Programme of activities design document form
(Version 08.1)

BASIC INFORMATION	
Title of the PoA	Improved Cooking Stove Programme in Burundi supported by Republic of Korea
Version number of the PoA-DD	1.2
Completion date of the PoA-DD	26/02/2019
Coordinating/managing entity	ECOEYE CO., LTD.
Host Parties	Burundi
Applied methodologies and standardized baselines	AMS-II.G. “Energy efficiency measures in thermal applications of non-renewable biomass” Version 10
Sectoral scopes linked to the applied methodologies	3 – Energy Demand

PART I. Programme of activities (PoA)

SECTION A. Description of PoA

A.1. Purpose and general description of PoA

The purpose of the PoA and its Component Project Activities (CPAs) is to mitigate climate change and contribute to sustainable development in Burundi.

According to the information gathered by Global Forest Watch, from 2001 to 2017, Burundi lost 22,400 ha of tree cover, equivalent to a 4.2% decrease and 1.83Mt of CO_2 emissions[1]. Rapid population growth has been a major contributing factor of deforestation through land use change for farming and because of household dependence on wood for fuel as a source of energy for the vast majority, as poverty reaches nearly 77 percent of the population (living with less than US$1.90 per day)[2].

CPA implementers manufacture and install affordable Improved Cooking Stoves (ICSs) to end-users in Burundi in replacement of traditional cooking stoves. Because ICSs are more efficient than traditional cooking stoves, users save non-renewable wood fuel during cooking leading to greenhouse gas (GHG) emission reductions and mitigating climate change.

Since there are neither laws nor regulations in Burundi that require the distribution and use of ICS whatsoever, the PoA is a voluntary action.

As ICS is relatively more expensive than traditional stoves, most households can't afford to buy ICSs. In order to implement this program, stove subsidy and operational cost support are vital. As Republic of Korea Emission Trading Scheme (Kr-ETS) would allow CERs from CDM projects directly implemented by Korean Parties from 2018, Korean Companies will provide all the implementation cost including stove subsidy and operation & maintenance cost for this PoA.

Framework of implementation

ECOEYE Co., Ltd. is the coordinating/managing entity (CME) of this PoA. It coordinates the efforts of potential CPA implementers to distribute ICSs throughout Burundi.

Principal CPA implementers will be Observatoire de l'Environnement et de la Nature « OBEN », which is also - a priori - the only technology supplier under this PoA and a Project participant, as well as AERA Group, which is the Project operations & MRV supervisor as well as carbon advisor. CPA implementers must run the project in compliance with the PoA requirements.

ECOEYE Co., Ltd. and/or Korean Party(ies) will provide all implementation cost for all the CPAs of the PoA. It will provide stove subsidy to make ICS affordable to household and also provide all operation & maintenance cost of ICS manufacturing and monitoring for CPA implementers to operate the PoA and CPAs under financially sustainable condition.

Stated goal of the PoA

The PoA aims to reduce non-renewable wood fuel consumption and greenhouse gas emissions of users by selling affordable ICSs in replacement of traditional cooking stoves as calculated ex-ante for each Component Project Activity of the PoA.

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[1] www.globalforestwatch.org/dashboards/country/BDI

[2] World Bank report, 2018

The PoA targets multiple beneficiaries and locations countrywide, with an initial focus on rural woodstove users (households or communities) where there is a clear demand for more efficient and cleaner cookstoves, but also encompassing urban and peri-urban areas with a higher density of inhabitants and increased wood fuel consumption.

Sustainable development

The country's Poverty Reduction Strategy Paper II (PRSP II) for 2012–2016, extended to 2018 and anchored in Burundi Vision 2025, includes 'promoting development through sustainable environmental and space management' as its 4th pillar, which chief component of (ii) protection of the environment and sustainable resource management.

As also supported by the World Food Program's Burundi interim country strategic plan (2018–2020), fuel-efficient stoves are promoted for helping to reduce respiratory diseases, the environmental impact of deforestation and the protection risks associated with collecting fuelwood.

Table 1: *PoA's impact on Sustainable Development Goals in Burundi*

SDG	PoA Alignment
3: Ensure healthy lives and promote well-being for all at all ages	• The PoA contributes to SDG 3, as it reduces the number of deaths and illnesses from air pollution. • ICSs help cut carbon monoxide and other particles related to incomplete and/or indoor solid fuels combustion and control the fire better reducing accidents. • Smoke from combusted wood fuel is the leading cause of acute respiratory infections and eye problems (Peprah, 2010). Other illnesses are lung cancer and asthma, which concern especially women and children, causing more than 1.5 million deaths a year (Rob Bailis, 2009) (World Health Organization, 2006).
7: Ensure access to affordable, reliable, sustainable and modern energy for all	• The PoA contributes to the goal of doubling the global rate of improvement in energy efficiency by 2030. • The PoA aims to replace inefficient cooking stoves by more efficient cooking stoves (ICSs), an upgraded technology.
8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	• The PoA creates more and better employment (production, marketing, distribution, after-sale services) throughout the PoA lifecycle. • Furthermore, ICSs promote safe and secure working environments of kitchen workers. • ICSs increase economic productivity through improved technology. Most important benefits are reduced workload in wood fuel procurement and/or reduced expenses for wood fuel purchase.
13: Take urgent action to combat climate change and its implications.	Apart from CO_2 emission reductions, the PoA strengthens resilience and adaptive capacity to climate-related hazards and natural disasters due to the increase of financial savings of households or communities.
17: Revitalize global partnership for sustainable development and strengthen the capacity of this partnership.	As the PoA is supported by the Republic of Korea, the CDM PoA contributes to SDG goal 17.

A.2. Physical/geographical boundary of PoA

The boundary of a PoA is defined as the geographical area within which all the CPAs included in the PoA are implemented. The geographical boundary of the PoA covers the whole Republic of Burundi (18 administrative provinces). It lies in Central Africa, east of the Democratic Republic of the Congo, north-west of Tanzania and south of Rwanda. Its geographic coordinates[3] are 3°23' S, 29°55' E.

[3] https://latitude.to/map/bi/burundi

Figure 1: *Map of Burundi*[4]

A.3. Technologies/measures

Compared to the traditional cooking stove used by the end-users, ICSs are more efficient while providing the same service. They allow better heat retention, i.e. quicker heating-up and longer cooking times with less wood fuel (and combustion fumes), thereby curbing deforestation.

The type of technology/measures and know-how transferred to the host country depend on the specific ICS type disseminated under each CPA and is thus further described in each CPA-DD. State-of-the art trainings[5] by regional or international experts are part of the technology transfer at stake in the program.

To achieve an effective reduction in non-renewable biomass consumption and to ensure a proper and durable ICS use, the CPA implementer may need to build users' capacity to adopt the new technology. After-sale services may thus comprise suitable awareness raising, training, follow-up or maintenance for users.

A.4. Coordinating/managing entity

The Coordinating/Managing Entity (CME) is ECOEYE CO., LTD., a Korea-based private emission reduction project development, carbon trading, ETS advisory as well as market analysis company.

A.5. Parties and project participants

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
Republic of Burundi	ECOEYE CO., LTD.	No

[4] http://www.un.org/Depts/Cartographic/map/profile/burundi.pdf
[5] *https://endev.info/content/Burundian_Cookstove_Producers_Trained_by_EnDev_Tanzania*

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
Republic of Burundi (host Party)	Observatoire de l'Environnement et de la Nature « OBEN »	No

A.6. Public funding of PoA

No public funding of the PoA occurs.

SECTION B. Management system

As stated in the CDM project standard for programmes of activities, Version 02.0, §*36 The coordinating/managing entity shall establish and implement, and provide a description of, the operational and management system for the implementation of the proposed CDM PoA,* including the following:

(a) Definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies

Table 2: *Personnel, responsibilities and competencies*

Personnel	Responsibilities in inclusion process	Competencies
PoA manager/ CME & carbon finance investor	- Finance the implementation of the PoA -Contact with CPA implementer -Review CPA according to PoA eligibility criteria -Prepare and sign agreement for CPA inclusion between CME and CPA implementer -Notify CPA implementer of submission of CPA-DD to DOE for validation and inclusion -Decide on CPA inclusion and notify CPA implementer -Assess additionality and eligibility of CPA against documents provided by CPA implementer -Control work of all subcontractors undertaking critical activities on behalf of CME	-Competencies • to check and apply relevant principles, procedures, techniques and all features for CPA inclusion, verification, review and approval • to ensure that each CPA meets all requirements and eligibility criteria for inclusion of CPAs in the proposed PoA before its inclusion • to plan and make effective use of resources; • to organise work effectively -Knowledge of specific technical and methodological CDM methodological aspects -Ability to obtain from third parties the desired outcomes
CPA Implementer(s)	-Carry out Local Stakeholder Consultation (LSC) -Provide evidence for CPA eligibility under the PoA including CPA-DD and emission reduction calculations -Implement CPA -Facilitate, support and cooperate the CME and Carbon Consultant during CPA inclusion and verification process	-Understanding of CME and carbon consultant needs -Knowledge of all technicalities of CPA and general CDM technical and methodological aspects
CPA carbon consultant	-Assist CME and CPA implementer to reach CPA inclusion through the following, among others, • carry out LSC • draft CPA-DD and emission reduction calculations • organize CDM on-site visit with DOE and stakeholder consultation • follow up - Assist CME and CPA implementer to reach verification of emission reductions after CPA inclusion, including • conduct training in monitoring of data, • write monitoring reports	-Knowledge of specific CDM technical and methodological aspects -Ability to plan and organize the work effectively and in the agreed timeframe, to prioritize and focus on matters of significance -Ability to prepare the relevant reports and handle all follow up actions

Monitoring team (after CPA inclusion)	On behalf of the CPA implementer: -Implement monitoring plan -Collect and check monitoring data -Implement a monitoring database.	-Competencies on monitoring equipment, data collection, recording and reporting.

