




# Validation report form for renewal of crediting period of component project activities

(Version 03.0)

## BASIC INFORMATION

<b>Title and UNFCCC reference number of the programme of activities (PoA)</b>	<b>Title:</b> Nepal Biogas Support Program – PoA <b>UNFCCC Reference number:</b> 9572		
<b>Version number of the validation report</b>	02		
<b>Completion date of the validation report</b>	05/05/2021		
<b>Version numbers of PoA-DD to which this report applies</b>	17		
<b>Title and UNFCCC reference number of each CPA for renewal</b>	<b>CPA Ref. no.</b>	<b>Title</b>	
	9572-P2-0005-CP2	Nepal Biogas Support Program - CPA 5: 19,842 digesters	
<b>Sectoral scopes for each CPA</b>	<b>CPA Ref. no.</b>	<b>Sectoral scopes (indicate mandatory and conditional sectoral scopes)</b>	
	9572-P2-0005-CP2	1 : Energy industries (renewable/non-renewable sources) 13: Waste Handling and disposal	
<b>Applied methodologies and standardized baselines for each CPA</b>	<b>CPA Ref. no.</b>	<b>Applied methodologies and standardized baselines</b>	
	9572-P2-0005-CP2	AMS.I.E. Switch from Non-Renewable Biomass for Thermal Applications by the User, Version 9.0	
<b>Number and duration of the next crediting period (CP)</b>	<b>CPA Ref. no.</b>	<b>No. of CP</b>	<b>Duration of the CP</b>
	9572-P2-0005-CP2	02	25/08/2021 to 24/08/2028 (including both dates)
<b>Coordinating/managing entity (CME)</b>	Alternative Energy Promotion Centre (AEPIC)		
<b>Host Parties</b>	Government of Nepal		
<b>Estimated amount of annual average greenhouse gas (GHG) emission reductions or GHG removals by sinks in the next crediting period (tCO<sub>2</sub>e), per CPA</b>	<b>CPA Ref. no.</b>	<b>Annual emission reductions or removals (tCO<sub>2</sub>e)</b>	
	9572-P2-0005-CP2	64,592tCO <sub>2</sub> eq	
<b>Name and UNFCCC reference number of the DOE</b>	Name: KBS Certification Services Pvt. Ltd. UNFCCC reference number: E-0051		
<b>Name, position and signature of the approver of the validation report</b>	 Kaushal Goyal Managing Director KBS Certification Services Pvt. Ltd.		

**SECTION A. Executive summary**

>> KBS Certification Services Pvt. Ltd. has been contracted by 'Alternative Energy Promotion Centre (AEPCC)' to perform a validation of the CDM registered CPA 'Nepal Biogas Support Program - CPA 5: 19,842 digesters' (UNFCCC Ref 9572-P2-0005-CP2) under the PoA "Nepal Biogas Support Program – PoA" (UNFCCC Ref #9572) for renewal of crediting period.

The scope of the validation is defined as an independent and objective review of the revised Component project activity design document, the CPA's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against the CDM Validation and Verification Standard for Programme of Activities (version 02), Project Cycle Procedure for Programme of Activities (version 02) and Project Standard for Programme of Activities (version 02), Kyoto Protocol requirements and UNFCCC rules.

The report is based on the assessment of the Component project activity design document, application of standard auditing techniques including but not limited to desk review, follow up actions (e.g., electronic (telephone or e-mail) interviews) and also the review of the applicable approved methodological and relevant tools, guidance and CDM decisions. This report summarizes the findings from the validation of the updated CPA-DD of the CPA, performed on the basis of UNFCCC criteria for CDM, as well as criteria given by the CDM VVS PoA, CDM Project cycle procedure for programme of activities and CDM Project Standard for Programme of Activities and included an assessment of: (a) The impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant guidance from the Board with regard to renewal of the crediting period at the time of requesting renewal of crediting period; (b) The correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions from the applicable crediting period. This validation opinion is also to be seen in conjunction with the validation report at the time of requesting registration for the first crediting period. The Validation Opinion is not meant to provide any consultancy towards the CME. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

The CPA is the installation of biogas plants (digesters) of or 2 m<sup>3</sup> 4 m<sup>3</sup> or 6 m<sup>3</sup> or 8 m<sup>3</sup> capacity each in the various regions and provinces of Nepal. The biogas units will be fed by cattle dung generated from the households. The biogas stoves will replace the traditional fire wood stoves used for cooking and heating purposes. Thereby, it avoids the related CO<sub>2</sub> emission from the use of non-renewable biomass. The CPA uses only one design i.e. GGC 2047 model.

The baseline scenario adopted for the project is the use of fossil fuels for thermal energy applications. CME has installed biogas units in 19,842 households, wherein all the units were commissioned. Annual emissions reductions for the CPA are 64,592 tCO<sub>2</sub>e per year in average.

The review of the project design documentation and the subsequent follow-up interviews have provided KBS with sufficient evidence to determine the project's fulfilment of all the stated criteria. In our opinion, the project meets all applicable UNFCCC requirements for the CDM.

☒ The Component project activity will be recommended to the CDM Executive Board with a request for renewal of crediting period.

☐ The Component project activity is not recommended for renewal of crediting period

**SECTION B. Validation team, technical reviewer and approver****B.1. Validation team member**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Validation findings
1.	Team Leader, Technical Expert (13.1)	IR	Sharma	Shikha	Central Office	X	Remote audit	x	x
2.	Technical Expert (1.1)	IR	Kandari	Sanjay	Central Office	X	Remote audit	x	x
3.	Validator-Trainee	IR	Malik	Ananya	Central Office	X	Remote audit	x	x
4.	Local Expert	EI	Adhikari	Sujan	Central Office	X	Remote audit	x	

**B.2. Technical reviewer and approver of the validation report for RCP**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer, Technical Expert (TA 1.1/13.1)	IR	Chaudhari	Tushar	Central Office
2	Manager Technical & Certification	IR	Chaudhari	Tushar	Central Office
3	Authorizer	IR	Goyal	Kaushal	Central Office

**SECTION C. Means of validation****C.1. Desk/document review**

>>The report is based on the assessment of the component project activity design document version 04 and subsequent versions, application of standard auditing techniques including but not limited to desk review, follow up actions (e.g., electronic (telephone or e-mail) interviews) and also the review of the applicable approved methodological and relevant tools, guidance and CDM decisions.

All the documents used for arriving validation conclusion are listed in Appendix 03 and referenced accordingly in validation report.

## C.2. On-site inspection

As a result of the COVID-19 pandemic, taking into account the rules of relevant national and local authorities (local to the DOE offices as well as to locality of the site visits), World Health Organization (WHO) recommendations, policies of the DOE and other relevant travel restrictions and guidance (for example, a requirement to self-isolate upon return from specific countries), a DOE may postpone site visits for onsite inspections required by the “CDM validation and verification standard for programme of activities (version 02.0) (VVS-PoA)”.

