Component project activity design document form
(Version 09.0)

Complete this form in accordance with the instructions attached at the end of this form.

BASIC INFORMATION	
Title of the CPA	Nepal Biogas Support Program – CPA 1: 20,000 digesters
Scale of the CPA	☐ Large-scale ☒ Small-scale
Version number of the CPA-DD	16
Completion date of the CPA-DD	03/11/2019
Title and UNFCCC reference number of the registered CDM PoA	Nepal Biogas Support Program – PoA (UNFCCC ref: 9572)
Title and reference number of the corresponding generic CPA	Nepal Biogas Support Program – CPA XXXX (9572-XXXX)
Coordinating/managing entity	Alternative Energy Promotion Centre (AEPC)
Host Party	Nepal
Applied methodologies and standardized baselines	AMS.I.E. Switch from Non-Renewable Biomass for Thermal Applications by the User, Version 9.0
Sectoral scopes	1 : Energy industries (renewable/non-renewable sources)
Estimated amount of annual average GHG emission reductions	65,103 tCO2e

SECTION A. Description of component project activity (CPA)

A.1. Purpose and general description of CPA

This CDM Program Activity (CPA) is part of the Nepal Biogas Support Program-Programme of Activity (PoA). Initially, this CPA included 20,000 digesters which were implemented between 22 June 2007 and 18 March 2009. For this crediting period, number of digester included in the CPA is 19,999.[1] Table 1 provides an overview of the digesters according to their size and location.

Table 1: Digesters listed in this CPA.

Region / Size	Terai	Hill	Mountain or Remote Hill	Total
4 m^3	**416**	**2690**	**5**	**3,111**
6 m^3	**9393**	**6128**	**96**	**15,617**
8 m^3	**1141**	**118**	**4**	**1263**
10 m^3	**5**	**3**	**0**	**8**
Total	**10955**	**8939**	**105**	**19,999**

A complete list of all digesters included in this CPA can be found in ER calculation spreadsheet (attached separately).

A.2. Location of CPA

The digesters in this CPA are located at various locations across Nepal. The geographical coordinates of Nepal are:
Latitude – North 26.20 degree to North 30.45 degree
Longitude – East 80.07 degree to East 88.20 degree

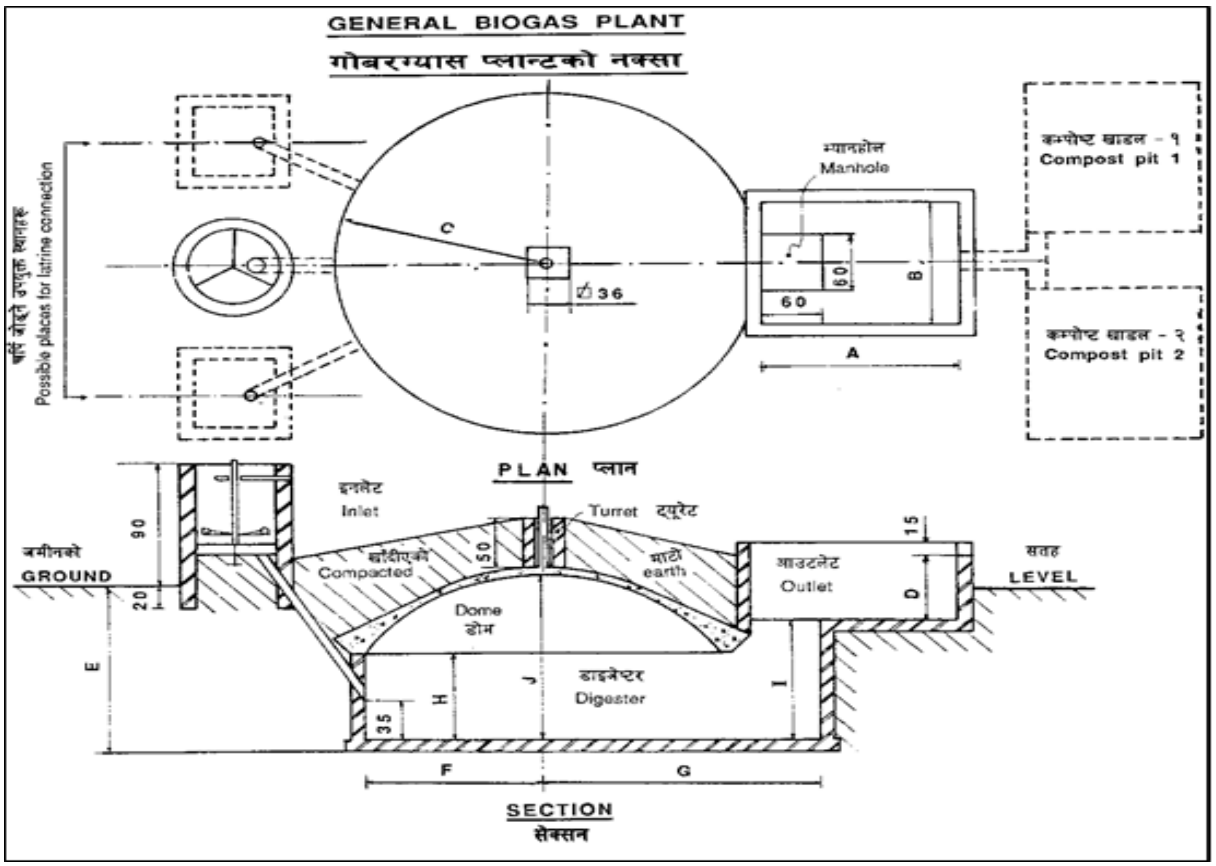
The CPA database contains the following information for each digester: owner's name, spouse name, VDC/NP, ward number or cluster, district, region, plant size, name of Installation Company, digester code and the commissioning date.