Besides the responsibilities mentioned in the table above, the CME is responsible for
- contracting the DOE to conduct validation of CPA and verification of emission reductions,
- finding and contracting CER buyers and distributing CER revenues to CPA implementers (if applicable),
- contracting CPA implementers.

Potential CPA implementers have to sign an agreement with the CME, in which they cede rights to sell CERs generated by their respective CPA to the CME. The standard contract also outlines the conditions of participation in the PoA and the CDM procedures that have to be respected in this regard, so that the CPA implementer is aware of and agrees to the inclusion of the project activity in the PoA.

Finally, end-users sign a sales agreement, which contains user information, rights and commitments (cf. sub-section (e) for details).

(b) **Records of arrangements for training and capacity development for personnel**

The CME shall support training and capacity building for its own personnel and CPA implementers, based on any identified needs, and keeps records of the trainings.

(c) **Procedures for technical review of inclusion of CPAs**

The technical review procedure by the CME for CPA inclusion includes the following main steps:

1. Verify that all eligibility criteria for inclusion in the PoA are met and all corresponding document evidence is provided.
2. Check the procedure to avoid double counting (see below).
3. Check if all supporting documentation quoted in CPA-DD is in accordance with PoA-DD.
4. Check emission reduction calculation.
5. Approve/refuse draft CPA-DD.
6. Deliver CME approval and agreement /refusal for CPA inclusion.
7. Submit CPA-DD to the DOE and CDM Executive Board.
8. Inform about inclusion of the CPA in the PoA as per DOE and CDM Executive Board decision.

(d) **Procedure and system to avoid double accounting**

The PoA is not registered under any other carbon credit certification scheme than the CDM.

Prior to the implementation of each CPA, the CPA implementer enters into a binding general contract with the CME concerning their relationship. By signing the contract, the CPA implementer also approves a clause, which states that the CPA under consideration is neither registered as a CDM project activity, included or in the process of being included under another PoA, nor a deregistered project activity (cf. eligibility criteria in section K) and that they cannot sell the emission reductions of the CPA under another PoA.

Before including a CPA in the PoA, the eligibility criteria require the CPA implementer to prove that the sold ICS is uniquely marked by a serial number and/or logo and recorded electronically as described in sub-section (e) below. The serial number assigned to the stove belongs to one end-user only, and shall be uniquely attributed to every stove as per below format:

O[#PROD].XXXXXX

Where:
O = OBEN CDM-PoA

[#PROD] = production site identification number (e.g. 1BUJ : Bujumbura site 1, 3NGO : Ngozi site 3, 2GIT : Gitega site 2 etc.)
XXXXXX = unique stove ID (e.g. 139120)

The recording and documentation procedures allow the CME to check the materiality of the claimed sales.

The unique serial numbers should also ensure that no confusion arises with other projects in the country involving ICSs, (besides the fact that subsequent CPAs in this PoA shall not cover the same geographical boundaries or disseminate stoves from the same production sites to avoid any infringement).

Original sales agreements (with ICS serial number and buyer contact details) are stored and used to crosscheck the electronic database transmitted by the CPA implementers. It allows the CME to check periodically the materiality of the claimed sales and identify buyers of stoves.

Finally, during technical review of CPA, compliance team shall consult the UNFCCC website in order to make sure that the considered CPA is neither included under another PoA with similar scope within the borders of the PoA, nor in the process of being included.

(e) **Controlling of records and documentation for each CPA under the PoA**

For every ICS sold, sales records are kept. These records shall enable third parties to verify that sales have indeed occurred and stoves are used by target end users (households communities) in specific areas targeted by the CPAs throughout Burundi.

Sales agreements between the CPA implementer and the end user or the retailer shall contain at least the following information:

- Name of PoA or CPA
- User group membership (if applicable, e.g. household)
- Date (and location) of purchase
- Stove model
- Unique serial number or logo of the stove
- Name of customer/retailer and contact details (address & phone number if applicable)
- Clauses to transfer carbon rights from user to the CPA implementer[6], to scrap the previously used traditional cooking stove.

The CPA implementer collects this data through sales persons or retailers, compiles it in an electronic database, which he regularly transmits to the CME. The CPA implementer also transmits electronic copies of the sales agreements to the CME, who archives them in a safe location while the CPA implementer keeps the hard copies. The CME cross-checks the electronic database with transmitted sales agreements, in particular for correctness and to avoid double-counting.

(f) **Measures for continuous improvements of the PoA management system**

Regular meetings are held on:
- Review of latest developments and events,
- Recurring issues related to the inclusion process,
- Feedback from the CPA implementers,
- Potential improvements to be implemented until next meeting.

[6] *The carbon rights transfer is a non-negotiable condition of participation in the PoA, which is continuously communicated to ICS purchasers from local stakeholder consultation through sales agreements with end-users and sales modalities with retailers.*

SECTION C. Demonstration of additionality of PoA

The PoA can be considered a voluntary action since there is no Burundian law or regulation that requires the sale/distribution or use of ICSs in Burundi.[7]

In Burundi, more than 90% of the urban population and almost 100% of the secondary urban centers use charcoal as energy source for cooking (Republic of Burundi. Ministry of Energy and Mines, Energy and Water Department, 2011). Nearly all rural households in Burundi use biomass for cooking (99%), for which firewood is by far the most dominant source of energy. Indoor air pollution resulting from this is worsened by the use of inefficient cook stoves. The World Health Organization estimates that indoor air pollution causes 10,200 premature deaths annually[8].

In the absence of the project activity (baseline scenario) the ICS end-users of the CPA would continue to use non-renewable wood fuel in traditional cooking stoves with lower efficiency to meet similar thermal energy needs as those provided by the ICSs. Typically, baseline devices are devices with no improved combustion air supply or flue gas ventilation that is without a grate or a chimney.

As per Option 3 of the applied small-scale methodology AMS-II.G, the referred "TOOL19: Demonstration of additionality of microscale project activities" is applicable due to its paragraph 17, which states that

"For CPAs applying microscale thresholds at the unit level rather than at the aggregate level of the CPA, the term 'project activities' in paragraphs 8 - 12 and 14 above shall be read as 'units'[9]. If each of the units contained in the CPA satisfies the condition to qualify as a 'microscale CDM unit', then the coordinating/managing entity is not required to demonstrate compliance of the CPA with the microscale or small-scale thresholds at the aggregate level of the CPA. In such cases, the requirements related to debundling stated in paragraphs 13 and 16 above do not apply either."

Consequently, CPAs under this PoA are not limited in size by CPA thresholds a priori, as each of the ICS units contained in the CPAs aims to achieve energy savings at a scale of no more than 600 MWh/year, which is equivalent to 1,800 MWh_{th} of annual energy savings per appliance, as required by paragraph 9 of the tool, which states that

"Energy efficiency project activities [units] that aim to achieve energy savings at a scale of no more than 20 gigawatt hours per year are additional if any one of the conditions below is satisfied:
(a) The geographic location of the project activity is in an LDC/SIDS or SUZ of the host country identified by the government in accordance with the paragraph 8(a)(i) above;
(b) The project activity is an energy efficiency activity with both conditions (i) and (ii) below satisfied:
(i) Each of the independent subsystems/measures in the project activity achieves an estimated annual energy savings equal to or smaller than 600 megawatt hours;
(ii) End users of the subsystems or measures are households/communities/SMEs,"

i.e. each ICS qualifies as a 'microscale CDM unit'.

The additionality of any CPAs under this PoA is ensured as Burundi is classified in the LDC category; as per corresponding eligibility criteria f) for CPA inclusion into the PoA (cf. section K).

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[7] *Cf. Laws promulgated in Burundi (https://www.assemblee.bi/spip.php?rubrique36)*
[8] http://www.who.int/quantifying_ehimpacts/national/countryprofile/burundi.pdf
[9] *Units are also referred to as "independent subsystems" or "technology/measures" in CDM regulatory documents.*

SECTION D. Start date and duration of PoA

D.1. Start date of PoA

The PoA start date is set at 09/10/2018, the date of CDM Prior Notification to the UNFCCC secretariat and the DNA.

D.2. Duration of PoA

28 years (336 months).

SECTION E. Environmental impacts

E.1. Level at which environmental impacts analysis is undertaken

Assessment of the need for an environmental analysis is done at PoA level as the environmental impact does not depend on the specific geographical location where the ICS are used.

E.2. Analysis of environmental impacts

Not applicable[10], as such an analysis is no required by the host Party.