If the site visits cannot be postponed, a proper justification should be provided by the DOE why the site visits cannot be postponed, including the demonstration of a significant impact of delaying the site visits on the DOE, or project participants or coordinating/ managing entity (e.g. commitment/ timeline as per the validation or verification contract, CER delivery commitment by project participants) reliance on applicable force majeure provisions in the validation or verification contracts, if needed.

For this CPA, CME is a government entity and has made commitment/timeline as per the validation contract. Hence the site visit could not be postponed for this CPA. Hence, the DOE has skipped the on-site visit. However as per the CDM EB, the DOE may use other standard auditing techniques for validation or verification as referred to in section 7.1.3 of the VVS for PoA/12/.

Validation team has used the following alternative means for its assessment and to justify that they are sufficient for the purpose of validation. Along with desk review, audit team has conducted remote audit interview as follows:

- A complete desk review of the CPA-DD, as well as all applicable country legal requirement and supportive evidences have been checked by the validation team.
- Validation team has performed Microsoft teams interview with CME in order to check implementation, project boundary, current situation, etc.
- Interview questions were filled as per Validation team interview checklist and also videos conferencing was done to check implementation of the CPA, project technology, baseline of CPA etc. Total 11 biogas owners were inspected through video conferencing and interviewed in order to assess the baseline appliance and usage of biogas in the baseline and project case for CPA.
- Cross-check evaluation, for information received from interviews, under the scope of all information and references provided in CPA-DD and supporting documents.

Details of interviewees, topics covered and additional information presented in the below section “C.3 Interviews”

Validation team has also checked the site visit requirements mentioned in the VVS for PoA Version 02/12/ and concluded that no-site visit is required at this stage of validation. The justification for not conducting the on-site visit as per VVS PoA Version 02 /12/ have been mentioned below:

VVS PoA version 02 requirements	Validation team justification
Para 29 (b) (b) Follow-up actions (e.g. on-site inspection and telephone or e-mail interviews), including: (i) Interviews with relevant stakeholders in the host country, such as personnel with knowledge of the PoA design and implementation; (ii) Cross checks between the information provided by interviewed personnel (i.e. by checking sources or other interviews) to ensure that no relevant information has been omitted;	Validation team has done the follow-up actions by: 1. telephonic call and e-mail conversations of CME. 2. Cross checks between information provided by interviewed personnel (i.e. by checking sources or other interviews) to ensure that no relevant information has been omitted.
Para 183 It is mandatory for the DOE to conduct an on- site inspection at validation for the proposed CPA if: (a) Its estimated annual average of GHG emission reductions or net anthropogenic GHG removals is more than 100,000 t CO <sub>2</sub> eq; or	The validation team has not considered the site visit as mandatory due to the following reasons which are in line with the VVS PoA version 02 requirements: a. For the CPA to be renewed, the estimated annual average of GHG emission reductions

(b) There is pre-project information that is relevant to the requirements for inclusion of the CPA and may not be traceable after the inclusion.	<p>or net anthropogenic GHG removals is 64,592 tCO<sub>2</sub>e which is less than 100,000 t CO<sub>2</sub> eq.</p> <p>b. Also there is no pre-project information that is relevant to the requirements for renewal of the CPA and may not be traceable after the renewal.</p> <p>Hence for the proposed CPA, it is not mandatory to conduct the site visit.</p>
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Duration of on-site inspection: DD/MM/YYYY to DD/MM/YYYY				
No.	Activity performed on-site	Site location	Date	Team member
1.				
...				

## C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Pokhrel	Prem Kumar	Climate and Carbon Financing Expert, AEPC	15/03/2021	Telephone interview encompassing the following topics: <ul style="list-style-type: none"> <li>General description</li> <li>Technologies / measures</li> <li>Methodology applicability</li> <li>Monitoring plan</li> <li>Estimation of emission reductions</li> </ul>	Shikha Sharma (Team Leader & TA Expert 13.1), Sanjay Kandari (TA expert 1.1), Ananya Malik (Verifier- trainee)
2.	MAINALI	BENI BDR	Province no 2, Bara	14/04/2021 - 17/04/2021	Project implementation, Baseline, Commissioning of digester, Mode of distribution etc.	Sujan Adhikari (Local Expert)
3	UPRETI	TIKA PD	Province no 2, Bara			
4	THARU	PHAGU	Province no 2, Bara			
5	JOSHI	SUNDARI	Sudurpaschim Province, Darchula			
6	NEUPANE	SHIV SHANKAR	Province no 1, Jhapa			
7	DHUNGEL	SHIVA KUMAR	Province no 1, Jhapa			
8	GOTAME	AMBAR	Bagmati Province, Makwanpur			
9	POUDEL	CHANDRA KANTA	Bagmati Province, Makwanpur			
10	GURUNG	SETI	Gandaki Province, Tanahun			
11	GURUNG	MIN BDR	Gandaki Province, Tanahun			

12	KARKI	SAGAR KUMAR	Province no 1 , Udaypur			
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#### C.4. Sampling approach

>> As stated in section C.2 above, a remote auditing was conducted for CPA 05. Sampling approach was applied during remote auditing with respect to para 29 (e) ii) of VVS for PoA version 02.0 /12/ to check the physical implementation of the CPA in line with the registered PoA /03/ and assess the baseline as stated in CPA-DD /01/. CME has provided the CPA database /15/ and random samples from the list were checked. In order to meet the requirement of paragraph 24 and 25 of "Sampling and surveys for CDM project activities and programmes of activities Version 08.0 /11/, simple random sampling was applied. 11 bio digester users samples were checked by remote auditing and compared the observations with the information mentioned in the CPA database (19,842 households) /15/, Biogas user survey /14/, CPA-DD /01/ and other documents. Sampling approach using the Standard (Sampling and surveys for CDM project activities and programmes of activities Version 08.0) has been applied as per Table on page 13 "Sample size and acceptance number based on AQL, UQL, and producer and consumer risks.

The following approach for the same from the table in standard is chosen:

- AQL 0.5%, UQL 20%,
- Producer risk: 10%
- Consumer risk: 10%

with "0" acceptance number to arrive at the sample size from each appliance i.e. bio digester.

The details including baseline practice, date of distribution of project digesters, type of product, Unique id of digesters, name of user and address etc. were verified and found to be consistent with the ones reported in the database and other supportive documents. No inconsistency was observed for any of the samples. Summary is below:

Parameters/Asects	Total Population	CME's sample size	Acceptance sample size	Acceptance Number	Sampling method used
baseline practice, date of distribution of project digesters, type of product, Unique id of digesters, name of user and address	19,842	NA at validation stage	11	0	Acceptance Sampling based on random selection of households.

