




**Validation report form for renewal of CDM programme of activities period  
(Version 03.0)**

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

**BASIC INFORMATION**

<b>Title and UNFCCC reference number of the programme of activities (PoA)</b>	West African Biodigester Programme of Activities UNFCCC Ref N°: 9977
<b>Number and duration of the next PoA period</b>	2nd crediting period: 7 years (24/06/2021 - 23/06/2028)
<b>Version number of the validation report</b>	2
<b>Completion date of the validation report</b>	22/03/2021
<b>Version number of PoA-DD to which this report applies</b>	1.7
<b>Coordinating/managing entity (CME)</b>	SNV Netherlands Development Organisation
<b>Host Parties</b>	Burkina Faso Benin
<b>Applied methodologies and standardized baselines</b>	AMS-I.E.: Switch from non-renewable biomass for thermal applications by the user --- Version 11.0.
<b>Mandatory sectoral scopes</b>	1: Energy industries (renewable - / non-renewable sources)
<b>Conditional sectoral scopes, if applicable</b>	N/A
<b>Name and UNFCCC reference number of the DOE</b>	AENOR INTERNACIONAL S.A.U UNFCCC ref. no: E-0021
<b>Name, position and signature of the approver of the validation report</b>	José Luis Fuentes  Climate Change Manager

## SECTION A. Executive summary

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SNV Netherlands Development Organisation has commissioned AENOR to validate the renewal of programme of activities period “West African Biodigester Programme of Activities”. The objective of the validation process is to have an independent, third party assessment of the proposed Small-Scale Programme of Activities (PoA) and the Small Scale CDM Programme Activity (CPA) template with generic information applicable to all CPAs under that PoA against the applicable CDM requirements. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country issues and criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria.

The scope of the validation includes the assessment of updated sections of the PoA-DD relating to the eligibility criteria for inclusion of CPAs in the PoA, the baseline, estimated GHG emission reductions or net anthropogenic GHG removals, the monitoring plan and the PoA period using the valid version of the approved methodology that are applicable to the PoA.

This validation concerns a small scale CDM Programme of Activities (hereinafter PoA) implemented by SNV Netherlands Development Organisation, in Burkina Faso and Benin, to reduce emissions of CO<sub>2</sub> by means of the development of small scale biodigester systems in West Africa to replace traditional thermal energy generation methods at household level.

All documents reviewed as part of the scope of the activity are detailed in the appendix 3. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. AENOR, based on the Specific Instruction for the Processing and Conducting of Validation, Registration, Verification and Certification of Kyoto Protocol CDM Project Activities (IE-DTC-039), has used a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

The validation is not meant to provide any consultancy services to the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the PoA-DD.

The validation was performed through means of the following the requirements of CDM validation and verification standard for programmes of activities, version 02.0, the applied methodology, and relevant CDM rules. The process of the validation included:

- I. Review of data and information;
- II. Cross checks between information provided in the PoA-DD and information from sources;
- III. Review new relevant national and/or sectoral policies;
- IV. The resolution of outstanding issues;

### Validation Process

The programme activity validation assessment for renewal of crediting period aims to be a risk-based approach and is based on the methodology developed in the CDM Validation and Verification Standard for Programme Activities, an initiative of Designated and Applicant Entities, which aims to harmonise the approach and quality of all such assessments.

The validation for the renewal of the crediting period began in October 2020 when the CM provided the initial version of the PoA-DD, and concluded in March 2021, with the submission of the final validation report. The validation was performed in the manner of an audit, where, a desk review of the PoA-DD was undertaken against the latest version of the approved methodology and CDM and other relevant criteria applying to the project.

As a final step of the validation, the validation report and the protocol have to undergo internal quality control by means of a technical review following the procedures of AENOR. The technical reviewer is a competent person from AENOR, independent of the team that carried out the validation of the project activity.

The Programme Design Document submitted by the CME was reviewed against the approved methodology and against CDM and other relevant criteria. Additional background documents related to the project design, rules and regulations issued by the government and baseline were also validated.

The CME was requested to address all validation findings and finally provided the validation team with sufficient evidence to determine that the applicable CDM requirements have been met. The project participant modified the initial updated PoA-DD to resolve the validation team concerns and resubmitted a final version of the updated PoA-DD. AENOR has prepared this report based on the final updated PoA-DD.

All Corrective Action Requests (CAR) and Clarification Actions (CL) have been checked by the validation team and have been adequately resolved. All the validation findings are summarized in section C.5 below and documented in more detail in Appendix 4.

In AENOR's opinion the program correctly applies and meets the relevant UNFCCC requirements for the CDM Programme of Activities and the relevant host country criteria.

## **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	Interview(s)	Validation findings
1.	Team Leader and Validator	IR	Gonzales Toledo	Richard Daniel	AENOR PERU	Yes	N/A	Yes	Yes
2.-	Validator	IR	Arribas Alonso	Luis Javier	AENOR	Yes	N/A	N/A	Yes

### **B.2. Technical reviewer and approver of the validation report for renewal of PoA period**

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	IR	Llorente Perez	Elena	AENOR
2.	Approver	IR	Fuentes Pérez	José Luis	AENOR

## **SECTION C. Means of validation**

### **C.1. Desk/document review**

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The desk review involved:

- CDM validation and verification standard for programmes of activities, version 02.0 /1/
- CDM project standard for programmes of activities, Version 02.0, /2/
- Methodological Tool: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period, Version 03.0.1 /3/
- Registered CDM-PoA-DD, Version 03, Date on 20/06/2014 /4/
- Approved Methodology: AMS-I.E.: Switch from non-renewable biomass for thermal applications by the user --- Version 11 /5/
- Methodological tool: Calculation of the fraction of non-renewable biomass, version 02.0 /6/
- Methodological tool: Project and leakage emissions from biomass, version 04.0 /7/
- Methodological tool: Assessment of de-bundling for small-scale project activities, version 04.0 /8/
- Methodological tool: Positive lists of technologies, version 02.0/9/
- Standard: Sampling and surveys for CDM project activities and programmes of activities, version 04.0 /10/
- Initial version of CDM-PoA-DD, version 1.1 /11/
- Final version of CDM-PoA-DD, version 1.7 /12/
- CDM-Generic-CPA-DD /13/
- Updated Modalities of Communication Statement /14/
- Generic emission reduction calculation for CPAs spreadsheet /15/
- Decision 3/CMP.1 and relevant decisions and guidelines from the EB. /16/
- PoA validation report, Revision number: 04; Report Date: 21/06/2014 /17/
- Local regulation /18/ /19/