A.3. Technologies/measures

The technologies used in this CPA are household biogas digesters with a sludge and gas holding capacity range of up to 10 m^3. The different sizes of the digesters that would be included in the programme would be of 4, 6, 8 and 10 m^3. The CPA uses only one design i.e. GGC 2047 model. The biogas digesters are based on a uniform technical design and are manufactured and installed following established technical standards in Nepal. The digester itself is a closed underground container made of concrete or other materials.

The design of the digester is mentioned below:

[1] During the first crediting period, one biogas of 6 cu m capacity in Ilam district was found abandoned during monitoring. So, the biogas is removed from CPA list.



The GGC 2047 biogas digester consists of five main structures or components. They are the inlet, outlet, digester, dome and the compost pits. The required quantity of dung and water is mixed in the inlet tank and this mix in the form of slurry is allowed to be digested inside the digester. The gas produced in the digester is collected in the dome, called as the gas holder. The digested slurry flows to the outlet tank from the digester through the manhole. The slurry then flows through the overflow opening to the compost pit where it is collected and composted. The gas is supplied to the point of application through the pipeline.

A.4. Coordinating/managing entity

Alternative Energy Promotion Centre

A.5. Parties and CPA implementers

Parties involved	CPA implementers	Indicate if the Party involved wishes to be considered as CPA implementer (Yes/No)
Government of Nepal (Host Party)	Alternative Energy Promotion Centre (AEPC)	No

A.6. Public funding of CPA

The digesters listed in the CPA receive subsidies and technical support under the BSP program. The BSP program is funded by the entities listed below. These include:

- German Development Bank KfW,
- Directorate General for International Cooperation (DGIS) of the government of the Netherlands through the Dutch development organisation SNV,
- Government of Nepal (GoN).

A.7. History of CPA

The Component Project Activity (CPA) was included as CPA-1 on 31 January 2013 under Nepal Biogas Support Programme-PoA. The CPA is proposed for crediting period renewal for second

crediting period. This CPA is neither registered as another CDM project activity nor included as a component project activity (CPA) in any other registered CDM programme of activities (PoA). The proposed CPA is neither a project activity that has been deregistered nor CPA that has been excluded from a registered CDM PoA.

This small-scale CPA lists a unique set of digesters that are not part of any other CDM project activity or CPA. AEPC registers all households that implement a digester under its BSP program. Each household by contract transfers the title to the emission reductions to AEPC.

Double counting is avoided by giving each digester a unique code (biogas digester code) and GPS reading. Also for maintaining the subsidy scheme it is important to avoid double counting. To avoid that households try to optimise their subsidy revenues, BSP does not allow that more than one digester is implemented per household. The digester codes listed in the BSP database and if necessary also the GPS coordinate (if biogas projects emerge in future that are not part of the BSP) will be used to confirm that each digester is counted only once and is not already included under a different CDM project or CPA.

A.8. Debundling

The proposed small scale CPA is not a de-bundled component of a large CDM project. Each of the independent subsystems (bio digesters) included in the CPA is not greater than 1% of the threshold defined for a small scale project.[2] 1% of the 15 MWel (45 MWth) threshold for type I projects is 150 kW_{el} (450kW_{th}). The capacity of a digester is 1.86 kW_{th} (see section I.2. of the CDM-SSC-PoA) and hence remains well below the 1% of 15 MW threshold.

