a Programme of Activities (PoA)"[5], if each independent subsystem/	Document: 1. Manufacturer specification.

[5] 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

		measures included in the CPA of a PoA is no greater than 1% of the small scale threshold defined by the methodology applied, than 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.	CPA-DD section A.4.6 to show energy saved by the ICS is less than 1.8 GWh_{th} /year using excel sheet or similar tool.
14	SSC Limit for CPAs	The CPA will remain under the thermal threshold of 180 GWh_{th}/a thermal energy savings (threshold as per clarification request SSC_233) throughout the crediting period of the CPA. If a CPA exceeds the applicable limit in any year, the claimable emission reduction shall be capped based on the estimated GHG reductions in the CPA-DD[6]. Please note that not all ICS may have been deployed at CPA inclusion stage, the SSC limit for CPAs can however also be checked during verification, and in case any deployed ICS will be found not in line with CPA SSC Limit for CPAs requirement, those ICS will not be counted for emission reduction calculation.	The estimated maximum number of ICSs is to be defined in the specific CPA-DD Annex 5. The number of ICS in operation per year will not exceed the "stove installation cap" established in the specific CPA-DD Annex 5.
15	Additionality	Additionality is demonstrated using EB68 Annex 27 "Additionality Guidelines of Small-Scale Projects", paragraph 2(c) as described in the PoA DD.	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: 1) Project size does not exceed small-scale CDM thresholds:

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.

[6] As per EB 65, Annex 5, paragraph 83.

			CPA-DD Annex 5 establishes the "stove installation cap" using an Excel sheet or similar tool. This requirement is also checked through eligibility criteria named "SSC Limit for CPA". And, 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 section A.4 to show description of the technology and section A.2 to specify target population. And, 3) Where the size of each unit is no larger than 5% of the small-scale CDM thresholds: CPA-DD section A.4.6 to show energy saved by the ICS is less than (180GWh$_{th}$/year * 0.05 =) 9GWh$_{th}$/year.
16	Applicability 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 is demonstrated at the PoA level at section E.2 through the assessment of "justification of the choice of the methodology and why it is applicable to the CPAs".	Document: The applicability of the methodology is established in section E.2 of the PoA-DD. The CPA needs to meet all eligibility criterias named "applicability of methodology" to meet the applicability criteria of the methodology.
17	Target groups	Target groups have been established by means of the baseline at the PoA level as described in section E.4 and Annex 3 of this PoA-DD. In summary, eligible target groups are any of the following:	The selected target groups included in each CPA are distinguished in each CPA, section A.4.

		1.Residential biomass users 2.Commercial biomass users 3.Institutional biomass users Assumptions made at the PoA level for any scope regarding these target groups are applicable to subsequent CPAs (i.e. baseline studies, ER calculation, monitoring plan).	
18	Distribution Mechanisms	Distribution mechanisms have been established in section A.2 of 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.
19	Local Stakeholder Consultation	The Local Stakeholder Consultation is established at the CPA level[7] as described in section D of the PoA-DD.	The first CPA in a given country shall establish the local stakeholder consultation for the entire country or target regions. Results of stakeholder consultations will be discussed in SSC-CPA-DD section D. When a stakeholder consultation is to be undertaken the following requirements will be satisfied: 1. The stakeholder consultation meets the requirements of the DNA of the Host country within the CPA boundary established in SSC-PoA-DD section D1. 2. The stakeholder consultation meets the requirements of the CDM listed in SSC-POA-DD section D1. 3. The stakeholder consultation meets the requirements of the Gold

			Standard listed in SSC-PoA-DD section D1.
20	Environmental Impact Assessment	The EIA is established at the PoA level for each host country as described in section C of the PoA-DD[8]. No further actions are needed at the CPA level to satisfy the eligibility criteria.	Document: The requirements for evaluating an environmental impact assessment are provided in section C of the PoA-DD.
21	Sampling Requirements	Sampling of appliances within the CPA must meet the requirements of AMS-II.G v.3 and the "Standard on Sampling and Surveys for CDM Projects and Programmes of Activities" (the Sampling Standard). 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 in Annex 3 of the PoA-DD and for monitoring tasks in section E.7.2.	Specification of the sampling methods applied and compliance with the sampling requirements will be described in the specific CPA-DD for the rest of the CPAs. The CPA-DD either specifies that: a) Sampling will be undertaken as part of the PoA Sampling Plan, and in the CPA-DD Section B.6.1 describes how the PoA Sampling Plan is to be applied; or 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 v. 3 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.

22	Baseline parameters to be established at CPA level	Each CPA shall demonstrate how the baseline parameters for baselines not established at the PoA level (that applies for commercial and institutional baselines not applicable at the first CPA at the time of PoA registration) that are to be calculated at the CPA level have been determined, and shall do so applying the following approaches: a) B_{old}: as per the approach outlined in PoA-DD Section E.6.2, applying Option (a) of paragraph 7 of AMS-II.G v.3; b) SC_{old} and/or n_{old} : a. When Option 2 of paragraph 6 of AMS-II.G v.3 aplies n_{old}: as per the approach outlined in E.6.2. b. When Option 3 of paragraph 6 of AMS-II.G v.3 aplies SC_{old}: as per the approach outlined in E.6.2. c) NRB for Nicaragua and Mexico.	CPA-DD section B.5.1 and Annex 3 shall outline the approach and provide supporting documents including copies of any official government reports, statistics or literature sources used for determining parameters. If local surveys or representative sampling are used then copies of questionnaires, sampling design etc shall be provided.

A.4.3. Description of how the anthropogenic emissions of GHG by sources are reduced by a SSC-CPA below those that would have occurred in the absence of the registered PoA (assessment and demonstration of additionality):

The following shall be demonstrated here:

(i) The proposed PoA is a voluntary coordinated action;
Host Countries in the PoA do not have laws or policies mandating the adoption of ICS by households as demonstrated in section A.2 of this PoA-DD. This proposed SSC-PoA is a

voluntary action by the CME. Furthermore the letter of approval issued by the Host Countries reaffirms the voluntary participation of this Party in the Clean Development Mechanism.

(ii) If the PoA is implementing a voluntary coordinated action, it would not be implemented in the absence of the PoA;
There has not been a previous announcement that any of the project activities would go ahead without expected carbon finance. A prior consideration statement has been provided by the CME to the UNFCCC for this purpose[9].

The assessment and demonstration of additionality for a typical SSC-CPA is done at the PoA level as shown in the PoA-DD, section E.5. Therefore, as allowed by the CDM[10] every SSC-CPA included in this SSC-PoA is deemed additional if it meets the eligibility criteria specified in A.4.2.2.

(iii) If the PoA is implementing a mandatory policy/regulation, this would/is not enforced;
Not applicable.

(iv) If mandatory a policy/regulation is enforced, the PoA will lead to a greater level of enforcement of the existing mandatory policy/regulation.
Not applicable.

A.4.4. Operational, management and monitoring plan for the programme of activities (PoA):

A.4.4.1. Operational and management plan:

Description of the operational and management[11] arrangements established by the coordinating/managing entity for the implementation of the PoA, including:

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

The project proponent will ensure that each SSC-CPA will maintain appropriate records to accurately track emission reductions. Each SSC-CPA will use a record keeping tool as described in further detail in section E.7.2 of this PoA-DD and B.6.1 of the CPA-DDs. Record keeping information flow as follows:

[9] Submission of prior consideration form provided to the DOE.
[10] EB55 Annex 38
[11] CME management system based on the new requirements published by the UNFCCC at the EB65 Annex 3.

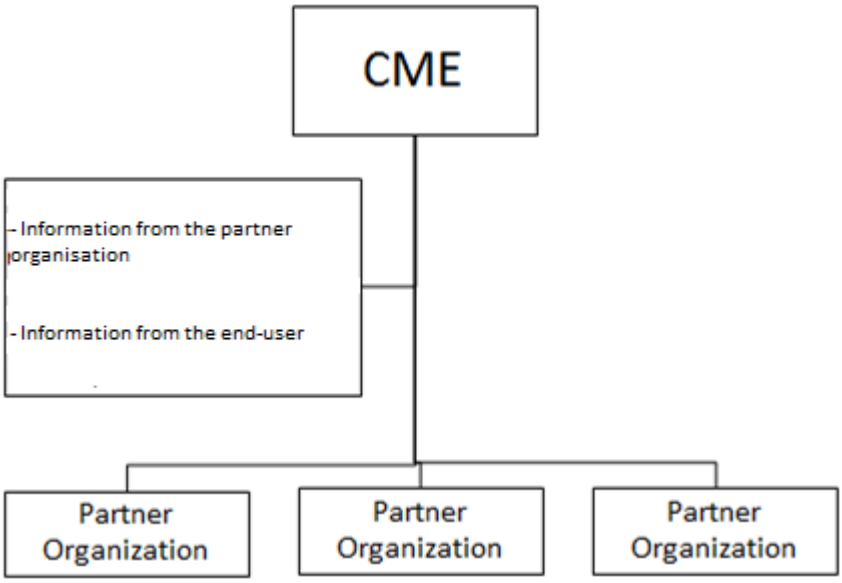


Figure 2. *Schematic of database tracking. User information is transferred from each Partner Organization to the CME.*

The CME will seek to develop partnerships with several PO's. All PO's are managed by the CME as shown in the diagram above. The CME may also implement CPAs directly.

The information collected on paper or in electronic form by the partners from the end-user is transferred to an electronic database which is updated regularly. The sales record carries all the sales information listed above including the traditional stove type and fuel used prior to ICS installation. Distribution records are transferred from each partner to the CME. Likewise, monitoring records are transferred from each partner organisation to the CME. The CME collects, stores and maintains master records for each CPA. All monitored data required for verification and issuance shall be kept for two years after the end of the crediting period or the last issuance of CERs, for this programme, whichever occurs later.
The CME ensures the enforcement of the monitoring and reporting during the crediting period and leads the review of reported results and data. Likewise, the potential corrective actions arising from this exercise will be addressed by the CME in order to keep the procedures up to date and ensure the accuracy of future monitoring and reporting. Electronic files of installation records are duplicated by paper documents received from the end-users. The CME screens and cross-checks each partner's records in order to confirm that the installation record is authentic and that no double-counting occurs. The CME may "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 but with higher accounting efficiency.

The values of the emission reduction parameters required for ex-post measurement are found by sampling ICS installations as described in Section E.7 below 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 to avoid double counting. This will be ensured by confirming all statements listed below as follows:

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.

   Points 1 and 2 will be enforced through the CME and PoA logo clearly embedded on each ICS distributed. This will match with the information displayed on each CPA Distribution Record, with a copy retained by the customer, thus identifying that each stove with its unique serial ID number has been distributed under a PoA managed by the CME of this PoA.