## **C.2. On-site inspection**

Due to COVID-19 pandemic and as per the three months allowance granted (from 23 March to 23 June 2020), extended period of 24 June to 31 December 2020 initially, and at 108th EB meeting, paragraph 28 (a) the EB agreed to further extend the period in which DOEs may apply alternative measures of validation/verification to mandatory on-site inspections until 30 June 2021 to deviate from the requirements in paragraph 183 of the VVS PoA version 2.0, no on-site inspection was conducted as part of this validation assessment.

According to the validation contract /21/ the verification shall finish 3 months after the reception of the PoA-DD by AENOR and according to clauses of the contract, this can be terminated due to the interruption of the process for a cause not attributable to AENOR. Since the PoA-DD was received In October 2020 and aforementioned contract provisions the site visit cannot be postponed.

In order to verify information and compliance with applicable requirements and to ensure the completeness and credibility of the audit, this rely on skype interviews with project participants, persons responsible for data collection, photographic evidence /22/ and video recordings of the biodigesters /23/.

AENOR deems that the videoconferences with the PP and consultant, as well as the pictures of biodigesters provided by PP, are sufficient for the purpose of the validation.

AENOR has revised the PoA through desk review of documents, video conferences and interviews, so it can be determined that the description of the PoA reflects the implementation, operation and monitoring of the updated PoA.

This section it is not applicable.

Duration of on-site inspection: DD/MM/YYYY to DD/MM/YYYY				
No.	Activity performed on-site	Site location	Date	Team member
1.	N/A	N/A	N/A	N/A

### C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Lam	Jan	SNV. Advisor renewable energy	10/10/2020 - 04/11/2020	PoA-DD Update  CPA design Update  Changes in local regulation  Ex-ante baseline, project emissions and leakage calculation	Richard Daniel Gonzales Toledo
2	Eric	Buysman	CDM consultant	14/12/2020 - 15/03/2021	PoA-DD Update  CPA design Update  Emission reductions calculation update	Richard Daniel Gonzales Toledo

### C.4. Sampling approach

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Not applicable. Sampling approach has not been used as mean of validation

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

Area of validation findings	No. of CL	No. of CAR	No. of FAR
<b>Programme of activities</b>			
Compliance with PoA-DD form	-	CAR 1	-
Programme of activities period	-	-	-
Coordinating/managing entity and the project participants	-	-	-
Post-registration changes	-	-	-
<b>Generic component project activities</b>	-	-	-
Application and selection of methodologies and standardized baselines	-	-	-
Validity of original baseline or its update	CL 1	CAR 2	-
Estimated emission reductions or net anthropogenic removals	CL 2	-	FAR 1
Validity of monitoring plan	-	-	-
Eligibility criteria for inclusion of CPAs	-	-	-
Others (please specify)	-	-	-
<b>Total</b>	<b>2</b>	<b>2</b>	<b>1</b>

**SECTION D. Validation findings****D.1. Programme of activities****D.1.1. Compliance with PoA-DD form**

<b>Means of validation</b>	The compliance of the PoA-DD with the valid version of the form was checked through desk-review of last version of the PoA-DD (version 1.7) /12/, last version of applicable form (Version 09.0), which includes in its attachment the instructions for filling out it, CDM rules and references and supported documents provided by the CME.
<b>Findings</b>	A corrective action request was raised reading this issue (CAR 1). All information regarding the findings are detailed in appendix 4.
<b>Conclusion</b>	<p>The PoA-DD was completed in the version 09.0 of the PoA-DD form, latest version valid, in accordance with paragraph 390 a) (i) of the VVS PoA.</p> <p>The audit team checked that the information transferred to the later valid version of the PoA-DD is materially the same as that in the registered PoA-DD, in accordance with paragraph 381 VVS of PoA, except for the relevant sections of the PoA-DD updated in accordance with the relevant requirements in the CDM project standard for PoAs (sections of the PoA-DD of the PoA relating to the baseline, estimated GHG emission reductions or net anthropogenic GHG removals, the monitoring plan and the crediting period using a baseline and monitoring methodology).</p> <p>In AENOR's opinion the final version of the PoA-DD has been completed using the latest version of the applicable form and has followed the instructions for filling out attached at the end of the form.</p>

**D.1.2. Programme of activities period**

<b>Means of validation</b>	The programme activities period was validated against information included in the registered PoA-DD /4/. All dates regarding crediting period were checked in the UNFCCC website. The start date of the crediting period is on 24/06/2014; first crediting period goes from 24/06/2014 to 23/06/2021 and PoA duration is 28 years and will finalize on 28/08/2041.
<b>Findings</b>	No findings were found regarding this issue.
<b>Conclusion</b>	<p>According to the VVS-PoA (paragraph 379) /1/, the coordinating/managing entity (CME) shall renew the PoA period of the registered CDM PoA every seven years. Then, after checking recorded dates, validation team concludes that requested of renewal crediting period is in line with registered information of the PoA.</p> <p>In AENOR's opinion CME is requesting renewal of the PoA period seven years after first crediting period and complies with PS-PoA /2/ requirements.</p>

**D.1.3. Coordinating/managing entity and the project participants**

<b>Means of validation</b>	<p>SNV Netherlands Development Organisation is the PoA Coordinating/Managing Entity (CME) for the project activities under the Programme of Activities (PoA).</p> <p>Audit team checked whether the names of the project participants included in the updated PoA-D are consistent with the names of the project participants in the latest version of the MoC statement /14/.</p> <p>CME contact information was validated against registered MoC /14/; also, it was checked that the names of the CME and the project participants included in the updated PoA-DD are consistent with the names of the CME and the PP in the latest version of the MoC statement.</p>
<b>Findings</b>	No findings were found regarding this issue.
<b>Conclusion</b>	In AENOR's opinion no entities other than those authorized as the coordinating/managing entity and the project participants of the proposed CDM PoA are included the PoA-DD.