SECTION B. Application of methodologies and standardized baselines

B.1. References to methodologies and standardized baselines

AMS I.E: Switch from non-renewable biomass for thermal applications by the user (Version 09)

B.2. Project boundary, sources and greenhouse gases (GHGs)

According to AMS-I.E, the project boundary is the physical, geographical site of the use of biomass or the renewable energy. At the unit level, the project boundary is defined by the individual sites and refers to the operation of the biogas digester units at the household level. Table below shows the emission sources that are under the control of the project participants and attributable to biogas digesters. Figure B.4.1 and B.4.2 show the physical relation between the emission sources and the project boundary.

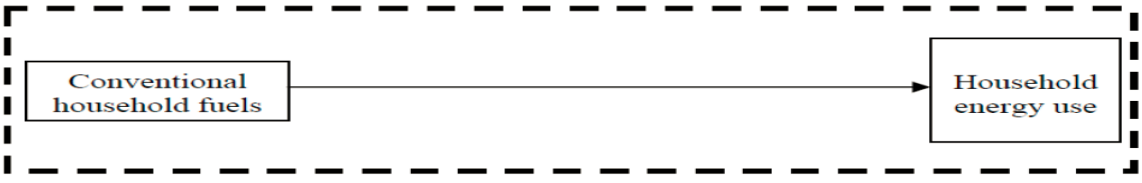


Figure B.4.1: Baseline emissions. Sources of GHG emissions and uses

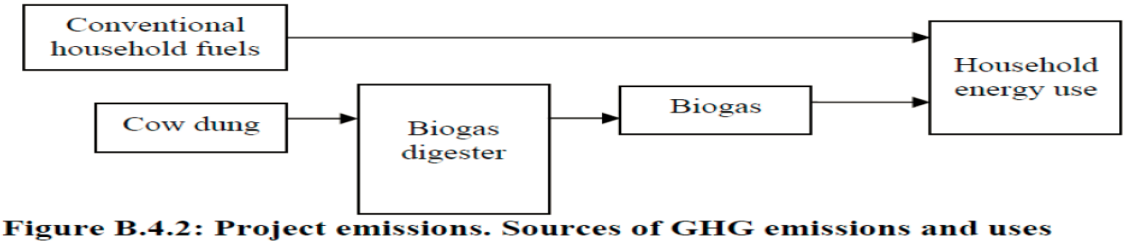


Figure B.4.2: Project emissions. Sources of GHG emissions and uses

[2] Guidelines on Assessment of Debundling for SSC Project Activities – Version 03, (EB 54, Annex 13)

Table shows the emission sources that are under the control of the project participants and attributable to biogas digesters.

	Source	GHG	Included?	Justification/Explanation
Baseline	Emissions from NRB use for cooking	CO_2	Yes	Main emission source.
		CH_4	No	Excluded for simplification. This is conservative.
		N_2O	No	Excluded for simplification. This is conservative.
	Emissions from fossil fuel use for cooking	CO_2	No	Excluded for simplification. This is conservative
		CH_4	No	Excluded for simplification. This is conservative
		N_2O	No	Excluded for simplification. This is conservative.
Project activity	Emission from digester and biogas cooking stove	CO_2	No	This is not required by AMS.I.E
		CH_4	No	This is not required by AMS.I.E
		N_2O	No	This is not required by AMS.I.E

B.3. Establishment and description of baseline scenario

The baseline scenario has been determined at the PoA level (refer section I.5 of the PoA-DD for detail information in baseline)

B.4. Estimation of emission reductions

B.4.1. Explanation of methodological choices

According to AMS-I.E. version 09, para 20, the baseline emission reductions under a CPA are calculated as the following:

$$BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossil\_fuel} \quad \text{Equation 1}$$

In which:

BE_y	Baseline Emissions during the year y (tCO2e)
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
$NCV_{biomass}$	Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel: 0.0156 TJ/tonne. The value is according to the methodology AMS I.E.
$EF_{projected-.fossilfuel}$	Emission factor for substitution of non renewable woody biomass by similar consumers. Use a value of 63.7 tCO_2/TJ[3]

Following option a) of paragraph 21, B_y is "Calculated as the product of the number of households multiplied by the estimate of average annual consumption of woody biomass per household that is displaced by the project activity (tonnes/household/year)".

Thus, B_y will be calculated as follows:

[3] This value represents the emission factor of the substitution fuels likely to be used by similar users, on a weighted average basis. The value is calculated, based on the global average ratio of cooking fuels (the normalized ratio of kerosene and liquefied petroleum gas (LPG) excluding coal), i.e. 9 per cent for kerosene (71.5 t CO2/TJ) and 91 per cent for LPG (63.0 t CO2/TJ).

$$B_y = N_{HH} \times (BC_{BL,HH,y} - BC_{PJ,HH,y})$$ Equation (2)

Where:

N_{HH}	=	Number of households in the project activity, number
$BC_{BL,HH,y}$	=	Average annual consumption of woody biomass per household before the start of the project activity, tonnes/household/year
$BC_{PJ,HH,y}$	=	If it is found that pre-project devices were not completely displaced but continue to be used to some extent, average annual consumption of woody biomass per household in the pre-project devices during the project activity, tonnes/household/year

B_y will be calculated multiplying with the actual household of this CPA that have operational digester in year y identified through survey method. Calculations will be carried out based on Excel spread sheets using the database of CPA that are already included. The database provides e.g. commissioning date.

