

**SMALL-SCALE CDM PROGRAMME ACTIVITY DESIGN DOCUMENT FORM
(CDM-SSC-CPA-DD) - Version 01**



NAME /TITLE OF THE PoA: Vietnam National Biogas Programme



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

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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).

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

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

Title: Vietnam National Biogas Programme (PoA) – “CPA name” (CPAxx)

Ver.: 6.1

Date: xx/xx/xx

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

The objective of the proposed small-scale CDM Programme of Activities (hereafter referred to as “the PoA”) is to reduce GHG emissions from fossil fuels used by installing biogas digesters in households in Vietnam. The PoA will be coordinated and managed by the Ministry of Agriculture and Rural Development (MARD).

Through the CPA under the PoA the heat energy needed for cooking in households will come from biogas and replace fossil fuels. The GHG emission from the fossil fuel combustion will be reduced as a result.

The CPA will contribute to the sustainable development of Vietnam in the following ways:

- i) Domestic biogas digesters contribute to economic development because:
 - The expenses for domestic energy are significantly reduced.
 - The labor required to maintain traditional energy systems (such as firewood collection) can be used in more directly economically productive ways.
 - Substitution of petroleum products will reduce the countries foreign exchange demand.
 - Application of bio-slurry increases the yield and reduces the need` -and expenses- for synthetic fertilizer.
 - A vibrant biogas sector creates significant employment and related economic activities, particularly in rural areas.
- ii) Domestic biogas digesters contribute to social development because:
 - The reduction in domestic workload, particularly for women and children, increases opportunities for education and other social activities.
 - Respiratory illnesses resulting from indoor air pollution and gastro-enteric diseases as a result of poor sanitary conditions reduce significantly.
 - In rural areas, biogas digesters often initiate innovation (education, sanitation, agriculture).
 - Increase awareness of alternative farming and animal husbandry practices and environmental impacts of behavior.
- iii) Domestic biogas digesters contribute to environmental development as follows:
 - Substituting conventional fuels and synthetic fertilizer, and changing traditional manure management systems, biogas installations reduce the emission of greenhouse gasses significantly.
 - Bio-slurry improves soil texture, thus reducing degradation, and reduces the need for further land encroachment.
 - Reduction of firewood use contributes to checking deforestation and reduces forest encroachment.

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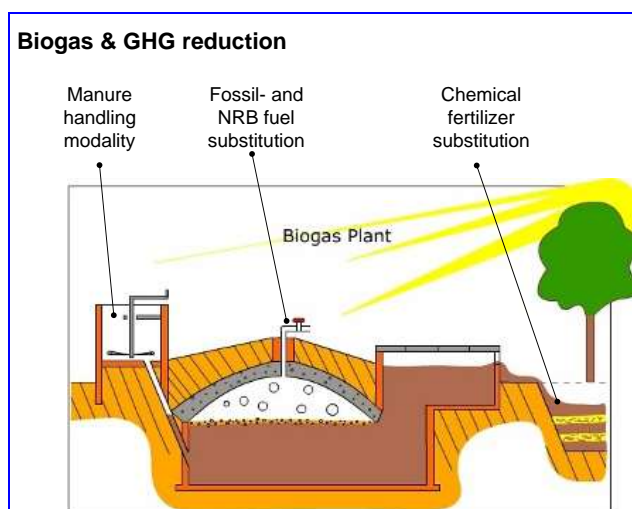
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- Improved manure management practices reduce ground and surface water pollution and odor and improve aesthetics.

The CPA is supporting the installment of biogas units in households with livestock (cattle, buffalos or pigs). In this way the manure management type is improved leading to less GHG emissions and improved hygienic and environmental living conditions. The installed biogas units are of fixed dome type. The produced biogas is used to replace conventional fuels like coal, LPG and kerosene for cooking. The households who are in possession of only two cows or seven pigs can reach their daily need of energy for cooking from the biogas unit. Apart from biogas, the slurry produced from the digestion process can replace fertilizers.

The installed biogas units contribute to the reduction of GHG in 3 ways: 1) the manure management system which entails less methane emissions is introduced; 2) the produced biogas replaces conventional fossil fuels; and 3) the produced slurry replaces chemical fertilizer. However, due to the lack of data and for the simplification reasons, the emission reductions from reduced consumption of agricultural residues, from manure management and from the fertilizer substitution will not be accounted for under this PoA, which is very conservative.



The project involves the installation and implementation of model types KT1 and KT2 (model A and B) domestic biogas installations or a different type of biogas plant provided that these are approved by MARD³ and are equal to or less than 25 m³ of installed capacity. The technology has been developed in the 1990s in Vietnam by the Institute of Energy and roots in earlier Chinese and German design. Design, construction and fitting has been standardized in MARD's "standards for small size biogas plants # 10 TCN 497 – 2005 – Part 6".

The hemi-spherical fixed dome plants are made on-site, entirely out of brick work. The materials required for construction, including bricks, cement, iron bars, fitting materials etc. are all locally manufactured. Basic appliances, which are also widely available, consist of gas pipe, main valves,

³ Provided that the model is approved by MARD and included in the MARD biogas standard.

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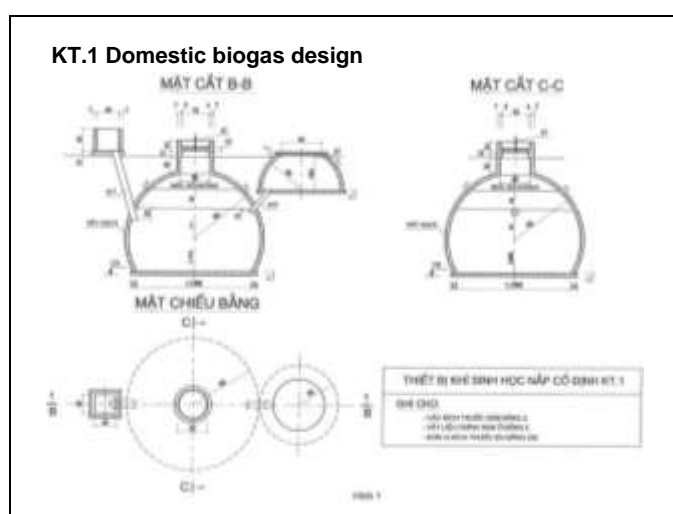
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stoves and gas lamps. Upon the requirement of the households, biogas plants range in digester size from 4m³ to 25m³ with a current average size of 8m³ to 10m³.