3. Confirmation that every ICS within a specific CPA is not double counted across the PoA: This will be inforced by means of the serial numbers allocated to each ICS under the PoA allow unique identification and tracking of the ICS. Based on the serial numbers, an ICS can only count in one CPA. 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 are uniquely identified by this unique alpha numeric system imprinted[12] on the stove and the serial number is noted in the Sales Database. Signed contractual agreements with partner organizations and distributors transferring carbon rights ownership to the CME, along with carbon rights waived to the CME from end-users, 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[13] of carbon waiver forms 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 shows 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 replace ICS estimated to no longer be in use in order to maintain the optimal implementation cap allowed per CPA. These and all other ICS implemented will be added to the 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 section A.4.4.2 and E.7.2 of this PoA-DD, and B.6.1 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.

All CPAs included under the present PoA will be exempt from the de-bundling check when all types of ICS considered under the PoA show energy savings of less than 1% of the small scale threshold defined[14] by the methodology AMS-II.G, version 3.

[12] The alpha numeric system indicates information about the CME, information about the product and unique serial number.
[13] Detailed sampling systems for this exercise are described in section E.7.2 to be followed across the program.

The threshold to prove the activity is not a de-bundled action is deducted from the small- scale threshold for each SSC-CPA, which corresponds to 180GWh thermal energy per year as follows:

1% of $180GWh_{th}$ = $1.8GWh_{th}$ = $1,800,000KWh_{th}$

Therefore, a de-bundling check will occur for any CPA that includes a technology type with a proven thermal energy savings of $1.8GWh_{th}$/y.

See section A.4.6 of each CPA-DD for further details of debundling checks for specific technologies implemented.

(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 PO and the CME. Under the agreement, the roles and responsibilities of the CME and the DO will be clearly spelled out. Further, the PO will ascribe its activity to the PoA as part of entering into this agreement.

Any parties the PO contracts in its role as the CPA developer will also be required to enter into a contractual agreement with the PO, similarly ascribing their activities to the PoA. Suitable training will be conducted for POs 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 PO 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 PO will clearly specify that the activity operates under the PoA. The agreements will be available to the DOE upon request.

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.

The CME will ensure that all involved parties in the CPAs (i.e. distributors, CPA operators if different from the CME) are trained adequately to meet the documentation requirements of the PoA. Physical or virtual meetings will be carried out where the parties involved will exchange their experiences and receive updates from the CME relevant to the proper execution of the PoA.

To ensure best practices, suitable training will be conducted for the CME 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 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 during the entire crediting period to ensure adequate training and maintenance of all CPAs.

[14] This is based on the clarification from "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 no larger than 1% of the small scale threshold defined by the methodology applied, 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. See specific CPA-DD section A.4.6.

These meetings and training sessions will take place at least once before the sale of the first ICS, and as needed according to the progress of the sales, or at least every month--whichever occurs earlier. The CME will provide to the DOE documentation of the meetings and trainings with all parties to demonstrate that were conducted. The materials could be any of the following, but are not limited to: photos, emails, participation sheets, self-statements, training materials, etc.

A.4.4.2. Monitoring plan:

The following information is provided here:

(i) *Description of the proposed statistically sound sampling method/procedure to be used by DOEs for verification of the amount of reductions of anthropogenic emissions by sources or removals by sinks of greenhouse gases achieved by CPAs under the PoA.*

The CME will also coordinate all ex-post monitoring activities in the PoA. It will be responsible for implementing the monitoring plan, ensuring the quality of data obtained and the use of this data for emissions reduction calculations. The CME will provide the DOE with a monitoring report for verification purposes for each CPA at the time of each verification. However, the actual field measurements to be conducted during monitoring (e.g. testing of ICS selected during sampling) will most likely be performed by third parties contracted to the CME. In the case of using contractors, however, the CME will still be responsible for setting the procedures and providing oversight and training to the contractors. The choice between conducting the actual monitoring activities itself or employing another organization (for example, local marketing firm, university etc) will depend on locational, operational factors and financial factors. In any case, a local partner will be important for providing local insight in questionnaire design, interview technique and for gaining physical access to project beneficiaries to obtain accurate results during monitoring.

Upon validation of the PoA, multiple CPAs may be implemented in the same area during the operational period of the PoA.

For each CPA, the monitoring parameters are listed in section E.7.1, the monitoring plan and the sampling method/procedure is detailed in section E.7.2.

The Monitoring Organisation is then responsible for ensuring that the data contained in each individual CPA Monitoring Record is provided to the CME by collating the data and uploading it in an Excel spread sheet or similar format provided by the CME. Either the originals of the individual CPA Monitoring Records or scanned copies of each Record will also be provided to the CME to prove the authenticity of the data. The CME will maintain archives of past CPA Monitoring Records and make these available during verification.

Double counting of ICS at any level (i.e. in more than one CPA or in different PoAs) will be avoided by ensuring that all information described in the sections mentioned above and A.4.4.1 are provided and that each ICS is registered only once in the recording system of a CPA.

The CME will perform cross-checks on the data provided to it by the Monitoring Organisation to ensure that the PoA Sampling Plan has been followed. This data will be contained in a

secure database that will form part of the PoA Distribution and Monitoring Database, which will be maintained by the CME. The CME will provide the DOE with a monitoring report with the necessary data for emissions reduction calculations and the outputs for verification purposes for each CPA at the time of each verification.

(ii) In case the coordinating/managing entity opts for a verification method that does not use sampling but verifies each CPA (whether in groups or not, with different or identical verification periods) a transparent system is to be defined and described that ensures that no double accounting occurs and that the status of verification can be determined anytime for each CPA;

The CME may not wish to have all CPAs verified at the time of each verification. A description of the proposed statistically sound sampling method/procedure to be used by DOEs for verification of the amount of emission reductions achieved by CPAs involved in the specific verification is detailed based on the sampling methodology described in section E.7.2.

The project will conduct monitoring accordingly. The CME recommends undertaking verification derived from random sampling of all the CPAs.

A.4.5. Public funding of the programme of activities (PoA):

This PoA does not receive public funding therefore there is no risk that public funding from Annex I parties could result in a diversion of official development assistance. This will be proven in each CPA of the program. See Annex 2.

SECTION B. Duration of the programme of activities (PoA)

B.1. Starting date of the programme of activities (PoA):

14/02/2012[15], date when the documentation was publicly available for the Global Stakeholder period.

B.2. Length of the programme of activities (PoA):

28 years

SECTION C. Environmental Analysis

C.1. Please indicate the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken. Justify the choice of level at which the environmental analysis is undertaken:

[15] See publication by UNEP "Primer on CDM Programme of Activities": http://cd4cdm.org/Publications/PrimerCMDPoA.pdf , page 10.

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

The objective of the SSC-PoA and the CPAs is the installation of ICSs 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.

In the case new countries are included after registration of this PoA, further research will be conducted to satisfy the EIA at each specific CPA including such countries.

C.2.Documentation on the analysis of the environmental impacts, including transboundary impacts:

The project activity consists of only energy efficiency measures that provide environmental benefits including:

Biodiversity

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 these 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

This means that less harmful pollutants are emitted, an important improvement as indoor air pollution has been proven to have direct correlation with respiratory illness and mortality rates, especially among women and children, worldwide. Also from the 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.

C.3.Please state whether in accordance with the host Party laws/regulations, an environmental impact assessment is required for a typical CPA, included in the programme of activities (PoA).:

The typical SSC-CPA distributes ICS. Their use does not cause significant negative environmental impacts as described above. In line with this, the national authorities in the Host Countries listed in section A.4.1.1 have provided the CME with notification of EIA[16]:

- El Salvador DNA does not require an EIA. Instead, the environmental management agency has issued a formal letter indicating that the project is exempted from the EIA requirement.

- Nicaragua DNA does not require an EIA. Instead, the environmental management agency has formally communicated that the project is exempted from the EIA requirement.

[16] EIA notifications from the Host Countries to the CME are provided to the DOE.

- Mexico DNA does not require an EIA. Instead, the environmental management agency has formally communicated that the project is exempted from the EIA requirement.

An environmental impact assessment is not required by the Host Countries included in this PoA nor for any typical CPA included in the PoA.

SECTION D. Stakeholders' comments

D.1.Please indicate the level at which local stakeholder comments are invited. Justify the choice:

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

The lead CPA for this POA is in El Salvador. A national stakeholder consultation has been conducted and documented for this country. The first CPA in a given country shall conduct a local stakeholder meeting for the entire country, and all subsequent CPAs in the same country will not be required to conduct another stakeholder meeting.

The local stakeholder comments will be invited at the time of first CPA inclusion into that country. The process will be conducted following the two requirements exposed below. The first one relates to the CDM guidelines and the second to the requirements established by each DNA of each Host Country included in the specific CPA:

- Requirements to invite stakeholder comments as per the Gold Standard guidelines (GS Toolkit, Annex F):
    - Stakeholder consultations at the CPA activity level will take place in a two-step process, i.e. the Local Stakeholder Consultation (LSC) meeting and the Stakeholder Feedback Round (SFR). At least one live meeting shall be conducted between the CME (or the project participant) and the stakeholders during the LSC for regular activities.
    - The Stakeholder Feedback Round will allow further stakeholders' comments to be incorporated into the design and finalization of the CPA inclusion (under the Gold Standard scheme only). This information is reviewed at the time of registration or inclusion, as applicable.
    - A single LSC live meeting can be organized for several CPA(s) as long as justification is provided in the project documentation that the activities are close enough to each other in location and time (start of construction/implementation within the same 2 years), similar socio-economic situations, similar activity or technology, etc.

- Requirements to invite stakeholder comments as per the CDM guidelines (EB65 Annex 04, section N):
    - Comments to be invited from local stakeholders that are relevant for the proposed project activity
    - The summary of the comment received in the CPA-DD must be complete.
    - The CME takes due account of all comments received and has described this process in the CPA-DD.

- Requirements established by each DNA of each Host Country included in the specific CPA: Guidance on the incorporation of local stakeholder comments are provided below as a general assessment regarding the rules and procedures for CDM activities in each Host Country according to their respective DNA:

Host Country	LSC Requirement	Note
El Salvador	No	The Ministry of the Environment and Natural Resources rules and regulations pertaining to the Kyoto Protocol do not include the requirement of a LSC[17]
Nicaragua	No	Decree No 21-2002 defines the responsibilities of a DNA but does not constitute the approval/supervision of a LSC[18]
Mexico	No	DNA's website on the development of CDM project does not include stakeholder consultations as requisite[19]

In the case that new countries are included and/or approved after registration of this PoA, additional Local Stakeholder Consultations will be conducted at the CPA level, as necessary. Stakeholder consultation meetings will be conducted for other countries at the time of first CPA inclusion into that country.

D.2. Brief description how comments by local stakeholders have been invited and compiled:

Not applicable. Information to be provided at the first CPA for the country of implementation.

D.3. Summary of the comments received:

Not applicable. Information to be provided at the first CPA for the country of implementation.

D.4. Report on how due account was taken of any comments received:

Not applicable. Information to be provided at the first CPA for the country of implementation.

SECTION E. Application of a baseline and monitoring methodology

E.1. Title and reference of the approved SSC baseline and monitoring methodology applied to a SSC-CPA included in the PoA:

[17] CDM requirements El Salvador: Document provided to the DOE.
[18] CDM requirements Nicaragua: Document provided to the DOE.
[19] CDM requirements Mexico: Document provided to the DOE.