Project Emissions

The AMS I.E Version 9 requires calculation of project emission using "TOOL16: Project and leakage emissions from biomass". As the fuelwood are basically sourced from the nearby and natural forest, which does not require processing of the feedstock and also does not include the cultivation, the project emissions (PE_y) is not applicable to this CPA and is taken as zero.

Leakage

As per para 24 of the AMS I.E version 9, the default factor of 0.95 is used to account for any potential leakage (i.e. By is multiplied by a net to gross adjustment factor of 0.95 to account for leakages).

Thus the leakage emission under a CPA is calculated as the following:

$$LE_y = 0.05 \times B_y . f_{NRB.y} . NCV_{biomass} . EF_{projected\_fossilfuel}$$ 3

Emission Reductions

As the methodology AMS I.E version 09, para 27, the emission reductions are to be estimated based on the following equation:

$$ER_y = BE_y - PE_y - LE_y$$

Where:

ER_y	=	Emission reductions in year *y*, tonnes CO_2eq

B.4.2. Data and parameters fixed ex ante

Data/Parameter	$BC_{BL,HH,y}$
Data unit	tonne/household/year
Description	Average annual consumption of woody biomass per household before the start of the project activity
Source of data	Based on survey (Biogas User Survey (BUS)) for similar project activities. The woody biomass substituted or displaced is conservatively taken as 4.5 tons/HH/years for ex-ante calculation of emission reduction for which the annual average consumption of woody biomass before the start of the project activities is 5.04 tons/HH/year and the average annual woody biomass consumption by pre-project device during the project activities is 0.54 tons/HH/Year.
Value(s) applied	5.04 tonne/household/year
Choice of data or measurement methods and procedures	Calculated using option (b) Historical data or a sample survey conducted as per the latest version of the "Standards:Sampling and surveys for CDM project activities and programme of activities;" Biogas User Survey follows the standard sampling and surveys guidelines
Purpose of data	Calculation of baseline emission
Additional comment	This value is used in the calculations and shall remain fixed for the crediting period.

Data/Parameter	$f_{NRB,y}$
Data unit	%
Description	Fraction of woody biomass saved by the project activity during year y that can be established as non-renewable biomass
Source of data	Calculated as per "TOOL30: Calculation of the fraction of non-renewable biomass"
Value(s) applied	86.1 %
Choice of data or measurement methods and procedures	The value is calculated as 86.1% using the national statistics and also validated by the Ministry of Forest and Environment, Government of Nepal. This value is for the national level, so will not be monitored.
Purpose of data	Calculation of baseline emission
Additional comment	This parameter shall remain fixed for the crediting period.

Data/Parameter	$EF_{projected\ fossilfuel}$
Data unit	tCO_2/TJ
Description	Emission factor for the projected fossil fuel consumption in the baseline.
Source of data	IPCC
Value(s) applied	63.7
Choice of data or measurement methods and procedures	AMS-I.E. Version 09 requires using this value.
Purpose of data	Calculation of emission reduction
Additional comment	The value will be fixed for the crediting period

Data/Parameter	N_{HH}
Data unit	Number
Description	Number of households in each CPA in year y
Source of data	BSP database for the CPA
Value(s) applied	19,999 digesters
Choice of data or measurement methods and procedures	The registration procedure of the BSP database avoids double counting of digesters and the registration of digesters that have not been commissioned.
Purpose of data	Calculation of baseline emission
Additional comment	During calculation of Emission Reduction, it will be based on actual number of households having the biogas operational

B.4.3. Ex ante calculation of emission reductions

The emission reduction calculation is based on data that is specified to digester size and region. This section provides explanation of calculation made.

