

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



NAME /TITLE OF THE PoA: [Programme for Promotion of Access to Domestic Biogas in Rural Bangladesh](#)



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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)

[**Note**] Throughout this generic CPA-DD, [*explanation*] implies this CPA-specific term of explanation is inserted for specific CPA-DD.

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

>>

Domestic Biogas CPA-[ID number of CPA] in Rural Bangladesh (*[period of the starting date of operation of the biogas digesters covered by the CPA specified as D1/M1/Y1–D2/M2/Y2]*)

Ver.: *[version number of the CPA-DD comes here]*

Date: *[date of completion of this document comes here specified as D/M/Y]*

ID number of CPA is set as “*n.m.y*” where “*n*” is the serial number of the CPA under the PoA, “*m*” is the month when the CPA starts and “*y*” is the year when the CPA starts.

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

>>

Under the PoA entitled “Programme for Promotion of Access to Domestic Biogas in Rural Bangladesh”, the CPA introduces micro-type biogas digesters (typically, biogas generation capacity of 2.4–4.8 m³/day) and supply biogas for households in rural Bangladesh as shown in A.4.2 of the PoA-DD.

This CPA is characterized as follows:

Period of the starting date of operation of the biogas digesters covered by the CPA	<i>[D1/M1/Y1–D2/M2/Y2]</i>
Number of biogas digesters	<i>[number]</i>
Average biogas generation capacity of digesters	<i>[number] m³/day</i>
Number of user households	<i>[number]</i>
Number of cookstove burners	<i>[number]</i>
Household which used ICS before using biogas ³	0
Number of micro-utility model ⁴	<i>[number]</i>
CPA operator	Grameen Shakti (GS for short)
Implementer(s) under the CPA operator except for GS	<i>[names of the associated organizations participated in the CPA]</i>

³ In case some household used ICS before use of biogas, the household is judged to be ineligible and excluded from the CPA (*i.e.*, not counting in calculation of emission reductions).

⁴ Micro-utility model is a business model that a biogas digester owner delivers biogas to his/her neighbor households.

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A typical CPA will provide sustainable clean energy (biogas) for households through replacing the non-renewable biomass so that reduces GHG emissions. At the same time it contributes to the sustainable development of Bangladesh that is explained as below:

Most of the population in rural areas in Bangladesh still heavily rely on fuelwood, dung, and crop residues for their cooking needs. The impacts of biomass reliance include deforestation, drudgery from needing to collect and prepare the biomass for use and also health impacts from indoor air pollution to rural women and children.⁵

In order to prevent further environmental deterioration, it is required to promote non-conventional energy technologies in this country. Biogas generated from animal manure and/or other organic wastes is undoubtedly one of the most appropriate sources of energy.

A typical CPA will contribute to reduce deforestation as the biogas generated will be used to replace mostly non-renewable biomass consumed by households; and also improve the environment of target rural area and households using animal manures which causes indoor air pollution as well.

It also set the trajectory of no carbon development pathway by utilizing indigenous renewable energy source in rural Bangladesh.

More detailed information of the biogas digesters and user households are provided in Annex 5.

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

>>

Brief information of the CPA operator is as follows.

Name of the CPA operator	Grameen Shakti
Whether is it a project participant?	Yes
Whether is it the CME?	Yes
Name and Position in charge of the CPA	[name] Head, International Cooperation & Development
Location of the office	Grameen Bank Bhaban (19 th floor), Mirpur 2, Dhaka 1216, Bangladesh
Partner organization of IDCOL?	Yes

The PoA has only one CPA operator which is GS.

CPA Operator is defined as the unique entity responsible for the CPA. *Implementers* of the CPA are offices of GS or other organizations than GS which implement the activities of the CPA under the CPA operator. Implementation includes introduction of biogas digesters, monitoring, *etc.*

Apart from the terminology of CDM, the management role of the PoA as well as each CPA is to be undertaken by GS HQ, under the supervision of IDCOL, supported by PEAR. Implementation of

⁵ Domestic Health Hazard and Indoor Air-Pollution: An Approach to Find Alternative Energy Source for Rural Bangladesh to Minimize the Threat, S. M. Reazul Ahsam, *et al.*

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the activities is done by GS Unit (Branch) Offices and other organizations (*i.e.*, they are called implementers) in general. The implementers are required to send the necessity information to GS HQ. (In order to avoid confusion, we do not use the terminology ‘CPA implementer’).