This PoA applies the methodology: AMS-II.G. Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass Version 03, Sectoral Scope 03.

The approved SSC baseline and monitoring methodology is approved for use in a PoA by the EB.

E.2. Justification of the choice of the methodology and why it is applicable to a SSC-CPA:

The methodology AMS-II.G requires that the technology used in the project shall be small appliances 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[20].

CDM Methodology Measure	Project Justification
"This category comprises appliances involving the efficiency improvements in the thermal applications of non-renewable biomass."	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 ICSs. This will be ensured by recording the fuel used prior to ICS installation and baseline stove type of all ICS purchasers. All ICSs replacing stoves using fossil fuels (such as kerosene and LPG) will be excluded from the records and subsequently from the emission reduction calculations (i.e., ICS may be still installed, but will not be included within the installation record and will be excluded from emission reduction calculations). This is in accordance with the approved methodology which is applicable only to users which were previously using biomass fuels. See section E.6.2 for more details.
"The project participants[21] 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."	Forest degradation in the Host Countries has been a consistent problem for decades, and non-renewable biomass has been used since before 31 Dec 1989. <u>El Salvador</u> Deforestation Rates: It is estimated that between 1977 and 1996 the area of forest cover has

[20] AMS-II.G v3, p7.

[21] 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.

	decreased from 262,308ha to 225098, which equates to a 14% loss of forest cover.[22] Between 1990 and 2009, El Salvador lost an average of 4,500 ha of forested land or 1.19% per year. In total, between 1990 and 2009, El Salvador lost 23% of its forest cover, or around 85,600 ha.[23] More than 95 percent of the original tropical deciduous forests in El Salvador have been destroyed, two-thirds of it during the last 40 years. This has left less than 7 percent of the country remaining forested. This is against the backdrop of approximately 4,500 hectares of forest disappearing annually.[24] Other studies show that the country has lost 98% of its original habitat leaving only 2% of the country now forested.[25] This dramatic decrease in the forest stock in El Salvador demonstrates that the population has been using non-renewable biomass since December 31st of 1989. <u>Nicaragua</u> Deforestation rates: From 1980 to 1990 Nicaragua had a deforestation rate of 124,000 ha per a year.[26] Since then deforestation in the country has continued as Nicaragua lost 29.5 percent of its forest cover between 1990 and 2009, resulting in a 1.55% deforestation rate.[27]These rates of deforestation continue to accelerate. In 1997 the rate of deforestation was estimated at between 1.5 and 2% per year.[28] <u>Mexico</u> Deforestation Rates: Between 1980 and 1990 the

[22] FAO – El Salvador – doc 1: "Evaluacion de los productos forestales no madereros en America Central ". FAO. Deposito de Documentos de La FAO.. Web. April 2012 < http://www.fao.org/docrep/007/ae159s/AE159S04.htm>

[23] FAO " El Salvador Forest Area, 1990-2009" *FAOSTAT*,. Web. Jan 2012. <http://faostat.fao.org/site/377/default.aspx#ancor>

[24] Weinberg, Stephanie. "El Salvador Civil War." *ICE Case Study* #22. American University May 1997. Web. Jan 2010 < http://www1.american.edu/ted/ice/elsalv.htm>

[25] Panayoutou, Theodore. "El Salvador Challenge: From Peace to Sustainable Development". *The Environment in Latin America, An Interdisciplinary Approach. Revista:Harvard Review of Latin America*. Fall 1998. Web. < http://www.drclas.harvard.edu/revista/articles/view/340>.

[26] Kaimowitz, David. "Livestock and Deforestation in Central America in the 1980s and 1990s: A Policy Perspective". Environment and Production Technology Division. June 1996.. PDF

[27] FAO of the UN. "Nicaragua Forest Area, 1990-2009." *FAOSTAT*. Web. Feb 2012. <http://faostat.fao.org/site/377/default.aspx#ancor>

[28] Alberts, Henk, et al. "Firewood Substitution by Kerosene Stoves in Rural and Urban Areas of Nicaragua, Social Acceptance, Energy Policy, Green House Effect, and Financial Implications" *Energy for Sustainable Development*. Vol. III No.2 (Jan 1997) pg 27. PDF

	rate of deforestation of Mexican forest was equal to 365 thousand hectares per a year.[29] A similar rate of deforestation of 354 thousand hectares per a year was observed between 1990 and 2000..[30]
"The project boundary is the physical, geographical site of the efficient systems using biomass."	The project location is defined as the national boundaries of the Host Countries of El Salvador, Mexico and Nicaragua. The geographic boundary of each country is defined as the administrative boundaries set by government entities. In the case any party involved in this project was also involved in another CDM activity, the appropriate measures will be taken so that each ICS can be distinguished to prove double-counting will not take place. Publicly available information on CDM projects will confirm that technologies installed by the project are not being double counted. Warranty cards signed at the point of sale, or delivered through SMS tracking systems, will transfer rights from the customer to the project, and will act as supporting evidence of stove ownership.
"The efficiency of the project systems as certified by a national standards body or an appropriate certifying agent recognized by it. Alternatively manufacturers' specifications may be used."	Every ICS model implemented in the PoA will present a certificate at the time of CPA inclusion proving the thermal efficiency as required by the CDM methodology. For biomass fired ICS, single or multi pot portable or in situ, the specified efficiency at the time of installation will be at least 20% as required by the CDM methodology. For more details see PoA-DD, section E.6.3.
"Monitoring shall ensure that: (a) Either the replaced low efficiency appliances are disposed of and not used within the boundary or within the region; or (b) If baseline stoves continue to be used, monitoring shall ensure that the fuel-wood consumption of those stoves is excluded from B_{old}.	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 traditional stoves used in parallel with ICS in the project activity will be excluded from emission reduction calculations (B_{old}).
"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	The CME chooses to account for all leakage in the project activity by applying the adjustment factor of 0.95 to the B_{old}. See PoA-DD section E.6.3.

[29] "Deforestation Rates in Mexico" Sermarnat. Web April 2012. <http://app1.semarnat.gob.mx/dgeia/informe_2008_ing/02_ecosistemas/recuadro2_3.html>
[30] FAO of the UN. " Mexico Forest Area, 1990-2009." FAOSTAT. Web. Feb 2012. <http://faostat.fao.org/site/377/default.aspx#ancor>.

selection of samples, and accounted for: (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 Bold is adjusted to account for the quantified leakage; (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 Bold is adjusted to account for the quantified leakage; (c) As an alternative to subparagraphs (a) and (b), Bold can be multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case 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."	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. 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.
"Total thermal energy savings from the sum of ICSs under a SSC-CPA will not exceed 180 GWh per year.[31]"	The maximum number of ICS is defined for each CPA according to the specific ICS models distributed, and corresponding stove performance,

	to ensure a maximum energy saving of 180GWhth/year per CPA[32]. 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 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.

E.3. Description of the sources and gases included in the SSC-CPA boundary

	Sources	Gas	Included?	Justification/Explanation
Baseline	Combustion of non-renewable biomass for cooking	CO2	Yes	Important source of emissions
		CH4	No	Not considered as per the methodology. Exclusion is conservative assumption.
		N2O	No	Not considered as per the methodology. Exclusion is conservative assumption.
Project	Combustion of non-renewable biomass for cooking	CO2	Yes	Important source of emissions
		CH4	No	Not considered as per the methodology. Exclusion is conservative assumption.
		N2O	No	Not considered as per the methodology. Exclusion is conservative assumption.

E.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:

As per paragraph 4 of AMS.II.G Version 03, ERs are calculated based on the assumption that in the absence of the project activity, the baseline scenario would be the use of fossil fuels for meeting similar

[32] According to clarification by the CDM dated 4/11/2008: "The SSC WG agreed to clarify therefore AMS-II.G is applicable to project activities with maximum thermal energy savings of 180 GWh per year." http://cdm.unfccc.int/UserManagement/FileStorage/AM_CLAR_VIIC5MTUUWR9PRPJL0EXOT3G2CKSFQ

thermal energy needs. As specified in the methodology, a value of 81.6 tCO2/TJ is used as the emission factor for the substitution of non-renewable biomass by similar consumers (*EFprojected_fossilfuel*)**.**[33]

Additional baseline information can be found in PDD Annex 3.

Typical baseline cooking practices throughout Latin and Central America include:

El Salvador:

In El Salvador, most of the rural sector of the population (89%) and about half of the urban population (49%) cook using fire wood on traditional stoves, according to the *Centro Agronomico Tropical de Investigacion y Ensenanza* (CATIE).[34] Research by Maldonado et al. show that 53% of rural households use wood exclusively.[35] Those households that do not solely use wood usually compliment their wood burning stoves with a gas stove (LPG), according to the households surveys conducted by Schneider.[36]

There are multiple types of traditional, wood burning stoves used in El Salvadoran households. The most typically used is a simple open fire stove, known as a poyeton (prevalent in 70% of households surveyed by Schnieder).[37] [38] A *poyeton* is designed for a pot to rest directly above the flame and is supported by a semi-circle made from clay, mud, or dirt.[39] [40] Traditional closed stoves are also used and are made from mud, bricks, or clay. They are designed in the shape of a U, creating some insulation and protection. [41] Large batches of slow cooked foods, like beans or rice, tend to be cooked on a weekly basis and heated daily. Corn and tortillas are also staples in El Salvadorian diet and are cooked daily.[42]

Nicaragua:

Most Nicaraguans in rural areas (91.4%) use wood as a source of fuel, and 30.9% of the urban population use fire wood.[43] Wood is used as a primary fuel source for most (91.4%) of rural Nicaraguans and the typical stove used by wood fuel users in Nicaragua is the traditional 3-stone fire. This is made by placing three stones, bricks, or whatever material is available in an equilateral triangle, and resting a pot on top of

[33] 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 tCO2/TJ) and a 25% weight is assigned to both liquid and gaseous fuels (71.5 tCO2/TJ for Kerosene and 63.0 tCO2/TJ for Liquefied Petroleum Gas (LPG).
[34] Current, D.. et al. 1989. "The Present and Future Status of Production and Consumption of Fuelwood in El Salvador". Proyecto Cultivo de Arboles de Uso Mdltiple (MADELEIRA). pg. vi and 17.
[35] Maldonado, J.H. 2004. "Relationships Among Poverty, Financial Services, Human Capital, Risk Coping, and Natural Resources: Evidence from El Salvador and Bolivia". pg 80.
[36] Schneider, H. 2006. "Caracterización del Consumo de Leña en El Sector Residencial en El Salvador", Departamento De Ciencias Energéticas y Fluídicas Universidad Centroamericana "José Simeón Cañas. Appendix pg. 2 Box 9.2.2