## D.1.4. Post-registration changes

Type of post-registration changes (PRCs)	Confirmation (Y/N)	Validation report for PRCs	
		Version	Completion date
Corrections	N	-	-
Inclusion of monitoring plan	N	-	-
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents	N	-	-
Changes to the programme design	N	-	-
Addition of CPA inclusion template	N	-	-
Changes specific to afforestation and reforestation activities	N	-	-
Change of coordinating/managing entity	N	-	-

## D.2. Generic component project activities

## D.2.1. Application and selection of methodologies and standardized baselines

Means of validation	The audit team has determined that the valid version of the approved baseline and monitoring methodology selected by the project participants in the registered PoA-DD (AMS-I.E.: Switch from non-renewable biomass for thermal applications by the user --- Version 11.0) has been used in the updated PoA-DD for the renewal of the crediting period and it has been correctly considered the applicability criteria required by the methodology. The applicability criteria will be complied by each individual CPA in a case-by-case basis, as detailed below:	
	Methodology applicability	CPA Condition
	This category comprises activities to displace the use of non-renewable woody biomass by introducing renewable energy technologies. Examples of these technologies include biogas stoves, solar cookers passive solar homes, renewable energy-based drinking water treatment technologies	The end user technology in this project is cook stoves fuelled with biogas from biodigesters which are fed with animal manure, which is a renewable energy source.
	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.	<p>This condition was validated during the first crediting period. Same condition is applicable to the renewal validation</p> <p><b>Burkina Faso:</b> According to the FAO, during the period between 1990 and 2010, forest cover has declined at an average of 1% per year and this has continued with 0.9% per year</p> <p><b>Benin:</b> Between 1990 and 2010, Benin lost an average of 60,000 ha or 1.04% per year. In total, between 1990 and 2010, Benin lost 20.8% of its forest cover, or around 1,200,000 ha.</p>
	In the case that technologies using renewable biomass are used under the project activity, this methodology is applicable where all emissions related to processing of biomass are fully accounted for and biomass is sourced	This project does not use biomass from dedicated plantations nor residues from plantations. The only source of biomass used is animal manure

	<p>from biomass residues and/or a dedicated plantation of the CDM project activity, meeting the following conditions:</p> <ul style="list-style-type: none"> <li>• For projects that use biomass residues, prior to the implementation of the project activity, the biomass residues have not been collected and used but been left for decay and would, in the absence of the project activity, continue to be left for decay; and</li> <li>• For projects that use biomass residues from a production process (e.g. production of sugar or wood panel boards), the implementation of the project does not result in an increase of the processing capacity of raw input (e.g. sugar, rice, logs, etc.) or in other substantial changes (e.g. product change) in this process; and</li> <li>• The biomass used by the project facility is not stored for more than one year; and</li> <li>• In the case biomass from dedicated plantations are used, the applicability conditions of TOOL16 "Project and leakage emissions from biomass" are satisfied.</li> </ul>	
	<p>The following further conditions apply for the fNRB value applied in a component project activity (CPA) of a PoA. The choice between (a) conduct own studies to determine the local fNRB value as per "TOOL30 v.2: Calculation of the fraction of non-renewable biomass" and then apply those values in the CPAs; and (b) use default national values approved by the Board shall be made ex ante. A switch from national value i.e. choice (b) to local values i.e. choice (a) is permitted, under the condition that the selected approach is consistently applied to all CPAs.</p>	<p>The CPAs under this PoA can apply either a national default value or calculate the fNRB value as per tool 30: <i>Calculation of the fraction of non-renewable biomass</i></p>
	<p>For electric cookstoves with integrated renewable energy device or with grid connected renewable energy system employing net metering, project participants shall demonstrate that, on an annual basis, at least 80% of the electricity generated is consumed by the electric cook stoves (i.e. 20% or less of electricity is consumed by other loads connected).</p>	<p>Not applicable. The project installs biodigesters</p>
	<p>For electric cook stoves, in all cases</p>	<p>Not applicable. The project installs</p>



	under paragraph 2(d) above where back-up diesel generators are used, this methodology is only applicable when no more than 1% of total electricity supply occurs from back up diesel generators on an annual basis.	biodigesters
	Under this methodology, emission reductions cannot be claimed only due to fuel-switch aspect and proposed project activities shall introduce new renewable energy based technologies, i.e. technology switch is also involved.	New renewable energy technologies are introduced: biodigesters in which biogas is generated from animal manure.
	Project participants shall describe in the PDD/PoA-DD the proposed method for distribution of project devices and how the double counting of emission reductions has been addressed, for example, using methods such as unique identifications of product and end-user locations (e.g. programme logo), to prevent double counting of emission reductions from the project devices (e.g. between end users, distributors and producers of stoves, producers of renewable energy, producers of processed renewable biomass).	The procedure to avoid double counting is part of the PoA management system. Section B item d in this PoA-DD discusses the system to prevent double counting.
	For project activities introducing bio-ethanol cookstoves, project participants shall demonstrate that the bioethanol cookstoves 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.	biodigesters
	The PoA-DD also includes applicability criteria pertinent to Project activity under a programme of activities (paragraph 49-51 AMS-I.E., version 11)	
Methodology applicability		CPA Condition
<p>The use of this methodology in a project activity under a programme of activities (PoA) is legitimate if the following leakages are estimated and accounted for, where applicable, on a sample basis using a 90/30 precision for the selection of samples, and accounted for:</p> <p>a) Use of non-renewable woody biomass saved under the project activity to justify the baseline of other CDM project activities can also be a potential source of leakage. If this leakage assessment quantifies a</p>		Leakage in each CPA is estimated and accounted for in accordance with the paragraph 49-c of the methodology. The CPAs under this PoA will adjust the By with a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required.

