CLEAN DEVELOPMENT MECHANISM
SMALL-SCALE PROGRAM ACTIVITY DESIGN DOCUMENT FORM (CDM-SSC-CPA-DD)
Version 01

CONTENTS

A. General description of CDM programme activity (CPA)

B. Eligibility of CPA and Estimation of Emission Reductions

C. Environmental Analysis

D. Stakeholder comments

Annexes

Annex 1: Contact information on entity/individual responsible for the CPA

Annex 2: Information regarding public funding

Annex 3: Baseline information

Annex 4: Monitoring plan

NOTE:

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

(ii) The coordinating/managing entity shall prepare a CDM Small Scale Programme Activity Design Document (CDM-SSC-CPA-DD)[1,2] that is specified to the proposed PoA by using the provisions stated in the SSC PoA DD. At the time of requesting registration the SSC PoA DD must be accompanied by a CDM-SSC CPA-DD form that has been specified for the proposed SSC PoA, as well as by one completed CDM-SSC CPA-DD (using a real case). After the first CPA, every CPA that is added over time to the SSC PoA must submit a completed CDM-SSC CPA-DD.

[1] The latest version of the template form CDM-CPA-DD is available on the UNFCCC CDM web site in the reference/document section.

[2] At the time of requesting validation/registration, the coordinating managing entity is required to submit a completed CDM-POA-DD, the PoA specific CDM-CPA-DD, as well as one of such CDM-CPA-DD completed (using a real case).

SECTION A. General description of small scale CDM programme activity (CPA)

A.1. Title of the small-scale CPA:

>>
SimGas Biogas Programme of Activities, [*country*] (CPA [*number*])

Version [*number*]
Date: [*dd/mm/yyyy*]

A.2. Description of the small-scale CPA:

>>
This CDM Program Activity (CPA) is part of the SimGas Biogas Programme of Activities (PoA). Under the CPA a maximum of [*number*] biogas systems will be implemented across [*country*], an estimated [*number*] of which will be manure-fed systems predominantly installed in rural regions and an estimated [*number*] of which will be organic waste-fed systems mainly implemented in urban areas. These biodigesters will be installed at [*households, communities and/or SMEs*] and will include biodigesters with capacities ranging from [*number*] m^3 to [*number*] m^3. Only biogas systems implemented between [*date*] and [*date*] will be covered under the CPA and implementation will not exceed [*number*] units. Table 1 provides the implementation schedule that is foreseen for the implementation of this CPA. The actual pace of implementation may differ from the schedule below , as long the applicable limitations related to the micro-scale additionality guidelines are adhered to.

The size of CPA 1 will be kept below the micro-scale limit; the aggregate capacity of the CPA will not exceed $15MW_{th}$ for the Type I project activity or a total of 20,000 tCO_2e for the Type III project activity, whilst the thermal capacity of each individual digester will not exceed 4,500 kW_{th}. Given an average capacity of [*number*] kW_{th} of a biodigester and an average emission reduction potential of [*number*] tCO_2e derived from the Type III project activity, the micro-scale additionality criteria are satisfied given the anticipated implementation schedule of [*number*] units in this CPA.

Table 1: Indicative implementation schedule of the CPA

Type / **Date**	*Manure-fed*	*Organic waste-fed*
[*date*]	[*number*]	[*number*]
[*date*]	[*number*]	[*number*]
[*date*]	[*number*]	[*number*]
[*date*]	[*number*]	[*number*]
Total	[*number*]	[*number*]

A.3. Entity/individual responsible for the small-scale CPA:

>>
The individuals responsible for the biogas systems are individual owners of the biogas equipment. Each biogas system owner agrees by a sales contract to transfer the ownership title of the generated emission reductions to SimGas IP BV.

The CPA implementer of this Component Project Activity is [*name of CPA Implementer*].

Name of Party Involved ((host) indicates a host Party)	**Private and/or public entity(ies) project participants (as applicable)**	**Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)**
[*name*]	[*name*]	[*Yes/No*]
[*name*]	[*name*]	[*Yes/No*]

A.4. Technical description of the small-scale CPA:

A.4.1. Identification of the small-scale CPA:

>>
Each biogas system implemented under the CPA will have a unique serial number physically attached to it. This number will be recorded in the CME's database. The database does not allow double-entries and the procedures and quality control checks within the CPA will minimise the risk that a single biogas system is entered into the database more than once.

A.4.1.1. Host Party:

>>
[*name of Host Party country*]

A.4.1.2. Geographic reference or other means of identification allowing the unique identification of the small-scale CPA (maximum one page):

>>
The geographic boundary for the CPA is [*name boundary*]

Figure 1: Map of [*name boundary*]

[*insert map boundary*]

All of the biogas systems implemented under this CPA will contain a unique serial number that will be recorded in the CME's database. The numbers will be engraved in the systems or otherwise attached in an unambiguous manner that will enable the verifier to identify systems listed in the database. The database will further include information regarding the coordinates of the installed biogas system, information on the owner, and its operational status.

A.4.2. Duration of the small-scale CPA:

A.4.2.1. Starting date of the small-scale CPA:

>>
The starting date of the CPA is [*dd/mm/yyyy*], which is the expected commissioning date of the first biodigester under this CPA.

A.4.2.2. Expected operational lifetime of the small-scale CPA:

>>
The expected operational lifetime of the CPA is 21 years.

A.4.3. Choice of the crediting period and related information:

>>
Renewable crediting period.

A.4.3.1. Starting date of the crediting period:

>>
The starting date of the crediting period is [*dd/mm/yyyy*].

A.4.3.2. Length of the crediting period, first crediting period if the choice is renewable CP:

>>
The crediting period for the CPA will be 7 years, renewable twice.

A.4.4. Estimated amount of emission reductions over the chosen crediting period:

>>
The emission reduction estimate of the CPA has been calculated based on values compiled from literature. As the CPA will collect baseline data from each participating household/community/SME *ex-ante*, the presented estimate is only illustrative and the actual emission reductions claimed will be based on the collected data.

Table 2: Estimated emission reduction ([*number*] crediting period)

Year	Annual estimate of emission reductions (tonnes CO_2e)
[*date*]	[*number*]
[*date*]	[*number*]
[*date*]	[*number*]
[*date*]	[*number*]
[*date*]	[*number*]
[*date*]	[*number*]
[*date*]	[*number*]
Total	[*number*]
Total number of crediting years	**7**
Annual average over crediting period	[*number*]

A.4.5. Public funding of the CPA:

>>
[*Yes/No*] public funding from Annex I countries is provided for the CPA.

A.4.6. Information to confirm that the proposed small-scale CPA is not a de-bundled component

>>

The CPA is exempt from a de-bundling check due to each independent subsystem/measure being less than 1% of the small-scale of methodologies AMS-I.E, AMS-I.I and AMS-III.R. The thresholds for these methodologies are 45 MW_{th}, or 60,000 t CO_2e for AMS-III.R.

The average biogas systems implemented in this CPA are estimated to produce [*output of biogas*] m^3 of biogas per day, assuming the [*size of unit*] m^3 unit. The largest biogas systems that can be included in this CPA are estimated to produce [*output of biogas*] m^3 of biogas per day, assuming the [*size of largest biogas unit*] m^3 unit. This amounts to a maximum output of [*output capacity number*] kW_{th}, which is below the established threshold of 450 kW_{th}. The calculation for this largest system is presented below:

$\mathbf{Th_{cap}} = \frac{\mathbf{E}}{\mathbf{t}} \quad where \quad \mathbf{E} = \eta * H_b * V_b$		
Thermal capacity of the 16 m^3 unit.		
Where:	Value:	Comments:
t = hours/day usage	[*number*]	[*source of data*]
η = efficiency of stove	[*percentage*] %	[*source of data*]
H_b = heat of combustion per unit volume of biogas	21.0 MJ/m^3	Derived from IPCC defaults
V_b = volume of biogas	[*number*] m^3/day	[*source of data*]
E = Energy available from the biogas system	[*number*] MJ/day	[*source of data*]
E_{th} =	[*number*] kWh/day	1 MJ = 0.2778 kWh
Th_{cap} =	[*number*] kW_{th}	[*source of data*]

The estimated emission reductions due to methane avoidance calculated per AMS-III.R. is [*number*] tonnes of CO_2e for the largest biogas systems that can be included in this CPA, which is below the 600 t CO_2e.

The CPA under this PoA [*is/is not*] exempt from a de-bundling check due to each independent subsystem/measure being less than 1% of the small-scale of methodologies AMS-I.E, AMS-I.I and AMS-III.R, as per the PoA-DD, section A.4.4.1.

A.4.7. Confirmation that small-scale CPA is neither registered as an individual CDM project activity or is part of another Registered PoA:

>>

The installation and commissioning procedure outlined in section A.4.4.1 of the PoA-DD ensures that all necessary data are gathered. Double counting is avoided through recording the unique GPS location and serial number of each biogas system in a centralised database system operated by the CME. Participating users will confirm that they are not taking part in other registered Programmes of Activities through signing of a sales contract for each biodigester system.