[37] Schneider, H. 2006. "Caracterización del Consumo de Leña en El Sector Residencial en El Salvador", Departamento De Ciencias Energéticas y Fluídicas Universidad Centroamericana "José Simeón Cañas. pg. 22.
[38] Westoff, B. and D. Germann, 1995. A Documentation of Improved and Traditional Stoves in Africa, Asia and Latin America. http://www.gtz.de/de/dokumente/en-stove-images2-1995.pdfp.88
[39] Ibid pg.88
[40] Schneider, H. 2006. "Caracterización del Consumo de Leña en El Sector Residencial en El Salvador", Departamento De Ciencias Energéticas y Fluídicas Universidad Centroamericana "José Simeón Cañas. pg. 4
[41] Ibid, Box 9.7.1
[42] Ibid, pg. 4
[43] Encuesta Nicaraguense de Demografia y Salud 2006/07. www.inide.gob.ni/endesa/InformeFinal07.pdf, pg 51 Table 3.6.3

the chosen materials.[44] Another traditional stove model is the 'U-Stove' built with clay or cement. The traditional Lorena stove is also prevalent in Nicaragua.[45 46]

Typical foods prepared include beans, rice, maize, and tortillas.[47]

Mexico:

In Mexico 27 million people use wood stoves in rural areas, which accounts for 80% of fuel consumption in rural households.[48] There is significant stove mixing that takes place among wood users in Mexico. The most common traditional stoves are the three-stone fire and U-type stove. Both are used with 'comals' as well as pots, and lack chimneys.[49] Another model is made from concrete with a metal griddle top. Typical cooking practices include the preparation of tortillas. More than half of a household's daily wood consumption is used solely for making tortillas.[50]

E.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the SSC-CPA being included as registered PoA (assessment and demonstration of additionality of SSC-CPA): >>

E.5.1. Assessment and demonstration of additionality for a typical SSC-CPA:

In accordance with EB68 Annex 27, paragraph 2, CPAs do not require the demonstration of barriers for the positive list of technologies and project activity types that are defined as automatically additional for project sizes up to and including the small-scale CDM thresholds. CPAs within the PoA shall demonstrate that they are small scale 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.

This SSC-CDM-PoA helps to overcome barriers to ICS dissemination and enables greater access to ICS for communities within the project boundary. A CPA that is eligible for inclusion in the PoA shall be defined automatically additional under the PoA, hence, assessment of additionality is done at the PoA level and a typical SSC-CPA implemented by the coordinating/managing entity under the SSC-CDM-PoA is deemed to be additional if it meets the eligibility criteria.

E.5.2. Key criteria and data for assessing additionality of a SSC-CPA:

[44] Westoff, B. and D. Germann, 1995. A Documentation of Improved and Traditional Stoves in Africa, Asia and Latin America. http://www.gtz.de/de/dokumente/en-stove-images2-1995.pdf. , pg 64

[46] Westoff, B. and D. Germann, 1995. A Documentation of Improved and Traditional Stoves in Africa, Asia and Latin America. http://www.gtz.de/de/dokumente/en-stove-images2-1995.pdf. , pg 91

[48] Berrueta, Victor M, et al, 2007. Energy performance of wood-buring cookstoves in Michoacan, Mexico. http://edge.rit.edu/content/P10451/public/Energy%20performance%20of%20wood-burning%20cookstoves. Renewable Energy, Issue 33, pg 860
[49] Ibid, pg.860

The assessment and demonstration of additionality for a typical SSC-CPA is determined at the PoA level as shown in section E.5.1. Therefore, as allowed[51] by the CDM every SSC-CPA included in this SSC-PoA is deemed additional if the following is met:

- The CPA meets the eligibility criteria for inclusion of a SSC-CPA in the PoA as per section A.4.2.2.
- The CPA is consistent with the current mandatory laws and regulations in the CPA boundary.

E.6. Estimation of Emission reductions of a CPA:

E.6.1. Explanation of methodological choices, provided in the approved baseline and monitoring methodology applied, selected for a typical SSC-CPA:

This PoA applies the methodology: AMS-II.G. Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass Version 03, Sectoral Scope 03.

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 v3. 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.

Independent studies will be used to establish the baseline for each Host Country. See the specific CPA-DD Annex 3 of the given country.

The quantity of biomass used in absence of the project activity for commercial users and institutions will be determined at the time of first inclusion of those stoves into a CPA. 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.

E.6.2. Equations, including fixed parametric values, to be used for calculation of emission reductions of a SSC-CPA:

Emission reductions are calculated[52] as follows:

$$\mathbf{ER_y = \Sigma\,(B_{y,savings} * N_y * U_y) * (f_{NRB,y} * NCV_{biomass} * EF_{projected_fossil\ fuel})} \qquad \textbf{Equation (1)}$$

Where:

ER_y Emission reductions during the period y in tCO2e

$f_{NRB,y}$	Fraction of woody biomass saved by the project activity in period y that can be established as non-renewable biomass
$NCV_{biomass}$	Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/t)

[51] EB55 Annex 38
[52] See annex 5 of each specific CPA for actual values.

$EF_{projected_fossilfuel}$	Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 81.6 tCO2/TJ
N_y	Total number of appliances of the type being deployed during period y as part of the SSC-CPA
U_y	Average usage rate (as opposite to drop-off) of appliances of type being deployed during period y as part of the SSC-CPA
$B_{y,savings}$	Quantity of woody biomass used in the absence of the project activity in tonnes during period y. This parameter is determined at the time of each CPA inclusion using one of the following options:

When using AMS-II.G version 3, <u>Option 1</u>:

$$B_{y,savings} = (B_{old} * L) - B_{y,new}$$ **Equation (2)**

Where:

B_{old}	Quantity of woody biomass used in the absence of the project activity in tonnes
$B_{y,new}$	Annual quantity of woody biomass used during the project activity in tonnes, measured as per the Kitchen Performance Test (KPT) protocol. 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) <http://www.pciaonline.org/node/1049)>
L	Leakage adjustment factor (fraction)

When using AMS-II.G version 3, <u>Option 2</u>:

$$B_{y,savings} = (B_{old} - \mu_{old}) * L * (1 - \eta_{old} / \eta_{new})$$ **Equation (3)**

Where:

B_{old}	Quantity of biomass used in the absence of the project activity in tonnes/ year
μ_{old}	Quantity of woody biomass for the continued use of old stoves per household
η_{old}	1. Efficiency of the system being replaced, measured using representative sampling methods or based on referenced literature values (fraction), use weighted average values if more than one type of system is being replaced; 2. A default value of 0.10 may be optionally used if the replaced system is a three stone fire, or a conventional system with no improved combustion air supply or flue gas ventilation system, i.e. without a grate or a chimney; for other types of systems a default value of 0.2 may be optionally used

η_{new}	Efficiency of the system being deployed as part of the project activity (fraction), as determined using the Water Boiling Test (WBT) protocol. Use weighted average values if more than one type of system is being introduced by the project activity. At the time of technology inclusion to the CPA this parameter will be named "$\eta_{specific}$".
L	Leakage adjustment factor (fraction)

When using AMS-II.G version 3, <u>Option 3</u>:

$$B_{y,savings} = (B_{old} - \mu_{old}) * L * (1 - \frac{SC_{new}}{SC_{old}})$$ **Equation (4)**

Where:

SC_{old}	Specific fuel consumption or fuel consumption rate[53] of the baseline system/s i.e. fuel consumption per quantity of item/s processed (e.g. food cooked) or fuel consumption per hour, respectively. Use weighted average values if more than one type of system is being replaced
SC_{new}	Specific fuel consumption or the fuel consumption rate of the system/s deployed as part of the project i.e. fuel consumption per quantity of item/s processed (e.g. food cooked) or fuel consumption per hour respectively. Use weighted average values if more than one type of system is being introduced by the project activity

Generalities

$$B_{y,savings} = (B_{old} * L) \times (1 - \frac{\eta_{old}}{\eta_{new}})$$

B_{old} is calculated as (option A from the methodology) the estimate of average annual consumption of biomass per appliance (tonnes/year) as derived from historical data, survey, or field testing.

L: As per AMS.II.G./Version 03, B_{old} is multiplied by a net to gross adjustment factor of 0.95 to account for leakages.l

$B_{y,savings}$ 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 section E.6.3 and E.7 of the PoA-DD and the specific requirements established in section B.5.1 and B.6.1 of the specific CPA.

Adjustment factors described in section E.4 and E.7.2 are used for ex-ante calculations. Ex-post parameters will be applied following the results of the monitoring plan.

ICS exclusion

[53] 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 (e.g. the CCT procedures specified by the Partnership for Clean Indoor Air (PCIA) <http://www.pciaonline.org/node/1050>).

Due to the age: Each year, the "cut-off age" is decided at the discretion of the CME, and stove older than this age will not be included in the sample and will not be included in calculations of emission reduction. This introduces conservativeness to the estimation of emission reductions.

Due to continued use of baseline technology:

1. It is possible that baseline technologies are still used in the project activity. B_{old} will be discounted for any biomass consumed by traditional stoves still used in the project activity. This is done for option 1 by subtracting B_{new} from B_{old} and for options 2 and 3 by means of the parameter μ_{old}. Only the quantity of baseline wood fuel actually displaced by the project activity will be used for emission reduction calculations. The monitoring plan will survey local usage and apply reductions to Bold as necessary through the means exposed above.
2. Similarly, it is also possible that more than one type of baseline technology is regularly used in the household. The sales receipt will describe the quantity and type of baseline technologies being replaced by the ICS being implemented.

Due to replacement of fuels other than biomass fuel: All technology models implemented will result in efficiency improvement in the thermal application of the non-renewable biomass, thus ICS installed will only replace biomass fuelled stoves. All ICS replacing stoves using fossil fuels (such as kerosene and LPG) will be excluded from the records and subsequently from the emission reduction calculations (i.e., ICS may be still installed but as these shall not be included within the installation record as a basis for emission reduction calculation). This will be ensured by recording the fuel used prior to ICS installation and baseline stove type of all ICS purchasers and including this information in the electronic Database for all ICS implemented. Each ICS recorded showing the fuel replaced to be anything other than biomass will be discounted from the records and not to count toward the Total Sales Record. Excluded ICS will be available in the record system for verification by the DOE. This is in accordance with the approved methodology which is applicable only to users which were previously using biomass fuels.

E.6.3. Data and parameters that are to be reported in CDM-SSC-CPA-DD form:

Data / Parameter:	B_{old}
Data unit:	tonnes wood/ year
Description:	Quantity of woody biomass used in the absence of the project activity in tonnes
Source of data used:	Historical data or survey of local usage, or calculation from the thermal energy generated in the project activity, will be conducted for relevant baseline appliance types as described in the baseline scenario. Weighted averages applied if more than one appliance. *If the data is obtained from survey, then the sampling design is as given below:* *Target population:* Commercial biomass users and/or institutional biomass users. *Objective:* To establish the quantity of woody biomass used in the absence of the project activity in tonnes for each target population. *Description and Reliability Requirements:* Baseline fuel consumption will be determined at the time of first inclusion into a CPA.