Both designs need a fair amount of construction skills, but have otherwise proven to be robust and virtually maintenance-free. With feeding of on-farm produced dung of pigs, cattle or buffalo to the digester, biogas will be produced to meet the energy demand of the household. The residue of the digestion process can be used as organic fertilizer.

The KT1 model is a further development of the model NL.5 of the Institute of Energy and has been accepted widely in the programme. The KT1 digester implemented in this PoA has a maximum digester volume of 25 m³.



The KT2 model follows the TG-BP design as applied in the Mekong Delta by the Can Tho University. Similar to KT1, the KT2 digester implemented in this PoA has a maximum digester volume of 25 m³. There are two models of KT2 built, KT2A and KT2B. KT2B is a modified version of KT2A, and currently the only model promoted by the programme⁴

⁴ Denoted in the database as KT2

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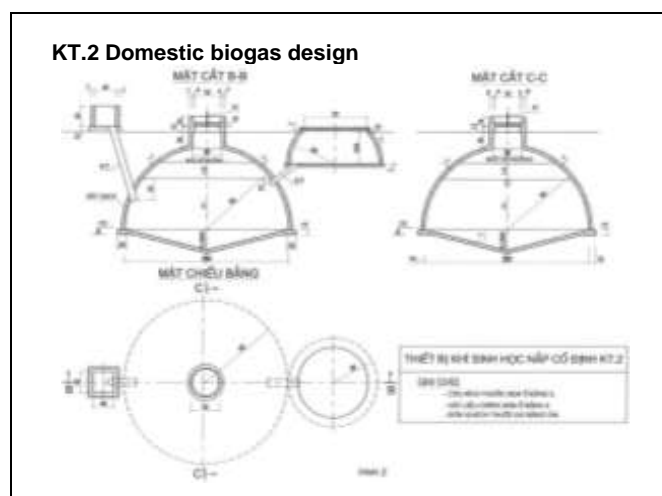


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Although the KT1 model optimizes material economy best, it needs deeper excavation. For areas with a high water table or rocky ground, the KT2 is then better suited.

For both models, design variations allow for the type of manure (pig and cattle/buffalo), the dilution ratios of water and manure (1/1, 2/1 and 3/1) and the specific climatic conditions (the North with a cold winter and the South with a warm winter).The programme uses an elaborate design manual, combining over 100 design variations.

Insert here: Key technical parameters of the applied technology, expected lifetime and construction period.

The project involves energy production from biogas of the Type I.C. “Thermal energy production with or without electricity” (version 18). The project thus falls under sectoral scope 1.

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

CPA implementer is the Ministry of Agriculture and Rural Development, who is the project participant of the PoA.

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
Viet Nam	Ministry of Agriculture and Rural Development (MARD)	no

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

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

A.4.1.1. Host Party:

Viet Nam

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

Biogas plants are installed in the backyards of the participating households, the aggregate of these units encompasses the project boundary. The project boundary of CPA_{xx} are the aggregates of these units installed and commissioned between _{xx/xx/xx} and _{xx/xx/xxxx} in _{xx} provinces described in the following table

Insert here a table with provinces included in the CPA

Insert here a map of the CPA

Each biogas plant installed under the CPA will be uniquely identified. The MARD will keep the following information for all the biogas plants to be installed under the CPA in order to identify the location of the systems, thus the information allows the unique identification of the CPA:

- Name of the head of household where the biogas units was installed;
- Head of household ID number;
- Unique plant ID code (PPP/DDD/CCC/xxx); (Province code, District code, Commune code/number).
- Date of commissioning;
- Name and ID code of mason that built the biogas plant;

See section B.6 for other data is stored of each biogas plant. A template of such a list is provided below:

Nr .	Name and ID of the biogas owner	Province/ District/ Commune	Unique registration number	Type*	Date of commissioning
1					
2					

* Biogas plant type, KT1, KT2 or other

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

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

Starting date is xx/xx/xxxx

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

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 date of commissioning of each biogas plant (but not before the date of inclusion of the CPA in the registered CPA)

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

7 years

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

This will be defined in the specific CPAs. It depends on the number of biogas units installed.

Year	Estimation of annual emission reductions in tonnes of CO₂e
DD/MM/YYYY	Xxxx
DD/MM/YYYY	Xxxx
DD/MM/YYYY	Xxxx
DD/MM/YYYY	Xxxx
DD/MM/YYYY	Xxxx
DD/MM/YYYY	Xxxx
DD/MM/YYYY	Xxxx
Total estimated reductions (tonnes of CO₂e)	Xxxx
Total number of crediting years	7 years
Annual average of the estimated reductions over the crediting period (tCO₂e)	Xxxx

A.4.5. Public funding of the CPA:

Public Funding. The proposed PoA receives public funding from the following sources:

- Government of Vietnam,

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- Provincial Government from participating provinces
- *(fill in other sources of funding as applicable)*

ODA Diversion. Respective letters from institutions will be made available to the DOE.

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

Based on Guidance for Determining the occurrence of de-bundling under a Programme of Activities (PoA) the CPA of PoA is exempted from performing de-bundling check in case each of the independent biogas digesters included in the CPA of a POA is no greater than 1% of the small scale thresholds defined by the methodology applied, namely 150 kW electric or 450 kW thermal energy installed..

The maximum digester volume eligible for CPA participation has a volume of is 25 m³. The specific thermal output is 0.0997 kW/m³ (see A4.2.2 of PoA-DD); therefore, the thermal capacity is for the largest digester 25 x 0.0997 = 2.49 kW, which is much less than 1% of the SSC threshold of 450 kW thermal. Therefore the CPA of this PoA are exempted from performing the de-bundling check i.e. considered as being not de-bundled component of a large scale activity.

Therefore the **CPA** of this PoA are exempted from performing the de-bundling check i.e. considered as being not de-bundled component of a large scale activity.

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

Each of the units accepted after commissioning is registered in the MARD database under the unique registration number. The MARD database stores these data for all the units installed. Each CPA under the PoA will have an individual database with the following information:

- Name of the head of household where the biogas units was installed;
- Head of household ID number;
- Unique plant ID code (PPP/DDD/CCC/xxx); (Province code, District code, Commune code/number).
- Date of commissioning;

All biogas plants registered in one CPA will be uniquely defined and recorded, thus each CPA is uniquely identified. The MARD will ensure that any biogas units in a new CPA have neither already been registered as a CDM project, nor as a CPA of another PoA.