SECTION B. Eligibility of small-scale CPA and Estimation of emissions reductions

B.1. Title and reference of the Registered PoA to which small-scale CPA is added:

>>
Title: SimGas Biogas Programme of Activities

Reference: [*insert reference number of PoA*]

B.2. Justification of the why the small-scale CPA is eligible to be included in the Registered PoA:

>>
As stated in the PoA-DD, the CPA shall meet the following criteria to become eligible for inclusion:

Eligibility Criteria Standard	**Eligibility Criteria**	**CPA-DD Indicator**
1. The geographical boundary of the CPA including any time-induced boundary consistent with the geographical boundary set in the PoA;	All biogas digesters in each CPA are located within the geographical boundaries of one Host Country, namely [*country*]. This will be confirmed by the CME by ensuring that each individual installation: • Is located at an address that lies within the geographical boundaries of [*host country*] as demonstrated by providing the address of all biogas digesters in the CPA database; • Has GPS coordinated that are situated within the geographical boundaries of [*host country*] as demonstrated by providing the GPS coordinates of all biogas digesters in the CPA database. • Is implemented between the start date of the CPA and [*dd/mm/yyyy*]	❑ [tick when met] _____ Verifiable evidence: – Commissioning Protocol – CPA Database
2. Conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations (e.g. programme logo)	Each biogas digester in the CPA has a unique serial number and programme logo engraved or permanently attached as a nameplate The serial numbers are listed in the CPA database. [*and*] The GPS coordinates of the location of each biogas digester is recorded in the CPA database. [*and*] The CME has an agreement in place with the owner of each individual biogas digester in the CPA in which the owner of each biogas digester transfers the rights to the emission reductions to the CME	❑ [tick when met] _____ Verifiable evidence: – Commissioning Protocol – CPA Database – CME Manual – Sales Contract

3. Conditions to check the start date of the CPA through documentary evidence	The start date of the CPA is the date at which the commissioning of the first biogas digester is completed. This is recorded in the Commissioning Protocol, which is archived and the date recorded in the CPA database. The database allows for easy verification that the earliest commissioning date is the start date of the CPA.	❑ [tick when met] _____ Verifiable evidence: – Commissioning Protocol – CPA Database
4. The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis	A local stakeholder consultation has been carried out on Host Country level. Evidence is provided that the programme activities are exempt from an environmental impact analysis (EIA).	❑ [tick when met] Sections C and D of the CPA-DD. _____ Verifiable evidence: – Stakeholder consultation report – EIA exemption notice
5. Conditions to provide an affirmation that funding from Annex I parties, if any, does not result in a diversion of official development assistance	A written confirmation has been issued for the CPA that no funding from Annex 1 parties has been used for this CPA or that, if used, this did not result in a diversion of official development assistance.	❑ [tick when met] _____ Verifiable evidence: – ODA declaration
6. Where applicable, the requirements for the debundling check, in case CPAs belong to small-scale (SSC) or microscale project categories.	The proposed small scale CPA of the PoA is not a debundled component of a large scale activity because: Each of the independent subsystems/measures included in the CPA of a PoA is no larger than 1% of the small-scale thresholds defined by the applied methodology (not exceeding 450kW thermal for SSC type I; not exceeding 600tCO_{2e} for SSC type III methodologies). The largest sub-unit has [*insert number for section A.4.*6] kW thermal capacity under AMS-I.E/AMS-I.I and [*insert number for section A.4.*6] tCO_2e emission reduction capacity under AMS-III.R. both of which are below the respective thresholds.	❑ [tick when met] Section A.4.6 of the CPA-DD _____ Verifiable evidence: – Sales Contract – Emissions reduction calculation spreadsheet demonstrating the size of each unit;
7. The conditions that ensure that CPAs meet the requirements pertaining to the demonstration of additionality.	The proposed CPA is additional.	❑ [tick when met] See section B.3 of the CPA-DD
	The CPA will stay below the scale limits, defined as follows: (a) Where AMS-I.E or AMS-I.I applies, the	❑ [tick when met] _____ Verifiable evidence:

		size of the CPA is less than or equal to15 MW_{th}; and (b) Where AMS-III.R applies, the size of the CPA is less than or equal to 20 $ktCO_2$/yr. Whichever CPA capacity is reached first will define the limits of the CPA.	– Sales Contract – CPA Database – Emissions reduction calculation spreadsheet
		(b) Where AMS-I.E or AMS-I.I apply, an individual household biogas system in the CPA has a maximum thermal capacity of 4,500 $kW_{th;}$	❑ [tick when met] _____ Verifiable evidence: – Sales Contract
		(c) Where AMS-III.R applies, each of the independent biogas systems in the project activity achieves an estimated annual emissions reduction equal to or less than 600 tCO_2e per year	❑ [tick when met] _____ Verifiable evidence: – Sales Contract – CPA Database – Emissions reduction calculation spreadsheet
		(d) End users of the subsystems or measures are households/communities/SMEs.	❑ [tick when met] _____ Verifiable evidence: – Sales Contract
8. The specifications of technology/ measure including the level and type of service, performance specifications including compliance with testing/ certifications		The CPA will install biogas digesters of the following types: – Manure-fed biogas systems, which generate biogas and organic fertiliser, and measure 2 – 16 m^3. Other sizes could be offered in future, as long as they remain below the maximum output capacities in criteria 9 below. – Organic-waste fed biogas systems, which generate biogas from domestic organic waste, and measure 0.54 – 6m^3. Other sizes could be offered in future, as long as they remain below the maximum output capacities in criteria 9 below. – Other types of biogas digester that are approved by the CME , as long as they are in line with the methodology and micro-scale additionality guidelines.	❑ [tick when met] _____ Verifiable evidence: – Sales Contracts – Commissioning protocol – Technical specification documents detailing digester models
9. Conditions that ensure compliance with	Only if AMS-I.E applies	All biogas digesters in the CPA are replacing non-renewable biomass.	❑ [tick when met] See section B.5.2 of the CPA-DD _____

applicability and other requirements of single or multiple method-ologies applied by CPAs.	:		Verifiable evidence: – Commissioning protocol;
	Only if AMS-I.E applies:	The CPA demonstrates that non-renewable biomass has been used since 31 December 1989, using survey methods or referring to published literature, official reports or statistics.	❑ [tick when met] See section B.5.2 of the CPA-DD _____ Verifiable evidence: – Published literature, official reports and/or statistics – Commissioning protocol
	Only if AMS-I.I applies:	Each biogas digester shall have a rated capacity equal to or less than 150 kW_{th}	❑ [tick when met] See section A.4.6 of the CPA-DD _____ Verifiable evidence: – Sales Contract – CPA database – Emissions reduction spreadsheet
	Only if AMS-III.R applies:	The CPA comprises the recovery and destruction of methane from manure and organic wastes that would be decaying anaerobically in the absence of the project activity.	❑ [tick when met] See section B.5.2 of the CPA-DD _____ Verifiable evidence: – Commissioning protocol;
	Only if AMS-III.R applies:	The CPA is limited to biogas digesters installed at individual households or small farms with methane recovery systems that achieve an annual emission reduction of less than or equal to 5 tCO_2 / year per system.	❑ [tick when met] See section B.5.2 of the CPA-DD _____ Verifiable evidence: – Commissioning protocol – Sales Contract – CPA Database – Emissions reduction spreadsheet
	Only if AMS-III.R applies:	The CPA specifies that methane emissions are prevented by changing the management practice of a biogenic waste or raw material in order to achieve the controlled anaerobic digestion equipped with methane recovery and	❑ [tick when met] See section B.5.2 of the CPA-DD _____

		combustion system.	Verifiable evidence: – Commissioning protocol; – Feasibility Study
	Only if AMS-III.R applies:	The CPA uses the methodology AMS-III.R in combination with: – AMS-I.I "Biogas/biomass thermal applications for households/small users" or – AMS-I.E "Switch from non-renewable biomass for thermal applications by the user"	❑ [tick when met] See section B.5.2 of the CPA-DD _____ Verifiable evidence: – CPA database – Emissions reductions calculation spreadsheet
	Only if AMS-III.R applies:	The CPA satisfies the following conditions: – The sludge is handled aerobically. In case of soil application of the final sludge the proper conditions and procedures that ensure that there are no methane emissions is ensured; – Measures are used (e.g. combusted or burnt in a biogas burner for cooking needs) to ensure that all the methane collected by the recovery system is destroyed.	❑ [tick when met] See section B.5.2 of the CPA-DD _____ Verifiable evidence: – Commissioning protocol; – CME Manual – Feasibility Study
10. Where applicable, target group (e.g. domestic/commercial/industrial, rural/urban, grid-connected/off-grid) and distribution mechanisms (e.g. direct installation)		The target group within the CPA are households, communities and /or SMEs, as recorded in the Sales Contract. All biogas digesters will be directly installed at the user's by qualified personnel. All entities involved in the distribution of biogas digesters will have a contractual agreement with the CME detailing their role in the CPA and the transfer of emissions rights to the CME.	❑ [tick when met] _____ Verifiable evidence: – Sales Contract – CME Manual
11. Where applicable, the conditions related to sampling requirements for a PoA in accordance with the approved guidelines/standard from the Board pertaining to sampling and surveys		The sampling method applied in the CPA (e.g. in the monitoring plan) follows the *Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 4). A 90% confidence interval and a 10% margin of error requirement is achieved for the sampled parameters.	❑ [tick when met] See section B.6 of the CPA-DD _____ Verifiable evidence – CME Manual
12. Where applicable, the		Where AMS-I.E or AMS I.I apply:	❑ [tick when met]

conditions that ensure that every CPA in aggregate meets the small-scale or microscale threshold criteria and remains within those thresholds throughout the crediting period of the CPA	The CPA's power capacity in aggregate remains below 15 MW_{th} throughout the crediting period; Where AMS III.R applies: The CPA's annual emission reductions in aggregate remains below 20 $ktCO_2e$ per year throughout the crediting period;	See section A.2 of the CPA-DD _____ Verifiable evidence: – Feasibility study – Technical unit design specifications – CPA Database – Emissions reductions calculation spreadsheet

As all of the above criteria are met, the CPA is eligible to be included in the SimGas Biogas Programme of Activities.