	Sampling Frame: Representative sample of baseline stove technologies weighted average if more than one type. *Sample Size and Desired Precision:* Mean Value determination, see Section 7.2. *Sample Method:* see Section 7.2 *Implementation:* Actual COVs will be used for emission reduction calculations derived from the monitoring results. All data will be kept for 2 years following the crediting period or the last issuance of the CERs of the project activity. Studies will be independently assessed to establish the baseline for each target population. Once a baseline is established for a target population it will remain fixed for the entire PoA. See the specific CPA-DD Annex 3 for the country of implementation.
Value applied:	To be established at the first CPA applying this value.
Justification of the choice of data or description of measurement methods and procedures actually applied:	Combination of literature and field work by a dedicated expert team. If credible new data becomes available after having established the baseline values in the first CPAs (either on the basis of literature values or surveys), then future CPAs shall use such updated data to define the baseline consumption value.
Any comment:	This parameter is applicable to the first CPA involving the Host Country of the study.

Data / Parameter:	η_{old}
Data unit:	Percentage
Description:	Efficiency of the system being replaced as part of the CPA
Source of data used:	Reference literature, survey, and/or default value for each baseline technology. Weighted averages applied if more than one appliance. *If the data is obtained from survey, then the sampling design is as given below:* *Target population:* Systems replaced by stove type. *Objective:* Establish the thermal efficiency of the system/s replaced per stove type. *Description and Reliability Requirements:* Each CPA may choose to establish the value for each baseline technology replaced. *Sampling Frame:* Representative sample of baseline stove technologies identified/tested, weighted average if more than one type. *Sample Size and Desired Precision:* Mean Value determination, see Section 7.2.

	Sample Method: see Section 7.2. *Implementation:* Lab or field sampling by a dedicated team by means of a WBT, CCT or KPT will be conducted for representative baseline appliance types as described in the baseline scenario. Weighted averages applied if more than one appliance. All data will be kept for 2 years following the crediting period or the last issuance of the CERs of the project activity.
Value applied:	To be established at the first CPA applying this value.
Justification of the choice of data or description of measurement methods and procedures actually applied:	η_{old} for Host Countries will be determined at the time of first CPA inclusion into a given country. Survey and/or historical data and/or default value, weighted average if multiple systems.
Any comment:	This parameter is applicable only when AMS-II.G step-6 option-2 is chosen for a given CPA.

Data / Parameter:	L_y
Data unit:	Percentage
Description:	Leakage factor applied to adjust the B_{old} due to the project activity during period y as part of the SSC-CPA
Source of data used:	Default value
Value applied:	0.95
Justification of the choice of data or description of measurement methods and procedures actually applied:	Default value deemed valid as per the CDM methodology.
Any comment:	None

Data / Parameter:	$NCV_{biomass}$
Data unit:	TJ/tonne
Description:	Net calorific value for biomass
Source of data used:	IPCC default value for wood fuel as per AMS-II.G version 03
Value applied:	0.0156

Justification of the choice of data or description of measurement methods and procedures actually applied:	Adopt IPCC default values as per CDM methodology. Reference: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 2: http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol2.html
Any comment:	None

Data / Parameter:	$EF_{projected_fossil_fuel}$
Data unit:	t CO2/TJ
Description:	Emission factor for the substitution of non-renewable woody biomass by similar consumers.
Source of data used:	default value
Value applied:	81.6
Justification of the choice of data or description of measurement methods and procedures actually applied :	Default value as prescribed by methodology AMS-II.G/v3
Any comment:	None

Data / Parameter:	$f_{nrb,y}$
Data unit:	Fraction
Description:	Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass
Source of data used:	NRB study
Value applied:	To be established at the first CPA applying this value.
Justification of the choice of data or description of measurement methods and procedures actually applied :	Publicly available data will be used to determine the NRB fraction. Established in the first CPA-DD involving the Host Country of the study. fNRB will be established per CDM meth AMS-II.G v3, or the latest AMS-II.G version available at the time of assessment.
Any comment:	None

Data / Parameter:	SC_{old}
Data unit:	tonne wood/ year
Description:	Specific fuel consumption of the fuel consumption rate of the system/s replaced
Source of data	*Target population:* Residential biomass users, commercial biomass users and/or

used:	institutional biomass users. *Objective:* To establish the specific fuel consumption of the system/s replaced for each target population. *Description and Reliability Requirements:* Primary data collection (by means of the CCT), weighted average if multiple systems. *Sampling Frame:* Representative sample of baseline stove technologies, weighted average if more than one type. *Sample Size and Desired Precision:* Mean Value determination, see Section 7.2. *Sample Method:* see Section 7.2. *Implementation:* Lab or field sampling will be conducted for representative baseline appliance types as described in the baseline scenario. Weighted averages applied if more than one appliance. When AMS-II.G step-6 option-3 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. All data will be kept for 2 years following the crediting period or the last issuance of the CERs of the project activity.
Value applied:	To be established at the first CPA applying this value.
Justification of the choice of data or description of measurement methods and procedures actually applied:	Expert team to conduct tests. SC_{old} for each Host Country will be determined at the time of first CPA inclusion into a given country.
Any comment:	This parameter is applicable only when AMS-II.G step-6 option-3 is chosen for a given CPA.

Data / Parameter:	$\eta_{specified}$
Data unit:	Percentage
Description:	Efficiency of the system being deployed at the time of CPA inclusion.
Source of data used:	Manufactures specifications or independent testing.
Value applied:	The efficiency of the different ICS systems to be distributed will be included in each CPA-DD. To be established in any CPA applying this value.

Justification of the choice of data or description of measurement methods and procedures actually applied:	*Target population:* Systems deployed by model. *Objective:* To establish the thermal efficiency of the system/s deployed per stove model. *Description and Reliability Requirements:* Independent testing certified by a national standards body or an appropriate certifying agent recognized by it and/or alternatively the manufacturer specifications, weighted average if multiple systems. *Method:* No sampling approach from the CDM guidelines is applied to this parameter given that the nature of the measurement is not a survey and therefore it does not require a sampling approach. Instead, the prototype to test will account for test results to meeting the sstatistical confidence/precision of 90/10. Results to be provide as supporting documents at the time of CPA inclusion.
Any comment:	Note that $\eta_{specified}$ is the efficiency as per manufacturer specification for fulfilling eligibility criteria of the PoA. This value will not be used for ex-post calculation of emission reductions since η_{new} is a monitored parameter to reflect possible changes in efficiency during the lifetime of the ICS.

E.7. Application of the monitoring methodology and description of the monitoring plan:

E.7.1. Data and parameters to be monitored by each SSC-CPA:

Data / Parameter:	μ_{old}
Data unit:	tonnes wood/ year
Description:	Quantity of woody biomass used in the *project activity* by traditional stoves per household
Source of data to be used:	Primary data collection through survey of household behavior or testing
Value of data applied for the purpose of calculating expected emission reductions in section B.5:	An assumed value will be applied at the CPA level for the purposes estimating emissions reductions ex-ante.
Description of measurement methods and procedures to be applied:	According to AMS II.G v03 ¶20 (b), *If baseline stoves continue to be used, monitoring shall ensure that the fuel-wood consumption of those stoves is excluded from Bold.* Baseline fuel consumption will be determined using survey at the time of first inclusion into a CPA. *Target population:* Residential biomass users, commercial biomass users and/or institutional biomass users.

	Objective: Establish the quantity of woody biomass used in the *project activity* by traditional stoves per household for each target population. *Description and Reliability Requirements:* Primary data collection. *Sampling Frame:* Project Database of each CPA as defined by sales date, appliance type, serial number, and end-user information. *Sample Size and Desired Precision:* Mean Value determination, see Section 7.2 *Sample Method:* see Section 7.2. *Implementation:* 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. When AMS-II.G step-6 option-2 or -3 is chosen for a given CPA, the CPA shall measure changes in B_{old} displaced by the project activity through this independent parameter. A survey or field test will be conducted to determine the amount of fuel-wood still used in the project activity by traditional stoves. Survey questionnaires administered to a sample of end users will elicit visual inspections of the household and if necessary an interview to confirm whether they are still using a baseline stove and in that case to obtain self-reported estimates of the amount of non-renewable biomass used per day in traditional stoves in parallel to the improved stove during various seasons. The quantity of woody biomass still used by traditional stoves (µold) will be excluded from Bold. Alternatively, field testing may measure fuel consumption by traditional stoves. A weighted average of stove sales for each vintage will be applied. This value will be used for ex-post emission reduction calculations. Once applied to a single CPA, all applicable future CPAs within the same POA may choose to use such data to define the value if applying a single sampling design.
QA/QC procedures to be applied:	CME/PO provides guidance and training for conducting testing with expert party assistance.
Any comment:	This parameter is applicable only when AMS-II.G step-6 option-2 or -3 is chosen for a given CPA.

Data / Parameter:	$B_{y,new}$
Data unit:	tonnes wood/ year
Description:	Quantity of woody biomass used during the project activity by the *improved stove technologies* in tonnes per household
Source of data to be used:	Primary data collection
Value of data applied for the purpose of	An assumed value will be applied at the CPA level for the purposes estimating emissions reductions ex-ante.

calculating expected emission reductions in section B.5:	
Description of measurement methods and procedures to be applied:	Baseline fuel consumption will be determined using surveys at the time of first inclusion into a CPA. *Target population:* Residential biomass users, commercial biomass users and/or institutional biomass users. *Objective:* To establish the quantity of woody biomass used during the project activity in tonnes for each target population. *Description and Reliability Requirements:* Primary data collection, weighted average if multiple systems. *Sampling Frame:* Project Database of each CPA as defined by sales date, appliance type, serial number, and end-user information. *Sample Size and Desired Precision:* Mean Value determination, see Section 7.2 *Sample Method:* see Section 7.2. *Implementation:* Lab or field sampling will be conducted for representative appliance types as described in the baseline scenario. When AMS-II.G step-6 option-1 is applied for each CPA, the CPA shall measure changes in $B_{y,new}$ fuel consumption using the KPT every year. A weighted average of stove sales for each vintage will be applied. This value will be used for ex-post emission reduction calculations. In accordance to AMS-II.G V3 methodological requirements, subsequent KPTs on aging stoves will measure changes in stove efficiency and will be used for emission reduction calculations for associated stove vintages. Once applied to a single CPA, all applicable future CPAs within the same 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.
QA/QC procedures to be applied:	CME/PO conducts testing with expert party assistance. Training will be provided to enumerators and testers.
Any comment:	This parameter is applicable only when AMS-II.G step-6 option-1 is chosen for a given CPA.