Ensuring that SSC-CPAs within the proposed PoA do not overlap geographically will prevent double counting of emission reductions. Prior to registering a new SSC-CPA within the proposed PoA, the coordinating/managing entity will check with the UNFCCC CDM project database whether a CDM project activity or CPA of another PoA installing biogas plants has already been registered in the same geographic area.

Given that each SSC-CPA included in the PoA will be identified by geographical location, it is possible to unambiguously identify CPAs or CDM project activities potentially operating in the same

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area. In an instance where a CPA or CDM project activity is already registered in the same geographic area as a proposed SSC-CPA, the coordinating/managing entity will not proceed with the registration of the SSC-CPA. In the instance where a CPA or CDM project activity is requesting registration, is under review or for which review or corrections have been requested, is in the same geographic area as a proposed SSC-CPA, the coordinating/managing entity will wait for these processes to be resolved before proceeding with registration of the new SSC-CPA.

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: Vietnam National Biogas Programme
Ver.: 8.1

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

No.	Eligibility Criteria	Yes/No
1	A new CPA shall have a clearly identified geographical boundary including a time-induced boundary consistent with the geographical boundary of Viet Nam	
2	Each biogas unit installed in a CPA shall have an unique identification number	
3	A new CPA will install biogas technologies (such as KT1 and KT2 or equivalent) that are recognized in the MARD national biogas standard with a maximum digester volume of 25 m ³	
4	Each biogas units installed will be inspected on compliance with the national standard before commissioning to the household	
5	The starting date of a new CPA is identified as the application date of the first household that has built a biogas plant.	
6	A new CPA shall meet the eligibility criteria listed in paragraph 1 to 11 of AMS-I.C version 18 and paragraph 1 to 4 of AMS-I.I version 2	
7	A new CPA shall meet the additionality criteria listed in section A.4.3 and the debundling check in A.4.4.1 of the PoA-DD	
8	A new CPA shall affirm that funding from Annex I parties, if any, does not lead to a diversion of Official Development Assistance (ODA) by supplying a non-ODA diversion declaration.	
9	A new CPA will only install a biogas unit in household that do not have a biogas plant, have livestock and use partially fossil fuels for cooking	

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10	A new CPA will execute a monitoring survey according to monitoring methodology and sampling plan as described in section A.4.4.2 of this PoA-DD	
11	The biogas units installed under a CPA will be approved and registered under the national biogas programme of MARD.	
12	The biogas units under a CPA are to be constructed by the biogas construction teams trained and licensed by MARD.	
13	Households that participate in the CPA have transferred their CER rights to the CME in return for after sales services and support.	

Applicability Condition of AMS I C Version 18

Meth Para	Paragraph	Conclusion on Applicability of the Project
1	This category comprises renewable energy technologies that supply users ₁ with thermal energy that displaces fossil fuel use. These units include technologies such as solar thermal water heaters and dryers, solar cookers, energy derived from renewable biomass and other technologies that provide thermal energy that displaces fossil fuel.	
2	Biomass-based cogeneration systems consisting of steam generator(s) and steam turbine(s) are included in this category. For the purpose of this methodology cogeneration shall mean the simultaneous generation of thermal energy and electrical energy in one process. Project activities that produce heat and power in separate element processes (for example, heat from a boiler and electricity from biogas engine) do not fit under the definition of cogeneration project.	
3	Emission reductions from a biomass cogeneration system can accrue from one of the following activities: (a) Electricity supply to a grid; (b) Electricity and/or thermal energy (steam or heat) production for on-site consumption or for consumption by other facilities; (c) Combination of (a) and (b).	
4	The total installed/rated thermal energy generation capacity of the project equipment is equal to or less than 45 MW thermal ₂ (see paragraph 6 for the applicable limits for cogeneration project activities).	
5	For co-fired ₃ systems, the total installed thermal energy generation capacity of the project equipment, when using both fossil and renewable fuel shall not exceed 45 MW thermal (see paragraph 6 for the applicable limits for cogeneration project activities).	

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6.	<p>The following capacity limits apply for biomass cogeneration units:</p> <p>(a) If the project activity includes emission reductions from both the thermal and electrical energy components, the total installed energy generation capacity (thermal and electrical) of the project equipment shall not exceed 45 MW thermal. For the purpose of calculating this capacity limit the conversion factor of 1:3 shall be used for converting electrical energy to thermal energy (i.e. for renewable project activities, the maximal limit of 15 MW(e) is equivalent to 45 MW thermal output of the equipment or the plant);</p> <p>(b) If the emission reductions of the cogeneration project activity are solely on account of thermal energy production (i.e. no emission reductions accrue from electricity component), the total installed thermal energy production capacity of the project equipment of the cogeneration unit shall not exceed 45 MW thermal;</p> <p>(c) If the emission reductions of the cogeneration project activity are solely on account of electrical energy production (i.e. no emission reductions accrue from thermal energy component), the total installed electrical energy generation capacity of the project equipment of the cogeneration unit shall not exceed 15 MW.</p>	
7	In case electricity and/or steam/heat produced by the project activity is delivered to another facility or facilities within the project boundary, a contract between the supplier and consumer(s) of the energy will have to be entered into specifying that only the facility generating the energy can claim emission reductions from the energy displaced.	
8	Project activities that seek to retrofit or modify an existing facility for renewable energy generation are included in this category.	
9	The capacity limits specified in the above paragraphs apply to both new facilities and retrofit projects. In the case of project activities that involve the addition of renewable energy units at an existing renewable energy facility, the total capacity of the units added by the project should comply with capacity limits in paragraphs 4 to 6 and should be physically distinct ⁴ from the existing units.	
10	<p>10. Charcoal based biomass energy generation project activities are eligible to apply the methodology only if the charcoal is produced from renewable biomass sources provided:</p> <p>(a) Charcoal is produced in kilns equipped with methane recovery and destruction facility; or</p> <p>(b) If charcoal is produced in kilns not equipped with a methane recovery and destruction facility, methane emissions from the production of charcoal shall be considered. These</p>	

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	emissions shall be calculated as per the procedures defined factor values from peer reviewed literature or from a registered CDM project activity can be used, provided that it can be demonstrated that the parameters from these are comparable e.g. source of biomass, characteristics of biomass such as moisture, carbon content, type of kiln, operating conditions such as ambient temperature.	
11.	If solid biomass fuel (e.g. briquette) is used, it shall be demonstrated that it has been produced using solely renewable biomass and all project or leakage emissions associated with its production shall be taken into account in emissions reduction calculation.	