B.3. Assessment and demonstration of additionality of the small-scale CPA, as per eligibility criteria listed in the Registered PoA:

>>

The additionality of the CPA is demonstrated per the conditions outlined in section E.5. of the PoA-DD and in accordance with the *Guidelines for demonstrating additionality of microscale project activities* (EB 68, Annex 26). This section states that three conditions need to be met for the CPA to pass the additionality test:

Additionality Criteria	Means of verification	Verifiable evidence:
1. Where AMS-I.E or AMS-I.I apply, the size of the SSC-CPA is less than or equal to 15MW_{th} Where AMS-III.R applies, the size of the SSC- CPA is less than or equal to 20 $ktCO_2e$/yr Whichever CPA capacity is reached first will define the limits of the CPA.	The size of individual biogas systems in a SSC-CPA are registered through the Sales Contract, and entered into the CPA database. The emissions reductions and thermal capacity of each installation are automatically calculated from the data entered into the database under each methodology applied. The CPA implementer must take care that one SSC-CPA does not exceed the limit of 15 MW_{th} and/or 20 $ktCO_2e$/yr, whichever CPA capacity is reached earlier.	❑ [tick when met] _____ Verifiable evidence: – Sales Contract (capacity of units installed) – Emissions reduction spreadsheet (calculating size/capacity of stoves and the biodigester)
2. Where AMS-I.E or AMS-I.I apply, an individual household biogas system in the SSC-CPA has a maximum thermal capacity of 4500 $kW_{th;}$	Size of individual biogas systems is registered through the Sales Contract. Biogas systems larger than 4500 kW_{th} will not be included in the SSC-CPA.	❑ [tick when met] _____ Verifiable evidence: – Sales Contract (capacity of units installed)
3. Where AMS-III.R applies, each of the independent biogas systems in the project activity	Size of individual biogas systems are registered through the Sales Contract. Household biogas systems achieving an	❑ [tick when met] _____ Verifiable evidence:

achieves an estimated annual emission reduction equal to or less than 600 tCO_2e per year;	estimated annual emission reduction larger than 600 tCO_2e per year will not be included in the SSC-CPA.	– Sales Contract (capacity of units installed) – CPA Database – Emission reduction calculation spreadsheet
4. End users of the subsystems or measures are households/ communities/SMEs.	Registration through the sales contract. Users other than households/ communities/SMEs will not be included in the SSC-CPA.	❑ [tick when met] _____ Verifiable evidence: – Sales Contract (type of user)

The CPA meets all requirements and is therefore eligible to be included in the SimGas Biogas Programme of Activities.

B.4. Description of the sources and gases included in the project boundary and proof that the small-scale CPA is located within the geographical boundary of the registered PoA.

>>

In the baseline scenario CO_2 and CH_4 are released into the atmosphere. The burning of charcoal, firewood and fossil fuels for cooking purposes is responsible for CO_2 emissions, while current manure handling practices cause CH_4 emissions from anaerobic decomposition.

In the project scenario, CH_4 from the physical leakage of the biogas system and the CO_2 emissions from the continued use of fossil fuels in the project activity need to be accounted for.

Emission sources and greenhouse gases within the boundary of the SSC CPA are outlined below in accordance with section E.3 of the PoA-DD:

Scenario	Source	Gas	Included?	Justification
Baseline Scenario	CO_2 emissions from - fossil fuel cook stoves cook stoves using non-renewable biomass	CO_2	Yes	Major source of emissions according to AMS-I.I. and AMS-I.E.
	CH_4 emissions from manure management	CH_4	Yes	Major source of emissions according to AMS-III.R.
		N_2O	No	Not relevant under any of the applied methodologies.
Project Scenario		CO_2	Yes	Relevant under AMS-I.I. where there is continued use of fossil fuels.
	Methane leakage from biogas systems where AMS-III.R. is applied	CH_4	Yes	Emissions due to physical leakage of methane from the biogas system, as per AMS-III.R.
		N_2O	No	Not relevant under any of the applied methodologies.

The project boundary of the SSC-CPA is the geographical boundary of [*name of boundary*].

The database managed by the CME will record the geographical coordinates of each installed biogas system to confirm that the CPA covers only biogas systems located within this boundary.

B.5. Emission reductions:

B.5.1. Data and parameters that are available at validation:

>>

Data / Parameter:	$B_{y\ rural}$
Data unit:	Tonnes/year
Description:	Biomass substituted in rural areas
Source of data used:	[*source*]
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	[*insert justification if needed*]
Any comment:	[*insert comment if needed*]

Data / Parameter:	$B_{y\ urban}$
Data unit:	Tonnes/year
Description:	Biomass substituted in urban areas
Source of data used:	[*source*]
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	[*insert justification if needed*]
Any comment:	[*insert comment if needed*]

Data / Parameter:	$F_{NRB,y}$
Data unit:	%
Description:	Fraction of biomass used in the absence of the project activity in year *y* that can be established as non-renewable biomass using nationally approved methods
Source of data used:	[*source*]
Value applied:	[*number*]
Justification of the choice of data or description of	[*insert justification if needed*]

measurement methods and procedures actually applied:	
Any comment:	[*insert comment if needed*]

Data / Parameter:	**NRB**
Data unit:	m^3
Description:	Non-renewable woody biomass
Source of data used:	[*source*]
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	[*insert justification if needed*]
Any comment:	[*insert comment if needed*]

Data / Parameter:	**DRB**
Data unit:	m^3
Description:	Demonstrably renewable woody biomass
Source of data used:	[*source*]
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	[*insert justification if needed*]
Any comment:	[*insert comment if needed*]

Data / Parameter:	**$SNU_{NRB\ switch}$**
Data unit:	%
Description:	Share of non-users that started using non-renewable biomass that was replaced by biogas from a digester user
Source of data to be used:	AMS-I.E. (version [*number*]) paragraph [*number*]
Value of data applied for the purpose of calculating expected emission reductions in section B.5	5 (adjustment factor of 0.95 applicable to B_y)
Description of measurement methods and procedures to be applied:	B_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required.
QA/QC procedures to	-

be applied:	
Any comment:	-

Data / Parameter:	**Capacity**
Data unit:	kW_{th}
Description:	Capacity of a biodigester system
Source of data used:	[*source*]
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	[*insert justification if needed*]
Any comment:	[*insert comment if needed*]

Data / Parameter:	$\mathbf{EF_{projected_fossilfuel}}$
Data unit:	tCO_2/TJ
Description:	Emission factor for the substitution of non-renewable woody biomass
Source of data used:	AMS I.E. version [*number*]
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	As per requirement of the methodology
Any comment:	-

Data / Parameter:	$\mathbf{NCV_{biomass}}$
Data unit:	TJ/tonne
Description:	Net calorific value of the non-renewable biomass that is substituted
Source of data used:	IPCC default
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	As per requirement of the methodology
Any comment:	-

Data / Parameter:	$\mathbf{NCV_{biogas}}$
Data unit:	TJ/tonne
Description:	Net calorific value of the biogas
Source of data used:	AMS I.I. version [*number*]
Value applied:	[*number*]

Justification of the choice of data or description of measurement methods and procedures actually applied:	As per requirement of the methodology
Any comment:	[*insert comment if needed*]

Data / Parameter:	**$EF_{fossil\ fuel}$**
Data unit:	tCO_2/TJ
Description:	Emission factor of kerosene consumed in the baseline scenario
Source of data used:	IPCC default
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	[*insert justification if needed*]
Any comment:	[*insert comment if needed*]

Data / Parameter:	**$EF_{fossil\ fuel}$**
Data unit:	tCO_2/TJ
Description:	Emission factor of LPG consumed in the baseline scenario
Source of data used:	IPCC default
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	[*insert justification if needed*]
Any comment:	[*insert comment if needed*]

Data / Parameter:	**η_{BL}**
Data unit:	%
Description:	Efficiency of the baseline equipment being replaced
Source of data used:	[*source*]
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	[*insert justification if needed*]
Any comment:	[*insert comment if needed*]

Data / Parameter:	η_{PJ}
Data unit:	%
Description:	Efficiency of the new equipment being implemented
Source of data used:	[*source*]
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	[*insert justification if needed*]
Any comment:	[*insert comment if needed*]

Data / Parameter:	$VS_{dairy\ cow}$
Data unit:	kg/hd/day
Description:	Daily volatile solid excreted for dairy cows
Source of data used:	IPCC default
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	As per Table 10.A. 4, Chapter 10, Volume 4 of the 2006 IPCC Guidelines
Any comment:	[*insert comment if needed*]