	<p>portion of non-renewable woody biomass saved under the project activity that is then used as the baseline of other CDM project activities, then By is adjusted to account for the quantified leakage;</p> <p>b) Increase in the use of non-renewable woody biomass outside the project boundary to create non-renewable woody biomass baselines can also be a potential source of leakage. If this leakage assessment quantifies an increase in the use of nonrenewable woody biomass outside the project boundary, then By is adjusted to account for the quantified leakage;</p> <p>c) As an alternative to subparagraphs (a) and (b) above, By can be multiplied by a net to gross adjustment factor of 0.9513 to account for leakages, in which case surveys are not required.</p>					
	<p>The following further conditions apply for the fNRB value applied in a component project activity (CPA) of a PoA. The choice between (a) conduct own studies to determine the local fNRB value as per “TOOL30 v.2: Calculation of the fraction of non-renewable biomass” and then apply those values in the CPAs; and (b) use default national values approved by the Board shall be made ex ante. A switch from national value i.e. choice (b) to local values i.e. choice (a) is permitted, under the condition that the selected approach is consistently applied to all CPAs.</p>	<p>The CPAs under this PoA can apply either a national default value or calculate the fNRB value.</p>				
	<p>If the generic CPA consists solely of units that qualify as “microscale CDM units”<sup>18</sup> as defined in the “TOOL19: Demonstration of additionality of microscale project activities”, the conditions to ensure that CPAs that will be included meet the small-scale or microscale thresholds and remain within those thresholds throughout the crediting period of the CPAs are not required.</p>	<p>Not Applicable. The CPA’s under this PoA are small-scale</p>				
	<p>Finally, PP has applied the following tools</p>					
<table><tr><th>Tool</th><th>Applicability Condition</th></tr><tr><td><i>Tool 16 v.04: Project and leakage emissions from biomass</i></td><td>In tool 16 only paragraph 24 is applicable to biodigesters. However, energy is not used to cultivate biomass or process biomass.</td></tr></table>			Tool	Applicability Condition	<i>Tool 16 v.04: Project and leakage emissions from biomass</i>	In tool 16 only paragraph 24 is applicable to biodigesters. However, energy is not used to cultivate biomass or process biomass.
Tool	Applicability Condition					
<i>Tool 16 v.04: Project and leakage emissions from biomass</i>	In tool 16 only paragraph 24 is applicable to biodigesters. However, energy is not used to cultivate biomass or process biomass.					

	<i>Tool 20 v.04.: Assessment of debundling for small-scale project activities paragraph v.1</i>	This tool is applicable to proposed small-scale project activities and small-scale CPAs in order to check whether they are debundled components
	<i>Tool 21 v.13.1: Demonstration of additionality of small-scale project activities</i>	This tool is applicable to small-scale project activities and small-scale CPA's. The CPA's under this PoA are small-scale and therefore this tool is applicable
	<i>Tool 32 v. 02.0: Methodological tool: Positive lists of technologies</i>	This tool shall be applied in conjunction with a small-scale or large-scale methodology which refers to this too
	<i>Tool 30 v.02: Calculation of the fraction of non-renewable biomass"</i>	This tool shall be applied in conjunction with a small-scale or large-scale methodology which refers to this tool.
No standardized baseline is applied in this programme of activities.		
<b>Findings</b>	No finding was raised regarding this issue.	
<b>Conclusion</b>	<p>According to the paragraph 390 (a) (iii) of the VVS v02.0, the validation team has confirmed, after performing the desk review, that the baseline and monitoring methodology have been applied correctly as well as its associated tools and guidelines.</p> <p>In AENOR's opinion the CME have applied the correct versions of the approved baseline and monitoring methodology in the final version of the PoA-DD, and all applicability criteria have been described properly, in accordance with the evidence provided by the CME and the requirements of the applicable methodology and the PoA Project Standard.</p>	

#### D.2.2. Validity of original baseline or its update

<b>Means of validation</b>	<p>The audit team checked whether the original baseline is still valid in accordance to the paragraph 382 VVS-PoA. The assessment included the following issues:</p> <ul style="list-style-type: none"> <li>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 PoA period of a registered CDM PoA at the time of requesting the renewal of the PoA period;</li> <li>b) The correctness of the application of the approved methodologies and, where applicable, the approved standardized baselines and the other methodological regulatory documents for the determination of the continued validity of the baseline or its update, and the estimation of GHG emission reductions or net anthropogenic GHG removals for the applicable PoA period.</li> </ul> <p>The regulatory framework in Burkina Faso and Benin has not changed since the first crediting period. Validation team reviewed Benin's National Renewable energy plan /18/ and Burkina Faso's National Renewable Energies Action Plan /19/. In the case of Benin, the overall policy is to continue with the promotion of digesters as priority action as modern fuel and alternative to traditional cooking. In the case of Burkina Faso aims to achieve 38,000 digesters by 2030.</p> <p>In both countries biogas continues to be promoted to address energy poverty, reduce deforestation and improve soil quality. There are no laws mandating the adoption of biodigesters, it remains a voluntary activity. Then, validation team confirm that the general framework has not changed since PoA registration.</p>
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	<p>In the second case it was reviewed the correct applicability of the methodology. Baseline parameters are in accordance with last version of applied methodology /5/. Validation team reviewed the generic emission reduction calculation for CPAs spreadsheet /15/.</p> <p>In addition, according to the paragraph 291 of PoA standard: <i>If data and parameters used for determining the original baseline, that were determined ex-ante and not monitored during the PoA period, are no longer valid, the coordinating/managing entity shall update such data and parameters in accordance with the "Methodological tool: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period.</i> In this case the CME has updated the modalities to calculate the GHG emission reductions as per latest version of the methodology and due to the parameters for determining the baseline emission have not changed, no additional assessment was done.</p>
<b>Findings</b>	A clarification request (CL 1) and a corrective action request (CAR 2) were raised reading this issue. All information regarding the findings are detailed in appendix 4.
<b>Conclusion</b>	<p>In AENOR's opinion, the PPs have documented in the final version of the PoA-DD the issues considered for assessing the validity of the baseline for the next crediting period in accordance with paragraphs 288 to 291 of CDM project standard for programmes of activities, Version 02.0.</p> <p>Finally, CME has updated the modalities to calculate the GHG emission reductions as per latest version of the methodology and due to the parameters for determining the baseline emission have not changed, no additional assessment was done.</p>