In order to apply monitoring plan of AMS I I, it is necessary to check the applicability of AMS I.I. Hence, applicability of AMS I I are attached herewith

Meth Para	Paragraph	Conclusion on Applicability of the Project
1	1. This category comprises activities for generation of renewable thermal energy using renewable biomass or biogas for use in residential, commercial, institutional applications (e.g. for supply to households, small farms or for use in built environment of institutions such as schools). Examples of these technologies that displace or avoid fossil fuel use include but are not limited to biogas cook stoves, biomass briquette cook stoves, small scale baking and drying systems, water heating, or space heating systems.	
2	The total installed/rated thermal energy generation capacity of the project equipment is equal to or less than 45 MW thermal.	
3	Each unit (e.g. cook stove, heater) shall have a rated capacity equal to or less than 150 kW thermal. Projects that include units with rated capacity greater than 150 kW thermal may explore AMS I.C “Thermal energy production with or without electricity”.	
4	For the specific case of biomass residues processed as a fuel (e.g. briquettes, wood chips), it shall be demonstrated that: (a) It is produced using solely renewable biomass (more than one type of biomass may be used). Energy use for renewable biomass processing (e.g. shredding and compacting in the case of briquetting) may be considered as equivalent to the upstream emissions	

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	<p>associated with the processing of the displaced fossil fuel and hence disregarded;</p> <p>(b) The “General guidance on leakage in biomass project activities” (attachment C to Appendix B of 4/CMP.1 Annex II) shall be followed;</p> <p>(c) The project participant can monitor the mass, moisture content and NCV of the resulting biomass fuel, through sampling that meets the confidence/precision level of 90/10;</p> <p>(d) Where the project participant is not the producer of the renewable fuel, the project participant and the producer are bound by a contract that shall enable the project participant to monitor the source of renewable biomass to account for any emissions associated with biomass production (as per 4 (b) above). Such a contract shall also ensure that there is no double counting of emission reductions.</p>	
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The proposed SSC-CPA satisfies each of the above criteria and is therefore eligible for inclusion in the PoA.

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

The CPA shall demonstrate additionality by assessing the criteria listed in section A.4.3 of the CDM SSC PoA-DD.

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.

The SSC CPA boundary is the physical, geographical site of the baseline, and project equipment built between **xx/xx/20xx** and **xx/xx/20xx** in the provinces listed in section **xx** producing the renewable energy delineates the project boundary within Viet Nam.

The GHG gas reduced through this CPA is CO₂. The CPA reduces the consumption of fossil fuels for cooking by replacing fossil fuels with biogas from animal manure.

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	Source	Gas	Included	Justification/explanation
Baseline	Thermal energy – use of coal	CO ₂	Yes	Major source of emissions
		CH ₄	No	Excluded for simplification
		N ₂ O	No	Excluded for simplification
	Thermal energy – use of liquid fossil fuels (LPG and kerosene)	CO ₂	Yes	Major source of emissions
		CH ₄	No	Excluded for simplification
		N ₂ O	No	Excluded for simplification
Project activity	Thermal energy – use of coal	CO ₂	Yes	Major source of emissions
		CH ₄	No	Excluded for simplification
		N ₂ O	No	Excluded for simplification
	Thermal energy – use of liquid fossil fuels (LPG and kerosene)	CO ₂	Yes	Major source of emissions
		CH ₄	No	Excluded for simplification
		N ₂ O	No	Excluded for simplification

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B.5. Emission reductions:

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

Data / Parameter:	NCV_{coal}
Data unit:	MJ/kg
Description:	Net calorific value for fuel type “other bituminous coals”
Source of data used:	2006 IPCC Guidelines
Value applied:	25.8
Justification of the choice of data or description of measurement methods and procedures actually applied :	
Any comment:	

Data / Parameter:	NCV_{LPG}
Data unit:	MJ/kg
Description:	Net calorific value for LPG
Source of data used:	2006 IPCC Guidelines
Value applied:	47.3
Justification of the choice of data or description of measurement methods and procedures actually applied :	
Any comment:	

Data / Parameter:	NCV_{kerosene}
Data unit:	MJ/kg
Description:	Net calorific value for kerosene
Source of data used:	2006 IPCC Guidelines
Value applied:	43.8
Justification of the choice of data or description of measurement methods and procedures actually applied :	
Any comment:	

Data / Parameter:	EF_{coal}
Data unit:	tCO ₂ eq./TJ

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Description:	Emission factor for burning other bituminous coals
Source of data used:	2006 IPCC guidelines
Value applied:	94.6
Justification of the choice of data or description of measurement methods and procedures actually applied :	
Any comment:	

Data / Parameter:	EF_{LPG}
Data unit:	t CO ₂ eq./TJ
Description:	Emission factor for burning LPG
Source of data used:	2006 IPCC guidelines
Value applied:	63.1
Justification of the choice of data or description of measurement methods and procedures actually applied :	
Any comment:	

Data / Parameter:	EF_{kerosene}
Data unit:	t CO ₂ eq./TJ
Description:	Emission factor for burning kerosene
Source of data used:	2006 IPCC guidelines
Value applied:	71.9
Justification of the choice of data or description of measurement methods and procedures actually applied :	
Any comment:	

Data / Parameter:	N_{k,i}
Data unit:	–
Description:	Number of biogas units k commissioned in CPA _j
Source of data used:	CPA _j database
Value applied:	
Justification of the choice of data or description of measurement methods and procedures actually applied :	

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Any comment:

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

Baseline emissions

The baseline emissions are estimated using AMS-I.I version 2. The baseline scenario for a CPA is that fossil fuels are used for cooking in households participating in the biogas programme. The simplified baseline is the amount of fossil fuel consumed multiplied with the emission factor of each of the fossil fuels.

Step 1: Identification of the fuel consumption

Step 2: Identification of the Net Calorific Value and the Emission factors for each of the fuels;

Step 3: Ex-ante calculation of the baseline emissions per household (plant).

Step 1: The consumption of fossil fuels is calculated as the average value of the control group with similar characteristics as the biogas households.

Table 7: Yearly consumption of fossil fuels per household of the control group

Fossil fuel	Yearly consumption per household (kg)
Coal	xxxx
LPG	xxxx
Kerosene	xxxx

Step 2: Reliable national or local data is not available and hence both the Net Calorific Value (NCV) for each of the fuels, as well as the Emission Factors (EF) is taken from the 2006 IPCC Guidelines. The coal types used in Vietnam are usually coal cake and coal honeycomb, which under the IPCC classification correspond to “other bituminous coal”⁵. The NCV and EF of three fossil fuels are presented in Table 8.