Data / Parameter:	$VS_{market\ swine}$
Data unit:	kg/hd/day
Description:	Daily volatile solid excreted for market swine
Source of data used:	IPCC default
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	As per Table 10.A. 4, Chapter 10, Volume 4 of the 2006 IPCC Guidelines
Any comment:	[*insert comment if needed*]

Data / Parameter:	VS_{goat}
Data unit:	kg/hd/day
Description:	Daily volatile solid excreted for goat
Source of data used:	IPCC default
Value applied:	[*number*]
Justification of the choice of data or description of	As per Table 10.A. 4, Chapter 10, Volume 4 of the 2006 IPCC Guidelines

measurement methods and procedures actually applied:	
Any comment:	[*insert comment if needed*]

Data / Parameter:	**VS_{sheep}**
Data unit:	kg/hd/day
Description:	Daily volatile solid excreted for sheep
Source of data used:	IPCC default
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	As per Table 10.A. 9, Chapter 10, Volume 4 of the 2006 IPCC Guidelines
Any comment:	[*insert comment if needed*]

Data / Parameter:	**$B_{0dairy\ cow}$**
Data unit:	m^3 CH_4/kg
Description:	Maximum methane producing capacity for manure produced by dairy cows
Source of data used:	IPCC default
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	As per Table 10.A. 4, Chapter 10, Volume 4 of the 2006 IPCC Guidelines
Any comment:	[*insert comment if needed*]

Data / Parameter:	**$B_{0market\ swine}$**
Data unit:	m^3 CH_4/kg
Description:	Maximum methane producing capacity for manure produced by market swine
Source of data used:	IPCC default
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	As per Table 10.A. 7, Chapter 10, Volume 4 of the 2006 IPCC Guidelines
Any comment:	[*insert comment if needed*]

Data / Parameter:	**B_{0goat}**
Data unit:	m^3 CH_4/kg
Description:	Maximum methane producing capacity for manure produced by goats

Source of data used:	IPCC default
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	As per Table 10.A. 9, Chapter 10, Volume 4 of the 2006 IPCC Guidelines
Any comment:	[*insert comment if needed*]

Data / Parameter:	$\mathbf{B_{0sheep}}$
Data unit:	m^3 CH_4/kg
Description:	Maximum methane producing capacity for manure produced by sheep
Source of data used:	IPCC default
Value applied:	[*number*]
Justification of the choice of data or description of measurement methods and procedures actually applied:	As per Table 10.A. 9, Chapter 10, Volume 4 of the 2006 IPCC Guidelines
Any comment:	[*insert comment if needed*]

Data / Parameter:	$\mathbf{UF_b}$
Data unit:	[unit]
Description:	Model correction factor
Source of data used:	AMS-III.R, version [*number*]
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[*number*]
Description of measurement methods and procedures to be applied::	-
QA/QC procedures to be applied:	-
Any comment:	-

Data / Parameter:	$\mathbf{PE_{leakage}}$
Data unit:	%
Description:	Project emissions due to physical leakage of biogas from the animal manure management system
Source of data used:	AMS III.D. version [*number*]
Value applied:	[*number*]

Justification of the choice of data or description of measurement methods and procedures actually applied:	[*insert justification if needed*]
Any comment:	[*insert comment if needed*]

Data / Parameter:	**N_s**
Data unit:	#
Description:	Number of biogas systems in each size category (m^3) installed under the CPA
Source of data used:	[*source*]
Value applied:	For the *ex ante* estimation of the emission reductions achieved, the following implementation schedule is assumed:

Type / **Year**	*Manure-fed*	*Organic waste-fed*
[*mm – mm yyyy*]	[*number*]	[*number*]
[*mm – mm yyyy*]	[*number*]	[*number*]
[*mm – mm yyyy*]	[*number*]	[*number*]
[*mm – mm yyyy*]	[*number*]	[*number*]
[*mm – mm yyyy*]	[*number*]	[*number*]
[*mm – mm yyyy*]	[*number*]	[*number*]
Total	[*number*]	[*number*]

Justification of the choice of data or description of measurement methods and procedures actually applied:	[*insert justification if needed*]
Any comment:	[*insert comment if needed*]

Data / Parameter:	**D_{CH4}**
Data unit:	t/m^3
Description:	Methane density
Source of data used:	IPCC: http://www.ipcc-nggip.iges.or.jp/public/gl/guidelin/ch1ref7.pdf
Value of data applied for the purpose of calculating expected emission reductions in section B.5	0.00067
Description of measurement methods and procedures to be applied::	-

QA/QC procedures to be applied:	-
Any comment:	-

All other parameters that need to be monitored are outlined in Section E.7 of the PoA-DD.

B.5.2. Ex-ante calculation of emission reductions:

>>

The applicability of the methodologies will depend on the baseline scenario determined on the user level. Users with the manure-fed biodigesters will apply a combination of AMS-I.E or AMS-I.I and AMS-III.R. Users with the organic waste-fed biodigesters will apply either AMS-I.E or AMS-I.I only.

Accounting for emission reductions due to the displacement of non-renewable biomass (AMS-I.E, version *[number]*)

Emission reductions

Methodology AMS-I.E. version [*number*] is applied to calculate the emission reductions resulting from the displacement of non-renewable biomass (NRB). This methodology will apply to households that indicate most of their fuel for cooking purposes comes from biomass. The emission reductions are calculated using the following formula[3]:

$$\mathbf{ER_y} = \mathrm{B_y} * f_{NRB,y} * \mathrm{NCV_{biomass}} * \mathrm{EF_{projected_fossilfuel}} \qquad \textbf{(1)}$$

Where:

ER_y	Emission reductions from non-renewable biomass use during the year *y* in tCO_2e
B_y	Quantity of woody biomass that is substituted or displaced in tonnes
$f_{NRB,y}$	Fraction of woody biomass used in the absence of the project activity in year *y* that can be established as non-renewable biomass using survey methods (percentage)
$NCV_{biomass}$	Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for firewood, 0.015 TJ/tonne)
$EF_{projected_fossilfuel}$	Emission factor for the substation of non-renewable woody biomass by similar consumers. Use a value of 81.6 tCO_2/TJ

Determining B_y

[*Explain how By has been determined*]

[3] AMS-I.E.: Switch from non-renewable biomass for thermal applications by the user (Version [*number*])

To convert charcoal use into firewood consumption, the average charcoal consumption was multiplied by a factor of 6, in accordance with IPCC guidance[4].

Table 3: Quantity of woody biomass that is displaced by the project activity

Description (*tonnes/hh/yr*)	**B_y rural**	**B_y urban**
Firewood consumption	[*number*] tonnes	[*number*] tonnes
Charcoal converted to wood	[*number*] tonnes	[*number*] tonnes
Total biomass consumption (*charcoal converted by factor 6*)	**[*number*] tonnes**	**[*number*] tonnes**

Determining $f_{NRB,y}$
As per methodology AMS-I.E., project participants need to determine the shares of renewable and non-renewable woody biomass in By (the quantity of woody biomass used in the absence of the project activity) using nationally approved methods (e.g. surveys or government data if available) and then determine $f_{NRB,y}$, as described below.

Demonstrably renewable biomass (DRB)
As per AMS-I.E., the woody biomass is originating from land areas that are forests where:

a) The land area remains a forest;
b) Sustainable management practices are undertaken on these land areas to ensure, in particular, that the level of carbon stocks on these land areas does not systematically decrease over time (carbon stocks may temporarily decrease due to harvesting); and
c) Any national or regional forestry and nature conservation regulations are complied with.

[*Explain how $f_{NRB,y}$ has been determined*]

Non-renewable woody biomass (NRB) is the quantity of woody biomass used in the absence of the project activity (By) minus the DRB component. To determine the fraction of NRB, the following formula is applied[5]:

$$\boldsymbol{f_{NRB,y}} = \frac{NRB}{NRB+DRB} \qquad \textbf{(2)}$$

[*Explain how DRB and B_y have been determined*]

Therefore, the fraction of NRB is as follows:

$$\boldsymbol{f_{NRB,y}} = \frac{number}{number} = number\ \%$$

Further to paragraph [*number*] of AMS-I.E., version [*number*], the existence of NRB is supported by two indicators:

[4] IPCC: Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual, Chapter Energy (1996)
[5] AMS-I.E.: Switch from non-renewable biomass for thermal applications by the user (Version [*number*])

1. Survey results, national or local statistics, studies, maps or other sources of information, such as remote-sensing data, that show that carbon stocks are depleting in the project area.

[*Explain how the above is met*]

2. Increasing trends in fuel wood prices indicating a scarcity of fuel-wood;

[*Explain how the above is met*]

Project emissions
No project emissions are accounted for under the methodology.

Leakage
In accordance with the methodology, leakage is accounted for through an adjustment factor as suggested by AMS-I.E. paragraph [*number*], by multiplying by a net to gross adjustment factor of [*number*]to account for leakages.