Data /	η_{new}

Parameter:	
Data unit:	Percentage
Description:	Efficiency of the appliance being deployed as part of the SSC-CPA, weighted average if multiple systems.
Source of data to be used:	Primary data collection
Value of data applied for the purpose of calculating expected emission reductions in section B.5:	An assumed value will be applied at the CPA level for the purposes estimating emissions reductions ex-ante.
Description of measurement methods and procedures to be applied:	*Target population:* Systems deployed by model. *Objective:* Establish the thermal efficiency of the system/s deployed per stove model. *Description and Reliability Requirements:* Primary data collection (by means of the WBT), weighted average if multiple systems. *Sampling Frame:* Project Database of each CPA as defined by sales date, appliance type, serial number, and end-user information. *Sample Size and Desired Precision:* Mean Value determination, see Section 7.2. *Sample Method:* see Section 7.2. *Implementation:* 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. AMS-II.G step-6 <u>option-2</u> is applied for each CPA, by means of a standard test (water boiling test) by a dedicated expert team at minimum every two years that measures aging stove efficiency per stove type. A weighted average of stove sales for each vintage will be applied. This value will be used for ex-post emission reduction calculations. All data will be kept for 2 years following the crediting period or the last issuance of the CERs of the project activity.
QA/QC procedures to be applied:	CME/PO conducts testing with expert party assistance. Training will be provided to enumerators and testers.
Any comment:	Once applied to a single CPA, all applicable CPAs within the same POA can use such data to define the value. This parameter η_{new} is applicable only when AMS-II.G step-6 <u>option-2</u> is chosen for a given CPA. If η_{new} is found to be lower than 20%, then the stove will be removed from crediting, or replaced with an equivalent performing appliance.

Data / Parameter:	SC_{new}
Data unit:	tonnes wood/ year
Description:	Specific fuel consumption of the fuel consumption rate of the system/s deployed
Source of data used:	Primary data collection (by means of the CCT), weighted average if multiple systems.
Value applied:	An assumed value will be applied at the CPA level for the purposes estimating emissions reductions ex-ante.
Description of measurement methods and procedures to be applied:	*Target population:* Residential biomass users, commercial biomass users and/or institutional biomass users. *Objective:* Establish the specific fuel consumption of the fuel consumption rate of the system/s deployed for each target population. *Description and Reliability Requirements:* 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. *Sampling Frame:* Project Database of each CPA as defined by sales date, appliance type, serial number, and end-user information. *Sample Size and Desired Precision:* Mean Value determination, see Section 7.2. *Sample Method:* see Section 7.2. Lab or field sampling will be conducted for representative appliance types as described in the baseline scenario. Weighted averages applied if more than one appliance. *Implementation:* Lab or field sampling will be conducted for representative appliance types as described in the baseline scenario. Weighted averages applied if more than one appliance. Primary data collection, weighted average if multiple systems. A standard test (Controlled Cooking Test) by a dedicated expert team at least every two years on each technology type that measures aging stove performance per stove type. When AMS-II.G step-6 <u>option-3</u> is chosen for a given CPA, a standard Controlled Cooking Test (CCT) will be conducted by a dedicated expert team at minimum every two years that measures aging stove efficiency per stove type. A weighted average of stove sales for each vintage will be applied. This value will be used for ex-post emission reduction calculations. If CCTs are conducted annually, a combined and weighted average of two years may be used to achieve the required sample size for biennial monitoring. All data will be kept for 2 years following the crediting period or the last issuance of the CERs of the project activity.

QA/QC procedures to be applied:	CME/PO conducts testing with expert party assistance
Any comment:	This parameter is applicable only when AMS-II.G step-6 option-3 is chosen for a given CPA.

Data / Parameter:	N_y
Data unit:	Total number of appliances
Description:	Total number of appliances deployed during period y as part of the SSC-CPA
Source of data to be used:	Primary data collection as recorded in the Total Sales Record
Value of data applied for the purpose of calculating expected emission reductions in section B.5:	An assumed value will be applied at the CPA level for the purposes estimating emissions reductions ex-ante.
Description of measurement methods and procedures to be applied:	*Target population:* All systems deployed (therefore all target populations). *Objective:* To establish the number of appliances deployed during period y as part of the SSC-CPA. *Description and Reliability Requirements:* Primary data collection, weighted average if multiple systems. No sampling is applied to this parameter. All technologies deployed, weighted average if more than one type. The total number of appliances by type and date deployed during period y is tracked in the Project Database of the specific CPA, which is updated regularly. All appliances distributed will be recorded. Any appliance not recorded in the Project Database will not be credited for emission reductions. Ny is adjusted according to actual operational days during a given monitoring period y. The sales date for each appliance listed in the Project Database of each CPA signifies the start of operation for each appliance type. The operational days of each appliance is divided by the total number of days of the current monitoring period to determine the adjusted N_y number of appliances in operation.
QA/QC procedures to be applied:	Each SSC-CPA project implementer shall maintain a sales record to calculate this parameter. CME's electronic records will be cross-checked against a representative sample of paper and/or SMS records from distribution transactions made by the partner organisations. For ICS delivered by other suppliers to the CME for distribution, records will also be cross checked against delivery notes issued by the transporter upon delivery. The cross-checking of all DOs will be led by the CME. This exercise will

	take place before each verification or at least once a year if no verifications have taken place in a given year. The CME supervises the activities of each SSC-CPA PO (when not the CME itself), and provides training, guidelines and templates to facilitate accurate testing and record keeping.
Any comment:	All data sources will be transparent and verifiable.

Data / Parameter:	U_y
Data unit:	Percentage
Description:	Average usage rate of appliance type being deployed during as part of the SSC-CPA.
Source of data to be used:	Primary data collection as measured through ex-post surveys/ user feedback.
Value of data applied for the purpose of calculating expected emission reductions in section B.5:	An assumed value will be applied at the CPA level for the purposes estimating emissions reductions ex-ante.
Description of measurement methods and procedures to be applied:	*Target population:* Systems deployed by type and vintage (i.e. residential, age 0). *Objective:* To establish the average usage rate of appliances deployed as part of the SSC-CPA per stove type and vintage, to determine only stoves that are still operating, measured ex-post through survey/user feedback. *Description and Reliability Requirements:* Primary data collection, weighted average if multiple systems. *Sampling Frame:* Project Database of each CPA as defined by sales date, appliance type, serial number, and end-user information. *Sample Size and Desired Precision:* Proportional Value determination, see Section 7.2 *Sample Method:* see Section 7.2. *Implementation:* 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. Field survey by a dedicated team at minimum every 2 years. Ex-post monitoring and surveys will determine the number of appliances still in operation. All data will be kept for 2 years following the crediting period or the last issuance of the CERs of the project activity.
QA/QC procedures to be applied:	CME/PO to conduct surveys with expert party assistance. Training will be provided to enumerators and testers.

Any comment:	All data sources will be transparent and verifiable.

E.7.2. Description of the monitoring plan for a SSC-CPA:

Sampling Plan across CPAs within the PoA

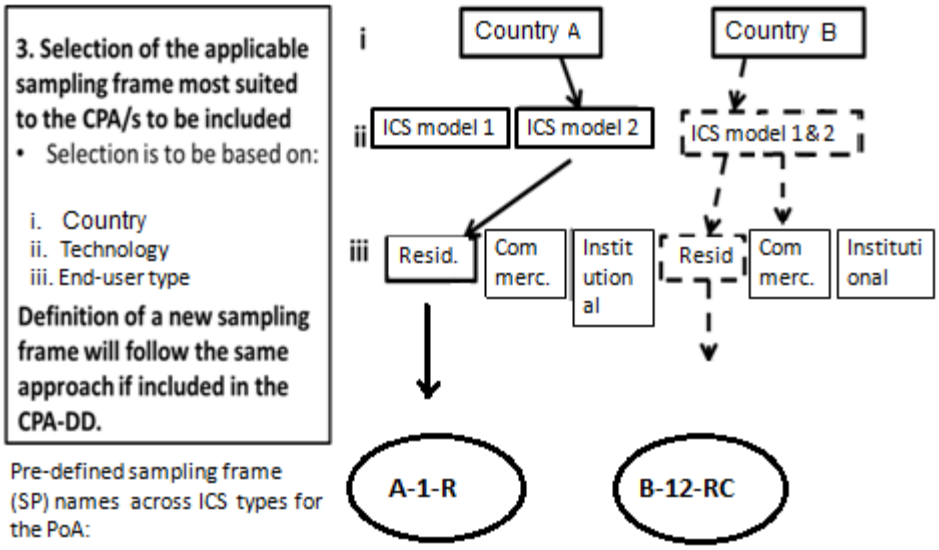
Due to the large number of ICS envisaged to be distributed as part of the CPAs to be included in the PoA, it is not economically feasible to monitor each individual ICS unit distributed. Therefore, representative sampling will be undertaken as part of a PoA-wide Sampling Plan that is designed in line with the requirements of AMS-II.G v. 3 and the "Standard for sampling and surveys for CDM project activities and programme of activities" (the Sampling Standard)[54]. 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 η_{new} 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 same 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 same 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.

At a minimum, the CME will define each Sampling Frame according to Region (I). ICS type (II) and Target population group (III). From the description and characteristic the implementer can then select a sampling frame appropriate for the study.

[54] EB 69 Report, Annex 4



Monitoring for typical SSC-CPAs is described below. Specific technologies that are not currently installed in the first CPA, such as institutional stoves, will have distinct baselines that will be established upon inclusion of CPA-DDs covering those technologies.

The monitoring activity provides a framework for project preparation and monitoring process that will be undertaken for each CPA. 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 section E.7.1 under “Data / Parameter”.

Field Measurement Objective and data to be collected – This is defined in the tables in section E.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 Sale Record. The sampling frame will be kept in hard-copy form for 2 years following the crediting period or the last issuance of the CERs of the project activity. In the case of multi-stage sampling, the sampling frame is a complete listing of sub-groups of the study area/population which constitutes all the primary sampling units. 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 (as in the diagram below defining sampling frames). From the description and characteristic the implementer can then select a sampling frame appropriate for the study.

Sample method –Sampling will be conducted using multi-stage sampling techniques, and detailed calculations are provided within the monitoring plan. When project circumstances allow for single stage simple random sampling will be applied per CMD guidelines EB 69 Annex 05 may be utilized. When project circumstances allow single stage simple random sampling will be applied per CDM guidelines EB 69 Annex 5. One example of a 2-stage random sampling approach would be to provide a first-stage sampling frame consisting of all households serviced across all CPAs categorized by region, methodology combination, end-user type, and ICS model combination – all listed by village. Random sampling of villages from the first-stage frame would provide a subset of areas to sample from. In the second stage, the sampling frame would consist of all households serviced in the randomly selected villages. Random sampling would then be conducted from the second-stage frame. To ensure a random sample selection, random number generators shall be applied. Each ICS in the target population is uniquely identifiable by its Serial ID number. Each ICS within a sampling frame can thus be allocated a Sample Selection Number in each monitoring period, starting at 1 and increasing up to the total number of ICSs in the Total Sales Record for that pre-defined 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. This will be done for each group of CPAs within a defined sampling frame or for each CPA in the case that CPAs are not grouped up for monitoring.

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 section E.7.1, and as allowed by the methodology, the sample size will be chosen for a 90/10 precision (90% confidence interval and 10% margin of error) if a sampling plan is develop for each CPA, and where there is no specific guidance in the applicable methodology, as the criteria for reliability of sampling efforts for small-scale project activities (according to EB 69 Annex 4)., except when a single sampling plan covering a group of CPAs is undertaken, in which case 95/10 confidence/precision is applied for the sample size calculation. Multi-stage sampling will be used to select samples from the Project Database for monitored parameters. Optionally, other sampling approaches may be used in accordance with EB 69 Annex 05 Guideline for Sampling and Surveys for CDM Project Activities and Programme of Activities, when sampling techniques or statistical analysis necessitates it.