Table 8: Net Calorific Values and Emission Factors of fossil fuels

Fuel type	NCV (MJ/kg)	EF (t CO ₂ eq./TJ)
Coal	25.8	94.6
LPG	47.3	63.1
Kerosene	43.8	71.9

Step 3: The baseline emissions per household in the control group are calculated taking account the formula:

$$BE_y = \sum_j FC_{BL,k,j} * NCV_j * EF_{FF,j}$$

⁵ The information about the coal type used for residential consumption in Vietnam can be found at the IEA statistical data website: http://www.iea.org/textbase/stats/coaldata.asp?COUNTRY_CODE=VN

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Where:

BE_y Baseline emissions of the control group household during the year y (tCO₂)

i Index for the type of baseline fossil fuel consumed

$FC_{BL,k,j}$ Annual consumption of baseline fossil fuel i (mass or volume unit)

NCV_j Net calorific value of the fossil fuel i (GJ/mass or volume unit)

$EF_{FF,j}$ CO₂ emission factor of fossil fuel i (tCO₂/GJ)

The total baseline emissions are then the sum of all baseline emissions from each of the fossil fuels, this is illustrated in the next table:

Table 9: Ex-ante calculation of baseline emissions per household per year

Fuel type	Yearly consumption per household (kg)	NCV (MJ/kg)	EF (t CO ₂ /TJ)	Baseline emissions (tCO ₂)
Coal	xxxx	25.8	94.6	xxxx
LPG	xxxx	47.3	63.1	xxxx
Kerosene	xxxx	43.8	71.9	xxxx
Total				xxxx

Ex-ante estimation of the baseline emissions per household is **xxxx** tCO₂ eq. per year.

Project emissions

According to AMS-I.I v02, in case the produced biogas does not replace all of the fossil fuels, these emissions have to be accounted for project emissions.

The calculation procedure has two steps:

Step 1: Identify the amount of fossil fuels consumed in project case;

Step 2: Calculate the project emissions per household.

Step 1: The consumption of the fossil fuels will be estimated through surveys on a statistically sound for each the CPA. The sampling method is described in the monitoring section.

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Table 10: Yearly consumption of fossil fuels per household in project situation

Fossil fuel	Yearly consumption per household (kg)
Coal	XXXX
LPG	XXXX
Kerosene	XXXX

Step 2: The project emissions from cooking fuels are calculated taking account the formula:

$$PE_{y,j} = \sum_j FP_{i,y,j} * NCV_i * EF_{CO_2,i}$$

Where:

$PE_{y,j}$ Project emissions per household in CPAj in year y;
 $FP_{i,y,j}$ Amount of fossil fuel i consumed in project case in CPAj in year y
 NCV_i Net Calorific value of the fuel i
 $EF_{CO_2,i}$ Emission factor for the fuel type i

The next table summarizes the project emissions

Table 11: Ex-ante calculation of project emissions per household per year

Fuel type	Yearly consumption per household (kg)	NCV (MJ/kg)	EF (t CO₂/TJ)	Baseline emissions (tCO_{2w})
Coal	XXXX	25.8	94.6	XXXX
LPG	XXXX	47.3	63.1	XXXX
Kerosene	XXXX	43.8	71.9	XXXX
Total				XXXXX

Ex-ante estimation of the project emissions per household is
XXXX tCO₂ eq. per year.

Leakage emissions

Methodology AMS-I.C requires leakage calculation in cases: (1) if the energy generating equipment is transferred from another activity; and (2) in case of collecting/processing/transportation of biomass residues is outside the project boundary. Since the programme set-up does not include any of the two no leakage emissions are accounted for.

Emission reductions

Emission reductions are calculated as the difference between baseline, obtained from the control group, and project emissions, obtained from the CPj1 participations times the CPAj population and the performance ratio:

$$ER_{y,j} = (BE_{y,j} - PE_{y,j}) * N_{k,j} * n_{k,y,j}$$

Where:

$ER_{y,j}$ = Emission reductions in CPAj in year y
 $BE_{y,j}$ = Baseline emissions per control group household in year y belonging to CPAj

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$PE_{y,j}$ = Project emissions in year y in CPAj
 $N_{k,j}$ = Number of biogas units commissioned in CPAj
 $n_{k,y,j}$ = Performance ratio of the biogas units in year y in CPAj

The next table summarizes the baseline, project and emission reductions at an assumed performance ratio of **xxx%**

Table 12: Ex-ante calculation of project emissions per household and for the CPAj population per year

Item	$BE_{y,i}$ (tCO _{2w})	$PE_{y,i}$ (tCO _{2w})	$ER_{y,i}$ (tCO _{2w})
Household	xxxx	xxxx	xxxx
CPA population (xxxx households)	xxxx	xxxx	xxxx

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

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)
20xx	XXX	X	X	X
20xx	XX	X	X	X
20xx	X	X	X	X
20xx	X	X	X	X
20xx	X	X	X	XX
20xx	X	X	X	X
20xx	X	X	X	
Total (tonnes of CO ₂ e)	x	x	X	X

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

B.6.1. Description of the monitoring plan:

The MARD will keep all monitoring data for a period of at least two years after the crediting period of CPAj.

The SSC WG declared that household biogas projects may use the monitoring procedures of AMS-I.I (SSC WG 34)⁶. Both the baseline and project emissions shall be determined by estimating the remaining fossil fuel consumption ex-post using survey methods. The emission reductions will then be estimated by subtracting the projects emissions from the baseline emissions.

⁶ <http://cdm.unfccc.int/UserManagement/FileStorage/7SWAZIE8F4YDT3BCV96KN2HLUJ5G01>

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The monitoring plan is described in detail after the following tables with values that will be monitored.