#### C.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Area of validation findings (SECTION D)	No. of CL	No. of CAR	No. of FAR
CPAs to be renewed and corresponding generic CPAs	--	--	--
Compliance with CPA-DD form	--	CAR 01, CAR 03	--
Application and selection of methodologies and standardized baselines	--	CAR 01, CAR 02	--
Validity of original baseline or its update	--	--	--
Demonstration of eligibility of the CPAs	CL 01	--	--
Estimated emission reductions or net anthropogenic removals	CL 02	--	--
Validity of monitoring plan	--	CAR 02	FAR 01
Crediting period	--	CAR 04	--
CME and project participants	--	--	--
Post-registration changes	--	--	--
Others (please specify)	--	--	--
<b>Total</b>	<b>02</b>	<b>04</b>	<b>01</b>

**SECTION D. Validation findings****D.1. CPAs to be renewed and corresponding generic CPAs**

Title and UNFCCC reference number of the CPA	Version number of the CPA-DD	Host Party	Title and reference number of the corresponding generic CPA	Version number of the PoA-DD on which the RCP is based
Nepal Biogas Support Program - CPA 5: 19,842 digesters  9572-P2-0005-CP2	06	Government of Nepal	Nepal Biogas Support Program – CPA XXXX (9572-XXXX)	17

**D.2. Compliance with CPA-DD form**

<b>Means of validation</b>	CPA-DD applies the applicable CDM-CPA-DD-FORM: Component project activity design document form version 9/09/. KBS verified that the renewal crediting period, information transferred to the later valid version of the CPA-DD form is materially the same as that in the registered CPA-DD/01/.
<b>Findings</b>	CAR 01 and CAR 03 were raised and successfully closed. Refer to appendix 4 for further details.
<b>Conclusion</b>	Validation team confirms that final CPA-DD is completed using the valid version of the applicable CDM-CPA-DD-FORM: Component project activity design document form version 09/09/ in compliance with para 390 (a) (i) of VVS for PoA version 02. All the information has been correctly transferred from registered CPA-DD to the current CPA-DD which is filled in the latest CPA-DD form available in UNFCCC website. Validation team confirms that the transfer of information from the old form to the new form is correct and materially the same as the information in the registered CPA-DD and also in compliance with the latest registered PoA-DD which is further in compliance with para 390 (a) (ii) of VVS for PoA version 02. CPA-DD is in compliance with the instruction provided in the template.

**D.3. Application and selection of methodologies and standardized baselines**

Means of validation	At the time of CPA inclusion, the CPA applied the following methodology		
	<ul style="list-style-type: none"><li>AMS.I.E. Switch from Non-Renewable Biomass for Thermal Applications by the User, Version 5.0</li></ul>		
	For the renewal of crediting period, the submitted revised generic CPA part of the PoA-DD /3/ correctly applies the version of the methodology, i.e. version 09 – “AMS.I.E. Switch from Non-Renewable Biomass for Thermal Applications by the Use”/06/. Therefore, the generic CPA was validated against AMS.I.E. version 09 /06/ requirements, as assessed below:		
	No.	Applicability of AMS-I.E Version 9.0	Validation Remarks
	1.	The methodology is applicable for technologies displacing use of non-renewable biomass by renewable energy.	The CPA will replace non-renewable biomass by introducing the biogas digester producing renewable energy as confirmed from the CME interviews.

	2.	Small-Scale project requirement: For biomass, biofuel and biogas project activities, the maximal limit of 15MW(e) is equivalent to 45 MW thermal output of the equipment or the plant (e.g. boilers). For thermal applications of biomass, biofuels or biogas (e.g. the cookstoves), the limit of 45 MW <sub>th</sub> is the installed/rated capacity of the thermal application equipment or device/s (e.g. biogas stoves).	The biogas capacity of each stove is 400 litre/hour as verified by the validation team through interviews and technical specifications. With a methane content of 52%, this gives an annual natural gas capacity of not more than 1.86 kW <sub>th</sub> per stove (validated during registration). This means that around 24,000 stoves would still have an aggregated capacity below the 45MW <sub>th</sub> small scale threshold value, however the CPA has 19,842 installations only. Therefore, the validation team confirms that the criteria is met.
	3.	This methodology comprises of activities to displace the use of non-renewable biomass by introducing renewable energy technologies. Examples of these technologies include, but are not limited to biogas stoves, bio-ethanol stoves, solar cookers, passive solar homes.	The digesters are indeed “small thermal appliances that displace the use of non-renewable biomass by introducing new renewable energy end-user technologies”. AMS-I.E. even lists biogas stoves as an example of eligible end user technologies. Therefore, the validation team confirms that the criteria is met.
	4.	Project participants are able to show that non-renewable biomass has been used since 31 December 1989, using survey methods or referring to published literature, official reports or statistics.	The BUS conducted in 2018-2019 demonstrated that the time needed to gather firewood, the price of firewood and the distance travelled to gather firewood is increasing at least since December 1989 as verified from the supportive/14/. In that survey the respondents were asked to provide averages for the time needed to gather firewood, the distance travelled and the price. The average of the estimates from all respondents, showed a clear increase on all three indicators. Therefore, the validation team confirms that the criteria is met.
	5.	For project activities introducing bio-ethanol cook-stoves, project participants or coordinating and managing entities shall demonstrate that the bio-ethanol cook-stoves are designed, constructed and operated to the requirements (e.g. with regard to safety) of a relevant national or local standard or comparable literature. Latest guidelines issued by a relevant national authority or an international organisation may also be used.	The CPA does not include the bio-ethanol cookstoves and hence this is not applicable for this CPA.
<b>Findings</b>		CAR 01 and CAR 02 were raised and successfully closed. Refer to appendix 4 for further details.	
<b>Conclusion</b>		The CPA fulfills all relevant criteria of the applied methodology AMS.I.E. Switch	



from Non-Renewable Biomass for Thermal Applications by the User, Version 9.0.  
Hence use of the selected methodology is appropriate for this CPA.

#### D.4. Validity of original baseline or its update

Means of validation	The validity of the baseline was assessed in the PoA level in accordance with the applicable validation requirements in the VVS PoA. Therefore, it can be concluded that the original baseline is still valid for the current CPA.			
	Also, as per para 392 of the VVS PoA, the validation team confirms that the following parameters have been updated from the registered CPA-DD:			
	Parameter	Value in the registered CPA-DD (Version 03)	Value in the revised CPA-DD (Version 04)	Assessment
	f <sub>NRB,y</sub>  Fraction of woody biomass saved by the project activity during year y that can be established as non-renewable biomass	86%	86.1 %	The validation team confirms that the value has been calculated as per the latest tool for Calculation of the fraction of non-renewable biomass” and is fixed in the latest PoA-DD.
	EF <sub>projected_fossilfuel</sub>  Emission factor for the projected fossil fuel consumption in the baseline.	81.6 tCO <sub>2</sub> /TJ	63.7 tCO <sub>2</sub> /TJ	The validation team confirms that the updated value is consistent with the applied methodology i.e AMS.I.E. version <b>Error! Reference source not found.</b> and is fixed in the latest PoA-DD.
B <sub>y</sub>  Quantity of woody biomass that is substituted or displaced	3.33 tonne/household/ year	4.50 tonne/household/ year	The value has been calculated based on latest biogas user surveys conducted by the CME during 2019 and it was found to be acceptable by the validation team.	
Findings	No finding was raised.			
Conclusion	Validity of the baseline has been correctly assessed and the parameters are updated as per the Methodology Tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period”/17/ in the validated PoA-DD submitted for the renewal of crediting period. The same is applicable for the CPA.			