Emission reductions

The emission reductions of households operating manure-fed systems are:

$$\mathbf{ER_y} = ([number]\ tonnes/year * [number]\% * [number]\ TJ/tonne * [number]\ tCO_2/TJ) * [number] = [number]\ tCO_2\text{e}$$

The emission reductions of households operating organic waste-fed systems are:

$$\mathbf{ER_y} = ([number]\ tonnes/year * [number]\% * [number]\ TJ/tonne * [number]\ tCO_2/TJ) * [number] = [number]\ tCO_2e$$

<u>Accounting for emission reductions due to the displacement of fossil fuels (AMS-I.I, version</u> <u>[*number*])</u>

Baseline emissions
Methodology AMS-I.I. version [*number*] is applied to calculate the emission reductions resulting from the displacement of fossil fuels. This methodology will apply to households that indicate most of their fuel for cooking purposes comes from fossil fuels. The emission reductions are calculated following 'Option 2' of the methodology, and are based on the thermal energy generated using the measured quantity of biogas. As baseline emissions are calculated based on the thermal energy generated using the measured quantity of biogas *ex-post*, $BS_{k,y}$ is estimated as the amount of thermal energy that would need to be provided to secure the same amount of output as in the baseline scenario where fossil fuel combustion and the baseline equipment are applied.

The emission reductions are calculated using the following formula[6]:

$$\mathbf{ER_y} = \sum_{\boldsymbol{k}} \mathrm{N_{k,0}} * \mathrm{n_{k,y}} * \mathrm{BS_{k,y}} * \mathrm{EF} * \eta_{\mathrm{PJ/BL}} * \mathrm{NCV_{biogas}} - \mathrm{LE_y} \quad \textbf{(3)}$$

Where:

ER_y	Emission reductions from fossil fuel use during the year *y* in tCO_2e
$N_{k,0}$	Number of thermal applications k commissioned
$n_{k,y}$	Proportion of k ,0 N that remain operating in year y (fraction)
$BS_{k,y}$	The net quantity of renewable biogas consumed by the thermal application k in year y, in tonnes/year
EF	Mean CO_2 emission factor, in tonnes/TJ (calculated as the mean of $EF_{fossil\ fuel}$)
$\eta_{PJ/BL}$	Ratio of efficiencies of project equipment and baseline equipment
NCV_{biogas}	Net calorific value of the biogas, use default value: 0.0215 GJ/m^3 biogas, to be reported in TJ/tonne

To calculate the thermal energy supplied in the baseline scenario, the NCV (TJ/day) of the fossil fuel used before the implementation of the biogas plant is defined. [*Insert description of how baseline scenario is defined*]

Project emissions
As option 2 is chosen to calculate the baseline emissions, no project emissions need to be accounted for.

Leakage
The implemented biogas system is not transferred from outside the boundary to the project activity as all installed systems are new. A default value of 0.05 m³ biogas leaked/m³ biogas produced applies where a Type III project activity (AMS-III.R) is not combined.

Emission reductions
With an efficiency of [*number*]%[7] of the new cook stove, and a mean EF of [*number*] tonnes/TJ, the emission reductions of households operating organic waste-fed systems using fossil fuel are:

$$\mathbf{ER_y} = [number]\ tonnes/year * [number]\ tonnes/TJ * [number] * [number]\ TJ/tonne * [number] = [number]\ tCO_2\mathrm{e}$$

[6] AMS-I.I.: "Biogas/biomass thermal applications for households/small users" (Version [*number*])
[7] [*source*]

Accounting for emission reductions due to the avoidance of methane emissions from manure handling (AMS-III.R, version [*number*])

Baseline emissions

Methodology AMS-III.R. version [*number*] is applied to calculate the emission reductions due to the avoidance of methane emissions from manure handling. Formula (**4**) applies to households operating manure-fed systems[8]:

$$\mathbf{BE_y} = GWP_{CH4} * D_{CH4} * UF_b * \sum_{j,LT} MCF_j * B_{O,LT} * N_{LT,y} * VS_{LT,y} * 365 * MS\%_{Bl,j} \quad (\mathbf{4})$$

Where:

BE,y	Baseline emissions from manure handling during the year y in tCO2e
GWP_{CH4}	Global Warming Potential of methane
D_{CH4}	CH^4 density (0.00067 t/m^3)
UF_b	Model correction factor to account for model uncertainties (0.94)
LT	Index for all types of livestock
j	Index for animal manure management system
MCF_j	Annual methane conversion factor (MCF) for the baseline manure management system *j*
$B_{0,LT}$	Maximum methane producing capacity for manure produced by livestock category LT in m^3 CH_4/kg dm
$N_{LT,y}$	Annual average number of animals of type LT in year *y* (numbers)
VS_{LT}	Daily volatile solid excreted for livestock category LT in kg/day
$MS\%_{Bl,j}$	Fraction of manure handled in the baseline animal manure management system *j*

No emission reductions from households operating organic waste-fed systems are claimed, as baseline methane emissions from organic waste disposal are minimal.

Emission factor for methane emissions from manure management

The MCF_j reflects the methane conversion factor for each manure management system applied in the baseline scenario.

[8] AMS-III.R.: Methane recovery in agricultural activities at household/small farm level (Version [*number*])

[*Insert description of how assessments were carried out*]

The system-specific methane conversion factors applicable to the baseline are provided in the IPCC Guidelines for National Greenhouse Gas Inventories[9]. [*Insert an explanation of the sources of data used in the table below*]

The applicable MCF will be chosen from the default values presented in Table 10.17, Chapter 10, Volume 4 of the 2006 IPCC Guidelines. Average temperatures are defined on the [*province/region/country*] level.

Table 4: Average temperature per province and the applicable MCF [10] (list is not exhaustive)

	[*Region x*]	**[*Region x*]**	**[*Region x*]**	**[*Region x*]**	**[*Region x*]**	**Region x**
Average temperature	[*degrees C*]	[*degrees C*]	[*degrees C*]	[*degrees C*]	[*degrees C*]	[*degrees C*]

MCF						
Daily spread	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]
Dry Lot	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]
Solid storage	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]
Pit storage < 1 month	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]
Pit storage > 1 month	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]	[*percentage*]

Manure characteristics of targeted animal population
Manure characteristics are determined by default IPCC values as no national specific data is available. These include the amount of volatile solids (VS) produced in the manure from animal category LT and the maximum amount of methane able to be produced from that manure (B_{OT}).

Table 5: Manure characteristics of different livestock categories [11] (list is not exhaustive)

	VS (kg/hd/day)	**B_O** (m^3 CH_4/kg VS)
[*Type of livestock*]	[*number*]	[*number*]
[*Type of livestock*]	[*number*]	[*number*]

[9] IPCC Guidelines for National Greenhouse Gas Inventories: "Chapter 10: Emissions from Livestock and Manure Management" (2006)
[10] IPCC Guidelines for National Greenhouse Gas Inventories: Chapter 10: Emissions from Livestock and Manure Management, Table 10.17 (2006)
[11] IPCC Guidelines for National Greenhouse Gas Inventories: Chapter 10: Emissions from Livestock and Manure Management, Table 10.A 4, 7 & 9 (2006)

[*Type of livestock*]	[*number*]	[*number*]
[*Type of livestock*]	[*number*]	[*number*]

The baseline emissions of households operating manure-fed systems are:[12]

$$\mathbf{BE_y} = [number] * 0.00067 * [number] * [number] * [number] * [number] * [number] * 365 * 1 = [number]\ tCO_2$$

Project emissions

Project emissions due to physical leakage of biogas from the animal manure management are accounted for in accordance with option (b) listed in paragraph [*number*] from AMS-III.D. version [*number*]:

$$PE_y = x * GWP_{CH4} * D_{CH4} * UF_b * \sum_{j,LT} MCF_j * B_{O,LT} * N_{LT,y} * VS_{LT,y} * 365 * MS\%_{Bl,j} \quad \textbf{(5)}$$

Where:

PE_y	Emissions due to physical leakage of biogas in year y (tCO_2e)
x	Physical leakage of biogas, where a default factor of $0.05m^3$ per $1m^3$ of produced biogas.
GWP_{CH4}	Global Warming Potential of methane
D_{CH4}	CH_4 density (0.00067 t/m^3)
UF_b	Model correction factor to account for model uncertainties (0.94)
LT	Index for all types of livestock
j	Index for animal manure management system
MCF_j	Annual methane conversion factor (MCF) for the baseline manure management system *j*
$B_{0,LT}$	Maximum methane producing capacity for manure produced by livestock category LT in m^3 CH_4/kg dm
$N_{LT,y}$	Annual average number of animals of type LT in year *y* (numbers)
VS_{LT}	Daily volatile solid excreted for livestock category LT in kg/day
$MS\%_{Bl,j}$	Fraction of manure handled in the baseline animal manure management system *j*

[12] The MCF of 27.5% (0.275) is the result of the multiplication of baseline manure handling methods and respective MCFs: ((.33*0.04)+(0.67*0.39))

The project emissions of households operating manure-fed systems are:

$$\mathbf{PE_y} = [number] * [number] * 0.00067 * [number] * [number] * [number] * [number] * [number] * 365 * 1 = [number]\ tCO_2$$

Leakage
No leakage is considered as the implemented biogas systems are not transferred from another activity.