Data / Parameter:	FC_{BL,coal,i,y}
Data unit:	Kg
Description:	Consumption of coal per household in year y of the control group belonging to CPA _j
Source of data to be used:	Control group database of CPA _j
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:	The data about the baseline consumption is collected via questionnaires amongst households without the project equipment that use fossil fuels for cooking and have the same characteristics as the project participants, taking into account these parameters (e.g. average income level, household occupancy, food or heating habits, climate/temperature zone, availability, price and type of fuel used).
QA/QC procedures to be applied:	
Any comment:	

Data / Parameter:	FC_{BL,LPG,i,y}
Data unit:	Kg
Description:	Consumption of LPG per household in year y of the control group belonging to CPA _j
Source of data to be used:	Control group database of CPA _j
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:	The data about the baseline consumption is collected via questionnaires amongst households without the project equipment that use fossil fuels for cooking and have the same characteristics as the project participants, taking into account these parameters (e.g. average income level, household occupancy, food or heating habits, climate/temperature zone, availability, price and type of fuel used).
QA/QC procedures to be applied:	
Any comment:	

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Data / Parameter:	FC_{BL,kerosene,i,y}
Data unit:	Kg
Description:	Consumption of kerosene per household in year y of the control group belonging to CPA <i>j</i>
Source of data to be used:	Control group database of CPA _j
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:	The data about the baseline consumption is collected via questionnaires amongst households without the project equipment that use fossil fuels for cooking and have the same characteristics as the project participants, taking into account these parameters (e.g. average income level, household occupancy, food or heating habits, climate/temperature zone, availability, price and type of fuel used).
QA/QC procedures to be applied:	
Any comment:	

Data / Parameter:	FC_{coal,i,y}
Data unit:	Kg
Description:	Consumption of coal per household in year y in CPA <i>j</i> in the project scenario
Source of data to be used:	CPA _j database
Value of data applied for the purpose of calculating expected emission reductions in section B.5	XX
Description of measurement methods and procedures to be applied:	During the project operation the CPAs will be monitored via surveys according to the monitoring plan described in PoA-DD section A.4.4.2
QA/QC procedures to be applied:	
Any comment:	

Data / Parameter:	FC_{LPG,i,y}
Data unit:	Kg
Description:	Consumption of LPG per household in a year y in CPA <i>j</i> in the project scenario
Source of data to be used:	CPA _j database
Value of data applied for the purpose of calculating expected emission reductions in	

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section B.5	
Description of measurement methods and procedures to be applied:	During the project operation the CPAs will be monitored via surveys according to the monitoring plan described in PoA-DD section A.4.4.2
QA/QC procedures to be applied:	
Any comment:	

Data / Parameter:	$FC_{\text{kerosene},i,y}$
Data unit:	Kg
Description:	Consumption of kerosene per household in a year y in CPA j in the project scenario
Source of data to be used:	CPA j database
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:	During the project operation the CPAs will be monitored via surveys according to the monitoring plan described in PoA-DD section A.4.4.2
QA/QC procedures to be applied:	
Any comment:	

Data / Parameter:	$n_{k,y,i}$
Data unit:	%
Description:	Annual performance ratio of installed plants k in year y in CPA j
Source of data to be used:	Calculated
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:	The value is calculated = total number of sampled biogas plants operational in year y in CPA j / total sampled number of biogas plants installed in CPA j ;
QA/QC procedures to be applied:	
Any comment:	

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CPA monitoring plan

The SSC WG declared that household biogas projects may use the monitoring procedures of AMS-I.I (SSC WG 34)⁷. Both the baseline and project emissions shall be determined by estimating the remaining fossil fuel consumption ex-post using survey methods. The emission reductions will then be estimated by subtracting the projects emissions from the baseline emissions.

Fuel consumption data of the baseline and project case will be collected through surveys organized by MARD and consist of the following steps:

1. The annual fuel consumption of the baseline fossil fuel is determined by applying option B of paragraph 10 of AMS-I.I version 2 according to the sampling requirement of 10A option I. A baseline control group of users not supplied with the project equipment shall be set up in CPAj. Relevant parameters of influence pertaining to the project region shall be defined and the control group shall be set up, taking into account these parameters (e.g. average income level, household occupancy, food or heating habits, climate/temperature zone, availability, price and type of fuel used). Fossil fuel consumption of the control group is monitored throughout the crediting period.
2. Continued use from fossil fuel consumption will be collected via survey in a sample in the CPA according to the option (i) of paragraph 10 (a) as described in paragraph 11 of AMS-I.I version 2
3. Emission reductions will only be applied to systems that are demonstrated to be operational. Based on the share of non-operational and operational units, the performance ratio will be determined. The operation check will be included in the monitoring survey as described in number 2.

Consequently, two surveys are executed for CPAj, the Control Group Survey (CGS) for point 1 above (A) and the Project Performance Survey (PPS) for point 2 and 3 above (B). The sampling plan (sample design, data and implementation) both surveys are described hereunder:

A. Baseline monitoring of the control group

1. Sample design

#	Item	Description
i	Objectives and Reliability Requirements	The objective is to obtain unbiased and reliable estimates of the baseline parameters described in section E.7.1 and table 1 of AMS-I.I version 2, since they will be used in the calculation of baseline emissions from fossil fuel use. The sampling will be executed according to paragraph 10a of AMS-I.I version 2, and will have a confidence/precision interval of either at least 90/10
ii	<u>Target Population</u>	Target population are the households without the project equipment that use fossil fuels for cooking and have the same characteristics as the project participants, taking into account these parameters (e.g. average income level, household occupancy, food or heating habits, climate/temperature zone, availability, price and type of fuel used). As many of these characteristics are not known ex-ante (a national database does not exist with data of each household), the target population size for the calculation of the sample size is simplified to

⁷ <http://cdm.unfccc.int/UserManagement/FileStorage/7SWAZIE8F4YDT3BCV96KN2HLUJ5G01>

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		all households with the technical potential for biogas in CPAj project area. The technical potential is identified as households that have daily at least 25 kilogram animal manure at their disposal (at least 2 bovines or 7 pigs). This method will yield a higher target population size and therefore sample size (a larger sample size will increase precision and reliability)
iii	<u>Sampling method</u>	<p>Multi Stage sampling. The primary sampling units are the villages in CPAj and the second sampling units are the households, both identified according to the following method:</p> <ol style="list-style-type: none"> 1. A list of all villages included in the CPA is drafted; from that list randomly a number of villages is selected with a confidence/precision interval of at least 90/10. 2. Subsequently, from the population of selected villages, a number of households are randomly selected with a confidence/precision interval of at least 90/10. 3. In the villages with selected households, the households that match the description of the target population will be identified with help of the village head.
iii	<u>Sample size</u>	<p>The minimum sample size will be calculated according to the next equation⁸.</p> $n = \frac{N}{1 + N(e)^2}$ <p>Where:</p> <p>n: minimal sample size e: level of precision (10%) N= Target population</p> <p>The equation assumes a confidence level of 95%¹⁰ which is higher than required for annual sampling (90%), this is conservative.</p> <p>For example, if the baseline population from which a sample will be drawn are 100,000 households. The minimum sample size is consequently</p> $100,000 / (1 + (100,000 * 10\%^2)) = 100 \text{ households}$ <p>It is good practice to employ oversampling at the design stage, not only to compensate for any attrition, outliers or non-response associated with the sample, but also to prevent a situation at the analysis stage where the required reliability is not achieved and additional sampling efforts would be required. Furthermore, oversampling is necessary to account for households that leave the control group, i.e. households will be removed from the control group</p>

⁸ <http://edis.ifas.ufl.edu/pd006> and Yamane, Taro. 1967. *Statistics, An Introductory Analysis*, 2nd Ed., New York: Harper and Row.