E.3. Environmental impact assessment

Not applicable as an environmental analysis is no required by the host Party.

SECTION F. Local stakeholder consultation

F.1. Level at which local stakeholder consultation is undertaken

Local stakeholder consultation is done at CPA level

F.2. Modalities for local stakeholder consultation

Not applicable

F.3. Summary of comments received

Not applicable

F.4. Consideration of comments received

Not applicable

SECTION G. Approval and authorization

Each project participant listed in the PoA-DD is authorized the Party involved in the PoA: ECOEYE CO., LTD., the coordinating/managing entity, and Observatoire de l'Environnement et de la Nature « OBEN », the project implementer, are approved and authorized by the host country in the letter of approval issued on October 26th 2018 by the CDM-DNA of Burundi.

[10] as confirmed by Ministry of Environment representative in an interview with the DOE

PART II. Generic component project activity (CPA)

SECTION H. Description of generic CPA

H.1. Title of generic CPA

Improved Cooking Stoves Programme in Burundi supported by Republic of Korea –CPA [XXX]

H.2. Reference number of generic CPA

Generic CPA [XXX]

H.3. Purpose and general description of generic CPA

The purpose of the CPA is to combat climate change and contribute to sustainable development of Burundi.

The CPA aims to reduce non-renewable wood fuel consumption and greenhouse gas (GHG) emissions of users in a designated area of Burundi by selling affordable Improved Cooking Stoves (ICSs) in replacement of traditional cooking stoves as calculated in section B.4.3 of each CPA-DD. ICS combust wood fuel more efficiently, i.e. require less firewood or charcoal than traditional stoves, reducing CO_2 emissions. It is assumed that in the absence of the project activity, the baseline scenario would be the projected use of fossil fuels to meet similar thermal energy needs as those provided by the project devices.

The small-scale project type applicable to the CPA is Type II, i.e. an energy efficiency improvement project activity "that reduce energy consumption, on the supply and/or demand side, with a maximum energy saving of 60 GWh per year (or an appropriate equivalent) in any year of the crediting period. In this context, for project activities that improve thermal energy efficiency, the maximum energy saving of 60 GWh(e) per year is equivalent to 180 GWh(th) per year saving."

Whereas the CPA qualifies as a microscale project type II as it aims to achieve energy savings at a scale of no more than 20 GWh per year (cf. eligibility criteria for CPA inclusion in section K of the PoA-DD), paragraph 17 of the Tool for Demonstration of additionality of micro-scale projects highlights the irrelevance of microscale and small-scale thresholds to CPAs involving isolated units such as cooking stoves (cf. Section C of PoA-DD).

H.4. Technologies/measures

Compared to the replaced traditional cooking stove used by the end-users, ICSs are more efficient while providing the same service. They allow better heat retaining, i.e. quicker heating-up and longer cooking times with less wood fuel (and combustion fumes), curbing deforestation.

The principal and locally produced technology type to be considered under this programme is the Jiko Matawi stove, a Tanzanian-design moulded from fermented clay which is dried through high temperatures in a kiln to reinforce its properties including high thermo efficiency and durability. It is a multi-purpose stove capable of using both firewood and charcoal depending on the preference of the user at the time of cooking. The stove is available in entry cost levels via a stand-alone ceramic model (that can also be installed in a fixed hearth within the kitchen of their home; see image at left) and as a metal cladded version.

Table 3: *Technical manufacturer specifications of a typical Matawi*

Weight	5.1 kg (stand-alone)
Efficiency	28.67%[12] (new)
Type of fuel	Wood/Charcoal
Height x Width	23 x 26 cm
Recommended pots diameter	12 inches
Durability	Approx. 8 years

Currently the common systems used for cooking are the traditional open fire (3-stone) system and traditional stoves which are still dominant in most of the households. These stoves are notoriously wasteful, with an efficiency level of 10-15% (EAC, 2008).

Typically, these are devices with no improved combustion air supply or flue gas ventilation that is without a grate or a chimney, i.e. problems include the diffusion of heat during windy conditions, the difficulty of controlling the fire, users' exposure to heat and smoke as well as fire hazards. In comparison, three stone fires have an efficiency of 10% (AMS-II.G. default value) with similar drawbacks.

SECTION I. Application of selected methodologies and standardized baselines

I.1. Reference to methodologies and standardized baselines

The approved baseline and monitoring methodology applied to the CPA in the PoA is Version 10.0 of AMS-II.G: "Energy efficiency measures in thermal applications of non-renewable biomass", hereinafter AMS-II.G.

AMS-II.G. calls for application of the:

- "Guideline: General guidelines for SSC CDM methodologies",
- "TOOL21: Demonstration of additionality of small-scale project activities", and
- "TOOL19: Demonstration of additionality of microscale project activities"

The methodology also refers to the latest approved versions of the following approved standards, methodology(ies) and tool(s)[13]:

(a) "AMS-III.BG.: Emission reduction through sustainable charcoal production and consumption";
(b) "TOOL30: Calculation of the fraction of non-renewable biomass";
(c) "Standard: Sampling and surveys for CDM project activities and programme of activities".

[12] EnDev Tanzania Matawi WBT results, 2015

[13] Refer to the UNFCCC CDM website for the exact reference of approved methodologies, tools and standardized baselines.

I.2. Applicability of methodologies and standardized baselines

AMS-II.G applies to generic CPA since it "comprises efficiency improvements in thermal applications of non-renewable biomass. Examples of applicable technologies and measures include the introduction of high efficiency biomass fired project devices (**cookstoves** or ovens or dryers) to replace the existing devices and/or energy efficiency improvements in existing biomass fired cook stoves or ovens or dryers", which is the case for the programme activity.

AMS-II.G. applicability criteria:	**Applicability check or corresponding eligibility criteria for CPA inclusion (Section K of the PoA-DD)**
In the case of cookstoves, the methodology is applicable to introduction of single pot or multi pot portable or in-situ cookstoves with rated efficiency of at least 20 per cent.	eligibility criteria (e) fulfilment
The aggregate energy savings of a single project activity shall not exceed the equivalent of 60 GWh per year or 180 GWh thermal per year in fuel input.	eligibility criteria (f)(ii) fulfilment
Non-renewable biomass has been used in the project region since 31 December 1989, using survey methods or referring to published literature, official reports or statistics.	FAO [e.g http://www.fao.org/forestry/country/en/bdi/]
The use of this methodology in a project activity under a programme of activities is legitimate if [..] leakages are estimated and accounted for.	I.6.1 methodological choices [gross adjustment factor is used under this PoA]

Furthermore, the CPA qualifies as Type II small-scale project type – cf. eligibility criteria (e), because
- it is a thermal energy efficiency improvement project activity
- it reduces energy consumption on the demand side
- it involves isolated units (cooking stoves)

I.3. Application of multiple methodologies

Not applicable

I.4. Project boundary, sources and greenhouse gases (GHGs)

The main emission sources and type of GHGs in the CPA boundary are CO_2 emissions from substituting fossil fuel consumption by similar consumers, equivalent to the non-renewable woody biomass saved by the project activity, as listed in the table below.

Source		GHG	Included?	Justification/Explanation
Baseline	CO_2 emissions from consumption of non-renewable woody biomass in low-efficiency traditional cooking stoves	CO_2	Yes	Main emission source.
		CH_4	No	Minor emission source (neglected for simplification).
		N_2O	No	Minor emission source (neglected for simplification).
Project activity	CO_2 emissions from consumption of non-renewable woody biomass in improved cooking stoves distributed by the project activity	CO_2	Yes	Main emission source.
		CH_4	No	Minor emission source (neglected for simplification).
		N_2O	No	Minor emission source (neglected for simplification).

According to AMS-II.G., the spatial extent of the project boundary is the physical, geographical site of the efficient devices that utilize biomass.

I.5. Establishment and description of baseline scenario

According to AMS-II.G., "it is assumed that in the absence of the project activity, the baseline scenario would be the projected use of fossil fuels to meet similar thermal energy needs as those provided by the project devices."

As per PoA description in section A.1, the project devices are ICSs using non-renewable wood fuel for all CPAs. Consequently, the baseline scenario is the projected use of non-renewable wood fuel to meet similar thermal energy needs as those provided by the ICSs, as long as the baseline device

i. would be used in the absence of the ICS,
ii. has a lower efficiency than the ICS,
iii. provides similar thermal energy needs as the ICS, and
iv. uses non-renewable wood fuels.

According to Safe Access to Fuel and Energy (SAFE) appraisal report[14], "given the large dependency of Burundi's households and communities on firewood for cooking, the energy technologies used are putting additional pressure on the scarce availability of firewood as the majority of respondents of the household survey (86%) are using the traditional three stone fire to prepare food and boil water. […] An additional 7% of households and communities are using a traditional mud stove and another 7% have access to an improved stove."
In the absence of the project activity (baseline scenario) the ICS end-users of the CPA would continue using non-renewable wood fuel in traditional cooking stoves with lower efficiency to meet similar thermal energy needs as those provided by the ICSs. Typically, baseline devices are devices with no improved combustion air supply or flue gas ventilation that is without a grate or a chimney.