There is no other implementer than GS Unit (Branch) Offices for the CPA. [OR, replaced by the following table(s).]

Brief information of other implementer(s) of the CPA than GS is: *[if needed, add tables]*

Organization of the implementer	<i>[name of organization]</i>
Whether is it a project participant?	No
Whether is it the CME?	No
Name and Position in charge of the CPA	<i>[name]</i> <i>[position]</i>
Location of the office	<i>[Postal address]</i>
Partner organization of IDCOL?	Yes

Organization of the implementer	<i>[name of organization]</i>
Whether is it a project participant?	No
Whether is it the CME?	No
Name and Position in charge of the CPA	<i>[name]</i> <i>[position]</i>
Location of the office	<i>[Postal address]</i>
Partner organization of IDCOL?	Yes

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

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

>>

A.4.1.1. Host Party:

>>

Bangladesh

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

>>

Each location of the biogas digester and user households in Bangladesh covered by this CPA are summarized in Annex 5 and specified in the attachment file.

The entity responsible for the CPA is Grameen Shakti as specified in A.3.

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

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

>>

[The first date of the period specified in A.1 and A.2 comes here as D1/M1/Y1] which is defined as the starting date of operation of the first biogas digester in the CPA.

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

>>

20 years 0 month

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 first date of the period specified in A.1 and A.2 comes here as D1/M1/Y1] which is defined as the starting date of operation (*i.e.*, real action) of the first biogas digester in the CPA.

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

>>

7 years (as crediting period for the PoA is 28 years, the total crediting period of any CPA through renewing should be limited to the end date of the PoA crediting period)

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

>>

Year	Estimation of overall emission reductions (tonnes of CO ₂ e)
Year A	
Year A+1	
Year A+2	
Year A+3	
Year A+4	
Year A+5	
Year A+6	
Year A+7	
Total (tonnes of CO ₂ e)	

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[Note] It is noted that 8 calendar years are required for the 7-year crediting period unless the CPA started on Jan.1.

A.4.5. Public funding of the CPA:

>>

Since a part of the PoA is undertaken as the IDCOL program (NDBMP), public funding—whose source comes from several industrialized countries—is used mainly for the source of micro-financing (loan) which provides flexibility for the households for initial investment. On the other hand, it is noted that GS does not invest in the biogas digesters. Each household invests (in many cases by utilizing the micro-financing scheme operated by GS).

It is also noted that any Annex I Party government will not obtain CERs in compensation for the ODA.

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

>>

The largest 100 m³/day biogas digester (independent subsystem) under a CPA of the PoA generates around 22 kW_{th} in average. This figure is much less than 1% of the threshold of small scale CDM project (45 MW_{th}). Therefore, as per “GUIDELINES ON ASSESSMENT OF DEBUNDLING FOR SSC PROJECT ACTIVITIES” (version 03) (paragraph 10)⁶, any CPA of the PoA is exempt from performing a de-bundling check.

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

>>

The third eligibility criteria specifies the procedures to confirm this point as follows:

(3) *The CPA is not a part of a registered CDM project or not a CPA under another PoA.*

Regarding inclusion of any CPA to the PoA, the CME or GS identifies if there is any registered CDM project activity or CPA of a registered PoA that targeting the same households in Bangladesh.

So far, there has been not any biogas digester related CDM project (renewable cooking energy related) or PoA in Bangladesh. Along with the PoA implementation,

DOE is to check whether the information of all current registered CDM project activities and CPAs under PoAs in Bangladesh provided by the CME or GS cover the cooking energy use of targeted households in general.

For this purpose, GS is to prepare the database to exclude the cases where

⁶ If each of the independent subsystems/measures (e.g., biogas digester, solar home system) included in the CPA of a PoA is no larger than 1% of the small-scale thresholds defined by the methodology applied, then that CPA of PoA is exempted from performing de-bundling check i.e., considering as not being a de-bundled component of a large scale activity.