Baseline Emission

According to AMS-I.E (version 09), the baseline emission under a CPA are calculated as the following:

$$BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossil\_fuel}$$

In which:

BE_y	Baseline Emissions during the year y (tCO2e)
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, Use 86.1%[4]
$NCV_{biomass}$	Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel: 0.0156 TJ/tonne). The value is according to the methodology AMS I.E.
$EF_{projected-.fossilfuel}$	Emission factor for substitution of non renewable woody biomass by similar consumers. Use a value of 63.7 tCO_2/TJ[5]

Thus, B_y will be calculated as follows:

By is calculated as using the following values

N_{HH}	19,999 in CPA-1
Displacement of Woody Biomass ($BC_{BL,HH,y}$ - $BC_{PJ,HH,y}$)	4.50 tonne/household/year[6]
Operational status of Biogas	89%[7]
Number of Household with operational digester	N_{HH} * Operational status of Biogas

[4] The value is calculated using "TOOL 30: Calculation of the fraction of non-renewable biomass" as given in section I.6.1 of PoA-DD and the value is fixed ex-ante. Use 86.1%

[5] This value represents the emission factor of the substitution fuels likely to be used by similar users, on a weighted average basis. The value is calculated, based on the global average ratio of cooking fuels (the normalized ratio of kerosene and liquefied petroleum gas (LPG) excluding coal), i.e. 9 per cent for kerosene (71.5 t CO2/TJ) and 91 per cent for LPG (63.0 t CO2/TJ).

[6] Conservative value taken as stipulated in section I.6.1 of this PoA DD and is fixed ex-ante.

[7] For ex ante, operational status of the CPA-1 in 2018 identified from biogas user survey has been used. The actual operational status will be arrived using sample survey for ex-post and may vary (higher or lower) for the CPA.

By = 19,999*0.89*4.5 = 80,096 tonne/year

Substituting the values,
Baseline Emission (BE_y) = 80096*0.861*0.0156*63.7 = 68,529.57 tCO_{2e}

Project Emissions

PE_y = 0

Leakage
The default factor of 0.95 is used to account for any potential leakage, as prescribed by the methodology.
Thus the leakage emission under a CPA is calculated as the following:

LE_y = 0.05*80096*0.861*0.0156*63.7 = 3426.48 tCO_{2e}

Emission Reductions
As the methodology AMS IE version 09, para 27, the ex-ante emission reduction is estimated as below:

$$ER_y = BE_y - PE_y - LE_y$$

= 68529.57 – 0 – 3426.48
= 65103 tCO_{2e} (round down value).

Please refer ER calculation spreadsheet for further details of the calculation.

B.4.4. Summary of ex ante estimates of emission reductions

Year	Baseline emissions (t CO_2e)	Project emissions (t CO_2e)	Leakage (t CO_2e)	Emission reductions (t CO_2e)
Year 1	68,529	0	3,426	65,103
Year 2	68,529	0	3,426	65,103
Year 3	68,529	0	3,426	65,103
Year 4	68,529	0	3,426	65,103
Year 5	68,529	0	3,426	65,103
Year 6	68,529	0	3,426	65,103
Year 7	68,529	0	3,426	65,103
Total	**479,703**	0	**23,982**	**455,721**
Total number of crediting years	7			
Annual average over the crediting period	68,529	0	3,426	65,103

B.5. Monitoring plan

B.5.1. Data and parameters to be monitored

Data/Parameter	Date of commissioning of project device of type i
Data unit	Date
Description	Actual date of commissioning of the project device.
Source of data	Internal database/records
Value(s) applied	22 June 2007 to 18 March 2009

Measurement methods and procedures	Since the CPA is already included in PoA, the digesters included in the CPAs database of the digesters are included in PoA
Monitoring frequency	Fixed and recorded at the time of commissioning
QA/QC procedures	This can be checked from the commissioning report and subsidy application form.
Purpose of data	Calculation of baseline emission
Additional comment	N/A

Data/Parameter	$BC_{PJ,HH,y}$
Data unit	tonnes/household/year
Description	Average annual consumption of woody biomass per household in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent.
Source of data	Biogas User Survey
Value(s) applied	- 0.54 tonnes/household/year for the ex-ante calculation as per the Biogas User Survey for similar project activities. For this crediting period, this parameter will be determined using regular user survey.
Measurement methods and procedures	Biogas User Survey will be conducted on a sample of households. The sample size is determined to achieve 90% confidence interval and a 10% margin of error. During the survey, the estimates of the biogas users on the average annual consumption of woody biomass during the monitoring period will be captured.
Monitoring frequency	At least once every two years (biennial)
QA/QC procedures	Though the methodology requires sample survey biannually, PP conducts the user survey annually to ensure the number of biogas digesters operational for that particular year for each CPA and the consumption of the woody biomass by pre-project device if any during the project activities.
Purpose of data	Calculation of baseline emission
Additional comment	ERs will be accounted only for functional biogas in the particular monitoring period