### D.2.3. Estimated emission reductions or net anthropogenic removals

<b>Means of validation</b>	<p>The audit team checked that the estimated GHG emission reductions in the updated PoA-DD comply with the applicable requirements in the Project standard, and the valid version of the methodology and tools that are applicable to the registered CDM programme of activities as follows:</p> <p><b><u>Baseline Emissions</u></b></p> <p>The baseline emissions are determining Applying the following:</p> $BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossilfuel}$ <p>Where:</p> <table> <tr> <td><math>BE_y</math></td><td>Baseline Emissions during the year y (tCO<sub>2</sub>)</td></tr> <tr> <td><math>B_y</math></td><td>Quantity of woody biomass that is substituted or displaced in tonnes</td></tr> <tr> <td><math>f_{NRB,y}</math></td><td>Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass</td></tr> <tr> <td><math>NCV_{biomass}</math></td><td>Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne)</td></tr> <tr> <td><math>EF_{projected\_fossil\_fuel}</math></td><td>Emission factor for the substitution of non-renewable woody biomass by similar consumers</td></tr> </table> <p>For the emission factor of fossil fuels projected to substitute non-renewable woody biomass by similar consumers, either the default regional values (73.2 tCO<sub>2</sub>e/TJ for sub-Saharan Africa) or project participants may estimate the emission factor for the substitution of non-renewable woody biomass by similar consumers for their project or PoA by applying the following equation:</p> $EF_{projected\_fossil\_fuel} = \sum_j \{x_j \times (EF_{FF,j,CO_2} + EF_{FF,j,CH_4} \times GWP_{CH_4} + EF_{FF,j,N_2O} \times GWP_{N_2O})\}$	$BE_y$	Baseline Emissions during the year y (tCO <sub>2</sub> )	$B_y$	Quantity of woody biomass that is substituted or displaced in tonnes	$f_{NRB,y}$	Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass	$NCV_{biomass}$	Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne)	$EF_{projected\_fossil\_fuel}$	Emission factor for the substitution of non-renewable woody biomass by similar consumers
$BE_y$	Baseline Emissions during the year y (tCO <sub>2</sub> )										
$B_y$	Quantity of woody biomass that is substituted or displaced in tonnes										
$f_{NRB,y}$	Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass										
$NCV_{biomass}$	Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne)										
$EF_{projected\_fossil\_fuel}$	Emission factor for the substitution of non-renewable woody biomass by similar consumers										

Where:

$x_j$	Percentage share of fossil fuel use (a fraction representing the share of fossil fuel type j in total fossil fuel used in the region/country or project area for cooking)
$EF_{FF,j,CO_2}$	CO <sub>2</sub> emission factor for the fossil fuel j (tCO <sub>2</sub> /TJ)
$EF_{FF,j,CH_4}$	CH <sub>4</sub> emission factor for the fossil fuel j (tCH <sub>4</sub> /TJ)
$EF_{FF,j,N_2O}$	N <sub>2</sub> O emission factor for the fossil fuel j (tN <sub>2</sub> O/TJ)
$GWP_{CH_4}$	Global Warming Potential of CH <sub>4</sub> valid for the commitment period
$GWP_{N_2O}$	Global Warming Potential of N <sub>2</sub> O valid for the commitment period

Default values for CO<sub>2</sub> emission factor, CH<sub>4</sub> emission factor and N<sub>2</sub>O emission factor, as per table 3 from applied methodology are used, as following:

Default emission factors (kg of GHG per TJ on a Net Calorific Basis)			
Fuel	CO <sub>2</sub> Emission Factor	CH <sub>4</sub> Emission Factor	N <sub>2</sub> O Emission Factor
Kerosene	71,900	10	0.6
Liquefied Petroleum Gases (LPG)	63,100	5	0.1
Coal	94,600	300	1.5

$B_y$  is calculated by using one of the following options:

- a) Calculated as the product of the number of households multiplied by the estimate of average annual consumption of woody biomass per household that is displaced by the project activity (tonnes/household/year);

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

Where

$N_{HH,y}$	Number of households with functional cookstoves distributed under the project activity in year y (number)
$BC_{BL,HH}$	Average annual consumption of woody biomass per household before the start of the project activity or at the renewal of each crediting period, whichever is later (tonnes/household/year)
$BC_{PJ,HH,y}$	Average annual consumption of woody biomass per household in the pre-project devices during the project activity (tonnes/household/year). This parameter shall be considered if it is found that pre-project devices were not completely displaced but continue to be used to some extent

- b) Calculated as the product of the number of persons served per household multiplied by the number of households and the estimate of average annual consumption of woody biomass per person that is displaced by the project activity:

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

Where:

$N_{p,HH}$  Average number of persons served per household (number)

$BC_{BL,PP,y}$  Average annual consumption of woody biomass per person before the start of the project activity or at the renewal of each crediting period whichever is later (tonnes/person/year)

$BC_{PJ,PP,y}$  Average annual consumption of woody biomass per person in the pre-project devices during the project activity (tonnes/person/year). This parameter shall be considered if it is found that pre-project devices were not completely displaced but continue to be used to some extent.

c) Calculated as the product of the number of persons served per institution<sup>8</sup> multiplied by the number of institutions and the estimate of average annual consumption of woody biomass per person that is displaced by the project activity:

$$B_y = \sum_{i=1}^n N_{IN,y} \times N_{p,IN,y} \times (BC_{BL,PP,y} - BC_{PJ,PP,y})$$