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- (a) User households of the CPA are not covered by other existing CPAs of this PoA, by checking that the period to define the CPA is different from others. Basically this is true, but if some overlap is set for the period, the households in the overlapping period is checked to avoid double-counting; and
- (b) User households of the CPA used ICS before use of biogas, by introducing checking system in the database.

It is noted that there is a registered PoA for installation of improved cookstoves (ICS).⁷ The CPA does not target the household covered by this PoA. A checking system is introduced whether the household has already installed ICS under registered PoA 4971. If so, the household is not covered under the CPA nor PoA.

In addition, each biogas digester is equipped with some physical label, mark or tag specifying that the digester be installed under the CDM PoA. Its digital photo is taken and collected in a database.

If this procedure is introduced at the time of the first CPA and no changes from that time, this criterion is met.

The information in Annex 5 as well as attachment file shows the related information for the items (a) and (b) above.

This ICS PoA is the only PoA which targets thermal energy use of household in rural Bangladesh to date. *[This paragraph will be modified if other PoAs, which may target the thermal energy use of the same household, will be implemented in rural Bangladesh. The method how to avoid overlapping will be described as well in this case.]*

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: **Programme for Promotion of Access to Domestic Biogas in Rural Bangladesh**
Ver.: 2.0
Date: 12/12/2011

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

>>

All of the eligibility criteria are met as shown below:

- (1) *The CME and GS define the period during which the biogas digester systems covered by the CPA are installed (e.g., 1/4/2012–31/9/2012). It provides a list of all user information with starting date of the service as well as the associated biogas digester and cookstoves for use.*

⁷ PoA 4791: “Improved Cooking Stoves in Bangladesh”. See http://cdm.unfccc.int/ProgrammeOfActivities/poa_db/SE7XIMKF8NYVOTL16BW3U45C9ZDGAP/view.

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Summary list is attached to the CPA-DD and the electronic file is provided also to the DOE with full relevant information.

DOE is to desk review that the period is consistent with the defined starting date of the CPA as well as to review whether the information is consistent.

It is noted that the starting date of CPA can be an earlier date of inclusion if it is after the starting date of the PoA.⁸

Location of each household is also shown in the file. DOE is to confirm all of them are in the geographical area of Bangladesh (*i.e.*, geographical area of the CPA).

As shown in sub-section A.2. backed by Annex 5 and attachment file, this condition is met.

- (2) *The CPA includes installation/construction of biogas digester systems, biogas delivery lines and biogas cookstoves at rural households or small and medium farms in Bangladesh. GS, under the supervision of the CME, has a records and documentation control process for each CPA as a part of its management system.*

CPA-DD with the relevant list of information is submitted for inclusion after installation of all biogas systems in the CPA.

GS, under the supervision of the CME, will inspect installation of biogas digesters and watch their operation regularly. GS keeps information of digesters in a CPA such as locations, ID numbers, names of user households including that of the digester owner and number of biogas cookstove burners and starting date of operation. GS shall demonstrate that it prepares the management system and operates it properly to the DOE.

DOE is to check whether GS prepared the management system and operates it properly with the relevant reporting arrangement to the CME and can be verifiable at the time of verification. DOE can desk review of this criterion by checking all relevant information provided by GS. If all of them are met for the first CPA and no changes from that time, this criterion is considered to be met.

It is noted that proper operation of the management system will be checked at the time of verification again in more detail. In case verification identifies some improper functions in the management system, new CPA inclusion cannot be done until the CME or GS will demonstrate to fix all identified issues.

The management system has not been changed after the validation process. *[If some changes was made, explain how it has been changed. It is also needed to state that all of the requirements for CDM has been maintained as before.]* No significant problems have been observed. *[If some*

⁸ “Glossary of CDM terms” (ver. 05) (http://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf) specifies that

Starting date of a CDM programme activity (CPA - All types)

The starting date of a CDM programme activity is the earliest date at which either the implementation or construction or real action of a programme activity begins. The starting date of the CPA cannot be prior to the commencement of validation of the programme of activities, *i.e.* the date on which the CDM-POA- DD is first published for global stakeholder consultation.

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significant problems occurred, please specify what it is. It is also needed to state that all of the necessary data was recovered or emission reductions are not claimed for the data lost.]

In addition, as shown in sub-section A.2. backed by Annex 5 and attachment file, this condition is met.