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		<p>at the moment they install a biogas plant (see definition of target population)</p> <p>Oversampling with 20% or more will be employed, hence, the minimum sample size for the annual sample will be $100+20\%*100 = 120$. Sampling will be done once for each crediting period, the same group will be used for the whole crediting period.</p>
iv	<u>Sampling frame</u>	The sampling frame is a random selection of households that belong to the target population

2. Data

#	Item	Description
i	Field measurements	<p>The survey will consist of a household visit with the objective to collect reliable and unbiased baseline fuel data. The baseline data will be collected using interview methods, the interviewee will be either the head of the household or the wife of the head of household. Ensured is that seasonal pattern of fuel use of the thermal application is captured by collecting data about fuel consumption for each season, as per paragraph 10 A option I of AMS-I.I version 2. The results will be scaled up to the whole year.</p>
ii	Quality Assurance/Quality Control	<p>Several mechanisms will be put into place to avoid non-sampling errors (bias) and to obtain reliable data for each parameters:</p> <ul style="list-style-type: none"> • Good Questionnaire Design The survey questionnaire will be developed and tested under real life conditions (pilot testing: taken to the field and tested with farmers as interviewees). The outcome of that testing will result in an improved questionnaire and will only be used after inspection of the CME. • Data collection preparation Data collection will be commencing only after a work plan is developed. Once this work plan is approved by the CPA implementers data collection can commence. • Fuel data collection Data will be collected for each season as per paragraph 10 A option I of AMS-I.I version 2 to ensure that seasonal pattern of fuel use of the thermal application is captured. Data on annual fuel consumption will be cross-checked with purchase receipts. When fossil fuel receipts are not available, the household will show the fuel consumption in volume for the consumption over the recent period of time; calibrated weighing scale will be used by the surveyor to measure the fuel consumption reliably. The scales will be calibrated as per national standards or manufacturer's requirement; The calibration procedure will be

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		<p>included in the monitoring report after actual monitoring.</p> <ul style="list-style-type: none"> • Cross checking A random selection of 10% of the surveyed households will be called by telephone by other MARD staff. In case no telephone number is available, the household will be interviewed in person. All data collected during the survey will be cross checked with the respondent during the telephone call or household visit. • Reporting The party involved in data collection shall submit a draft report, which will be inspected by the CME and invited relevant independent experts⁹. In a workshop the results will be discussed between the party, CME and the relevant experts. Based on the outcome of the workshop and comments of the CME and relevant experts, a final report will be written which will be integrated into the monitoring report. The monitoring report is subject to inspection by a contracted DOE. • Data entry and cross checking Data will be entered by trained MARD personal. All data entered will be cross-checked by other MARD staff to ensure that the data is entered in a reliable fashion
iii	Procedures for Administering Data Collection and Minimizing Non-Sampling Errors	<p>The survey team will interview a random selected control household and answers will be recorded in a questionnaire, in case of non-response the surveyor will proceed to the next household in the list of control group households. The surveyor will document the out-of-population cases, refusals and other sources of non-response. Also, the surveyor will only interview informed interviewees, i.e. interviewees with knowledge on cooking and the biogas plant.</p> <p>The original questionnaire used in monitoring period y will be made available for inspection by DOE for the respective verification period y.</p>
iv	Storage	All survey records and forms will be stored by MARD and available for up to 2 years after the last crediting period

3. Implementation

#	Item	Description
i	Implementation	The sampling effort will be executed after the closing of a monitoring period, i.e. if the monitoring period is from year x to year x+1, the monitoring effort will take place after year x+1 but before year x+2 to ensure that monitoring takes place soon after the

⁹ Relevant experts are professionals working in the field of rural energy, biogas and or agriculture.

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		<p>closing of a monitoring period. Persons involved will have the following qualifications and experience:</p> <ul style="list-style-type: none"> • Surveyors: Person that has is trained by the survey team leader and has joined the pilot testing of the questionnaire. • Survey team leader: Experience person and has been involved in at least 2 other surveys • Monitoring report author: Experienced person with CDM knowledge • Expert reviewer: Rural agronomist, biogas technician, technical advisors to the project or related • Draft report commenters: CME director, project coordinators of the CPAj implementation agencies, technical advisors to the programs.
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B. Project performance monitoring

1. Sampling Design

#	Item	Description
i	Objectives and Reliability Requirements	The objective is to obtain unbiased and reliable estimates of the monitoring parameters described in section E.7.1 and table 1 of AMS-I.I version 2, since they will be used in the calculation of greenhouse gas emission reductions and the annual performance ratio. The sampling will be executed according to the option (i) of paragraph 10 (a) as described in paragraph 11 of AMS-I.I version 2 and will have a confidence/precision interval of at least 90/10. The performance ratio will be executed according to paragraph 17, and will have a confidence/precision interval of at least 90/10 as well.
ii	Target Population	The target population are the households that participate in the CPAj
iii	Sampling method	Simple random sampling
iii	Sample size	<p>A unit is a household with a biogas plant. The minimum sample size will be calculated according to the next equation¹⁰.</p> $n = \frac{N}{1 + N(e)^2}$ <p>Where:</p> <p>n: minimal sample size e: level of precision (10%)</p>

¹⁰ <http://edis.ifas.ufl.edu/pd006> and Yamane, Taro. 1967. *Statistics, An Introductory Analysis*, 2nd Ed., New York: Harper and Row.