No Burundian law or regulation require the sale/distribution or use of ICSs in Burundi.[15]

I.6. Estimation of emission reductions

I.6.1. Explanation of methodological choices

The following methodological choices for calculation of the emission reductions of each CPA are used for each ICS type implemented.

Emission reductions:

The emission reductions of the CPA are the sum of emission reductions achieved by each of the applied type of the cooking stoves:

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

Where:

i	=	Indices for the situation where more than one type of project device is introduced to replace the pre-project devices
j	=	Indices for the situation where there is more than one batch of project device
ER_y	=	Emission reductions during year *y* in t CO_2e
$ER_{y,i,j}$	=	Emission reductions by project device of type *i and* batch *j* during year *y* in t CO_2e

[14] World Food Program, October 2016

[15] *Cf. Laws promulgated in Burundi (https://www.assemblee.bi/spip.php?rubrique36)*

LE_y = Leakage emissions in the year *y*

A batch of stoves is defined as all stoves that have been sold within one calendar year (365 days), in other words the maximum time difference between the first and last stove sold is 365 days.

$ER_{y,i,j}$ is determined as follows:

Equation (2)

$$ER_{y,i,j} = B_{y,savings,i,j} \times N_{y,i,j} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossil\,fuel}$$

Where:

$B_{y,savings,I,j}$ = Quantity of woody biomass that is saved in tonnes per cookstove device of type i and batch j during year y

$f_{NRB,y}$ = Fraction of woody biomass that can be established as non-renewable biomass (fNRB)[16]

$NCV_{biomass}$ = Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne, based on the gross weight of the wood that is 'air-dried')

$EF_{projected\_fossilfuel}$ = Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass by similar consumers. Use a value of 63.7 tCO_2/TJ

$N_{y,jj}$ = Number of project devices of type i and batch *j* operating during year y

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

Quantity of woody biomass saved $B_{y,savings,i,j}$ (due to implementation of efficient thermal devices) is determined as per following options:

Option 3: Water Boiling Test (WBT):

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

Equation (3)

Where:

$B_{old,i,j}$ = Annual quantity of woody biomass that would have been used in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project device type *i* and batch *j*

$\eta_{old,i,j}$ = Efficiency of the old devices being replaced by project devices of type *i* and batch *j*

$\eta_{new,i,j}$ = Efficiency of the project device *i* and batch *j*

Determination of baseline consumption of woody biomass $B_{old,i,j}$:

The Annual quantity of woody biomass that would have been used in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project device type i and batch j is determined as:

- **1.47** tonnes/person-year for households situated in urban areas[18]; and
- **1.07** tonnes/person-year for households situated in rural areas, i.e. households situated outside urban areas[19].

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

[18] EAC Strategy to Scale-Up Access to Modern Energy Services - Burundi Country Report (Godefroy Hakizimana, 2008)

[19] Rapport d'étude sur les données du bois-énergie au Burundi (François Nkurunziza, 1999)

These values are derived from country-specific literature and deemed conservative as compared to the following alternate sources:

- For urban areas, 1.71[20] tonnes/person-year and 1.5 tonnes/person-year[21] respectively.
- For rural areas 1.09[22] and 1.1 tonnes/person-year respectively[19].

Applicable value will be selected and documented ex-ante at CPA-level according to urban/rural geographical scope, based on latest household size statistics[23].

The calculations in the equations above to determine $B_{y,savings,i,j}$ assume that there is only one device per household. Considering that baseline surveys or other methods may estimate the total consumption per household, AMS II.G. requires that an adjusted formula as below shall be used in case more than one project device is used in the household.

$B_{old,i,j}$ is determined as follows:

$$B_{old,i,j} = B_{old,HH} \div N_{d,HH} \quad \text{Equation (4)}$$

$$B_{old,HH} = B_{old,p} \times N_{p,HH} \quad \text{Equation (5)}$$

Where:

$\boldsymbol{B_{old,HH}}$	=	Annual quantity of woody biomass that would have been used in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices (tonnes/household/year)
$\boldsymbol{N_{d,HH}}$	=	Number of project devices per household (number)
$\boldsymbol{B_{old,p}}$	=	Annual quantity of woody biomass that would have been used per person in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices (tonnes/person/year)
$\boldsymbol{N_{p,HH}}$	=	Average number of persons per household (number)

➔ By default, only one ICS may be purchased and used per household under this PoA. Yet monitoring surveys of sampled kitchens' stoves in use will account for any additional project device and be reflected in adjustment factor $N_{d,HH}$.

Determination of baseline stove efficiency $\eta_{old,i,j}$:

The baseline stove efficiency is determined or identified before CPA inclusion by conducting a baseline survey and / or based on a literature review.

AMS.II-G. requires to "use weighted average values if more than one type of device is being replaced."

In order to determine the efficiency of baseline stoves used in different end user locations (households or communities), the following approach may be used[24]:

$\eta_{old,i,j}$ = 10% to 20% or a weighted average value if multiple devices are replaced, based on survey.

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[20] Note d'estimation des quantités de Charbon de Bois utilisées dans la Ville de Bujumbura (2014) and An Analysis of the Urban Consumption of Charcoal by Household: The Case of the City of Bujumbura in Burundi (2015)

[21] ASB0018: Baseline woody biomass consumption for household cookstoves in Burundi (expired Nov 26th 2018)

[22] WISDOM – East Africa (Rudi Drigo, 2005)

[23] e.g. 2008 Burundi Population Survey_Status and Structure of Population Table 2.12 (national urban average: 5,0 people per household; national rural average: 4,7 people per household)

[24] *Other approach for determining baseline efficiency for small and medium enterprise and communities may be provided at the time of CPA inclusion if it is demonstrated to be more appropriate/ relevant.*

Indeed, according to AMS.II-G., a default value of 0.10 may be used if the replaced device is a three stone fire using firewood, or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney; for other types of devices, a default value of 0.2 may be optionally used.

Specific value will be determined and documented at CPA-level.

Determination of project stove efficiency $\eta_{new,i,j}$:
As per AMS II.G., the loss in efficiency of the project devices *i* in each batch *j* due to aging shall be accounted during the monitoring period y. The project participant may choose any option below to account for the loss in efficiency; the option should be identified and fixed ex-ante in the PDD at the time of registration.

a) A default schedule of linear decrease in efficiency up to the terminal efficiency assumed as 20 per cent shall be applied through the life span of the project device[25].
b) Manufacturer of project devices shall confirm with technical justification based on certification by a national standards body or an appropriate certifying agent recognized by that body that no decrease in efficiency of project device is envisaged during the crediting period ; or
c) Determine[26] the rate of efficiency drop for a representative sample of the first batch of project device *i* in year *y* and assume that same rate of loss in efficiency applies to all other batches. In other words, it may be assumed that the degradation of efficiency measured in a representative sample of the first batch of project devices i apply to all subsequent batches. The efficiency of the project devices in the first batch has to be monitored annually through representative samples and this rate of loss in efficiency may be applied correspondingly to all batches.
d) Determine the loss in efficiency annually from a representative sample of each batch and use the actual loss rate that is measured.

➔ Option d is default option under this PoA as deemed most representative a priori. Other options may be chosen if justified. As per AMS-II.G. para. 25, life span is only reported at CPA-level and fixed ex-ante if option a) is chosen.[27]

Determination of $f_{NRB,y}$:
The value of the fraction of non-renewable biomass *(f_{NRB})* to be applied in a Component Project Activity (CPA) of the PoA is determined among one of the two options as follows:

(a) Conduct local studies to determine the local fNRB value (sub national values) as per the "TOOL30: Calculation of the fraction of non-renewable biomass"; or

(b) Use default national values approved by the Board[16].

➔ The DNA of Burundi and the CDM Executive Board have approved a fNRB default value of 77%, which was valid until 05/09/2017[28] and used for ex-ante purposes. Ex-post value shall apply option (a) unless Designated National Authorities (DNA) has meanwhile proposed a renewal with an update to the fNRB values.

Leakage emissions

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[25] *If the efficiency of the project device falls below 20%, it is no longer eligible to be considered a project device.*

[26] *Example: For the representative sample of batch 1, if the efficiency of a new project device is 30% and at the end of year 1, the efficiency monitored to be 29%; the loss rate is (30%-29%)/1=1%. Then this 1% loss rate is to be assumed to be applicable for all the devices in the first batch and subsequent batches for first year of operation.*

[27] *If the life span of devices is less than the crediting period it shall be demonstrated that the devices shall be replaced after the life span has ended. In such cases, if it cannot be demonstrated that the project devices will be replaced with new devices, no emission reductions can be claimed beyond the life span of the project devices.*

[28] http://cdm.unfccc.int/DNA/fNRB/index.html

AMS-II.G. requires that leakage related to the non-renewable woody biomass saved by the project activity shall be assessed based on ex post surveys of users and the areas from which the woody biomass is sourced (using 90/30 precision for a selection of samples).
AMS-II.G. allows that $B_{y,savings,i,j}$ is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required.

➔ By default, the gross adjustment factor is used under this PoA.

Project activities switching from baseline device using firewood to efficient project device using charcoal or switching from firewood to efficient project device using briquette shall take into account the leakage effects related to the charcoal or briquette production.
➔ No fuel switch is at stake under the proposed program.