(3) *The CPA is not a part of a registered CDM project or not a CPA under another PoA.*

See sub-section A.4.7 for confirmation.

(4) *Installations/operations of biogas digesters shall be in compliance with related national and sectorial standards and regulations.*⁹

DOE is to check whether the CME or GS provided all related documents. For proper operation, providing relevant handbook with suitable instruction and establishment of maintenance system are considered to be the evidences. If all of them are provided for the first CPA and no changes from that time, this criterion is met.

It is noted that a monitoring system is introduced to include only properly operating biogas digesters in the calculation of emission reductions.

The national and sectorial standards and regulations, which set requirements to the PoA activities, has not been changed after the validation process. *[If some changes was made, explain how it has been changed. It is also needed to state that all requirements by them are met.]* Therefore, this condition is met.

(5) *The aggregated capacity of biogas cookstoves under a CPA is less than 15 MW_{th}, i.e., the aggregated number of burners of cookstoves is less than 8,000.*¹⁰

Bearing the threshold in mind, GS, under the supervision of the CME, constructs the database of digester systems (including cookstoves and related equipment) for each CPA to and provides all specific information of biogas digester system to DOE.

DOE is to desk review the specification of the system (*esp.*, number of burners of biogas cookstoves) and *ex ante* calculation of GHG emission reductions specified or attached to the CPA-DD.

As shown in sub-section A.2. backed by Annex 5 and attachment file, this condition is met. See A.2. for the cookstove numbers.

⁹ Infrastructure Development Company Ltd. (IDCOL) Model Biogas Plant Construction Manual, IDCOL/SNV, April 2006.

¹⁰ See footnotes 8 and 10 for calculations (of the PoA-DD).

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

Please see sub-section E.5.1 of the PoA-DD which is referred as below:

If a CPA that employs renewable energy under the PoA is up to 5 MW_e, then the CPA is demonstrated to be additional by following the Guidelines specified in “Guidelines for demonstrating additionality of microscale project activities” (version 03) approved in the 63th meeting of EB.

The Guidelines states:

Paragraph 2 (c). The project activity is designed for distributed energy generation (not connected to a national or regional grid)¹¹ with both conditions (i) and (ii) satisfied;

(i) Each of the independent subsystems/measures in the project activity is smaller than or equal to 1500kW electrical installed capacity;.

(ii) End users of the subsystems or measures are households/communities/small and medium enterprises (SMEs).

The Guidelines also states that:

Paragraph 6. Project activity’ in paragraphs 2–4 means a small scale or large scale CDM project activity or a project activity under a programme of activities (CPA of a PoA).

Because the capacity of each household biogas cookstove (independent sub-system) is around 1.65 kW_{th} (for single burner), *i.e.*, much less than the threshold 1,500 kW_e (4,500 kW_{th}) and all end users of the sub-systems are households that each CPA satisfies the condition stipulated in the “Guidelines for demonstrating additionality of microscale project activities”.

Therefore, according to the Guidelines mentioned above, any CPA under the PoA is additional.

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.

>>

As shown in sub-section E.3 of the PoA-DD, As shown in sub-section E.3 of the PoA-DD, the boundary of a CPA is the physical, geographical site of renewable energy (biogas) is used through installation and operation of biogas digesters at households. The GHGs and sources being considered within the boundary are included in the table below.

Table: Emission sources included in or excluded from the project boundary

Source		Gas	Included?	Justification / Explanation
<i>Baseline</i>	Emissions from non-renewable biomass use	CO ₂	Yes	Major emission source
		CH ₄	No	Not significant. Excluded for simplification and conservativeness

¹¹ This means that projects applying AMS.I-D are not eligible.

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		N ₂ O	No	Not significant. Excluded for simplification and conservativeness
<i>Project Activity</i>	CO ₂ emissions from non-renewable biomass use	CO ₂	Yes	In case household still uses non-renewable woody biomass after use of biogas
		CH ₄	No	Zero emission source
		N ₂ O	No	Zero emission source

As the CPA targets households in rural Bangladesh, it is obvious that the CPA is located within the geographical boundary of the registered PoA.