Emission reductions

$$\mathbf{ER_y} = \mathrm{BE_y} - \mathrm{PE_y} - \mathrm{LE_y}$$

Therefore, emission reductions of households operating manure-fed systems are:

$$\mathbf{ER_y} = ([number] - [number]) - [number] = [number]\ tCO_2e$$

Table 6: Summary of emission reductions per digester type and baseline scenario (tCO_2/yr)

Methodology	Manure-fed system	Organic waste-fed system
AMS-I.E		
BE_y	[*number*]	[*number*]
PE_y	[*number*]	[*number*]
LE_y	[*number*]	[*number*]
$\underline{ER}_y$	[*number*]	[*number*]
AMS-I.I		
BE_y	[*number*]	[*number*]
PE_y	[*number*]	[*number*]
LE_y	[*number*]	[*number*]
$\underline{ER}_y$	[*number*]	[*number*]
AMS-III.R		
BE_y	[*number*]	[*number*]
PE_y	[*number*]	[*number*]
LE_y	[*number*]	[*number*]
$\underline{ER}_y$	[*number*]	[*number*]
Total ER_y	tCO_2/yr	tCO_2/yr

B.5.3. Summary of the ex-ante estimation of emission reductions:

>>

This table provides a summary of the ex-ante estimation of emission reductions.

Total estimated emission reductions for the manure-fed systems are [*number*] tCO_2e per biodigester, per year. Given a total of [*number*] manure-fed systems foreseen in this CPA, this amounts to total emission reductions of [*number*] tCO_2e in the first crediting year. This is because it is assumed that implementation of all [*number*] biodigesters occurs within the first year and that the implementation is evenly spread out

over the year. This means that the emission reductions generated under the first year are only half of the emission reductions that are generated in the following years.[13] Each following year, the estimated emission reductions are [*number*] tCO_2e per year, as all [*number*] manure-fed biodigesters are assumed to be operational.

For the organic waste-fed biodigesters, while the total estimated emission reduction for NRB substitution by the organic waste-fed system is [*number*] tCO_2 as calculated above, this ex-ante estimate assumes that only [*number*] % of the urban users included in this CPA indicate biomass to be their primary fuel for cooking purposes. Similarly, while the total estimated emission reduction for fossil fuel substitution by the organic waste-fed system is [*number*] tCO_2, it is assumed that [*number*] % of the urban users use fossil fuel as their primary fuel for cooking purposes. This means that an emission reduction of [*number*] tCO_2 is assumed for the organic waste-fed systems. Given a total of [*number*]organic waste-fed systems foreseen in this CPA, and given the same assumption and reasoning as described above, this amounts to total emission reductions of [*number*]tCO_2e per year in the first crediting year and [*number*]tCO_2e per year each following year.

The actual ratio of urban users using NRB and fossil fuels respectively for cooking will be determined ex-post through surveying. It will be ensured that the total amount of biodigester implemented under the CPA meets the limits defined by the methodology and micro-scale additionality guidelines

Year	**Estimation of project activity emissions (tonnes of CO_2 e)**	**Estimation of baseline emissions (tonnes of CO_2 e)**	**Estimation of leakage (tonnes of CO_2 e)**	**Estimation of overall emission reductions (tonnes of CO_2 e)**
2013	[*number*]	[*number*]	[*number*]	[*number*]
2014	[*number*]	[*number*]	[*number*]	[*number*]
2015	[*number*]	[*number*]	[*number*]	[*number*]
2016	[*number*]	[*number*]	[*number*]	[*number*]
2017	[*number*]	[*number*]	[*number*]	[*number*]
2018	[*number*]	[*number*]	[*number*]	[*number*]
2019	[*number*]	[*number*]	[*number*]	[*number*]
Total (tonnes of CO_2 e)				[*number*]

B.6. Application of the monitoring methodology and description of the monitoring plan:

B.6.1. Description of the monitoring plan:

>>

The monitoring procedures and sampling plan for the PoA is in-line with the procedures outlined in paragraph 18 of the *Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 4), which refers to the *Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 5):

[13] The reasoning is that the first biodigester commissioned on day 1 of the first crediting year will genereate the full emission reduction of 9.14 tCO_2e, while the biodigester commissioned on day 365 of the first crediting year will generate no emission reductions.

a) Sampling design
- *(i) Objectives and Reliability Requirements*
- *(ii) Target population*
- *(iii) Sampling method*
- *(iv) Sample size*
- *(v) Sampling frame*

b) Data to be collected
- *(i) Field measurements*
- *(ii) Quality Assurance/Quality control*
- *(iii) Analysis*

c) Implementation plan

d) Data Storage

The above criteria are elaborated in the forthcoming paragraphs.

a) Sampling Design

(i) Objectives and Reliability Requirements

The objective of the sampling effort will be to meet the monitoring requirements set forth in the methodologies AMS-III.R (version [*number*]), AMS-I.I (version [*number*]) and AMS-I.E (version [*number*]). In accordance with the requirements set forth in the respective methodologies, the sample size will be selected following a 90% confidence interval and a 10% margin of error (90/10) where applicable. Monitoring will be carried out on an annual basis. As the PoA progresses and the number of CPAs increases, the sampling plan can apply to a group of CPAs as referred to paragraph 20 of EB 69, Annex 4. This will be applicable to CPAs that have installed similar types of biogas digesters and there is no wide disparity between the income levels of users.

All monitoring shall be coordinated by the CME, SimGas IP BV.

(ii) Target Population

The target population for the application of monitoring procedure will be the households/SMEs/communities in which biogas systems have been installed, as identified through the centralised record-keeping database managed by the CME.

(iii) Sampling method

The sampling method and the desired precision/expected variance are outlined in section E.7.2. of the PoA-DD.

(iv) Sample size

The formula and method for calculating the sample size is outlined in section E.7.2. of the PoA-DD.

(v) Sampling frame

The sampling frame is outlined in section E.7.2. of the PoA-DD.

b) Data to be collected

(i) Field measurements

Field measurement objectives and data to be collected are listed in section E.7.1 of the PoA-DD. The parameters to be monitored within each CPA will depend on the methodologies applied, as outlined

below. A weighted-average approach will be applied based on the population sizes of the sampled clusters.

AMS-I.E (version [*number*]):
1. Yearly check by sampling (90/10) if the biogas systems are still operating.
2. Yearly check through a survey that non-renewable biomass previously used by those that start using a digester, is not now used by other households/SMEs/communities that previously used renewable biomass.
3. Confirmation that non-renewable biomass is displaced or substituted at the users included under 1 above.

Where AMS-I.E applies, operational data that installed systems are still in use will be. These data will be collected through a biogas data logger which checks if the gas is flowing in a set time interval, or through a survey to check that the systems are operational, conducted via sampling. Through a Monitoring Survey users will be asked how much biomass is used for cooking after the installation of the biodigesters. Leakage will be accounted for applying the default [*number*] m^3 biogas leaked per 1 m^3 biogas produced, in accordance with the guidance provided by AMS-I.E version [*number*], paragraph [*number*]: "*Alternatively, B_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required.*"

AMS-I.I (version [*number*])
4. Yearly check by sampling (90/10) if the biogas systems are still operating.
5. At least five campaigns[14] per biodigester type will be carried out per year to account for the total biogas supplied to the thermal energy equipment ($BS_{k,y}$)

Where AMS-I.I applies, operational data that installed systems are still in use will be. These data will be collected through a biogas data logger which checks if the gas is flowing in a set time interval, or through a survey to check that the systems are operational, conducted via sampling. A measure of the biogas throughput will be quantified through a direct measure from a biogas flow meter, applied in campaigns. At least five campaigns (defined as continuous monitoring over a period of at least one month) will be applied per digester type. As such, at least five installations per digester type will be monitored for a period of one month each on an annual basis.

AMS-III.R (version [*number*])
6. Estimating the average annual hours of operation of a system using survey methods
7. Annual recording of operating systems using survey methods
8. Survey methods are used to determine the annual average animal population (NLT), the amount of waste/animal manure generated on the farm and the amount of waste/animal manure fed into the biogas system.
9. The proper soil application (not resulting in methane emissions) of the final sludge verified on a sampling basis.
10. The baseline manure handling practice at a sample of biodigester users. These exact data will substitute MCF_j and $MS\%_{Bl,j}$ currently estimated in the SCC-CPA-DD.

[14] Continuous measurement made for at least one month at a single digester is considered as a campaign.

Where AMS-III.R applies, operational data that installed systems are still in use will be collected. These data will be collected through a biogas datalogger which checks if the gas is flowing in a set time interval, or through a survey to check that the systems are operational, conducted via sampling. Average annual hours of operation will be determined through asking users how many days a year they use the biodigesters, and for how many hours per day, on average, they cook using biogas. Through a Manure Management Survey, part of the Monitoring Survey, the CME will also ask users to estimate their annual average animal population, as well as to estimate the quantity of manure generated on the farm and the quantity fed into the system. Users will also be asked to detail the methods used to apply the final sludge to soil.

Upon sale of the biodigester installations, and associated accessories, the user will sign a Sales Contract, and upon commissioning, a Commissioning Protocol, as detailed in section A.4.4.1 of the PoA-DD. The sales and commissioning persons shall be responsible for ensuring that all data are complete and accurate within respective documents. Hard copies of both documents will be kept at the office of the CME, and all data entered into a central record keeping database.