Sample Size Calculation

Sample sizes will be sufficient to ensure that the precision of the sample means are in accordance to the Sampling Frame established for the CPA within the PoAto 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 version 03, paragraph 22, and other CDM sampling guidelines, with the applicable methodology having precedence[55]. 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.

For each sampling approach used, EB 69 Annex 05 Best Practices Examples Focusing on Sample Size and Reliability Calculations will be followed to determine the appropriate sample size. The selection of the most effective information-gathering method will be justified by means of the cost-effectiveness and suitability of the method selected. The choice depends on several considerations, including the known characteristics of the population, the cost of information-gathering, and other conditions surrounding the project and the product in question. Methods may include but are not limited to visual inspections, physical measurements, respondent self-reports, and operational logs.

Sample size is determined for Mean Values using[56]:

$$c \geq \frac{\left(\frac{SD_B}{Clustermean}\right)^2 \times \left(\frac{M}{M-1}\right) + \left(\frac{1}{u}\right) \times \left(\frac{SD_W}{Overallmean}\right)^2 \left(\frac{\overline{N}-u}{\overline{N}-1}\right)}{\left(\frac{0.1}{1.645}\right)^2 + \frac{1}{M-1}\left(\frac{SD_B}{Clustermean}\right)^2}$$

Where:

- (c) Minimum required number of clusters to be sampled.
- Confidence:
  - 90% = 1.645 (as indicated in the formula above)
  - 95% = 1.96 (1.645 in formula will be replaced)
- Precision:
  - 10% = 0.1 (as indicated in the formula above)
  - 5% = 0.05 (0.1 in formula will be replaced)
- (M) Total number of clusters (i.e. villages) = TBD from project database
- (N) Average number of units (HH) per a cluster = TBD from project database
- (u) Number of units that have been pre-specified per a cluster = TBD according to M and N.
- (Overallmean) Mean per unit from all clusters in the sample =

$$\frac{(\Sigma\ Mean\ per\ unit\ in\ a\ cluster)}{Total\ number\ of\ units\ in\ sample}$$

- (Clustermean) Mean for all units (in other words, per cluster) from all clusters in the sample =

$$\frac{(\Sigma\ Mean\ per\ cluster\ in\ the\ sample)}{Total\ number\ of\ clusters\ in\ sample}$$

- (SD_B) Standard deviation between clusters =

[55] Applicable common sampling approaches are outlined in EB 69 Annex 04 and Annex 05.

[56] EB69 Annex05, Example 18.

$$SD_B{}^2 = \frac{\sum_{i=1}^{n}(y_i - \bar{y})^2}{n-1}$$

Therefore: $SD_B = \sqrt{(SD_B)^2}$

Where:

- y = Total for the units sampled per cluster (TBD from the field, and according to N)
- n = Number of clusters (TBD from the field, and according to M)

- (SD_w) Average within clusters standard deviation =

$$\sqrt{\frac{\sum\ (Number\ of\ units\ in\ cluster * (St\ Dev\ between\ units\ in\ cluster)^2)}{Total\ number\ of\ units\ accross\ all\ clusters}}$$

Sample size is determined for Proportional Values using[57]:

$$c \geq \frac{\frac{SD_B^2}{\bar{p}^2} \times \frac{M}{M-1} + \frac{1}{\bar{u}} \times \frac{SD_w^2}{\bar{p}^2} \times \frac{(\bar{N} - \bar{u})}{(\bar{N} - 1)}}{\frac{0.1^2}{1.96^2} + \frac{1}{M-1}\frac{SD_B^2}{\bar{p}^2}}$$

Where:

- (c) Minimum required number of clusters to be sampled.
- Confidence:
  - 90% = 1.645 (as indicated in the formula above)
  - 95% = 1.96 (1.645 in formula will be replaced)
- Precision[58]:
  - 10% = 0.1 (as indicated in the formula above)
  - 5% = 0.05 (0.1 in formula will be replaced)
- (M) Total number of clusters (i.e. villages) = TBD from the project database
- (N) Average number of units (HH) per a cluster = TBD from the project database
- (u) Number of units that have been pre-specified per a cluster = TBD according to M and N.
- (p) Mean for all units (in other words, per cluster) from all clusters in the sample =

$$\frac{(\Sigma\ Mean\ per\ cluster\ in\ the\ sample)}{Total\ number\ of\ clusters\ in\ sample}$$

- (SD_B) Standard deviation between clusters =

[57] EB69 Annex05, Example 14.

[58] According to the 69 Annex05, Page04, Paragraph 11 "Precision of 10 percent i.e. ±10% in this standard shall be interpreted as a proportion can describe either of the two possible scenarios of the success rate or the failure rate – for example (i) cook stove still operational or (ii) cook stove no longer operational. Project proponents may use the larger of the two proportions in the sample size calculation, that is p or (1-p), in any of the monitoring periods during the crediting period without having to revise the monitoring plan. The check on meeting the reliability requirement should be based on the larger of the two proportions.

$$SD_B^{\ 2} = \frac{\sum_{i=1}^{n}(p_i - \overline{p})^2}{n-1}$$

Therefore: $SD_B = \sqrt{(SD_B)^2}$

Where:

- p = Mean for each unit sampled per cluster (calculated above)
- n = Number of clusters (TBD from the field, and according to M)

- (SD_w) Average within clusters standard deviation =

$$\sqrt{\frac{\sum\ (Variance\ within\ each\ clsuter)}{Number\ clusters}}$$

A sample size calculation tool[59] has been designed to describe step by step the method in place and to estimate the minimum sampled needed to satisfy statistical requirements for each monitoring parameter according to its sampling approach. Thus, the sample size calculation tool to be used has been developed for each monitored parameter in section E.7.1. 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.

The coefficient of variation is estimated from recent monitoring data. 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 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 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. This will be done for each group of CPAs within a defined sampling frame or for each CPA in the case that CPAs are not grouped up for monitoring.

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 cease once required confidence/precision is met.

Multistage sampling from CPA Project Databases

Step 1: For each monitoring period contact details from end-users are collected for all, or a subset of, appliances deployed. This is stored in the Total Sales Record and serves as the basis from which sampling frames are developed.

[59] See Sample Size Calculation Tool provided to the DOE.

Step 2: In order to reflect the different age of the appliances (i.e. the different deployment dates), the relative share of appliance vintages within the total population of appliances deployed as recorded in the Total Sales Record under the CPAs shall be established. Example: If after the second monitoring period, 75% of all appliances were deployed until the end of the first Monitoring Period, and 25% were deployed until the end of the second Monitoring Period, then the final selection shall also represent that share. Similarly, within each monitoring period, probability weighted sampling will reflect the number of appliances sold per 3-month quarter within a calendar year. Households will be randomly sampled accordingly.

Step 3: Multi-stage sampling is applied to the sampling frame. A first-stage sampling frame consisting of all households serviced across all CPAs categorized by region, methodology combination, end-user type, and CEP model combination – will be developed and listed by village or DO. Random sampling of villages/DO's from the first-stage frame would provide a subset of areas to sample from.

Step 4: In the second stage of multi-stage sampling, the sampling frame would consist of all households serviced in the randomly selected villages or DO's. Random sampling of users from within the selected villages or DOs will be drawn for participation in the study. The number of users to be selected shall be determined statistically to maximize reliability of results.

Monitored Systems

1. Total Sales Record: The total sales record documents the information listed below for the technologies implemented. A carbon waiver including a warranty card will be distributed with each stove sold.The CME makes every effort to retrieve this information (paper form or electronically (i.e. SMS)) but cannot guarantee the collection of information for waivers and warranties with every stove due to challenges such as high rates of illiteracy and logistical challenges. The total sales record will be kept electronically and with supporting evidence from paper records and/or SMS tracking records, and will be provided to the DOE at verification. The Total Sales Record contains:

a. CPA-ID (CPA to which appliance belongs to)
b. Unique identification of stove using stove serial number or programme logo
c. Partner organization name, address and telephone
d. Date of sale and model/type of project technology sold
e. Quantity of project technology sold as evidenced by invoices

Frequency: Ongoing

Project Database: [Parameter Ny] 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 expand the number of ICS deployed 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. ICS with end-user details recorded will serve as the sampling frame for monitored parameters. End-user details recorded are:

a. Name

b. Governmentdepartment, village, telephone, or address (as available)
c. Mode of use (i.e. institutional, commercial, residential)
d. Baseline sub-category when applicable (i.e. urban, rural)
e. Type of stove and fuel the ICS is replacing

The POs are responsible for recording the fuel used prior to ICS installation and baseline stove type of all ICS purchasers. PO's are responsible for excluding any ICS which are replacing stoves using fossil fuels (such as kerosene and LPG) from emission reduction calculations (i.e., POs may install such ICS for end-users, but as these shall not be included within the Project Database as a basis for emission reduction calculation).

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[60] 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, section B.6.1. 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 up to the date when monitoring is conducted. 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

[60] EB69 Annex 04 and Annex 05.

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.
The monitoring plan below defines parameters and factors that could not be determined at the time of the initial project studies or that must be updated during the crediting period according to the methodology.

1. Project Technology Efficiency Test: [Parameter η_{new}] is established through standard tests that will be performed for a representative sample of each technology type implemented. As stove designs improve, new designs of the same model will be tested. New designs of the same model will be treated as different technology types.

Applicability: Parameter η_{new} is only required when B_{old} is determined using step-6 *option-2* from the AMS-II.G-v3 methodology. For CPAs that choose to determine B_{old} using AMS-II.G-v3 step-6 *option-1 or option-3,* appliance efficiency will be determined by the KPT or CCT, respectively, to ensure comparability of baseline and ongoing monitoring data.

Frequency: Completed at least every 2 years.

2. Project Technology Usage Survey: [Parameter U_y] estimates the percentage of project technology still in use within the sales population. The usage survey provides a single usage parameter that is weighted based on drop off rates that are representative of the distribution of stove vintages in the total sales record. A minimum of 50% of usage surveys will be confirmed by visual inspection.

Frequency: Completed at least every 2 years.

3. Baseline Fuel Consumption: [Parameter B_{old} or SC_{old}] this survey establishes new baselines for CPAs crediting technologies with no established baseline at the PoA level (i.e. institutional stoves, CPAs using AMS-II.G/v3 step-6 option-1, -2 or-3). In this case, the appropriate target population would be surveyed and/or tested as described in POA-DD E.6.2.

Frequency: Upon inclusion of a new CPA and as described at the pertinent CPA-DD section E.6.2 further describes monitoring procedures.

4. Baseline Technology Parallel Use Survey: [Parameter μ_{old}] this survey and/or test assess the extent to which project beneficiaries continue using the baseline technologies after the purchase of the new technology. Thus, the relative usage of the baseline technology will be surveyed and/or tested and an adjustment factor applied to discount biomass consumed in traditional stoves in parallel to improved stoves. B_{old} will be adjusted accordingly.