B.5. Emission reductions:

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

>>

Data / Parameter:	B_{HH}^{BL}
Data unit:	ton/household/year
Description:	Woody biomass consumption per household per year
Source of data used:	Standardized approaches for facilitating the baseline emission calculations under AMS-I.E
Value applied:	3.29
Justification of the choice of data or description of measurement methods and procedures actually applied:	The default value is set by the SSC WG report: [to be replaced] http://cdm.unfccc.int/Panels/ssc_wg/meetings/033/ssc_033_an08.pdf
Any comment:	This value is applied for all CPAs.

Data / Parameter:	f_{NRB}
Data unit:	No dimension
Description:	<i>NRB</i> : Share of non-renewable woody biomass used in the absence of the project activity <i>DRB</i> : Share of (demonstrably) renewable woody biomass used in the absence of the project activity
Source of data used:	Fraction of non-renewable woody biomass used among whole woody biomass in the absence of the project activity, defined as $f_{NRB} = \frac{NRB}{NRB + DRB}$ where NRB is the non-renewable woody biomass and DRB is the demonstrable renewable woody biomass.
Value applied:	1.0

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	(JPMorgan Climate Care report and World Bank “Restoring Balance—Bangladesh’s Rural Energy Realities”)
Justification of the choice of data or description of measurement methods and procedures actually applied:	Because Bangladesh is a LDC, available official documents are limited. Therefore, JPMorgan conducted a comprehensive study considering CDM-specific requirements into account. In addition, the World Bank Report (footnote 3) and other materials (see footnote 2) support this result. This is also supported by the registered PoA 4971: “Improved Cooking Stoves in Bangladesh (footnote 11), shows the value is 1.0 (page 22–23).
Any comment:	–

Data / Parameter:	NCV_{biomass}
Data unit:	TJ/ton
Description:	Net calorific value of the woody biomass
Source of data used:	Methodology
Value applied:	0.015
Justification of the choice of data or description of measurement methods and procedures actually applied:	Default value as per AMS-I.E. (ver. 04)
Any comment:	–

Data / Parameter:	$EF_{\text{projected_fossilfuel}}$
Data unit:	t CO ₂ /TJ
Description:	Emission factor for substitution of woody biomass
Source of data used:	Methodology
Value applied:	81.6
Justification of the choice of data or description of measurement methods and procedures actually applied:	Default value as per AMS-I.E (ver.04)
Any comment:	–

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

>>

The sub-section E.6.2 of the PoA-DD (eq. 9 and 10) shows:

$$ER_y = 1.163 \cdot N_{\text{HH},y}^{\text{OP}} \cdot (3.29 - B_{\text{HH}}^{\text{PJ}})$$

In case $B_{\text{HH}}^{\text{PJ}} = 0$, per household emission reductions is calculated as

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(emission reductions per household) = 3.83 [tCO₂/yr/household]

The amount of mission reductions *ER* in a typical year (assuming that one year has passed from installation of the last biogas digester and all digesters functions properly) is calculated as

$$ER_y = 3.83 \cdot N_{HH,y}^{OP} \text{ [tCO}_2\text{/yr]}$$

$$= [\textit{insert calculated value}] \text{ [tCO}_2\text{/yr]}$$

by inserting that

$$N_{HH,y}^{OP} = [\textit{insert the number of user households covered by the CPA}]$$

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)
Year A			0	
Year A+1			0	
Year A+2			0	
Year A+3			0	
Year A+4			0	
Year A+5			0	
Year A+6			0	
Year A+7			0	
Total (tonnes of CO ₂ e)			0	

[Note] It is noted that 8 calendar years are required for the 7-year crediting period unless the CPA started on Jan.1.

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

B.6.1. Description of the monitoring plan:

>>

1. Monitoring framework

The operation and management structure for monitoring involves both GS HQ and the implementers (GS Branch Offices and other organizations).

GS HQ (supported by PEAR) will act as the overall supervisor of implementers, and undertake data checking reported by each implementer (GS Branch Offices or other organizations), aggregating

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the data, conducting necessary calculations of emission reductions and preparing a monitoring report periodically (typically annually) to the DOE.

The implementers will undertake the monitoring of the CPA operations including household surveys based on the operation and monitoring manual prepared by GS HQ. Results will be reported to GS HQ. GS have the responsibility to manage and operate the CPA as one and the unique CPA operator.

GS HQ will manage whole activities under the PoA. Other organizations may join as implementers.