Data/Parameter	**B_y**
Data unit	tones/year
Description	Quantity of woody biomass that is substituted or displaced
Source of data	Biogas User Surveys
Value(s) applied	This will be calculated based on the operational status of the biogas digesters for particular monitoring period and the woody biomass consumed by pre-project devices during project activity. It ranges from zero when biogas is not in operation to 5.04 tonnes/household/year when $BC_{PJ,HH,y}$ is zero and biogas is operational.
Measurement methods and procedures	The calculation of the By depends on the operational status of the biogas units for the particular monitoring period and the operational status will be checked annually during the Biogas User Survey. From the total population of biogas units included in the project activity, statistically representative samples will be drawn for the purpose of carrying out the survey. The sample size is determined to achieve 90% confidence interval and a 10% margin of error. The percentage of biogas units found to be operational during the sample survey shall be used to calculate the weighted average operational status of the biogas which then will be used to calculate By as follows: $By = N_{HH}*(BC_{BL,HH,y} - BC_{PJ,HH,y})$ where N_{HH} will be the household with operational biogas digester for the particular monitoring period. $N_{HH} = N * P_{Y,}$ where N is the number of bio digesters installed in the project and Py is Proportion of Bio digesters operational estimated based on the sample survey

Monitoring frequency	Once in a Year
QA/QC procedures	Though the methodology requires sample survey biannually, PP conducts the user survey annually to ensure the number of biogas digesters operational for that particular year for each CPA.
Purpose of data	Calculation of baseline emission
Additional comment	Once the biogas included in the component project activity completes its operational lifetime, those biogas will not be considered for the next consecutive monitoring.

Data/Parameter	$NCV_{biomass}$
Data unit	TJ/tonne
Description	Net calorific value of the non-renewable woody biomass, briquettes or charcoal used in project devices
Source of data	Methodology AMS I.E. Version 09
Value(s) applied	0.0156
Measurement methods and procedures	De-fault value will be applied from the methodology AMS I.E version 09
Monitoring frequency	N/A
QA/QC procedures	N/A
Purpose of data	Calculation of baseline emission
Additional comment	N/A

B.5.2. Sampling plan

The various aspects to be monitored according to the methodology are presented in the table below:

Aspects to be monitored according to Methodology	**Applicability to the Project**	**Parameter to be Monitored (YES/NO/Not Applicable)**
Monitoring shall consist of checking of all appliances or a representative sample thereof, at least once every two years (biennial) to ensure that they are still operating or are replaced by an equivalent in service appliance.	Emission reductions is directly proportional to the number of appliances (digesters in case of the CPA) still performing. So this needs to be monitored.	Yes (based on BUS Reports carried out at least biennial)
Monitoring should confirm the displacement or substitution of the non-renewable woody biomass at each location.	This shall be ensured by monitoring the number of appliances (digesters in case of the CPA) still performing	Yes (based on the performance reports carried out at least biennial, e.g. BUS, and in addition to eligibility criteria that also confirm use of NRB)
Monitoring of average annual consumption of woody biomass per household in the pre-project devices during the project activity, if it is found that pre-project devices were not completely displaced but continue to be used to some extent	As emission reduction is calculated based on this, this needs to be monitored	Yes (based on the user survey; i.e. Biogas User Survey)

The annual Biogas User Survey (BUS) will be conducted to assess the parameters given above. The survey will be conducted following statistically sound sampling procedure. The Annual Biogas User Survey will be conducted following the Guideline for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0 (EB 86, Annex 4). As part of the survey, statistically representative sample of biogas users will be surveyed and in order to

achieve 90% confidence interval and a 10% margin of error requirement for the sampled parameters. Stratified random sampling will be applied in conducting survey. The sample to be surveyed will be drawn randomly from the population of biogas digester distributed in each stratum (i.e. remote hill, hill and terai) spread within the project boundary of the CPA. To make it more representatives, different development regions and the size of the plants will also be considered while drawing the sample. In order to have an unbiased and independent assessment, the survey will be carried out through an independent agency to check the operation/functioning of the biogas units installed as part of CPA. The corresponding sampling plan is given in Appendix 5 of PoA-DD for second crediting period.

The fraction of the Non-renewable biomass displaced by the PoA has been determined ex-ante in the PoA-DD and has been fixed for the second crediting period. The following indicators will be monitored through Biogas User Survey to confirm the displacement of NRB by households and perceptions of the biogas users on these indicators would be captured through survey and analysed. These indicators include:

a. Trends in distance travelled for firewood gathering or trends in time needed for firewood gathering indicating depletion of resources available
b. Trends in price of firewood indicating demand and scarcity
c. Trends in type of cooking fuel collected that could indicate scarcity of fire wood

At least two of the above indicators should confirm the displacement of non-renewable biomass. The survey will seek to collect the data pertaining to the indicators for monitoring year.