I.6.2. Data and parameters fixed ex ante

Data / Parameter:	$B_{old,p}$
Data unit:	tonnes/person/year
Description:	Annual quantity of woody biomass that would have been used per person in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices
Source of data:	Country-specific, conservative literature as detailed in PoA-DD section I.6.1: [urban] EAC Strategy to Scale-Up Access to Modern Energy Services - Burundi Country Report (Godefroy Hakizimana, 2008) [rural] Rapport d'étude sur les données du bois-énergie au Burundi (François Nkurunziza, 1999)
Value(s) applied	**1.47** tonnes/person-year for households situated in urban areas; or **1.07** tonnes/person-year for households situated in rural areas
Choice of data or Measurement methods and procedures	-
Purpose of data	Calculation of baseline emissions
Any comment:	The proposed values have been compared to alternate sources, and deemed further conservative considering that per capita GDP in the country has doubled in the last decade, thus more frequent cooking related to higher purchasing power for cooking fuels.

Data / Parameter:	$N_{p,HH}$
Data unit:	Number
Description:	Average number of persons served per household prior to project implementation
Source of data:	Determined ex ante at CPA level
Value(s) applied	[XX]
Choice of data or Measurement methods and procedures	- Based on records of households served by the project
Purpose of data	Calculation of baseline emissions
Any comment:	-

Data/Parameter	$B_{old,HH}$
Data unit	tonnes/household/year

Description	Annual quantity of woody biomass that would have been used in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices
Source of data	Determined ex ante at CPA level.
Value(s) applied	[XX]
Choice of data or Measurement methods and procedures	Option 1. $B_{old,}$ times $N_{p,}$
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/Parameter	**$B_{old,i,j}$**
Data unit	tonnes/year
Description	Annual quantity of woody biomass that would have been used in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project device type *i* and batch *j*
Source of data	Determined ex ante at CPA-level
Value(s) applied	[XX]
Choice of data or Measurement methods and procedures	$B_{old,HH}$ divided by $N_{d,HH}$
Purpose of data	Calculation of baseline emissions
Additional comment	$B_{old,i,j}$ equals $B_{old,HH}$ when only one project device per household is taken account of; ex-ante $N_{d,HH}$ equals 1; please refer to its specific Data / Parameter table.

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	Determined ex ante at CPA-level: UNFCCC website[29] (default country-specific f_{NRB} values, expiring five years from the date of their approval) or FAO and IPCC data (as far as possible) and survey results, national or local statistics or other sources of information (following TOOL30: Calculation of the fraction of non-renewable biomass).
Value(s) applied	[*XX*]
Choice of data or Measurement methods and procedures	As per para. 44 of AMS-II.G.
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/Parameter	**$\eta_{old,i,j}$**
Data unit	(i) Default 0.1 or 0.2 (please see details below); (ii)Establish prior to start of implementation based on survey
Description	Efficiency of the device being replaced
Source of data	Determined ex ante at CPA-level, based on AMS-II.G. for default values and/or baseline surveyliterature, statistics etc.
Value(s) applied	[*XX*]

[29] http://cdm.unfccc.int/DNA/fNRB/index.html

Choice of data or Measurement methods and procedures	Efficiency of pre - project device, which is a three stone fire using firewood (not charcoal), or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney; for other types of devices, a default value of 0.2 may be optionally used. Weighted average values (amount of woody biomass consumed by each device as the weighting factor) will be used if more than one type of device is being replaced.
Purpose of data	Calculation of baseline emissions
Additional comment	Use weighted average values if more than one type of system is being replaced.

Data/Parameter	**Leakage**
Data unit	Fraction
Description	Net to gross adjustment factor to account for leakages
Source of data	AMS-II.G.
Value(s) applied	0.95
Choice of data or Measurement methods and procedures	In case this leakage adjustment factor is applied, it is not required to survey the use/diversion of non-renewable woody biomass saved under the project activity by non-project households/users that previously used renewable energy sources.
Purpose of data	Calculation of baseline emissions
Additional comment	B_{old} is multiplied by a net to gross adjustment factor of 0.95 to account for leakages according to AMS-II.G.

I.6.3. Modalities for ex ante calculation of emission reductions

Provided that $B_{y,savings,i,j}$ methodological option 3 is applied by default and that CPA focuses on urban households, ex-ante emission reduction calculation is as follows:

Table 4: *Simplified ex-ante calculation of emission reductions*

	Value	***Unit***	***Source/reference***
$N_{y,i,j}$	[*XX*]	*n/a*	*Section B.5.1 of CPA-DD*
$\mu_{,y}$	[*XX*]	*fraction*	*Section B.5.1 of CPA-DD*
$f_{NRB,y}$	[*XX*]	*n/a*	*Section B.4.2 or B.5.1 of CPA-DD*
$NCV_{biomass}$	[*XX*]	*TJ/tonne*	*IPCC Guidelines 2006*
$EF_{projected\_fossilfuel}$	[*XX*]	*tCO_2/TJ*	*IPCC Guidelines 2006*
$B_{y,savings,i,j}$	[*XX*]	*tonnes/year*	*Section B.4.3 of CPA-DD:* $B_{y,savings,i,j} = B_{old,i,j}*(1 - \eta_{old,i,j}/\eta_{new,i,j})*0.95$ *or*
$B_{old,i,j}$	[*XX*]	*tonnes/year*	*Section B.4.2 of CPA-DD or section I.6.2 of PoA-DD :* $B_{old,i,j} = B_{old,HH} / N_{d,HH}$ *(=*$B_{old,HH}$ *when only one project device per household is distributed)*
$B_{old,HH}$	[*XX*]	*tonnes/HH/ year*	*Section B.4.2 of CPA-DD or section I.6.2 of PoA-DD :* $B_{old,HH} = B_{old,p} \times N_{p,HH}$
$\eta_{old,i,j}$	[*XX*]	*%*	*Section B.4.2 of CPA-DD:* η_{old} *= 10%[30] to 20%[31] or a weighted average value if multiple devices are replaced, based on survey*
$\eta_{new,i,j}$	[*XX*]	*%*	*Section B.5.1 of CPA-DD*
Baseline Emissions	[*XX*]	*tCO_2/y*	*Section B.4.3 of CPA-DD:* $ER_{y,i,j} = B_{y,savings,i,j} \times N_{y,i,j} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\ fossil\ fuel}$
Project	[*XX*]	*tCO_2/y*	*Section B.4.3 of CPA-DD*

[30] *AMS-II.G. default efficiency value of three stone fire systems.*
[31] *According to AMS-II.G, "for other types of devices a default value of 0.2 may be optionally used."*

emissions (PE_y)			
Leakage emissions (LE_y)	[*XX*]	*tCO_2/y*	*Section B.4.3 of CPA-DD or section I.6.1 of PoA-DD: Adjustment factor (0.95) already applied at $B_{y,savings,i,j}$ level*
Emission reductions	[*XX*]	*tCO_2/y*	*Section B.4.3 of CPA-DD:* $ER_y = \sum_i \sum_j ER_{y,i,j} - LE_y$

I.7. Monitoring plan

I.7.1. Data and parameters to be monitored

Data/Parameter	***$N_{y,i,j}$***
Data unit	-
Description	Number of project devices of type i and batch j operating during year y
Source of data	CPA monitoring database
Value(s) applied	To be determined at CPA level
Measurement methods and procedures	The CPA implementer keeps an electronic database of all stoves sold. As per AMS II.G: monitoring shall consist of checking of all devices or a representative sample.to determine if they are still operating; those devices that have been replaced by an equivalent in-service device can be counted as operating. Consequently, $N_{y,i,j}$ is determined by multiplying all devices sold (N) with the proportion of cooking stoves found to be operating in a representative sample, i.e. $p_{op\_stoves,y}$.
Monitoring frequency	At least once every two years (biennial)
QA/QC procedures	Sampling standard shall be used for determining the sample size to achieve 90/10 confidence precision (or 95/10 confidence precision) for the sample size calculation (if conducted biennially).
Purpose of data	Calculation of baseline emissions
Additional comment	In addition to operating status, if baseline stove is not included under baseline defined under the specific CPA, the new device is counted as not operating, i.e. no emission reductions are claimed. For ex-ante purposes, $p_{op\_stoves,y}$ = 95% can be considered at CPA-level based on average monitored values of other cookstove project activities in the sub-region.[32] For the subsequent monitoring sessions of the same CPA, the previously monitored value of $p_{op\_stoves,y}$ shall be used for ex-ante purposes such as sample size calculation.

Data/Parameter	μ_y
Data unit	Fraction
Description	Adjustment to account for any continued use of pre-project devices during year y
Source of data	When applying equations 6 and 8 of AMS II.G, it is a fraction based on monitoring results. In other cases (i.e. applying equations 3, 5 and 7), use 1.0.
Value(s) applied	Determined at CPA level.