2. The role of implementers

The following table shows the role of GS branch (unit) offices and other implementers (for other organizations).

Table: Functions of implementers

	GS HQ (supported by PEAR)	Implementers (GS offices or other organizations)
Monitoring management	<ul style="list-style-type: none"> - Develop the operation and monitoring manual for CPAs. - Develop and establish data collection and reporting system for parameters monitored in every CPAs. - Implement and manage monitoring of CPAs. 	<ul style="list-style-type: none"> - Implement and manage monitoring of CPAs.
Data collection	<ul style="list-style-type: none"> - Establish and maintain data collection systems for parameters monitored. - Check data quality and collection procedures of each CPAs regularly. 	<ul style="list-style-type: none"> - Implement data collection. - Check data quality and collection procedures regularly.
Data storage and management	<ul style="list-style-type: none"> - Develop database format of CPA. - Check the reported data from each CPAs. - Calculate emission reductions based on the data reported by the implementers. - Implement data management of PoA. - Store and maintain records. 	<ul style="list-style-type: none"> - Enter collected data to a computer database. - Implement data management of CPA. - Store and maintain records.
Reporting	<ul style="list-style-type: none"> - Analyze data and compare project performances. - Prepare and forward monthly or annual reports. 	<ul style="list-style-type: none"> - Report electronic data to the program coordinator. - Households report related information and any malfunctions happened on biogas digesters to the implementer (GS)

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		unit offices or other organization)
CDM training and capacity building	- Develop and establish training program for GS branch offices, other organizations and households.	- Implement simple training for households, ensuring enabled to meet the needs of the monitoring plan.
Quality assurance and verification	- Establish and maintain quality assurance system with a view to ensuring transparency and allowing for verification. - Prepare for, facilitate and co-ordinate verification process.	- Undertake regular check of biogas digester for 2 years (monthly for households utilizing micro-finance), including assurance for 5 years maintenance as well as to make contract to inform malfunction to the GS branch office after that period for recovery. - All of these information are recorded and reported to the GS HQ.

3. Monitored data

The data to be monitored are shown below:

Data / Parameter:	$N_{HH,y}^{OP}$
Data unit:	number
Description:	Number of user households which are successfully utilizing the biogas from operating biogas digesters in the CPA in a year <i>y</i> .
Source of data to be used:	This value is specified in the database of the management of the PoA. This parameter is calculated <i>ex post</i> by using the dataset of $n_i^{OP}_{HH,y}$ below. This value can be a fraction if some digester is out of order for a certain period or a digester starts its operation in the middle of the verification period.
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:	GS constructs a database for the PoA. The database includes the information of the household which introduced a biogas digester and the user households of the biogas digester. This parameter is calculated as an aggregation of each household: $N_{HH,y}^{OP} = (1/365) \cdot \sum_i n_i^{OP}_{HH,y}$ (For notation, see the next monitoring item) It also includes the starting date of operation of the biogas digester as well as the maintenance record of the digester.
QA/QC procedures to be applied:	This parameter is automatically calculated in the database.
Any comment:	It is noted that the summation is over the <i>user household</i> of biogas and not summation over biogas digester. Some biogas digester may deliver biogas to

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	several households. On the other hand, judgment of ‘operation’ is related to the status of the associated <i>biogas digester</i> , i.e., $n_i^{OP}_{HH,y}$ belonging to the same biogas digester is the same.
--	---

Data / Parameter:	$n_i^{OP}_{HH,y}$
Data unit:	number of days
Description:	Number of days during which user household (specified as <i>i</i>) is successfully utilizing the biogas from an operating biogas digester in the CPA in a year <i>y</i> .
Source of data to be used:	This parameter is based on the status report by the unit offices of GS or other organizations’ report.
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:	GS unit offices monitor and record each biogas digester’s operation status as well as each household’s use of biogas. This is integrated to its maintenance service. At the unit-office level, the staff will be in close touch with the customers, as they will periodically (once every month, in principle) visit the customers' houses both to collect the installments and to attend to any servicing requirements. After all payment, the unit office staff visits the household at least every year as well as every call for trouble for the operation of the biogas digester.
QA/QC procedures to be applied:	Monitoring, recording and reporting by each unit office is integrated to existing GS management system. Database managed by GS HQ is to collect all the data for calculation of $N^{OP}_{HH,y}$. The biogas digester owner shall communicate with GS unit office if additional user households were included after the installation of the system.
Any comment:	It reflects the starting date of operation and the duration of trouble of the biogas digester in the year.