#### D.5. Demonstration of eligibility of the CPAs

<b>Means of validation</b>	According to the PoA/03/, the proposed CPA shall comply with the following eligibility criterion:
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	No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion
	1	Geographical boundary	<ul style="list-style-type: none"> <li>- All biogas digesters in the CPA are located within the geographical boundaries of Nepal.</li> <li>- 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.</li> </ul>	<p>The CME will provide the Project description and geographical coordinates of the CPA as per one of following documents:</p> <ul style="list-style-type: none"> <li>- Commissioning Report from Biogas Companies (BC)/16/.</li> <li>- CPA Database/15/ indicating digester code, address and GPS coordinate.</li> </ul>
	2	Double counting	<ul style="list-style-type: none"> <li>- Double counting is avoided by assuring that no digester is already included to a different CDM project or CPA.</li> <li>- 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).</li> </ul>	<p>As described under section K of this PoA-DD, the CME will provide the following documents:</p> <ul style="list-style-type: none"> <li>- CPA Database indicating digester code, address and GPS coordinate.</li> <li>- Unique GPS reading of each digester.</li> <li>- CDM website indicating potential further projects not included to BSP using the same technology</li> </ul>
	3	Technology	<ul style="list-style-type: none"> <li>- AEPC will implement all CPAs as part of the BSP.</li> <li>- All digesters listed in the CPA shall be household biogas digesters with a sludge and gas holding capacity range of 2-10 m<sup>3</sup>.</li> <li>- 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.</li> <li>- The equipment shall be new and not transferred from other project activities.</li> </ul>	<p>The CME will provide the following documents:</p> <ul style="list-style-type: none"> <li>- Commissioning Report from Biogas Companies (BC).</li> <li>- Technical specification documents detailing digester models and equipment applied.</li> </ul>
	4	Start Date	<ul style="list-style-type: none"> <li>- The start date of a CPA is the date of commissioning of the first biogas digester included to that respective CPA.</li> <li>- The start date of CPA 5 shall be 29 February 2012, which is the date of</li> </ul>	<p>The CME will provide the following documents:</p> <ul style="list-style-type: none"> <li>- Commissioning Report from Biogas Companies (BC), indicating the commissioning date.</li> <li>- CPA Database</li> </ul>

			commissioning of the first digester in CPA 5. - 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.	
	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.	The CME will provide the following documents: - 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.	The CME will provide the following documents: - Declaration from CPA implementer / AEPC/14/. - Confirmation of ODA non diversion, as applicable.
	7	Target Group and distribution mechanism	- The target group within the CPA are households.	The CME will provide the following documents: - 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. <sup>1</sup>	The CME will provide the following documents: - BSP/AEPC database to confirm the number of digesters in a CPA is 19,959/15/.
	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	The CME will provide the following documents: - Confirmation that each CPA is a voluntary action not mandated by the Government of Nepal
<b>Findings</b>		CL 01 was raised and successfully closed. Refer to appendix 4 for further details.		
<b>Conclusion</b>		The validation team was able to confirm that the eligibility criteria for the renewal of		

<sup>1</sup> Estimated maximum capacity of 1.86 kWth per stove. Considering that the limit for SSC is 45 MW<sub>th</sub>, the maximum number of digesters allowed under a CPA (20,000) remains well below the SSC threshold.

crediting period of CPA defined in the PoA-DD is in accordance with the applicable requirements in para 124 of the PS for PoA.

## D.6. Estimated emission reductions or net anthropogenic removals

Means of validation	<b>Baseline Emission:</b> 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 <sub>y</sub>	Baseline Emissions during the year y (tCO <sub>2</sub> e)									
	B <sub>y</sub>	Quantity of woody biomass that is substituted or displaced in tonnes									
	f <sub>NRB,y</sub>	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% <sup>2</sup>									
	NCV <sub>biomass</sub>	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 <sub>projected-fossilfuel</sub>	Emission factor for substitution of non-renewable woody biomass by similar consumers. Use a value of 63.7 tCO <sub>2</sub> /TJ <sup>3</sup>									
	Following are the data parameters fixed ex-ante:										
	<table><tr><th>Parameter</th><th>Value</th><th>Source and validation</th></tr><tr><td><b>BC<sub>BL,HH,y</sub></b>  Average annual consumption of woody biomass per household before the start of the project activity</td><td>5.04 tonne/household/year</td><td>The value is fixed and was found to be consistent with the registered PoA-DD for 2<sup>nd</sup> crediting period.</td></tr><tr><td>f<sub>NRB,y</sub>  Fraction of woody biomass saved by the project activity during</td><td>86.1 %</td><td>The value is fixed and was found to be consistent with the registered PoA-DD for 2<sup>nd</sup> crediting period.</td></tr></table>			Parameter	Value	Source and validation	<b>BC<sub>BL,HH,y</sub></b>  Average annual consumption of woody biomass per household before the start of the project activity	5.04 tonne/household/year	The value is fixed and was found to be consistent with the registered PoA-DD for 2 <sup>nd</sup> crediting period.	f <sub>NRB,y</sub>  Fraction of woody biomass saved by the project activity during	86.1 %
Parameter	Value	Source and validation									
<b>BC<sub>BL,HH,y</sub></b>  Average annual consumption of woody biomass per household before the start of the project activity	5.04 tonne/household/year	The value is fixed and was found to be consistent with the registered PoA-DD for 2 <sup>nd</sup> crediting period.									
f <sub>NRB,y</sub>  Fraction of woody biomass saved by the project activity during	86.1 %	The value is fixed and was found to be consistent with the registered PoA-DD for 2 <sup>nd</sup> crediting period.									