[32] *http://cdm.unfccc.int/ProgrammeOfActivities/poa_db/QMD6V3B5IHFRYW4NLX0JTKOAE21ZGS/view*

Measurement methods and procedures	During the annual monitoring campaign, CME-mandated field agents inquire if the baseline stove that was supposed to be replaced by the ICS is still used. Field agents estimate the usage rate of the pre-project stove(s) "by formulating questions and/or collecting evidence to determine the frequency of usage of both the project devices and baseline devices. For example if there were 3 pre-project devices per household and it was determined during the survey that use of one of them continues during the crediting period then a conservative adjustment factor of 0.66 is applied for the relevant monitoring period. Another example would be the case where there was only one pre-project device per household and its use during the project period continues along with the project stove to meet 25% of the cooking needs of the household in which case the adjustment factor will be 0.75 as per AMS-II.G. Monitoring should inquire and record ordinary times' consumption (i.e. outside of festival, funeral or anything else out of the ordinary).
Monitoring frequency	At least once every two years (biennial)
QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	The proportion of continued use of pre-project stoves (1 - $\mu_{,y}$) is a monitored parameter, i.e. only available ex-post. For ex-ante purposes, μ_y = 95% can be considered at CPA-level. For the subsequent monitoring sessions of the same CPA, the previously monitored values of μ_y shall be used for ex-ante purposes.

Data/Parameter	$\eta_{new,i,j}$
Data unit	Fraction
Description	Efficiency of the device of each type *i* and batch *j* implemented as part of the project activity
Source of data	Stove Performance test results.
Value(s) applied	To be determined at CPA level.

Measurement methods and procedures	According to AMS-II.G. efficiency shall be measured/estimated as follows (the option should be identified and fixed ex ante in the CPA-DD at the time of inclusion): 1. The efficiency of the project devices shall be based on certification by a national standards body or an appropriate certifying agent recognized by that body. 2. Alternatively, manufacturer specifications on efficiency based on water boiling test (WBT) may be used. The WBT shall be carried out in accordance with national standards (if available) or international standards or guidelines (e.g. the WBT procedures specified by the partnership for clean indoor air (PCIA): <http://www.pciaonline.org/testing>. The sampling test of stoves by such certification bodies/agents or manufacturers shall be conducted following a 90/10 precision in accordance with the "Standard for sampling and surveys for CDM project activities and programme of activities 3. However, the following simplified approach may be used, when the efficient cook stoves are produced by a manufacturer with a good quality management system in place to ensure that the individual equipment produced do not vary beyond the range of acceptance limits (e.g. characteristics such as materials, critical dimensions): (i) Conduct a sample test on three cook stoves with three tests conducted for each stove. The test can be carried out by project proponents by themselves or stove manufacturers (ii) If the standard deviation of the nine test results indicated above is very small and 90/10 precision requirement is met (in this case, the value of the t-distribution for 90 per cent confidence shall be used instead of Z value), the efficiency determined is acceptable, otherwise more sample tests would be required until 90/10 precision is met. 4. For project activities that implement cookstoves with saucepan capacities both greater than 30 L as well as smaller than 30 L, the most conservative value among the results of efficiency tests conducted (i.e. the least efficiency determined) on cookstoves of sizes equal to or smaller than 30 L may be used for stoves that are larger than 30 L in lieu of actual testing of the efficiency of stoves that are above 30 L capacity. The simplified approach above may also be used to comply with eligibility requirements under paragraph **Fehler! Verweisquelle konnte nicht gefunden werden.** and can be used only if the following conditions are met: (i) Stoves that can hold saucepans that are larger than 30 L are from the same manufacturer[33] and of similar design (e.g. with respect to construction materials including insulation material, placement of grate, cooking vessels and if applicable chimney) as compared to the stoves that are smaller than 30 L; (ii) Project proponents should demonstrate that comparable repair and maintenance practices are undertaken on all project stoves, irrespective of the size Sampling and monitoring is implemented per batch (age class). In case of two subsequent monitoring sessions the efficiency of stoves of an age group is determined at respectively $\eta_{i,j,1}$ and $\eta_{i,j,2}$, $\eta_{i,j} = \frac{\eta_{i,j,1}+\eta_{i,j,2}}{2}$.
Monitoring frequency	(i) Recorded at the time of commissioning/distribution. (ii) Annual monitoring in case default option c or option d are chosen to adjust for efficiency losses as per paragraph 32 of AMS II.G.

[33] For in-situ constructed stoves, show that the prefabricated components are sourced from the same supplier.

QA/QC procedures	Tests are performed by third parties and cross-checked with WBT tests from manufacturer information, if available. If applicable, for each stove type (and size), WBTs are carried out for a representative sample of ICSs in line with the PoA Sampling Plan.
Purpose of data	Calculation of baseline emissions
Additional comment	For ex-ante purposes, $\eta_{new,i,j}$ **= 28.67**% may be considered for typical Jiko Matawi ICSs based on EnDev TICS Water Boiling Test (WBT) Results, January 2015

Data/Parameter	$NCV_{biomass}$
Data unit	TJ/tonne
Description	Net calorific value of the non-renewable woody biomass, briquettes or charcoal used in project devices.
Source of data	2006 IPCC Guidelines for National Greenhouse Gas Inventories
Value(s) applied	[XX]
Measurement methods and procedures	IPCC default for wood fuel, 0.0156 TJ/tonne, based on the gross weight of the wood that is 'air-dried' may be used if fuel used in project device is also woody biomass. If fuel used in the project device is charcoal, 0.029 TJ/tonne may be used. If briquette is used as project fuel, NCV shall be measured annually.
Monitoring frequency	Yearly
QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/Parameter	***Life Span***
Data unit	Number of years
Description	The operating life time of the project device. The life span should be reported in cases where the CPA implementer opts to account the efficiency loss as per paragraph 32 (a) of AMS-II.G..
Source of data	Manufacturer (certified by a national standards body or an appropriate certifying agent recognized by that body)
Value(s) applied	At CPA-level
Measurement methods and procedures	-
Monitoring frequency	Fixed and recorded at the time of commissioning/distribution
QA/QC procedures	-
Purpose of data	Baseline emissions
Additional comment	Only reported if option a) of para. 32 of AMS-II.G. is chosen.

Data/Parameter	***Date of commissioning of batch j***
Data unit	Date
Description	To establish the date of commissioning, the Project Participant may opt to group the devices in "batches" and the latest date of commissioning of a device within the batch shall be used as the date of commissioning for the entire batch
Source of data	Internal records
Value(s) applied	To be recorded at CPA level
Measurement methods and procedures	Every time an ICS is sold a sales agreement is filled. The information is entered in the CPA's electronic database afterwards. Based on the database, the date of commissioning is determined, assuming conservative lead times between sale, construction/installation and commissioning.
Monitoring frequency	Fixed and recorded at the time of commissioning/distribution of the last project device in the batch

QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	To be reported in the monitoring report

Data/Parameter	***Date of commissioning of project device i***
Data unit	Date
Description	Actual date of commissioning of the project device.
Source of data	Internal records
Value(s) applied	To be recorded at CPA level
Measurement methods and procedures	Every time an ICS is sold a sales agreement is filled. The information is entered in the CPA's electronic database afterwards. Based on the database, the date of commissioning is determined, assuming conservative lead times between sale, construction/installation and commissioning.
Monitoring frequency	Recorded at the time of commissioning/distribution of project devices
QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	-

Data/Parameter	***N***
Data unit	Number
Description	Number of project devices distributed
Source of data	Internal records (Electronic database used for registering all ICS's sold)
Value(s) applied	To be determined ex-post at CPA level
Measurement methods and procedures	Every time an ICS is sold a sale agreement is filled and an electronic database is filled. Based on the information collected into this electronic database, the number of ICSs distributed is determined.
Monitoring frequency	Recorded at the time of commissioning/distribution of project devices
QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	To be determined ex post.

Data/Parameter	$N_{d,HH}$
Data unit	Number
Description	Number of project devices distributed per household
Source of data	Internal records
Value(s) applied	1
Measurement methods and procedures	-
Monitoring frequency	Recorded at the time of commissioning/distribution of project devices
QA/QC procedures	It will be verified during monitoring campaign.
Purpose of data	Calculation of baseline emissions
Additional comment	Only one cooking stove per household is registered in the electronic database. If a household purchases more than one cooking stoves, monitoring surveys of sampled kitchens' stoves in use will account for any additional project device and be reflected in adjustment factor $N_{d,HH}$. Ex-ante estimation of $N_{d,HH} = 1$.

I.7.2. Sampling plan

The following CPA sampling plan design complies with:

- AMS-II.G. version 10.0
- General Guidelines for SSC-CDM methodologies, Version 22.1
- CDM Project Standard for programmes of activities (Version 02)
- Standard for "Sampling and surveys for CDM Project Activities and Programme of Activities", Version 07.0:
- Guideline: Sampling and surveys for CDM project activities and PoAs, Version 04.0

For each CPA, monitored emission reductions generated over all ICS batches (age classes) are determined by:

1. Calculating the amount of emission reductions generated by each batch of ICSs based on the monitored number of distributed ICSs, quantity of woody biomass saved per ICS type (via ICS efficiency) and taking account of the overall proportion of operating ICSs, the residual consumption of baseline stoves and the specific size of the age class.
2. Summing up the emission reductions obtained for each age class.