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		<p>N= the CPAj population</p> <p>The equation assumes a confidence level of 95%¹⁰ which is higher than required for annual sampling (90%), this is conservative.</p> <p>For example if the CPA size is 10,000 households. The minimum sample size is consequently for annual monitoring:</p> $10,000/(1+(10,000*10\%^2))=99 \text{ households}$ <p>It is good practice to employ oversampling at the design stage, not only to compensate for any attrition, outliers or non-response associated with the sample, but also to prevent a situation at the analysis stage where the required reliability is not achieved and additional sampling efforts would be required.</p> <p>An oversampling of 20% will be employed, hence, the minimum sample size for the annual sample will be $99+20\%*99 = 119$.</p>
iv	Sampling frame	<p>The sampling frame will be drawn from the CPAj database; all households in the sampling frame represent the target population. Target population membership is recorded in the CPAj database and uniquely identifiable based on the ID code of the biogas plant</p>

2. Data

#	Item	Description
i	Field measurements	<p>The survey will consist of a household visit with the objective to collect reliable and unbiased data described in PoA-DD section E.7.1. Data will be collected using interview methods, the interviewee will be either the head of the household or the wife of the head of household. The results will be scaled up to the whole year. Ensured is that seasonal pattern of fuel use of the thermal application is captured by collecting data about fuel consumption for each season, as per paragraph 10 A option I of AMS-LL version 2. The results will be scaled up to the whole year.</p>
ii	Quality Assurance/Quality Control	<p>Several mechanisms will be put into place to avoid non-sampling errors (bias) and to obtain reliable data for each parameters:</p> <ul style="list-style-type: none"> • Good Questionnaire Design <p>The survey questionnaire will be developed by the party that executed the survey and the questionnaire will be tested under real life conditions (pilot testing: taken to the field and tested with farmers). The outcome of that testing will result in an improved questionnaire and will only be used after inspection of the CME.</p>

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		<ul style="list-style-type: none"> • Fuel data collection Data will be collected for each season as per paragraph 10 A option I of AMS-III version 2 to ensure that seasonal pattern of fuel use of the thermal application is captured. Data on annual fuel consumption will be cross-checked with purchase receipts. When fossil fuel receipts are not available, the household will show the fuel consumption in volume for the consumption over the recent period of time; calibrated weighing scale will be used by the surveyor to measure the fuel consumption reliably. The scales will be calibrated as per national standards or manufacturer's requirement; The calibration procedure will be included in the monitoring report after actual monitoring. • Cross checking A random selection of 10% of the surveyed households will be called by telephone by other MARD staff. In case no telephone number is available, the household will be interviewed in person. All data collected during the survey will be cross checked with the respondent during the telephone call or household visit. • Data collection preparation Before the party that executes the survey starts with data collection, the party will first develop a work plan in an inception report. Once the work plan is approved the party can commence with data collection. • Reporting The party shall submit a draft report, which will be inspected by the CME and invited relevant independent experts¹¹. In a workshop the results will be discussed between the party, CME and the relevant experts. Based on the outcome of the workshop and comments of the CME and relevant experts, a final report will be written. The final monitoring report is subsequently inspected by a contracted DOE. • Data entry and cross checking Data will be entered by trained MARD personal. All data entered will be cross-checked by other MARD staff to ensure that the data is entered in a reliable fashion.
iii	Procedures for Administering Data Collection and	The survey team will interview a random selected control household and answers will be recorded in a questionnaire, in case

¹¹ Relevant experts are professionals working in the field of rural energy, biogas and or agriculture.

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	Minimizing Non-Sampling Errors	<p>of non-response the surveyor will proceed to the next household in the list of control group households. The surveyor will document the out-of population cases, refusals and other sources of non-response. Also, the surveyor will only interview informed interviewees, i.e. interviewees with knowledge on cooking and the biogas plant.</p> <p>The original questionnaire used in monitoring period y will be made available for inspection by DOE for the respective verification period y.</p>
iv	Storage	All survey records and forms will be stored by MARD and available for up to 2 years after the last crediting period

3. Implementation

#	Item	Description
i	Implementation	<p>The sampling effort will be executed after the closing of a monitoring period, i.e. if the monitoring period is from year x to year x+1, the monitoring effort will take place after year x+1 but before year x+2 to ensure that monitoring takes place soon after the closing of a monitoring period. Persons involved will have the following qualifications and experience:</p> <ul style="list-style-type: none"> • Surveyors: Person that has is trained by the survey team leader and has joined the pilot testing of the questionnaire. • Survey team leader: Experience person and has been involved in at least 2 other surveys • Monitoring report author: Experienced person with CDM • Expert reviewer: Rural agronomist, biogas technician, technical advisors to the project or related • Draft report commenters: CME director, project coordinators of the CPAj implementation agencies, technical advisors to the programs.

A database will be set-up by the MARD for CPAj under the PoA. The database will include the following information, but not limited to:

- Number of installed biogas units;
- Location of each biogas plant registered under CPAj;
- Name of the each biogas plant owner;
- Name and ID code of the mason that built the biogas plant
- Date of commissioning for each plant;
- Size and model of each biogas plant;
- Unique biogas plant registration number for each plant;
- The fossil fuel consumption in the baseline case (from control group)
- The fuel consumption in the project (sample from CPAj database)

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- The annual performance ratio (sample).

The CPA shall describe here the quality control and recording mechanism as per E.7.2. of the PoA-DD

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:

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

The environmental analysis is done at the PoA level. The PoA involves the construction of biogas plants in the households. Biogas plants will be registered under the national biogas programme. The construction of biogas plants does not entail significant negative environmental impacts. For this reason, it is reasonable to undertake a single environmental analysis at the level of the PoA rather than individual assessments for each SSC-CPA.

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:

Not applicable

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:

Not applicable

SECTION D. Stakeholders' comments

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

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

In the local stakeholder workshops that were held at national level no controversial issues and negative impacts of the programme were identified, therefore it is not considered necessary to execute consultation workshops at CPA level.

In this case sections D.2. to D.4. need not be completed in this form.

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D.2. Brief description how comments by local stakeholders have been invited and compiled:
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Not applicable

D.3. Summary of the comments received:

Not applicable

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

Not applicable

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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:	



Annex 2

INFORMATION REGARDING PUBLIC FUNDING

{donor name} affirms that the funding for the project activities for the biogas programme have not resulted in the diversion of ODA and that this funding is not counted towards the financial obligation of concerned Parties. A letter stating this will be provided from concerned parties and is available upon request.

Annex 3

BASELINE INFORMATION

See Section B.5.

Annex 4

MONITORING INFORMATION

See Section B.6.