<sup>2</sup> 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%

<sup>3</sup> 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 CO<sub>2</sub>/TJ) and 91 per cent for LPG (63.0 t CO<sub>2</sub>/TJ).

	year y that can be established as non-renewable biomass		
	EF <sub>projected_fossilfuel</sub> Emission factor for the projected fossil fuel consumption in the baseline.	63.7 tCO <sub>2</sub> /TJ	The value is fixed and was found to be consistent with the applied methodology and the registered PoA-DD for 2 <sup>nd</sup> crediting period.
	N <sub>HH</sub> Number of households in each CPA in year y	19,842 digesters	The value has been checked from the CPA database and was found to be acceptable by the validation team.
<p><b>Project emission:</b> According to AMS-I.E (version 09), the project emission is estimated as zero.</p> <p><b>Leakage:</b> The default factor of 0.95 is used to account for any potential leakage, as prescribed by the methodology which is found OK.</p> <p><b>Emission reduction:</b> As per the methodology, emission reduction (ER<sub>y</sub>) is calculated as below: ER<sub>y</sub> = BE<sub>y</sub> - PE<sub>y</sub> - L<sub>y</sub> = 67,991 – 0 – 3,399 = 64,592 tCO<sub>2</sub>/year</p> <p>CME has submitted the ex-ante emission reduction estimation in a excel sheet/2/. The excel sheet is clear, viewable, non-protected and the calculated values in the sheet are reproducible. Hence, the ex-ante emission reduction calculated for this project is correct.</p>			
<b>Findings</b>	CL 02 was raised and successfully closed. Refer to appendix 4 for further details.		
<b>Conclusion</b>	<p>The assessment team confirms that</p> <ul style="list-style-type: none"> <li>• All assumptions and data used by the CME are listed in the CPA-DD, including their references and sources;</li> <li>• All documentation used by CME as the basis for assumptions and source of data is correctly quoted and interpreted in the CPA-DD;</li> <li>• All values used in the CPA-DD are considered reasonable in the context of the proposed project activity;</li> <li>• The baseline methodology, AMS-I.E, version 9.0 has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions;</li> </ul> <p>All estimates of the baseline emissions can be replicated using the data and parameter values provided in the CPA-DD.</p>		

#### D.7. Validity of monitoring plan

<b>Means of validation</b>	<p>The monitoring plan is in compliance with the monitoring methodology AMS-I.E, version 9.0 /06/. The CPA was originally included applying Small scale methodology AMS-I.E, version 5.0. For the 2<sup>nd</sup> crediting period, the version i.e. version 9.0 of the same methodology AMS-I.E has been applied and the monitoring plan of the same has been adopted.</p> <p>As per the AMS-I.E Version 9.0 methodology, the following parameters will be monitored:</p>		
	<b>Sl. No.</b>	<b>Parameters</b>	<b>Monitoring procedure</b>
	1	Date of commissioning of project device of type i	The validation team has checked commissioning report/16/ and CPA

		Actual date of commissioning of the project device.	database/15/ and found consistent.
	2	NCV <sub>biomass</sub>  Net calorific value of the non-renewable woody biomass, briquettes or charcoal used in project devices	De-fault value has been applied from the methodology AMS I.E version 09/6/ and found consistent.
	3	BC <sub>PJ,HH,y</sub>  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	The value has been verified from the biogas user survey report/14/ and found consistent by the validation team.
	4	B <sub>y</sub>  Quantity of woody biomass that is substituted or displaced	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.  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 B <sub>y</sub> as follows:  $B_y = N_{HH} * (BC_{BL,HH,y} - BC_{PJ,HH,y})$ where N <sub>HH</sub> 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 P <sub>y</sub> is Proportion of Bio digesters operational estimated based on the sample survey.
The monitoring plan will give opportunity for real measurements of achieved emission reductions.			
<b>Findings</b>	CAR 02 was raised and successfully closed. . Also, FAR 01 has been raised. Refer to appendix 4 for further details.		
<b>Conclusion</b>	The monitoring plan provided in the CPA-DD is in line with applied methodology AMS-I.E., version 9.0. From the verification of the monitoring procedure provided in the CPA-DD, validation team could conclude that the CME is able to implement the monitoring plan.		

#### D.8. Crediting period

<b>Means of validation</b>	As verified from the CPA-DD/01/, the start date of 2 <sup>nd</sup> crediting period for this CPA is from 25/08/2021 to 24/08/2028 with the length of 7 years.
<b>Findings</b>	CAR 04 was raised and successfully closed. Refer to appendix 4 for further details.
<b>Conclusion</b>	The start date of 2 <sup>nd</sup> crediting period is next date of the end date of 1 <sup>st</sup> crediting period and hence, it is acceptable.

#### D.9. CME and project participants

<b>Means of validation</b>	As per the registered PoA-DD/3/ and previous CPA-DD, the CME and parties
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	involved in the CPA were:	
	<b>CME</b>	<b>Party</b>
	Alternative Energy Promotion Centre (AEPC)	Government of Nepal (host)
	As per submitted CPA-DD/01/, the CME and parties involved in the CPA are same as stated above.	
	Also, Validation team confirms that the name of the CME in the updated CPA-DD /02/ is consistent with the names of the CME in the latest version of the MoC statement /19/ in compliance with para 390 (vi) of VVS for programme of activities 02 /12/.	
<b>Findings</b>	No findings raised.	
<b>Conclusion</b>	Validation team confirm that the name of the CME in the updated CPA-DD /02/ is consistent with the name of the CME in the latest version of the MoC statement /19/ in compliance with para 390 (vi) of VVS for programme of activities 02 /12/.	

#### D.10. Post-registration changes

Type of post-registration changes (PRCs)	Confirmation (Y/N)	Validation report for PRCs	
		Version	Completion date
Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents <sup>4</sup>	N	NA	NA
Corrections	N	NA	NA
Changes to the start date of the crediting period of component project activity	N	NA	NA
Inclusion of monitoring plan	N	NA	NA
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from applied methodologies, standardized baselines, or other methodological regulatory documents	N	NA	NA
Changes to the project design	N	NA	NA
Changes specific to afforestation and reforestation activities	N	NA	NA
Others (please specify)	N	NA	NA

#### SECTION E. Internal quality control

>> Following the completion of the assessment process and a recommendation by the assessment team, the validation opinion prepared by Team Leader is independently reviewed by internal Technical Reviewer. TR reviews if all the KBS procedures have been followed and all conclusions are justified in accordance with applicable standards, procedures, guidance and CDM decisions. The TR either is qualified for the technical area within the CDM sectoral scope(s) applicable to project activity or is supported by qualified independent technical expert at this stage.

The Technical Reviewer will either accept or reject the recommendation made by the assessment team. The findings can be raised at this stage and CME must resolve them within agreed timeline.

The opinion recommended by Technical Reviewer will be confirmed by Manager Technical & Certification and finally authorized by the Managing Director on behalf of KBS as final validation opinion. The Technical Reviewer and Manager T&C maybe be same person.