Frequency: Completed at least every 2 years for options 2 & 3, and annually for option 1.

5. Project Fuel Consumption: [Parameter $B_{y,new}$ or SC_{new}] is determined for CPAs applying AMS-II.G/v3 step-6 option-1 or option-3, respectively. These values are gathered through surveys or studies to establish project fuel consumption for each CPA. Weighted averages are applied if there are multiple technology types.

Frequency: Completed at least every 2 years for options 2 & 3, and annually for option 1.

Continued use of displaced traditional stoves
Methodology AMS II.G.v3: Monitoring shall ensure that the replaced low efficiency appliances are disposed off and not used within the boundary or within the region or continued usage of baseline stoves needs to be monitored and taken into consideration for the baseline emission calculations.

Monitoring surveys conducted on households using ICS will also investigate the extent to which baseline traditional stoves are still in use. If it is found that a traditional stove is still used, even in a secondary role, the HH will be encouraged to discard their traditional stove through the Disposal Policy. Evidence of use of traditional stoves in other kitchen is not possible as the stoves in question are not portable. As a final resort, in cases where further implementation of the Disposal Policy is shown by the monitoring visits to be ineffective, option (b) in paragraph 20 of the methodology will be applied to ensure that emission reductions are calculated taking into account only that portion of the wood used in the kitchen overall is subject to the improved efficiency of the ICS.

Disposal Policy: The project activity encourages full adoption of ICS installed through the project activity. To incentivize full adoption, the project proponents extend a full-year warranty in exchange for the disposal of a household's traditional stove.

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 (eg. Excel, STATA, or SPSS), minimum 2 years working experience in a similar field, and at minimum a Bachelors degree from an institution of higher education.
Monitoring team	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. The skills and experience required for the data collection activities include: • Experience conducting WBTs • Experience conducting door-to-door surveys of biomass consumption • Local language skills (especially important for input to questionnaire design and interviewing of end users) • English language skills • Cultural awareness • Numerical proficiency • Data entry skills

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 μ_{old} 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 the 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 (eg. 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.

E.8Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)

The baseline studies and monitoring methodology were completed using desk review and literature review in combination with historical data and/or a survey of local usage on the 12/12/2012. The results of the work are outlined in PDD section E.6.2 and Annex 3 Baseline Information of each CPA-DD.

The responsible parties for the baseline study for the first CPA are:

Dr. Herbert Schneider and Dr. Ismael Antonio Sánchez
Universidad Centroamericana "J. S. Cañas"
Departamento Ciencias Energéticas
Tel / Fax 503 2210 6664

Universidad Centroamericana conducted the household surveys and field work. Universidad Centroamericana is an independent third party and not a project participant nor a partner organization to the PoA.

Annex 1

CONTACT INFORMATION ON COORDINATING/MANAGING ENTITY and PARTICIPANTS IN THE PROGRAMME of ACTIVITIES

Organization:	UpEnergy Group Inc.
Street/P.O.Box:	47 Kearny Street
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E-Mail:	erik@upenergygroup.com
URL:	http://www.upenergygroup.com
Represented by:	
Title:	Managing Director, Up Energy Group Inc.
Salutation:	Mr.
Last name:	Wurster
Middle name:	
First name:	Erik
Department:	
Mobile:	
Direct FAX:	
Direct tel:	
Personal e-mail:	

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

There is no public funding involved in the particular project activities included in this PoA.

Any public funding used for related program activities will be disclosed at the CPA level, but carbon funding will always be used to fill gaps in other lending programs that do not receive public funding.

Annex 3

BASELINE INFORMATION

I. Baseline Description

According to Methodology AMS-II.G, the baseline scenario 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) η_{old} – Efficiency of the system being replaced. As described in AMS-II.G, this project will use a default value of 0.1 because the systems being replaced are either three stone fire stoves or conventional systems with no improved combustion air supply or flue gas ventilation system. Baseline technologies are described below

(b) B_y – Quantity of woody biomass per appliance used in the absence of this project activity

(c) fNRB – Fraction of woody biomass saved by this project activity that can be established as non-renewable

II. Identification of baselines and target populations

The project identifies three baseline scenarios at the PoA level as described below. Woody biomass used in the absence of the project activity is identified for each target population. Given that a baseline 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. End-users will be categorized into one of the following scenarios based on the characteristic of their fuel consumption patterns:

- Baseline scenario 1: “Residential biomass users”, which consists of people using biomass for household or residential purposes.

- Baseline scenario 2: “Commercial biomass users”, which consists of people using biomass for commercial purposes.

- Baseline scenario 3: “Institutional biomass users”, which consists of people using biomass for institutional purposes, excluding industrial use.

Three baselines (*Baseline scenarios 1, 2 and 3*) have been established at the PoA level and will serve to calculate the emission reductions creditable from the sale of biomass fuel stoves. Thus, *Baseline 1* will be applied to end-users making residential use of the stove. *Baseline 2* will be applied to end-users making commercial use of the stove. Finally *Baseline* 3 will apply to institutional stove sales.

Emission reductions will be credited for a new project scenario 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.

III. Baseline studies

Baseline scenario 1: Residential biomass users

See specific CPA-DD, Annex 3.

Baseline scenario 2: "Commercial biomass users" & Baseline scenario 3: "Institutional biomass users"

B_{old} for commercial and institutional users will be independently determined at the time of first inclusion of a CPA. A summary of the baseline reports for these scenarios is outlined below based on expectations at the time of validation of the program. The baseline report to be used for CPA inclusion will follow the outline established below and will contain information to satisfy the monitoring requirements and sampling methods provided in the PoA-DD.

Target population:
The target population of these two baselines consists of all commercial and institutional users of firewood fuelled cookstoves within a selected scale of operation and country. While these stoves types vary, commercial and institutional stoves in the context of the program are used in small shops or neighborhood food stalls that sell meals to the public and small institutions that serve meals to their members.

Objective:
The purpose of establishing these two baseline scenarios is to facilitate the quantification of fuel consumed by the target population in the absence of the program activity. Amongst this population, the project activity provides improved cookstoves to households and institutions using biomass fuel for traditional stoves or 3-stone fires.

Description and Reliability Requirements:
Historical data and/or local survey will be used to assess the cooking practices within these baseline scenarios to establish the pertinent B_{old}.

Throughout 2011, local experts visited several small commercial stove users within the program boundary. The following are the conclusions for the estimation of the commercial and institutional baseline scenarios:

The fuel consumption estimated at the ex-ante stage for the residential baseline scenario is approximately 3.58 tonnes of wood per year for a typical household of four members[61]. From the overall potential market of commercial users and institutions across the geographical boundary of this program, the CME estimates that the program could reach an optimal capacity to serve about 1,000 small scale (typically about 20 people served per day, serving only on commercial days) commercial users and institutions within the program boundary per year. While stoves types vary, commercial and institutional stoves in the context of the program are used in small shops or neighborhood food stalls that sell to the public. For these types of commercial and institutional users, fuel consumption differs only in that they serve a greater number of meals $person^{-1}$ day^{-1} compared to residential household baselines. A typical

[61] See PoA-DD Annex 5 Ex-ante calculations for baselines 2 & 3.

commercial/institutional stove under the baseline scenario running 5 days per week would lead to a typical fuel consumption of approximately:

$B_{old\text{-}typical\ (per\ stove)}$ =(3.58 tonnes wood/HH-y)/4.12 people served × (20 people served/day) × 200 days/year = 3,475 ton consumed /institution-commerce-year

Therefore, the overall typical fuel consumption for all commercial users and institutions is estimated to be:

$B_{old\text{-}typical\ (overall\ in\ PoA)}$ = 3,475ton consumed /institution-commerce-year × 1,000 potential commercial and institutional users = 3,475,728tons consumed/baseline 2 & 3-year

It was observed that inefficient wood stoves are used by the large majority of commercial and institutional users, and consume large amounts of firewood that release high volumes of greenhouse gases into the atmosphere. Commercial and institutional stoves are the same type of technologies used by residential users, but have a larger capacity than residential stoves.

Figure 2: Left: Typical Commercial Tortilla Maker, Right: Uninsulated Inefficient Stove.

Thus, overall fuel savings for baseline 2 & 3 are estimated below (following option 2 of the methodology, as described in section B.5.2):

$\mathbf{B_{y,savings,} = (B_{old} - \mu_{old}) * (1 - \eta_{old} / \eta_{new})}$;
$B_{saving\text{-}typical\ (overall\ in\ PoA)}$ = 3,475,728tons consumed/baseline2&3-year * (1 – 0.10/0.26) ;
$B_{saving\text{-}typical\ (overall\ in\ PoA)}$ = 2,138,909 tons saved/baseline2&3-year

	Overall ERs	Number of CPAs
2012	1,133,739	25
2013	3,191,564	70
2014	4,836,533	105
2015	6,010,590	131
2016	6,713,734	146
2017	7,017,569	153
2018	7,099,173	155
TOTAL	36,002,902	785
AVG	5,143,272	112

CDM survey and sampling guidance will be followed to determine actual baseline and project scenario parameters[62]. At the time of implementation of the first CPA to include commercial or institutional stoves, a series of surveys and or field/lab studies will be undertaken to determine values for the baseline scenario. B_{old} will be determined using AMS-II.G options described in PoA-DD section E.6.2, equations 2, 3, and 4. Details of actual methods and procedures applied to determine B_{old}, assumptions used to calculate baseline fuel consumption, and results associated with surveys and testing, will be provided with the first CPA using this baseline and will be valid for the subsequent CPAs using the same baseline unless credible new national or regional data is established.

Therefore based on the maximum potential of all baselines included in this PoA the average ERs generated by this PoA is expected to be:

For baseline 1

Assuming a maximum potential according to CME capacity of 500,000 ICS implemented across the multi-country boundary for this baseline during the first crediting period the maximum ERs expected would be:

[(305,520 ERs in CPA 1 for Baseline 1 during first crediting period / 40,000 ICS implemented) * 500,000 ICS] / 7 years = 545,571 ERs/annual average across PoA for Baseline 1

For baseline 2&3

5,143,272 ERs/annual average for Baseline 2&3 (based on 1,000 ICS implemented per year along the crediting period).

In conclusion, for all baselines (1,2 & 3)

545,571 ERs across PoA for Baseline 1
+
5,143,272 ERs across PoA for Baseline 2&3
=
5,688,843 ERs for PoA for the entire crediting period

[62] See: Sampling Application Guidance, of the General Guidelines for Sampling and Surveys for Small-Scale CDM Project Activities (EB 65 Report, Annex 2)

Annex 4

MONITORING INFORMATION

Details of the monitoring plan are described in the PoA-DD A.4.4.1, E.6.2, E.7.2

Annex 5
ER EX-ANTE CALCULATIONS

See CPA-DD, Annex 5.

Annex 6
LETTERS OF APPROVAL

See PoA-DD, Annex 6.