Where:

$N_{p,IN,y}$  Average number of persons served per household (number)

$N_{IN,y}$  Number of institutions with functional cookstoves distributed under the project activity in year y (number)

d) Calculated from the thermal energy generated in the project activity as:

$$B_y = \sum_{i=1}^n HG_{p,y,i} \div (NCV_{biomass} \times \eta_{BL})$$

Where:

$HG_{p,y,i}$  Quantity of thermal energy generated by the new renewable energy technology i in the project in year y (TJ)

$\eta_{BL}$  Weighted average efficiency of pre-project devices (fraction)

For the option a,b,c,d the  $B_y$  will also be adjusted for plants constructed and operational for less than a year since not all the biodigesters will be constructed in 1st month of any year. Construction will be ongoing, and plants will be added every month. Thus, the plants constructed in January will be operational for 11 months of that year, the plants constructed in February will be operational for 10 months of that year and so on.  $B_y$  will be adjusted in pro rata basis for such plants. Number of biodigesters included in the monitoring period and are operational for one year (N) will be calculated with the following formula:

$$N_{HH} = \sum_{M=1}^n N_M \times M/12$$

	<p>Where:</p> <p><math>M</math> Number of biodigesters in use for “M” months during the monitoring period. NM will be considered from the plants installed in the monitoring period and previous monitoring periods.</p> <p><math>N_M</math> Number of months that the plants are in use during the monitoring period (M=1,2,3, .....n)</p> <p>In addition, as per methodology’s paragraph 15, the ERs are calculated based on batches of 1 months, where the latest date of a calendar month is used as start date of the ER generation.</p> <p><b><u>Project emission</u></b></p> <p>Potential project emissions sources mentioned in chapter 5.4 of the applied methodology are not applicable. The PoA and its CPA’s are not involved in the cultivation and processing of biomass</p> <p><b><u>Leakage emission</u></b></p> <p>Leakage emissions shall be calculated using the latest version of “<i>TOOL16: Project and leakage emissions from biomass</i>”. In tool 16 only paragraph 24 is applicable to biodigesters. However, energy is not used to cultivate biomass or process biomass. The project only utilizes animal waste as feedstock to generate biogas and thereby woody biomass is displaced as cook stove fuel. The leakage emissions as per tool are therefore 0.</p> <p>Then, emission reductions will then be calculated with the following equation:</p> $ER_{CPA,y} = 0.95 \times N_{HH} \times B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossilfuel} \times P$ <p>Where P = the average operation rate</p> <p><math>B_y</math> will be calculated with by option a, b, c or d, or a combination of the options depending on the circumstances in a CPA.</p>
<b>Findings</b>	A clarification request (CL 2) and a forward action request (FAR 1) were raised regarding this issue. All information regarding the findings are detailed in appendix 4.
<b>Conclusion</b>	<p>In AENOR’s opinion, the CME has documented in the final version of the PoA-DD that information of the estimated GHG emission reductions in accordance with the requirements of the latest approved version of the methodology and tools applied to the determination of the emission reductions and the project emissions.</p> <p>The methodology for calculating emission reductions is transparently documented in the latest version of the PoA-DD and it complies with existing good practice.</p> <p>The generic CPA part of the PoA-DD clearly documents how each equation will be applied in each specific CPA. The selection of parameters and GHG calculations is complete and transparent. With the options given in the generic CPA, the emission reductions can be estimated in each specific CPA-DD.</p> <p>AENOR has validated that data and assumptions considered in the Generic CPA part are consistent with applied methodology and tool selected.</p> <p>Therefore, AENOR, based on the above assessment and the paragraph 390 of the VVS confirms that the modalities for estimating the baseline, estimating GHG emission reductions, and developing the monitoring plan in the updated PoA-DD</p>

comply with the applicable requirements in the “CDM project standard for programmes of activities”, and the valid version of the methodology.