Data / Parameter:	n_i^{burner}
Data unit:	number
Description:	Number of biogas cookstove burners per each household <i>i</i>
Source of data to be used:	Order sheet of the biogas digester system
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:	Usually, specs and numbers of the biogas cookstoves are shown in the order sheet of the biogas system.

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applied:	
QA/QC procedures to be applied:	<p>Inspected after installation of the biogas digester system.</p> <p>The biogas digester owner shall communicate with GS unit office if additional biogas cookstoves were installed after the installation of the system.</p>
Any comment:	<p>This parameter is used to judge whether the CPA complies with the eligibility criterion (4).</p> <p>The maximum number of the burners per a CPA is 9,096 in order to meet the threshold of Microscale CDM, while the eligibility criterion set the limit as 8,000 (around 88% of the threshold); it has the safety margin.</p>

4. Data collection

Data collection regarding households will mainly be carried out by implementers (GS branch offices and other organizations). The role of GS HQ in data collection is checking the quality of the data collected by implementers.

5. Data management

Data management is the most important step in the monitoring process to ensure transparent and credible emission reduction calculations.

Each implementer (GS branch offices or other organization) shall collect data described in section E.7.1 and archive these electronically using the common template developed by the program coordinator. The electronic files and the hard copy shall be sent to the GS HQ.

The GS HQ will develop an appropriate electronic template for archiving all data of every CPA. After reporting data from each branch office or other implementers, the GS HQ shall check the data. If there are any errors found, they will be checked against original data and carry out interview with farmers if necessary. All the responses to these errors will be documented and compiled.

The GS HQ will calculate emission reductions for each CPA supported by PEAR and store the outputs in hard disks as well as hard copy printouts.

The relevant information is reported to IDCOL.

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SECTION C. Environmental Analysis

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

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

Biogas digester promotion projects are seen to have few negative impacts on the environment. Especially domestic biogas digester promotion projects are implemented at household level and their impact on the environment is identical in most extension regardless of location; therefore, environmental clearance certificate will be gained at the PoA level.

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

>>

Please refer sub-section C.2 of the PoA-DD. There is no specific elements to this CPA.

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:

>>

No EIA is required for activities under the PoA.

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SECTION D. Stakeholders' comments

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

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

Since CPAs under the PoA will be implemented dispersedly in all rural Bangladesh, which is also the geographical boundary for the PoA and the program design, distribution and implementation aspects including the CDM issues are essentially uniform across the country with no CPA specific characteristics, hence it is appropriate to conduct a stakeholder consultation at a PoA level.

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

>>

D.3. Summary of the comments received:

>>

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

>>

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Annex 1

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

Organization:	Grameen Shakti
Street/P.O.Box:	Mirpur-2
Building:	Grameen Bank Bhaban (19 th Floor)
City:	Dhaka
State/Region:	Dhaka
Postfix/ZIP:	1216
Country:	Bangladesh
Telephone:	88029004314
FAX:	88028035345
E-Mail:	g_shakti@grameen.net
URL:	http://www.gshakti.org/
Represented by:	Abser Kamal
Title:	Managing Director
Salutation:	Mr.
Last Name:	Kamal
Middle Name:	
First Name:	Abser
Department:	
Mobile:	8801711567042
Direct FAX:	
Direct tel:	
Personal E-Mail:	g_shakti@grameen.com

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

[Please refer Annex 2 of the PoA-DD.](#)

Annex 3

BASELINE INFORMATION

[Please see B.5 and Annex 5 for details of information.](#)

Annex 4

MONITORING INFORMATION

[Please refer to B.6.1 of the PoA-DD.](#)

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[Annex 5](#)

INFORMATION OF THE BIOGAS DIGESTERS AND USER HOUSEHOLDS

The necessary information for CDM specified in A.4.4.1 (2) for this PoA are summarized.

[The template will be prepared by the GS HQ.]

In addition, a database spread sheet file is provided for more detailed biogas digester-wise and household-wise information.