B.5.3. Other elements of monitoring plan

Internal monitoring activities as part of the overarching BSP programme

AEPC carries out thorough quality control activities to ensure that the biogas digesters are built according to set quality standards following the subsidy delivery mechanism and other set standard. This includes setting up random sampling, field visits, on the spot advice to biogas companies and biogas owners, collecting and analyzing data obtained through questionnaire during visits, adopting “rewards or punishment” system to biogas companies etc as applicable according the rules and regulation. Note that this quality control is carried out to ensure quality of the digesters but not necessarily to calculate the emission reductions.

SECTION C. Start date, crediting period type and duration

C.1. Start date of CPA

22/06/2007 (first digester listed date)

C.2. Expected operational lifetime of CPA

The operational lifetime of each digester is 20 years.

C.3. Crediting period of CPA

C.3.1. Type of crediting period

Renewable crediting period

C.3.2. Start date of crediting period

31 January 2020.
As the first crediting period is ended on 30/01/2020, this pertains to the starting date of the second crediting period.

C.3.3. Duration of crediting period

7 years. This pertains to the length of the second crediting period

SECTION D. Environmental impacts

D.1. Analysis of environmental impacts

Please refer to the section E of CDM-SSC-PoA-DD

D.2. Environmental impact assessment

Please refer to the section E of CDM-SSC-PoA-DD

SECTION E. Local stakeholder consultation

E.1. Modalities for local stakeholder consultation

Please refer to the section F of CDM-SSC-PoA-DD

E.2. Summary of comments received

SECTION F. Please refer to the section F of CDM-SSC-PoA-DD

F.1. Consideration of comments received

Please refer to the section F of CDM-SSC-PoA-DD

SECTION G. Eligibility for inclusion

The CPA is eligible for the inclusion and renewal of crediting period in the PoA for Nepal Biogas Support Program-PoA since it meets all the criteria listed in the eligibility criteria for inclusion of a SSC-CPA in the PoA as given in registered PoA-DD as under.

No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion	Description of this CPA in relation to the criterion and supporting evidence
1	Geographical boundary	-All biogas digesters in the CPA are located within the geographical boundaries of Nepal. - This will be confirmed by the CME by ensuring that each individual installation is a) located at an address that lies within the geographical boundaries of Nepal as demonstrated by providing the address of all biogas digesters in the CPA database; and b) has GPS coordinates that are situated within the geographical boundaries of Nepal.	- Commissioning Report from Biogas Companies (BC). - CPA Database indicating digester code, address and GPS coordinate.	The CPA was validated against all the criteria for the inclusion and found it in-line with the requirement and was included as CPA
2	Double counting	- Double counting is avoided by assuring that no digester is already included to a different CDM project or CPA. - This will be confirmed by the CME based on a) the digester codes listed in the BSP database and b) if necessary also GPS coordinates (the latter applies if biogas projects emerge under the CDM that are not part of the BSP).	- CPA Database indicating digester code, address and GPS coordinate. - Unique GPS reading of each digester. - CDM website indicating potential further projects not included to BSP using the same technology.	

3	Technology	- AEPC will implement all CPAs as part of the BSP. - All digesters listed in the CPA shall be household biogas digesters with a sludge and gas holding capacity range of 2-10 m3. - Biogas shall be supplied to a stove with a maximum capacity of 400 l/h leading to a maximum annual gas capacity of not more than 1.86 kWth per stove. - The equipment shall be new and not transferred from other project activities.	- Commissioning Report from Biogas Companies (BC). - Technical specification documents detailing digester models and equipment applied.	
4.	Start Date	- The start date of a CPA is the date of commissioning of the first biogas digester included to that respective CPA. - The start date of CPA 1 shall be 22 June 2007, which is the date of commissioning of the first digester in CPA 1. - The start of each future CPA shall be after the date of commissioning of the last installation included to a previous CPA. - The date of commissioning is recorded in the Commissioning Report, which is archived and the date recorded in the CPA database.	- Commissioning Report from Biogas Companies (BC), indicating the commissioning date. - CPA Database	
5.	Compliance with applied methodology	- The activity shall replace non renewable biomass. This will be confirmed through documenting that participating households use non-renewable biomass as firewood.	- Report confirming use of non-renewable biomass as firewood prior to installation of digesters (e.g. BUS)	
6.	Diversion of official development assistance	- The CPA shall not result into the diversion of official development assistance.	- Declaration from CPA implementer / AEPC. - Confirmation of ODA non diversion, as applicable.	
7.	Target Group and distribution mechanism	- The target group within the CPA are households.	- Installation confirmation from Biogas Companies (BC) indicating that the digesters are installed in a household.	
8.	Threshold check	- Number of biogas digester included in each CPA shall not exceed 20,000 units, which assures compliance with the small scale limit of 45MWth. [8]	- BSP/AEPC database to confirm the number of digesters in a CPA is maximum 20,000.	
9.	Other Voluntary action	- Each CPA to be included in this PoA should be a voluntary action and not mandated by the Government of Nepal	- Confirmation that each CPA is a voluntary action not mandated by the Government of Nepal	

All other criteria for the eligibility given in PoA-DD are in-line with the proposed CPA, the CPA is eligible to include under the PoA.