<sup>4</sup> Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

**SECTION F. Validation opinion**

>> KBS Certification Services Pvt. Ltd. has been contracted by 'Alternative Energy Promotion Centre (AEPC)' to perform a validation of the CDM registered CPA 'Nepal Biogas Support Program - CPA 5: 19,842 digesters' (UNFCCC Ref 9572-P2-0005-CP2) under the PoA "Nepal Biogas Support Program – PoA" for renewal of crediting period.

The validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism, latest version of Validation and Verification Standard for Programme of Activities and related Standards/Guidance and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The CDM programme of activity will result in reductions of greenhouse gas (GHG) emissions that are real, measurable and give long-term benefits to the mitigation of climate change. In our opinion, the project meets all relevant UNFCCC, CDM criteria and all relevant host country criteria.

The review of the Component project activity design documentation and the subsequent follow-up interviews have provided validation team with sufficient evidence to determine the validity of the original baseline and/or its update through an assessment. The Component project activity design document correctly applies large scale methodology AMS I E version 09. It is demonstrated that the project baseline scenario is not changed and also all necessary parameters are updated correctly for the 2<sup>nd</sup> crediting period.

The monitoring plan provides for the monitoring of the project's emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design, and it is validation team's opinion that the project participants are able to implement the monitoring plan.

In summary, it is validation team's opinion that the CDM CPA 'Nepal Biogas Support Program - CPA 5: 19,842 digesters' (UNFCCC Ref 9572-P2-0005-CP2) meets all relevant UNFCCC requirements for the renewal of the crediting period. Hence KBS requests the renewal of the crediting period of the component project activity.



## Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CH <sub>4</sub>	Methane
CL	Clarification request
CM	Combined Margin
CME	Coordinating/Managing Entity
CO <sub>2</sub>	Carbon dioxide
CPA	Component Project Activity
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
KBS	KBS Certification Services Pvt. Ltd.
PDD	Project Design Document
PE	Project Emissions
PoA	Program of Activities
PoA-DD	Program of Activities Design Document
PP	Project Participant
PRC	Post registration change
PS	Project Standard
PCP	Project Cycle Procedure
RCP	Renewal of Crediting period
QA/QC	Quality Assurance/Quality Control
tCO <sub>2e</sub>	Tonnes of CO <sub>2</sub> equivalents
T&C	Technical & Certification
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation & Verification Standard

## Appendix 2. Competence of team members and technical reviewers

<b>Personnel Name:</b>		<b>Sanjay Kandari</b>	
<b>Qualified to work as:</b>			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input checked="" type="checkbox"/>
Technical Reviewer	<input checked="" type="checkbox"/>	Local Expert (India)	<input checked="" type="checkbox"/>
<b>Area(s) of Technical Expertise</b>			
<b>Sectoral Scope</b>	<b>Technical Area</b>		
Energy Industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Energy demand	TA 3.1. Energy Demand		
Waste Handling and Disposal	TA 13.1 Waste Handling and Disposal TA 13.2 Manure		
Approved by (Manager C & T)	Akhilesh Joshi		
Approval date:	11/12/2015		

<b>Personnel Name:</b>		<b>Ms. Shikha Sharma</b>	
<b>Qualified to work as:</b>			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input type="checkbox"/>	Local Expert	<input type="checkbox"/>
<b>Area(s) of Technical Expertise</b>			
<b>Sectoral Scope</b>	<b>Technical Area</b>		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Waste Handling and Disposal	TA 13.1 Waste Handling and Disposal		
Approved by (Manager C & T)	Sanjay Kandari		
Approval date:	14/01/2021		

<b>Personnel Name:</b>		<b>Sujan Adhikari</b>	
<b>Qualified to work as:</b>			
Team Leader	<input type="checkbox"/>	Technical Expert	<input type="checkbox"/>
Validator/Verifier	<input type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input type="checkbox"/>	Local Expert (Nepal)	<input checked="" type="checkbox"/>
<b>Area(s) of Technical Expertise</b>			
<b>Sectoral Scope</b>	<b>Technical Area</b>		
<b>NA</b>	<b>NA</b>		
Approved by (Manager C & T)	Gagandeep Kakkar		
Approval date:	05/05/2020		

<b>Personnel Name:</b>		<b>Ms. Ananya Malik</b>	
<b>Qualified to work as:</b>			
Team Leader (Trainee)	<input type="checkbox"/>	Technical Expert	<input type="checkbox"/>

Validator/Verifier- Trainee	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input type="checkbox"/>	Local Expert	<input type="checkbox"/>
<b>Area(s) of Technical Expertise</b>			
<b>Sectoral Scope</b>	<b>Technical Area</b>		
-	-		
Approved by (Manager C & T)	Sanjay Kandari		
Approval date:	07/12/2020		

<b>Personnel Name:</b>	<b>Tushar Chaudhari</b>		
<b>Qualified to work as:</b>			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input checked="" type="checkbox"/>
Technical Reviewer	<input checked="" type="checkbox"/>	Local Expert (India)	<input checked="" type="checkbox"/>
<b>Area(s) of Technical Expertise</b>			
<b>Sectoral Scope</b>	<b>Technical Area</b>		
Energy Industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Energy demand	TA 3.1. Energy Demand		
Waste Handling and Disposal	TA 13.1 Waste Handling and Disposal		
Approved by	Manager Competency & Training		
Approval date:	02/09/2020		

## Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	AEPC	Registered CPA DD  Revised CPA-DD (Initial)  Revised CPA-DD (Intermediate)  Revised CPA-DD (Final)	Version 03, dated 05/02/2014  Version 04, dated 16/02/2021  Version 05, dated 29/04/2021  Version 06, dated 04/05/2021	AEPC
2	AEPC	ER Calculation Sheet  Final ER sheet	Version 01, dated 16/02/2021  Version 02, dated 16/02/2021	AEPC
3	AEPC	Registered PoA-DD	version 17, dated 05/09/2019	Publically available
4	KBS	Validation Report	Dated 17/09/2019	Publically available
5	UNFCCC	Web page in UNFCCC, , previous validation and verification reports	<a href="https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/7/BSCYZMH2U05TWXFJKE/LND18PRQ96O/view">https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/7/BSCYZMH2U05TWXFJKE/LND18PRQ96O/view</a>	Publically available
6	UNFCCC	AMS.I.E – “Switch from Non-Renewable Biomass for Thermal Applications by the User”	Version 09	Publically available
7	IPCC	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book	<a href="#">Web link</a>	Publically available
8	UNFCCC	Kyoto Protocol (1997)	<a href="#">Web link</a>	Publically available
9	UNFCCC	CPA-DD-FORM	Version 9.0	Publically available
10	UNFCCC	CDM Project Standard for PoAs	Version 2.0	Publically available
11	UNFCCC	Standard: Sampling and surveys for CDM project activities and programme of activities	Version 08	Publically available
	UNFCCC	Guidelines for sampling and surveys for CDM project activities and programme of activities	Version 04	Publically available
12	UNFCCC	CDM Validation and Verification Standard for PoAs.	Version 02	Publically available
13	UNFCCC	Glossary “CDM terms”	Version 10	Publically available
14	AEPC	Biogas basic record set: - Biogas application form/ Subsidy Application Forms - End user agreement for	For the digesters installed	AEPC