#### D.2.4. Validity of monitoring plan

<b>Means of validation</b>	<p>The audit team checked that the monitoring plan in the updated PoA-DD complies with the applicable requirements in the Project standard, and the valid version of the methodology and tools that are applicable to the registered CDM PoA.</p> <p>The parameters included in the monitoring plan to be monitored during the second crediting period are the following:</p> <table border="1"> <tr> <td><i>Date</i></td><td> <p><i>Date of commissioning of project device of type <math>i</math></i></p> <p>The CME and CPA implementer keep a paper and electronic record of the installed systems. Annual monitoring</p> </td></tr> <tr> <td><i>Months</i></td><td> <p><i>Date of commissioning of batch <math>j</math></i></p> <p>Not all the biodigesters will be constructed in 1<sup>st</sup> month of any year. Construction will be ongoing, and plants will be added every month. The database contains the information on plant completion date sourced from the plant completion form.</p> </td></tr> <tr> <td><i>P</i></td><td> <p><i>Operational percentage of the biodigesters in the monitoring period (this will be estimated from the biogas users survey. “P” will be estimated from all the biodigesters)</i></p> <p>This parameter will be obtained from Annual Biogas User Survey. The CME will arrange for conduct the annual biogas user survey. CME will also conduct spot-checks to verify the legitimacy of reports. This will be undertaken by telephone on receipt of new records by the CME and annually with site visits.</p> </td></tr> <tr> <td><i>BC<sub>PJ,HH,y</sub></i></td><td> <p><i>Average annual consumption of woody biomass per household in the pre-project devices during the project activity (tonnes/household/year).</i></p> <p>This parameter will be monitored by surveys. Monitoring shall consist of estimation of all project devices or a representative sample thereof, at least once every two years (biennial)</p> </td></tr> <tr> <td><i>BC<sub>PJ,PP,y</sub></i></td><td> <p><i>Average annual consumption of woody biomass per person in the pre-project devices during the project activity (tonnes/person/year).</i></p> <p>This parameter will be monitored by surveys. Monitoring shall consist of estimation of all project devices or a representative sample thereof, at least once every two years (biennial)</p> </td></tr> <tr> <td><i>N<sub>p,IN,y</sub></i></td><td> <p><i>Average number of persons served per household (number)</i></p> <p>This is applicable If option c is used to calculate, monitored by surveys annually ex post</p> </td></tr> <tr> <td><i>N<sub>p,HH</sub></i></td><td> <p><i>Average number of persons served per household (number)</i></p> <p>This is applicable If option b is used to calculate, monitored by surveys annually ex post.</p> </td></tr> <tr> <td><i>HG<sub>p,y,i</sub></i></td><td> <p><i>Quantity of thermal energy generated by the new renewable energy technology <math>i</math> in the project in year <math>y</math> (TJ).</i></p> <p>This is applicable If option d is used to calculate, it shall be determined as following:</p> </td></tr> </table>	<i>Date</i>	<p><i>Date of commissioning of project device of type <math>i</math></i></p> <p>The CME and CPA implementer keep a paper and electronic record of the installed systems. Annual monitoring</p>	<i>Months</i>	<p><i>Date of commissioning of batch <math>j</math></i></p> <p>Not all the biodigesters will be constructed in 1<sup>st</sup> month of any year. Construction will be ongoing, and plants will be added every month. The database contains the information on plant completion date sourced from the plant completion form.</p>	<i>P</i>	<p><i>Operational percentage of the biodigesters in the monitoring period (this will be estimated from the biogas users survey. “P” will be estimated from all the biodigesters)</i></p> <p>This parameter will be obtained from Annual Biogas User Survey. The CME will arrange for conduct the annual biogas user survey. CME will also conduct spot-checks to verify the legitimacy of reports. This will be undertaken by telephone on receipt of new records by the CME and annually with site visits.</p>	<i>BC<sub>PJ,HH,y</sub></i>	<p><i>Average annual consumption of woody biomass per household in the pre-project devices during the project activity (tonnes/household/year).</i></p> <p>This parameter will be monitored by surveys. Monitoring shall consist of estimation of all project devices or a representative sample thereof, at least once every two years (biennial)</p>	<i>BC<sub>PJ,PP,y</sub></i>	<p><i>Average annual consumption of woody biomass per person in the pre-project devices during the project activity (tonnes/person/year).</i></p> <p>This parameter will be monitored by surveys. Monitoring shall consist of estimation of all project devices or a representative sample thereof, at least once every two years (biennial)</p>	<i>N<sub>p,IN,y</sub></i>	<p><i>Average number of persons served per household (number)</i></p> <p>This is applicable If option c is used to calculate, monitored by surveys annually ex post</p>	<i>N<sub>p,HH</sub></i>	<p><i>Average number of persons served per household (number)</i></p> <p>This is applicable If option b is used to calculate, monitored by surveys annually ex post.</p>	<i>HG<sub>p,y,i</sub></i>	<p><i>Quantity of thermal energy generated by the new renewable energy technology <math>i</math> in the project in year <math>y</math> (TJ).</i></p> <p>This is applicable If option d is used to calculate, it shall be determined as following:</p>
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<i>P</i>	<p><i>Operational percentage of the biodigesters in the monitoring period (this will be estimated from the biogas users survey. “P” will be estimated from all the biodigesters)</i></p> <p>This parameter will be obtained from Annual Biogas User Survey. The CME will arrange for conduct the annual biogas user survey. CME will also conduct spot-checks to verify the legitimacy of reports. This will be undertaken by telephone on receipt of new records by the CME and annually with site visits.</p>																
<i>BC<sub>PJ,HH,y</sub></i>	<p><i>Average annual consumption of woody biomass per household in the pre-project devices during the project activity (tonnes/household/year).</i></p> <p>This parameter will be monitored by surveys. Monitoring shall consist of estimation of all project devices or a representative sample thereof, at least once every two years (biennial)</p>																
<i>BC<sub>PJ,PP,y</sub></i>	<p><i>Average annual consumption of woody biomass per person in the pre-project devices during the project activity (tonnes/person/year).</i></p> <p>This parameter will be monitored by surveys. Monitoring shall consist of estimation of all project devices or a representative sample thereof, at least once every two years (biennial)</p>																
<i>N<sub>p,IN,y</sub></i>	<p><i>Average number of persons served per household (number)</i></p> <p>This is applicable If option c is used to calculate, monitored by surveys annually ex post</p>																
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<i>HG<sub>p,y,i</sub></i>	<p><i>Quantity of thermal energy generated by the new renewable energy technology <math>i</math> in the project in year <math>y</math> (TJ).</i></p> <p>This is applicable If option d is used to calculate, it shall be determined as following:</p>																



	<ul style="list-style-type: none"> <li>For a biogas digester, it shall be monitored as per the requirements stipulated in the Table 1 of "AMS-I.I.: Biogas/biomass thermal applications for households/small users". Alternatively, project proponents may use a default biogas generation value of <math>0.13 \text{ Nm}^3\cdot\text{m}^{-3}\cdot\text{day}^{-1}</math> (i.e. volume of biogas generated in normal conditions of temperature and pressure per unit useful volume of the digester per day) for regions/countries where annual average ambient temperature is higher than <math>20^\circ\text{C}</math>.</li> <li>For the case of ethanol cookstoves, the related requirements from AMS-I.I. for determining thermal energy generated in the case of processed renewable biomass (refer to paragraph 13 of the methodology version 4.0) may be adopted. The preferred approach to determine the thermal energy output of the stoves would be through monitoring the amount of ethanol used for cooking by the households (if required, on a sample basis), the NCV and density of the ethanol, and the efficiency of the project stoves determined according to the requirements of AMS-II.G.: Energy efficiency measures in thermal applications of non-renewable biomass for <math>n_{new,i,j}</math>. The manufacturers rated thermal capacity of the stoves and the monitored utilization hours entails uncertainties since e.g. stoves may be operating at partial capacity. Therefore, for this option, it may be necessary to determine the average capacity utilization of stoves through surveys.</li> </ul>
<b>Findings</b>	No finding was raised regarding this issue
<b>Conclusion</b>	<p>The monitoring plan will be implemented and managed by the CME. It describes how to collect, assess and archive all relevant data to be monitored according to the applied methodology and tools. Data from the monitoring procedures will be recorded in the electronic project database and summarised in the Monitoring Report. The data collection will follow the procedures laid out in the latest version of "Standard for Sampling and surveys for CDM project activities and programmes of activities, version 08.0" /20/.</p> <p>In AENOR's opinion, the CME has documented in the monitoring plan of the final version of the PoA-DD, all requirements established by the latest approved version of the methodology and tools applied to determine the emissions reductions of the project activity and its project emissions.</p> <p>Authority and responsibilities are well defined, and Quality Assurance and Quality Control procedures are managed in order to reduce the uncertainties of the emissions reduction monitored.</p> <p>Provisions of data collection and archiving involved in the monitoring is included in the PoA-DD and is deemed as appropriate by the DOE team because they are defined according to the specifications stated in the applied methodology and tools.</p>