Aside from the directly measured number of project devices distributed (per household) and corresponding dates of commissioning of project devices/batches, all monitored parameter values are measured through a representative sample of recorded ICSs own by [*households /communities*].

(a) Sampling Design

Objectives and reliability requirements

The sampling objective is to provide unbiased and reliable estimates of these parameter values during the crediting period with the confidence/precision level required by AMS-II.G. and summarized in the table below. This is achieved through a smaller but representative (statistically valid) sample of distributed ICS, as compared to the study of the total population of cooking stoves distributed, which is often not feasible or possible.

Target population and sampling frame

The *target population* is the totality of ICSs (sampling unit) distributed.

For the monitoring of parameter $\eta_{new,i,j}$ which is sensitive to the aging of stoves, all cooking stoves sold are grouped in batches (age classes) and efficiency parameter values are estimated for each batch as a separate population.

In case of option (c) (drop of efficiency rate), efficiency test sampling approach is undertaken similarly to other options of yearly efficiency determination, yet only applied among the population of the first batch of stoves implemented during the first 12 months. Same first batch population is then sampled again at each monitoring verification throughout the years of operation, and this rate of loss in efficiency is applied correspondingly to all subsequent batches of same age.

The *sampling frame* is the data on ICS sales entered and/or available in the CPA's electronic database.

The electronic database records information for each sale at least on the following:

- Sales date (age class)/date of replacement of the ICS
- Project stove serial number(s)
- Type and size of ICS(s)
- Customer (and reseller as applicable) name
- Contact details of customer (and reseller as applicable)
- User type (e.g. household)

Sampling Method

Due to the homogeneity requirement for grouping CPAs under one sampling plan, the sampling method is simple random sampling[35] for all parameters monitored through sampling at all times.

Sample Size

A sample size is calculated in order to meet reliability requirements.

- The project proponent elects the sampling of each CPA individually.

Parameter values are estimated by sampling in accordance with the requirements in AMS-II.G. separately and independently for each of the CPAs included in the PoA.

The sample size for estimating the proportional parameters $p_{op\_stoves,y}$ and $\mu_{,y}$ (or their reverse) is calculated using the formula provided in the "Guideline: Sampling and surveys for CDM project activities and PoAs" Appendix 1 para 12:

$$n_p \geq \frac{t_{\alpha/2}^2 \mathrm{N_y} \times p(1-p)}{(\mathrm{N_y}-1)\cdot 0.1^2 \times p^2 + t_{\frac{\alpha}{2}}^2 p(1-p)}$$ Equation (6)

With:

$t_{\alpha/2}$ *Student's t Critical Values equal to 1.96 in the case when 95% confidence interval and a 10% margin of error are required and value; equal to 1.645 in the case when 90% confidence interval and a 10% margin of error are required*

N_y *Size of the population of stoves considered for the monitoring session*

p *Expected proportion*

The monitoring of $p_{op\ stoves,y}$ and $\mu_{,y}$ is based on the same sample, which is the sample with the larger sample size of the two.

If it is not possible to meet the 95/10 confidence/precision, then:

- for $\mu_{,y}$, the higher bound of the 95%/10% confidence/precision requirements shall be used as the correct value.
- for $p_{op\ stoves,y}$, the lower bound of 95%/10% confidence/precision shall be used as the correct value.

For $\eta_{new,i,j}$ the sample size is calculated using the formula mentioned in the "Guideline: Sampling and surveys for CDM project activities and PoAs" version 04.0 (simple random sampling, Appendix 1 para.51) applicable to the determination of a mean value parameter:

$$n_\eta \geq \frac{t_{\alpha/2}^2 N_{age,y} V}{(N_{age,y}-1)\cdot 0.1^2 + t_{\alpha/2}^2 V}$$ Equation (7)

Where:

$$V = \left(\frac{standard\ deviation}{mean}\right)^2$$

$N_{age,y}$ Number of stoves distributed belonging to the age class y

$t_{\alpha/2}$ Student t critical values

For $\eta_{new,i,j}$, one sample per age class is calculated in case efficiency losses are measured from a representative sample of each batch (sub-option d).

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[35] *E.g. through a program generating random numbers selecting sampled cooking stoves before the start of each monitoring or sales period to prepare participating cooking stove owners well in advance.*

In general, if the sample size calculation returns a value of less than 30 samples, a minimum sample size of 30 is chosen when the parameter of interest is a proportion. If the parameter of interest is a numeric mean value (i.e. not a proportion or percentage) the student's t-distribution is used if the resulting sample size is less than 30.

(b) Data to be collected

The table below summarizes the variables to be measured and the main specifications and modalities required for data collection including confidence/precision level to assure and control for quality of the sampled data (QA/QC). Furthermore, the implementation plan below and section I.7.3 of PoA-DD reveal additional QA/QC measures.

Table 5: *Monitored parameters and specifications for monitoring*

Para-meter	Description	Confidence/ Precision level	Source of data (and method)	Grouped CPAs/PoAs	Frequency	Seasonality
$N_{y,i,j,l}$ / ($p_{op\_stoves,y}$)[36]	Proportion of distributed ICS still operating in year y	95/10 (biennial) 90/10 (annual)	Monitoring (Visual inspection, field interviews)	Simple random sampling for all CPAs with the same boundary (or for each CPA)	At least once every two years (biennial)	Unlikely to be affected by seasonal influences
$\mu_{,y}$	Adjustment to account for any continued use of pre-project devices during year y	95/10 (biennial) 90/10 (annual)	Monitoring results (Interview of end-user, field interviews)	Simple random sampling for all CPAs with the same boundary (or for each CPA)	At least once every two years (biennial)	Unlikely to be affected by seasonal influences
$\eta_{new,i,j}$	Efficiency of the device being deployed as part of the project activity in year y	90/10	Water Boiling test (laboratory)	Simple random sampling for all CPAs with the same boundary (or for each CPA)	Annually	Not affected by seasonal influences

(d) Implementation Plan

The CME and management of the monitoring team coordinate the overall implementation of the monitoring and sampling plan. The monitoring team consists of one monitoring manager and one data manager (cf. section I.7.3 of PoA-DD for their general responsibilities). The implementation plan consists of the following principal steps:

Step 1: Selection of all monitoring options at time of CPA inclusion.

Step 2: Stove distribution and sales agreements

[36] *$N_{y,i}$ is not directly monitored. The parameter $p_{op\_stoves,y}$ is monitored in order to determine $N_{y,i}$.*

Person in charge: CPA implementer and CME
Cf. section B of PoA-DD.
The CME cross-checks data of at least 1% of monthly signed sales agreements/ registered in the electronic database. According to the *Standard for "Sampling and surveys for CDM project activities and programme of activities*" this is representative [37]. This step is implemented continuously throughout the crediting period.

Step 3: Compilation of data into electronic database
Person in charge: CPA data manager
Cf. section B of PoA-DD.
Two different persons are in charge of recording sales agreements electronically so they can control the quality of each other's work. This step is implemented continuously throughout the implementation plan.

Step 4: Choice of number of CPAs/PoAs under single sampling plan and number of monitored batches
Person in charge: CPA implementer in accordance with CME
See this section and Appendix 5.

Step 5: Sample size calculation including oversampling
Person in charge: CPA data manager
See this section and Appendix 5.

Step 6: Sample drawing
Person in charge: CPA data manager
A sample of distributed ICSs is selected randomly out of the sampling frame per batch for monitoring $p_{op\_stoves,y}$ (involved in the calculation of $N_{y,i,j}$), $\mu_{,y}$ and $\eta_{new,j}$, respectively.

Step 7: Data collection
Person in charge: CPA data manager
The data manager organizes the monitoring campaigns, which includes lists of sampled users with contact details but without the stoves' serial numbers. This way the serial number recorded during the campaign can be matched with records in the electronic database to assess the accuracy of the measurement. The data of sampled users' is collected through surveys, which are filled at the operation site of the stove (a priori, costumer's address). Questions to the end-user operationalize the monitored parameters. If required, the survey includes an additional question on the baseline stove to rule out the end-use of certain baseline stoves and verify the baseline of the specific CPA.
To measure the ICS efficiency $\eta_{new,j}$ the stove is brought to a laboratory and tested as per monitoring specification and QA/QC requirements above.

Step 8: Consolidation of monitoring results
Person in charge: CPA data manager
In case of determination of the rate of efficiency drop as per option (c) of AMS-II.G, the degradation of efficiency measured in a representative sample of the first batch of project devices will apply to all subsequent batches. The efficiency of the project devices in the first batch is monitored annually through representative samples and this rate of loss in efficiency will be applied correspondingly to all batches.

Step 9: Record keeping
Person in charge: CPA data manager

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[37] *For instance, according to the Standard for "Sampling and surveys for CDM project activities and programme of activities", for a binary parameter and a sample of 15,000 ICSs with an assume proportion of 95%/5% a sample of 15 ICSs is calculated (section B.7.2). The minimum percentage is therefore 15/15,000=0.1%. 1% is therefore conservative.*

All monitored data is recorded in hard copy and in the electronic database. All documents, lists and questionnaires produced during monitoring are saved electronically with physical copies securely stored under the direct responsibility of the data manager and the supervision of the monitoring manager. All data is kept and archived electronically for two years after the end of the crediting period or the last issuance of certified emission reductions, whichever occurs later.