[8] Estimated maximum capacity of 1.86 kWth per stove. Considering that the limit for SSC is 45 MW_{th}, the maximum number of digesters allowed under a CPA (20,000) remains well below the SSC threshold.

Appendix 1. Contact information of CPA implementers

Organization name	Alternative Energy Promotion Centre (AEPC)
Country	Nepal
Address	Khumaltaar Heights
Telephone	+977-1-5539390
Fax	+977-1-5539392
E-mail	madhusudhan.adhikari@aepc.gov.np
Website	www.aepc.gov.np
Contact person	Madhusudhan Adhikari, Executive Director

Appendix 2. Affirmation regarding public funding

Please refer to CDM SSC PoA DD

Appendix 3. Further background information on ex ante calculation of emission reductions

Please refer section B.4.3 of CPA DD and the ER calculation spreadsheet.

Appendix 4. Further background information on monitoring plan

Please refer to Appendix 5 of PoA-DD

Appendix 5. Summary report of comments received from local stakeholders

Please refer to section F of PoA-DD

Appendix 6. Summary of post-registration changes

For this CPA, total biogas installed in CPA was 20,000. But the numbers entered for each stratum (Terai, Hill and Remote Hill) was mismatched with the actual database during registration. So, the numbers in each stratum was revised through the issuance track during the first verification but the total number of biogas has not been changed (i.e. 20,000). The total number of biogas digester for the CPA-1 is 20,000 while the distribution is corrected in the revision for first crediting period i.e. Terai: 10,955; Hill: 8940 and Mountain: 105). The PRC for updating the number of biogas in each stratum was done through the issuance track during first verification of the PoA and was approved on 22nd June 2015. The revised CPA DD and the PRC documents can be viewed in the link below:
https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss339237849/view

In this crediting period, the total number of biogas under the CPA is taken as 19,999 (i.e. Terai: 10955; Hill: 8939 and Mountain/Remote Hill: 105) as one digester in Ilam district which is accounted in Hill is found abandoned during monitoring. Since number of digester is within the threshold criteria, this is in-line with the requirement of PoA-DD.

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Document information

Version	*Date*	*Description*
09.0	31 May 2019	Revision to: • Ensure consistency with version 02.0 of the "CDM project standard for programmes of activities" (CDM-EB93-A07-STAN); • Make editorial improvements.
08.1	20 October 2017	Editorial revision to remove appendix "Applicability of methodologies and standardized baselines" from the main part of the form which had been mistakenly kept in the previous version.
08.0	28 June 2017	Revision to: • Remove appendix "Applicability of methodologies and standardized baselines" as the appendix is not relevant at the CPA level; • Make editorial improvement.
07.0	7 June 2017	Revision to: • Improve consistency with the "CDM project standard for programmes of activities" and with the PDD and PoA-DD forms; • Make editorial improvement.
06.0	24 May 2017	Revision to: • Ensure consistency with the "Standard: CDM project standard for programme of activities" (CDM-EB93-A07-STAN) (version 01.0); • Incorporate the "Component project activity design document form for small-scale component project activities" (CDM-SSC-CPA-DD-FORM); • Make editorial improvement.
05.0	15 April 2016	Revision to ensure consistency with the "Standard: Applicability of sectoral scopes" (CDM-EB88-A04-STAN) (version 01.0).
04.0	9 March 2015	Revision to: • Include provisions related to statement on erroneous inclusion of a CPA; • Include provisions related to delayed submission of a monitoring plan; • Provisions related to local stakeholder consultation; • Provisions related to the Host Party; • Make editorial improvement.
03.0	25 June 2014	Revisions to: • Include the Attachment: Instructions for filling out the component project activity design document form for CDM component project activities (these instructions supersede the "Guidelines for completing the component project activity design document form" (Version 01.0)); • Include provisions related to standardized baselines; • Add contact information on a CPA implementer and/or responsible person/ entity for completing the CDM-CPA-DD-

Version	*Date*	*Description*
		FORM in A.13. and Appendix 1; • Add general instructions on post-registration changes in paragraph 4 and 5 of general instructions and Appendix 6; • Change the reference number from F-CDM-CPA-DD to CDM-CPA-DD-FORM; • Make editorial improvement.
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the component project activity design document form" (EB 66, Annex 16).
01.0	27 July 2007	EB 33, Annex 42 Initial adoption.

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