The record keeping database will be used to record the results of all monitoring, thereby avoiding double counting, with all data stored to be kept for at least two years after the crediting period or the last issuance of CERs for the project activity.

(ii) Quality Assurance/Quality control

Training will be given to staff responsible for the data collection system on the management system to be put in place as part of the overall PoA. This will include:

- Data to be recorded in the database (as per A.4.4.1 of the PoA-DD) and how to complete the sales contract and installation record correctly;
- How to identify the serial number on a biogas systems;
- How to fill out and where to submit copies of the sales contract, installation records and invoice and any associated documentation;
- Procedure for dealing with a change in serial number, address or capacity of a biogas system;
- Monitoring procedures, in accordance section A.4.4. of the PoA-DD.

In order to ensure that no methane emissions result from the application of slurry to soils under AMS-III.R staff will also receive training to be passed to biogas digester users during commissioning. This includes specifications that the slurry, once removed from the biogas digester, must be stored in a reservoir of less than 1 m in depth[15].

On completion of training, trained staff will receive a letter confirming their attendance. The name, company and contact details of all attendees will be recorded as part of the CME's PoA database. This will be used to confirm that the training has been completed and that staff is qualified to carry out the data collection as required under the PoA.

In order to minimise errors, a quality control and assurance strategy plan will be established. This strategy includes a planning phase in which there is a clear definition of the target population, of the issues and variables to be investigated, of the sampling frame and sample size, a distribution and random sample selection in the different strata of the population, and the design of a questionnaire that reflects the

[15] Exceeding these parameters is assumed to result in methane emissions as specified in AMS-III.R.

objectives of the survey and facilitates field operations and information processing. The team who will carry out the sampling survey will be appropriately selected to have previous field experience in performing similar surveys.

In order to minimise errors, all personnel conducting field measurements, both for the collection of baseline data and annual monitoring of CPAs, on behalf of the programme will receive training on the procedures to be used for data collection, including the format in which data should be collected, project background, basic functioning of the biogas systems, the application of slurry to soil and record-keeping system for the quantity of manure fed into the system and any other relevant project background. Response rates will be maximised by contacting all randomly-selected biogas system users beforehand to arrange a practical site visit date and sampling over the minimum required number to compensate for any non-responses. In cases where participants refuse to participate in the monitoring, the reason shall be documented in the CME's programme database. The CME will explain that monitoring is part of the requirements of the programme and try to arrange an alternative date for a site visit, or carryout monitoring with another member of the household/SME/community. The programme database will have a provision for recording any monitoring carried out in reference to the serial number of the installed system.

Calibration of the data logger
Prior to field dispatch of the data logger, the equipment will be checked for minimum flow sensitivity. This check ensures that the data logger functions properly and has sensitivity suitable for use in conjunction with low-flow biogas appliances. When the data logger is commissioned and each time the batteries are replaced, the software is initialised. Initialisation is carried out using the custom application developed for data collection, which runs on a mobile phone and communicates with the data logger by means of near field communication. During initialisation, the application recalibrates the data logger's internal real-time clock (RTC) to match that of the mobile phone. The data logger will continue to keep track of time and correlate biogas usage data to specific dates using the RTC. The RTC has its own power source to keep track of time even if the batteries in the data logger die, but the initialisation process provides an extra calibration process to ensure that the RTC is accurate.

(iii) Analysis
Data will be used for the preparation of monitoring reports for each CPA or a group of similar CPAs. The results of all monitoring will be entered into the CME's management database. Where it is found that an installed biogas digester is no longer in use, the installation will be removed from inclusion in the CPA.

c) Implementation plan
SimGas IP BV is responsible for the production of annual monitoring reports, following the criteria outlined in section E.7 and E.7.1. Sampling will be carried out following the *Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 4) in accordance with CDM requirements. A precision/confidence of 90/10 will be applied, in accordance with the requirements of the methodologies above.

All sampling efforts will be conducted by qualified personnel who have undergone training as part of the programme. They will be issued with a certificate confirming their attendance at any training and their qualification to complete the monitoring. A paper copy of the certificate will also be kept by the CME. Any samplers will be required to speak the native language(s) in which biogas systems have been implemented, allowing for full understanding of any responses given by users, and any questions therein.

The first sampling effort for each CPA shall be carried out one year after inclusion in the PoA, and each subsequent year thereafter. If sampling is to be carried out for a group of CPAs, monitoring may be carried out any time before the annual deadline for each CPA to be included in the sampling effort, and should be conducted annually thereafter. The date of all monitoring shall be recorded in the CPA database.

d) Data Storage

The baseline data collection for the three applicable methodologies is as follows:

- Baseline data for AMS-I.E will be established for each household/SME/community *ex-ante* on the CPA level. This will be gathered through data collected from official baseline surveys, reports or statistical databases.
- Baseline data for AMS-I.I. presented in the respective CPA-DDs will be estimated *ex-ante* through data collected from official baseline surveys, reports or statistical databases, but will be confirmed *ex-post* through the monitoring of $BS_{k,y}$, as outlined above.
- Baseline data for AMS-III.R presented in the respective CPA-DDs will be estimated *ex-ante* through data collected from official baseline surveys, reports or statistical databases, but will be confirmed *ex-post* through a Manure Management Survey, which will be performed upon commissioning at the users. A randomly selected sample of these will serve to establish MCF_j *ex-post.*

Quality control procedures and sampling efforts conducted by the qualified personnel are outlined in section E.7.2. of the PoA-DD.

In accordance with the requirements set forth in the respective methodologies, where applicable the sample size will be selected following a 90% confidence interval and a 10% margin of error (90/10).

The following tables provide an overview of the parameters that will be monitored:

<table>
<tr><td>Data / Parameter:</td><td>N</td></tr>
<tr><td>Data unit:</td><td>[units]</td></tr>
<tr><td>Description:</td><td>Number of biogas systems commissioned</td></tr>
<tr><td>Source of data to be used:</td><td>CME database</td></tr>
<tr><td>Value of data applied for the purpose of calculating expected emission reductions in section B.5</td><td>Ex-ante estimate of the number of biogas digesters to be installed based on the CPA implementer’s projections.
<table>
<tr><td>Type
Date</td><td>Manure-fed</td><td>Organic waste-fed</td></tr>
<tr><td>[date]</td><td>[number]</td><td>[number]</td></tr>
<tr><td>[date]</td><td>[number]</td><td>[number]</td></tr>
<tr><td>[date]</td><td>[number]</td><td>[number]</td></tr>
<tr><td>[date]</td><td>[number]</td><td>[number]</td></tr>
<tr><td>Total</td><td>[number]</td><td>[number]</td></tr>
</table></td></tr>
<tr><td>Description of</td><td>The unique serial number of each installation will be recorded upon</td></tr>
</table>

measurement methods and procedures to be applied:	commissioning and entered into the electronic database, with clear divisions between CPAs.
QA/QC procedures to be applied:	On commissioning of the biogas system the unique serial number of each digester will be recorded, and entered into an electronic database, with clear divisions between CPAs.
Any comment:	Completed as part of the Commissioning Protocol on a continual basis as and when new biogas digesters are added to the programme. Annual record checks will be carried out.

Data / Parameter:	$\mathbf{n_{k,y}}$
Data unit:	%
Description:	Operational rate of the thermal applications installed
Source of data to be used:	CME database
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[*number*]
Description of measurement methods and procedures to be applied:	The CME's database collects a number of key data concerning each implemented biogas system. This includes annual checks of whether the installed biogas system is operational, based on sampling.
QA/QC procedures to be applied:	The operational rate of thermal applications will be monitored annually using sampling methods to satisfy a 90/10 precision/confidence, following the *Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 4).
Any comment:	Completed as part of the Monitoring Survey

Data / Parameter:	$\mathbf{Displacement_{NRB}}$
Data unit:	
Description:	Confirmation of the displacement or substitution of the non-renewable woody biomass at each location.
Source of data to be used:	Annual survey based on sample
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[*number*]
Description of measurement methods and procedures to be applied:	Through an annual Monitoring Survey, the CPA implementer will ask users if their consumption of firewood has changed since the installation of a biodigester, and if so, by how much.
QA/QC procedures to be applied:	This will be monitored annually using sampling methods to satisfy a 90/10 precision/confidence, following the *Standard for Sampling and Surveys for*

	CDM Project Activities and Programme of Activities (EB 69, Annex 4).
Any comment:	Completed as part of the Monitoring Survey

Data / Parameter:	**$HG_{p,y}$**
Data unit:	Number
Description:	Quantity of thermal energy generated by the new renewable energy technology in the project in year *y* (TJ)
Source of data to be used:	Annual monitoring survey based on sample
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[*number*]
Description of measurement methods and procedures to be applied:	As per AMS-I.E., monitoring shall include the amount of thermal energy generated by the new renewable energy technology in the project in year y. This parameter only needs to be monitored in CPAs where B_y is determined from the thermal energy generated in the project activity.
QA/QC procedures to be applied:	This will be monitored annually using sampling methods to satisfy a 90/10 precision/confidence, following the *Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 4).
Any comment:	Completed as part of the Monitoring Survey. This parameter only needs to be monitored in CPAs where B_y is determined from the thermal energy generated in the project activity.