I.7.3. Other elements of monitoring plan

The CME is responsible for overall monitoring organization. The sampling plan, data collection & consolidation and results analysis are implemented by an adequately trained monitoring team, well aware of CDM requirements and supervised by the CME. The monitoring team consists of one monitoring manager and one data manager. If external expertise or support in management or controlling is needed or to avoid conflict of interest, the CME may contract local third-party experts (e.g. NGOs) assist the monitoring team.

A compensation system, possibly based (in parts) on objective performance criteria, may be introduced in order to encourage workers.

Table 6: *Monitoring team and responsibilities*

Role	Responsibilities
Monitoring manager	- In general, ensure that all CPAs follow the monitoring plan - Ensure that the equipment and measurements are in line with the measurement methods, recording frequency and archiving approaches in monitoring plan - Ensure that monitoring data collected is consolidated and entered in electronic database - Ensure that monitoring team receives proper training - Ensure a coherent and standard monitoring report for each CPA
Data manager	- Collect monitoring data - Enter data in electronic database and archive hardcopies[38] - Carry out sample size determination and emission reduction calculations

Before the commencement of monitoring works, the CME ensures that the monitoring staff / CPA implementers (if applicable) receive *training* according to their responsibilities in the monitoring. For all staff, it involves information on the general PoA management system so that roles, responsibilities and communication channels are clear.

Document evidence on training schedules, sessions and trainers is recorded and reflected in the monitoring reports.

SECTION J. Crediting period type and duration

The crediting period is 7 years (84 months), renewable twice, for all CPAs.

SECTION K. Eligibility criteria for inclusion

Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion
Geographical boundary (a)	The CPA takes place within the borders of Burundi	Checking relevant sections of CPA-DD, indicating map snapshot and GPS coordinates

[38] *Data monitored and required for verification and issuance are kept and archived for at least two years after the end of the final crediting period or the last issuance of CERs, whichever occurs later.*

Double counting (b) (i)	There shall be no double counting of emission reductions, i.e. each cooking stove sold under the CPA are uniquely marked by an ICS serial number (and/or logo) and recorded in an electronic database for PoA lifetime as described in PoA-DD section C following the below format: O[#PROD].XXXXXX Where: O = OBEN CDM-PoA [#PROD] = production site identification number (1BUJ : Bujumbura site 1, 3NGO : Ngozi site 3, 2GIT : Gitega site 2…) XXXXXX = unique stove ID (e.g. 139120)	Checking relevant sections of CPA-DD Template of sales agreement, in which serial number of ICS that is distributed under the PoA is supposed to be recorded. Contractual agreement between CPA implementer and CME (including all rights and responsibilities of both parties including implementation of any tests or baseline studies as per AMS II. G. etc.).
Double counting (b) (ii)	There shall be no double counting of emission reductions, i.e. CPAs shall neither be registered as CDM project activities, included in another registered PoAs, nor the project activities that have been deregistered.	Checking relevant sections of CPA-DD Checking UNFCCC website as well as other GHG emission reductions certification schemes (e.g. voluntary labels). Contractual agreement between CPA implementer and CME.
Technology (c)	The CPA specifies the level and type of service provided by the technology/measure as well as its performance, which are in line with the technology outlined in PoA-DD. Specifications of the technology/measure shall include the type, capacity, and other key features of the design of the systems;	Checking relevant sections of CPA-DD ICS test/certification/performance report
Start date (d)	The start date of the CPA is verifiable through documentary evidence and shall not be prior the start date of the PoA.	Checking start date indicated in Section C.1 of CPA-DD Document evidence to demonstrate real action in line with definition of start date in the CDM Glossary of Terms - such as order of first sale of ICSs or first sales agreement signed.
Methodology (e)	The CPA applies and complies with AMS-II.G. version 10.0, in particular: *All CPAs shall involve dissemination of improved cookstoves or energy efficiency improvements in thermal applications of non-renewable biomass, with a minimum efficiency of 20%. The stoves shall be new'*	Checking relevant sections of CPA-DD on the basis of ICS test/certification/performance report
Additionality (f) (i)	The project shall be the distribution (sale) of ICSs to target end-users (households or communities) in Burundi, and therefore classifies as an End-use Energy Efficiency Improvement project.	Checking relevant sections of CPA-DD
Additionality (f) (ii)	The nominal energy savings of each ICS shall not exceed 600 MWh/unit, which is equivalent to 1,800 MWh_{th}/unit/year.	Emission reduction calculation sheet of CPA-DD
Local Stakeholder Consultation (g) (i)	A local stakeholder consultation (LSC) shall be conducted for each CPA.	Checking relevant sections of CPA-DD based on LSC report

CME approval (g) (ii)	A CPA-DD, related emission reduction calculation as well as all required evidence documents for CDM project eligibility shall be submitted to CME, who needs to formally approve the CPA.	CME conclusion of review of CPA-DD by CME. Contractual agreement between CPA implementer and CME
ODA (h)	The CPA shall not involve any public funding that diverts Official Development Assistance.	Checking relevant sections of CPA-DD If public funding is used for a CPA, the relevant Annex I party will confirm that the funding is not a diversion of ODA for that CPA.
Target group (i)	The target group of each CPA shall be households. Alternatively, the target group can be communities;[40]	Checking relevant sections of CPA-DD
Sampling (j)	The CPA sampling plan complies with the "*Standard for sampling and surveys for CDM project activities and programme of activities*";	Checking relevant sections of CPA-DD describing the applied sampling plan

[40] *Households are domestic units consisting of the members of a family who live together and share food and cooking equipment. Similarly, communities targeted by the PoA are groups of individuals that have a common identity and share some of their resources such as biomass and cooking equipment. For instance, schools, refugee camps are considered communities that are targeted by the project and may be included in the CPAs.*

Appendix 1. Contact information of coordinating/managing entity and project participants

Coordinating/managing entity and/or project participants	☒ Coordinating/managing entity ☐ Project participant
Organization name	ECOEYE CO., LTD
Country	Republic of Korea
Address	#1503, Hyundai Knowledge Industrial Center B 70 Dusan-ro, Geumcheon-gu, Seoul.South Korea
Telephone	+82-2-6480-7346
Fax	-
E-mail	sangsun_ha@ecoeye.com
Website	www.ecoeye.com
Contact person	Sang-Sun Ha

Coordinating/managing entity and/or project participants	☐ Coordinating/managing entity ☒ Project participant
Organization name	Observatoire de l'Environnement et de la Nature « OBEN »
Country	Burundi
Address	Avenue Nyabisindu, Q9 Bujumbura
Telephone	+257-76-602-600
Fax	-
E-mail	obenn2016@gmail.com
Website	-
Contact person	Claver Ndizeye

Appendix 2. Affirmation regarding public funding

Not applicable as the PoA does not expect to involve any public funding according to the OECD definitions for Official Development Assistance (ODA).

Appendix 3. Applicability of methodologies and standardized baselines

Not applicable

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

Not applicable

Appendix 5. Further background information on monitoring plan

Oversampling and reliability of mean value parameters

To compensate for any attrition, outliers or non-response associated with the sample[41] and to prevent a situation at the analysis stage where the required reliability is not achieved and additional sampling efforts are required, oversampling is applied. Oversampling implies the conscious choice of a larger sample size (10-40%) than normally required.

If the estimates from the actual samples fail to achieve the target minimum levels of precision, project participants either;

1. Perform additional data collection that is a supplemental or new sample to reach the required precision level; or
2. Apply a correction to the estimates using one of the two options below:
   (i) Discount the emission reduction estimates by either,
   - Take the lower or the upper bound, whatever is the more conservative, of the 90 or 95 per cent confidence interval, depending on the type of methodologies applied; or
   - Discount by no less than three times (x3) the percentage precision points missed (e.g. if the attained precision is 90/11 then the emission reduction estimates are discounted by 3 per cent);

For mean value parameters, reliability is checked by using the following calculation[43]:

$$r = \frac{{}^{1}/_{2}\,width\ of\ confidence\ interval}{mean} * 100\%$$

For proportional parameters, reliability is checked by using the following calculation:

$$r = \frac{{}^{1}/_{2}\,width\ of\ confidence\ interval}{proportion} * 100\%$$

For either formula, as long as *r* is below or equal to 0.1, reliability is sufficient. If *r* is above 0.1 the procedure for oversampling outlined above is applied.

Outliers

Outliers are points that have a low probability to be generated by the overall distribution. A simple and common approach is to identify all data that deviate more than 3 times the standard deviation from the mean of the overall population. Therefore, data that deviates more than 3 times the standard deviation from the mean is defined as outlier data. Either the outlier is removed from database or, if possible/applicable, a second measurement is done to confirm the value.

[41] For example, μ_y will be determined using data from target end users where the monitored ICS was found to be in operation. Thus, the actual sample size is systematically smaller than the calculated one. In such a case, oversampling allows to fulfil reliability requirements anyway.

[43] As per "Guideline: Sampling and surveys for CDM project activities and PoAs".

Appendix 6. Summary report of comments received from local stakeholders

Not applicable

Appendix 7. Summary of post-registration changes

Not applicable