		CER ownership - Biogas user survey report - Declaration from CPA implementer / AEPC on ODA		
15	AEPC	Biogas distribution database	-	AEPC
16	AEPC	Sample Commissioning Reports	-	AEPC
17	UNFCCC	Methodology Tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period"	Version 3.0.1	Publically available
18	AEPC	Signed Risk acknowledgment and acceptance form	Dated 03/05/2021	AEPC

## Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. CL from this validation

CL ID	01	Section no.	D.5	Date: 16/04/2021
Description of CL				
Following documents are required for further validation process: <div><div>1.</div><div>Commissioning Report from Biogas Companies (BC)</div></div> <div><div>2.</div><div>Installation confirmation from Biogas Companies (BC)</div></div> <div><div>3.</div><div>Declaration from CPA implementer / AEPC on ODA</div></div>				
CME response				Date: 29/04/2021
<div><div>1.</div><div>Commissioning Report from Biogas Companies are attached with the response. See SD#1 for the reference.</div></div> <div><div>2.</div><div>Installation confirmation and commissioning reports are same. So, please see SD#1 for the reference.</div></div> <div><div>3.</div><div>CME has declared during CPA inclusion that the whole PoA and its CPAs does not result in diversion of ODA from any development partners. Please see attached letter SD#2 submitted during inclusion of CPA.</div></div>				
Documentation provided by CME				
SD#1_Plant Completion reports-CPA-5				
SD#2_Declaration of ODA non-diversion from AEPC				
DOE assessment				Date: 29/04/2021
<div><div>1.</div><div>The commissioning reports from biogas companies have been provided and the commissioning dates mentioned in the reports were found to be consistent with the dates mentioned in the database. Hence, the finding is closed.</div></div> <div><div>2.</div><div>The commissioning/installation reports from biogas companies have been provided and therefore, the installation dates have been confirmed. Hence, the finding is closed.</div></div> <div><div>3.</div><div>The declaration for non-diversion of ODA has been provided and checked by the validation team. Hence, the finding is closed.</div></div>				

CL ID	02	Section no.	D.6	Date:	16/04/2021
<b>Description of CL</b>					
CME shall clarify the basis for calculating the value of P <sub>y</sub> [i.e. Percentage of digesters implemented that is operational in year y (Performance Factor)] as no justification for the same has been provided in the ER sheet.					

<b>CME response</b>	<b>Date:</b> 29/04/2021
The operational percentage of digester is taken from the registered PoA-DD for ex-ante calculation of CPA. Please see footnote 29 of the registered PoA-DD (SD#3) for clarification. Since this is taken for ex-ante calculation and will be monitored ex-post, this has no impact in actual ER calculation during monitoring. So, the ER sheet is also revised accordingly and provided with this response.	
<b>Documentation provided by CME</b>	
SD#3_PoA-DD_9572_V17 9572_ER calculation_CPA-5_V.02	
<b>DOE assessment</b>	<b>Date:</b> 29/04/2021
As checked from the footnote 29 of the registered PoA-DD, the operational status has been taken as 89 % for the ex-ante calculation and therefore, applied the same in CPA for its ex-ante calculation. Further, during the remote interviews, it has been confirmed that the operational status shall be monitored ex-post. Hence, the finding is closed.	

Table 2. CAR from this validation

<b>CAR ID</b>	01	<b>Section no.</b>	D.2, D.3	<b>Date:</b> 19/02/2021
<b>Description of CAR</b>				
<ol style="list-style-type: none"> <li>1. In the cover page of the CPA-DD, the host country mentioned is inconsistent with the registered PoA-DD.</li> <li>2. Under section A.1 of the CPA-DD, as per the CPA-DD Template instructions, CME shall include a summary of the following: <ol style="list-style-type: none"> <li>a. The project boundary;</li> <li>b. The baseline scenario;</li> <li>c. The estimates of annual average and total GHG emission reductions for the chosen crediting period.</li> </ol> Also, Indicate the small-scale project type (Type I, Type II and/or Type III) applicable to the CPA in accordance with the corresponding generic CPA </li> <li>3. Under section A.2 of the CPA-DD, as per the CPA-DD Template instructions, CME shall include a map of the project location.</li> <li>4. Under section A.3 of the CPA-DD, CME has stated that "The technologies used in this CPA are household biogas digesters with a sludge and gas holding capacity range of up to 10 m<sup>3</sup>". However, it has been mentioned subsequently that up to 8 m<sup>3</sup> capacity will be used in this CPA. CME shall correct the same. Further, the figure providing the design of digesters was found to be missing.</li> <li>5. Under section A.3 of the CPA-DD, as per the CPA-DD Template instructions, CME shall: <ol style="list-style-type: none"> <li>a. Specify whether the age and average lifetime of the equipment based on the manufacturer's specifications and industry standards that are within the range specified in the corresponding generic CPA</li> <li>b. Provide a short summary of the baseline scenario;</li> <li>c. Describe the technologies/measures existing prior to the implementation of the CPA.</li> </ol> </li> </ol>				
<b>CME response</b>				<b>Date:</b> 29/04/2021
<ol style="list-style-type: none"> <li>1. The host country in cover page of CPA-DD is revised in line with the registered PoA DD.</li> <li>2. The corresponding summary of the project boundary, baseline scenario, estimates of average annual and total GHG emission reductions for the crediting period and the applicable type of the small scale PoA are also appropriately included in section A.1 of the revised CPA-DD</li> <li>3. The map showing the district coverage is also included in section A.2 of revised CPA-DD.</li> <li>4. The biogas digesters included in the CPA are up to 8 cum capacity. So, this has been corrected appropriately in section A.3 of revised CPA-DD</li> <li>5. The information on baseline scenario, technologies/measure under baseline scenario and project scenario and the life of the technology implemented are given in section A.3 of the revised CPA-DD.</li> </ol>				
<b>Documentation provided by CME</b>				
Revised CPA-DD				
<b>DOE assessment</b>				<b>Date:</b> 29/04/2021

1. The host country mentioned in the revised CPA-DD is now consistent with the registered PoA-DD. Hence, the finding is closed.
2. The details regarding baseline scenario, project boundary and estimated ERs during 2<sup>nd</sup> crediting period has been now mentioned along with small scale type and was verified to be consistent during the remote interview. Hence, the finding is closed.
3. Map of project location has been included in the revised CPA-DD, the location as identified in the same was confirmed through the remote interview. Hence, the finding is closed.
4. As confirmed through the review of commissioning report of biogas companies and during the remote interview, the biogas digesters included in the CPA are up to 8 cu.m. and therefore, the correction done by CME is acceptable. Hence, finding is closed.
5. The summary of baseline scenario, technologies/measure under baseline scenario and project scenario and the life of the technology implemented as verified during remote interview has been now provided in the revised CPA-DD and was found to be consistent. Hence, the finding is closed.