Data / Parameter:	**$BS_{k,y}$**
Data unit:	tonne
Description:	The net quantity of renewable biogas consumed by the thermal application *k* in year *y*
Source of data to be used:	Measurement campaign
Value of data applied for the purpose of calculating expected emission reductions in section B.5	
Description of measurement methods and procedures to be applied::	In accordance with the monitoring requirements of AMS-I.I, at least five campaigns per digester type shall be carried out in each year of the crediting period. Continuous measurement made for at least one month at a single digester is considered as a campaign.
QA/QC procedures to be applied:	
Any comment:	Completed as part of Monitoring Survey; monitored in campaigns.

Data / Parameter:	**MCF_j**
Data unit:	%
Description:	Methane conversion factor for each manure management system j

Source of data to be used:	Baseline survey completed on commissioning of installations
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[*value*]
Description of measurement methods and procedures to be applied::	Upon commissioning of the biogas system, users will be asked to take part in a Manure Management Survey, as part of the baseline survey. Questions regarding the exact manure management practice applied prior to the biogas system usage will be included, based on IPCC terminology. A randomly selected sample of these will serve to establish MCF_j *ex-post*.
QA/QC procedures to be applied:	
Any comment:	Will not be monitored continually, but only assessed once on commissioning of the biogas system through the Baseline Survey.

Data / Parameter:	**$MS\%_{Bl,j}$**
Data unit:	Number
Description:	Fraction of manure handled in the baseline animal manure management system *j*
Source of data to be used:	Baseline survey completed on commissioning of installations
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[*percentage*]%, [*livestock type*]
Description of measurement methods and procedures to be applied::	Upon commissioning of the biogas system, users will be asked to take part in a Manure Management Survey, as part of the baseline survey. Questions regarding the type of livestock handled will be included. A randomly selected sample of these will serve to establish $MS\%_{Bl,j}$ *ex-post.*
QA/QC procedures to be applied:	This parameter will be established using sampling methods to satisfy a 90/10 precision/confidence, following the *Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 4).
Any comment:	Will not be monitored continually, but only assessed once on commissioning of the biogas system through the Baseline Survey

Data / Parameter:	**OP_{hours}**
Data unit:	Hours
Description:	The average annual hours of operation of a system using survey methods.
Source of data to be used:	Annual monitoring survey
Value of data applied for the purpose of calculating expected emission reductions in	[*number*]

section B.5	
Description of measurement methods and procedures to be applied::	As part of the monitoring survey, households/communities/SMEs will be asked the average annual hours of operation of the installed biogas stoves.
QA/QC procedures to be applied:	All data will be recorded alongside the unique serial number of the digester installations. This will be monitored annually using sampling methods to satisfy a 90/10 precision/confidence, following the *Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 4).
Any comment:	Completed as part of Monitoring Survey

Data / Parameter:	$N_{da,y}$
Data unit:	-
Description:	Number of days animal is alive in farm in year *y*
Source of data to be used:	Annual Monitoring Survey
Value of data applied for the purpose of calculating expected emission reductions in section B.5	365 (this value will be used for ex-ante calculation purposes, the real data will be determined through annual surveys and be verified in the ERs verification process of the CPA)
Description of measurement methods and procedures to be applied::	Will be monitored on a sampling basis.
QA/QC procedures to be applied:	The number of days animals are alive will be monitored annually using sampling methods to satisfy a 90/10 precision/confidence, following the *Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 4).
Any comment:	This survey will be carried out annually.

Data / Parameter:	$N_{p,y}$
Data unit:	-
Description:	Number of animals produced annually of type LT for the year *y*
Source of data to be used:	Annual Monitoring Survey
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Different values have been applied from the baseline survey.
Description of measurement methods and procedures to be applied::	Will be monitored on a sampling basis.
QA/QC procedures to	The number will be monitored annually using sampling methods to satisfy a

be applied:	90/10 precision/confidence, following the *Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 4).
Any comment:	This survey will be carried out annually.

Data / Parameter:	$N_{LT,y}$
Data unit:	Number
Description:	Annual average number of animals of type LT in year *y* (population)
Source of data to be used:	Annual monitoring Survey
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[*number*] (this value will be used for ex-ante calculation purposes, the real data will be determined through annual surveys and be verified in the ERs verification process of the CPA)
Description of measurement methods and procedures to be applied::	For annual monitoring purposes, a count of the number of animals in category LT in year *y* will be performed.
QA/QC procedures to be applied:	This will be monitored annually using sampling methods to satisfy a 90/10 precision/confidence, following the *Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 4).
Any comment:	This survey will be carried out annually.

Data / Parameter:	$WST_{generation, y}$
Data unit:	Tonne
Description:	Amount of waste/animal manure generated on the farm in year *y*
Source of data to be used:	Manure Management Survey, performed as part of the annual Monitoring Survey
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[*number*]
Description of measurement methods and procedures to be applied::	The amount of animal waste generated by livestock shall be calculated as the product of the number of animals in the household/community/SME and the default VS values as per 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
QA/QC procedures to be applied:	The number of livestock will be monitored annually using sampling methods to satisfy a 90/10 precision/confidence, following the *Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 4).
Any comment:	This survey will be carried out annually.

Data / Parameter:	$WST_{fed, y}$
Data unit:	Tonne
Description:	Amount of waste/animal manure fed into the system
Source of data to be	Manure Management Survey, performed as part of the annual Monitoring

used:	Survey
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[*number*]
Description of measurement methods and procedures to be applied::	On commissioning users will be shown how to record the quantity of manure deposited into the system. Users will be provided with a bucket and required to tally the number of buckets of manure loaded into the system on a check sheet as a record. The total manure fed to the digester will be limited by the capacity of the digester.
QA/QC procedures to be applied:	This will be monitored annually using sampling methods to satisfy a 90/10 precision/confidence, following the *Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 4).
Any comment:	This survey will be carried out annually.

Data / Parameter:	**Soil application**
Data unit:	
Description:	The proper soil application of the final sludge. Sludge should be handled aerobically to ensure no methane emissions result.
Source of data to be used:	Manure Management Survey, performed as part of the annual Monitoring Survey
Value of data applied for the purpose of calculating expected emission reductions in section B.5	
Description of measurement methods and procedures to be applied::	Will be monitored on a sampling basis.
QA/QC procedures to be applied:	On commissioning of biodigester systems, users will be provided with training as to the proper application of sludge to soil to avoid methane emissions. The application of soil will be surveyed annually using sampling methods to satisfy a 90/10 precision/confidence, following the *Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities* (EB 69, Annex 4) in accordance with CDM requirements.
Any comment:	This survey will be carried out annually.

Data / Parameter:	**GWP_{CH4}**
Data unit:	**-**
Description:	Global Warming Potential of methane
Source of data used:	IPCC
Value of data applied for the purpose of calculating expected emission reductions in	[*number*]

section B.5	
Description of measurement methods and procedures to be applied::	-
Any comment:	All future emission reductions and removals shall be calculated using the global warming potentials (GWPs) adopted by the Conference of the Parties serving as the meeting of the Parties at its seventh session, in accordance with decision 4/CMP.7 and EB 69, Annex 3. This decision references the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) as the source to be used for GWPs during the second commitment period of the Kyoto Protocol.

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:

☐ Please tick if this information is provided at the PoA level. In this case sections C.2. and C.3. need not be completed in this form.

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

>>

The project activity involves the introduction of small-scale biogas systems, which will reduce the use of kerosene and non-renewable biomass for cooking purposes. The environmental impacts of the project activity are therefore expected to be largely positive. No negative impacts are expected. The project activity will act in accordance with all relevant laws and regulations and principles of good practice, as outlined below:

The project proponent will ensure that all biogas systems brought into the country for use comply with [*describe relevant local laws and regulation*]

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

>>

[*describe relevant local laws and regulation*]

SECTION D. Stakeholders' comments

>>

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

☐ Please tick if this information is provided at the PoA level. In this case sections D.2. to D.4. need not be completed in this form.

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

>>

Identification of stakeholders

[*Insert details*]

How comments were invited

[*Insert details*]

D.3. Summary of the comments received:

>>

[*Insert details*]

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

>>

[*Insert details*]

Annex 1

CONTACT INFORMATION ON ENTITY/INDIVIDUAL RESPONSIBLE FOR THE SMALL-SCALE CPA

Organization:	
Street/P.O.Box:	
Building:	
City:	
State/Region:	
Postfix/ZIP:	
Country:	
Telephone:	
FAX:	
E-Mail:	
URL:	
Represented by:	
Title:	
Salutation:	
Last Name:	
Middle Name:	
First Name:	
Department:	
Mobile:	
Direct FAX:	
Direct tel:	
Personal E-Mail:	

Organization:	
Street/P.O.Box:	
Building:	
City:	
State/Region:	
Postfix/ZIP:	
Country:	
Telephone:	
FAX:	
E-Mail:	
URL:	
Represented by:	
Title:	
Salutation:	
Last Name:	
Middle Name:	
First Name:	
Department:	

Mobile:	
Direct FAX:	
Direct tel:	
Personal E-Mail:	

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

[*add information*]

Annex 3

BASELINE INFORMATION

[*add information*]

Annex 4

MONITORING INFORMATION

[*add information*]

- - - - -