<b>CAR ID</b>	02	<b>Section no.</b>	D.3, D.7	<b>Date:</b> 16/04/2021
<b>Description of CAR</b>				
<ol style="list-style-type: none"> <li>1. Under section B.1 of the CPA-DD, as per the MR form filling guidelines, CME shall include any tools used.</li> <li>2. In section B.4.3 of the CPA-DD, the calculations for ex-ante emission reduction was found to be inconsistent with the ER sheet.</li> <li>3. Under section B.5.1 of the CPA-DD, for the parameter “BC<sub>PJ,HH,y</sub>” and “B<sub>y</sub>”, CME has stated that “Though the methodology requires sample survey biannually”, however, the monitoring frequency is “biennially”. Hence, the same shall be corrected.</li> </ol>				
<b>CME response</b>				<b>Date:</b> 29/04/2021
<ol style="list-style-type: none"> <li>1. The tools used in formulating PoA-DD and CPA-DD are included in section B.1 of revised CPA-DD.</li> <li>2. Ex-ante calculation is corrected in-line with the ER sheet in section B.4.3 of revised CPA-DD.</li> <li>3. The description for the parameter “BC<sub>PJ,HH,y</sub>” and “B<sub>y</sub>” is corrected appropriately in revised CPA-DD under section B.5.1. Please see revised CPA-DD.</li> </ol>				
<b>Documentation provided by CME</b>				
<i>Revised CPA-DD</i>				
<b>DOE assessment</b>				<b>Date:</b> 29/04/2021
<ol style="list-style-type: none"> <li>1. The latest version of tools used in the CPA has been now mentioned in the revised CPA-DD. Hence, the finding is closed.</li> <li>2. In section B.4.3 of the revised CPA-DD, the calculations for ex-ante emission reduction are now consistent with the ER sheet. Hence, the finding is closed.</li> <li>3. The correction from biannually to biennially as has been done Hence, the finding is closed.</li> </ol>				

<b>CAR ID</b>	03	<b>Section no.</b>	D.2	<b>Date:</b> 16/04/2021
<b>Description of CAR</b>				
<ol style="list-style-type: none"> <li>1. Under section C.1 of the CPA-DD, as per the CPA-DD template (form filling guidelines), CME shall: Describe how the start date has been determined in accordance with the definition of start date provided in the “Glossary: CDM terms.</li> <li>2. Under section C.3.1 of the CPA-DD, as per the CPA-DD template (form filling guidelines), CME shall indicate whether it is the first, second or third crediting period.</li> </ol>				
<b>CME response</b>				<b>Date:</b> 29/04/2021
<ol style="list-style-type: none"> <li>1. The CPA start date is fixed during the inclusion of CPA. The description on how CPA start date has been determined is described accordingly in section C.1 of revised CPA-DD.</li> <li>2. The CPA is proposed for the crediting period renewal for second crediting period and the CPA-DD is applicable for second crediting period. This has been mentioned in section C.3.1 of the revised CPA-DD.</li> </ol>				
<b>Documentation provided by CME</b>				

<i>Revised CPA-DD</i>	
<b>DOE assessment</b>	<b>Date:</b> 29/04/2021
<ol style="list-style-type: none"> <li>1. The start date of CPA (29/02/2012) as verified through the registered documents and during the remote audit has now been mentioned in the revised CPA-DD. Hence, the finding is closed.</li> <li>2. CME has now consistently indicated that the revised CPA-DD is applicable to the second crediting period. Hence, the finding is closed.</li> </ol>	

<b>CAR ID</b>	04	<b>Section no.</b>	D.8	<b>Date:</b> 16/04/2021
<b>Description of CAR</b>				
<ol style="list-style-type: none"> <li>1. In ER sheet, the crediting period dates are not consistent with the CPA-DD start date of crediting period.</li> <li>2. Font type, font size and font colour should be consistent throughout the CPA-DD.</li> <li>3. Data separator (commas) should be added as per the international format in the calculated values.</li> </ol>				
<b>CME response</b>				<b>Date:</b> 29/04/2021
<ol style="list-style-type: none"> <li>1. The ER sheet is corrected accordingly in-line with the crediting period start date of the CPA for this crediting period. Please see revised ER sheet.</li> <li>2. Font type, size and color are made consistent in the revised CPA-DD.</li> <li>3. Data separator are appropriately added in the calculation values in revised CPA-DD.</li> </ol>				
<b>Documentation provided by CME</b>				
<i>Revised CPA-DD</i>				
<b>DOE assessment</b>				<b>Date:</b> 29/04/2021
<ol style="list-style-type: none"> <li>1. The crediting period start date in the ER sheet and CPA-DD are now consistent. Hence, the finding is closed.</li> <li>2. Validation team confirms that the font type, size and color are consistent throughout the revised CPA-DD. Hence, the finding is closed.</li> <li>3. The data separators have been now used in the revised CPA-DD provided. Hence, the finding is closed.</li> </ol>				

Table 3. FAR from this validation

<b>FAR ID</b>	01	<b>Section no.</b>	D.7	<b>Date:</b> 03/05/2021
<b>Description of FAR</b>				
<p><i>The verifying DOE shall ensure that the latest global warming potentials adopted by the CMP have been applied, in converting emission reductions achieved on or after 1 January 2021 to carbon dioxide equivalents in project design document. This shall be conducted in accordance with para 1 c of Annex 1 of the 109<sup>th</sup> EB report, which states that the project participants should:</i></p> <p><i>“i)Apply any global warming potential values that may be adopted by the CMP for that period in their monitoring reports for any emission reductions achieved on or after 1 January 2021; and</i></p> <p><i>(ii)Update their project or programme design documents in accordance with any requirements of the CMP guidance.”</i></p>				
<b>CME response</b>				<b>Date:</b> DD/MM/YYYY
<b>Documentation provided by CME</b>				
<b>DOE assessment</b>				<b>Date:</b> DD/MM/YYYY

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## Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none"><li>• Ensure consistency with version 02.0 of the “CDM validation and verification standard for programmes of activities” (CDM-EB93-A08-STAN);</li><li>• Make editorial improvements.</li></ul>
02.0	29 December 2017	Revision to align with the requirements of the “CDM validation and verification standard for programme of activities” (version 01.0). Change form symbol from CDM-CPA-RCP-FORM to CDM-CPA-RCPV-FORM.
01.0	3 August 2015	Initial publication.
Decision Class: Regulatory		
Document Type: Form		
Business Function: Renewal of crediting period		
Keywords: component project activity, crediting period, validation report		