#### D.2.5. Eligibility criteria for inclusion of CPAs

<b>Means of validation</b>	<p>According to paragraphs 123 and 124 of the "CDM project standard for programmes of activities", version 02.0, the CME has developed the eligibility criteria for inclusion of a CPA under the PoA. Evaluation criteria have been defined to crosscheck that all the eligibility criteria fulfil the requirements of the Standard, under the PoA Management System, and has been validated by AENOR.</p> <p>A complete list of CPA Eligibility Criteria has been set up in section K of the final PoA-DD. The list of eligibility criterion has been validated along with the evaluation criterion and they are deemed as appropriate and sufficient according to the criteria specified in paragraph 124 of the Standard.</p>
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	ref	Category	Description	Eligibility Criteria
	(a)	Geographical Boundary	All cookstoves supplied by biogas from biodigesters listed in the CPA will be located in Benin or Burkina Faso. Project boundary of each CPA will be the physical, geographical site of the installed biodigesters (biodigesters and biogas cookstoves).	Location and boundary are specified in the specific CPA-DD stating that the location of each biodigester in the CPA is limited to Burkina Faso or Benin, <b><u>Documents/evidence to be checked</u></b> <ul style="list-style-type: none"> <li>Statement of CME that the location and boundary is within Burkina Faso or Benin</li> </ul>
	(b)	Double counting	All CPAs will be checked to prevent double counting and are not registered as a separate CDM project activity, nor as part of another registered CDM PoA.	A statement is included in the CPA-DD that the specific CPA will not be part of another single CDM project activity or CPA under another PoA <b><u>Documents/evidence to be checked</u></b> <ul style="list-style-type: none"> <li>UNFCCC website, UNEP Risoe</li> </ul>
	(c)	Technology	The applied technology involves the dissemination of gas cookstoves supplied by fuel from fixed-dome household biodigesters producing biogas for cooking purposes. All the biogas cookstoves with biodigesters included in each CPA will replace the use of nonrenewable biomass. The biodigesters will be of fixed dome design constructed as per the specifications and quality guidelines in the NBP " <i>Manuel des Constructeurs de Bio digesteurs domestiques</i> ", or digesters with equivalent performance (i.e. prefabricated digesters)	All the biodigesters supplying biogas to the cookstoves will follow the quality standards set by the program in the construction manual. As guided by the construction Manual, the Biogas Construction Companies (BCC) fill out: <ul style="list-style-type: none"> <li>Prior construction survey form to confirm the household uses biomass for cooking before the installation of biodigester, and</li> <li>the plant Completion form, and submit them to the respective</li> <li>National Biodigesters Programme. NBP's technicians visit the sample plants for quality control to ensure that the plants are built as per the prescribed quality standards and fill in the Quality Control Form</li> </ul> Only the biodigesters passing the criteria will be entered into the CPA database by the CPA implementer <b><u>Documents/evidence to be checked</u></b> <ul style="list-style-type: none"> <li>CPA database</li> </ul>

	(d)	Start date	<p>Prior Consideration form was submitted to the UNFCCC on August 29/08/2013. All CPAs will state very clearly their start date, and evidence that their start date is not prior to the date of submission of Prior consideration form.</p>	<p>Starting date of the CPA is on or after the starting date of the PoA (date of the Prior Consideration form, 29/08/2013).</p> <p><b><u>Documents/evidence to be checked</u></b></p> <ul style="list-style-type: none"> <li>• Date of launch of CPA as signified by substantial investment, or</li> <li>• Date of first plant installed under the CPA, or</li> <li>• Submission of prior consideration form</li> </ul>
	(e)	Methodology	<p>All the CPAs will comply with the CDM methodology used for this PoA i.e. AMS I.E, v.11.0</p> <p>Applicability criteria described in table 2 (of the PoA-DD), that are applicable to the CPA's, criteria 1,2,4,7,10 are included here, Criteria 8 on double counting is separately mentioned in this table.</p> <p>1. This category comprises 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, solar cookers, passive solar homes, renewable energy-based drinking water treatment technologies (e.g. sand filters followed by solar water disinfection; water boiling using renewable biomass).</p> <p>2. 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.</p> <p>3. The following further conditions apply for the fNRB value applied in a component project activity (CPA) of a PoA. The choice between (a) conduct own studies to determine the local fNRB value as per "TOOL30 v.2: Calculation of the fraction of non-renewable biomass" and then apply those values in the CPAs; and (b) use default national values approved by the Board shall be made ex ante. A switch from national value i.e. choice (b) to local values i.e. choice (a) is permitted, under the condition that the selected approach is consistently applied to all CPAs.</p>	<p>Each CPA will comply with the CDM methodology used in the PoA. Fulfilment of the applicability criteria will be described in the CPA-DD.</p> <p><b><u>Documents/evidence to be checked</u></b></p> <ol style="list-style-type: none"> <li>1. CPA-DD</li> <li>2. The estimated number of biodigesters is to be defined in the CPA-DD. Not all may have been deployed at CPA inclusion stage, however the number of biodigesters included in each CPA can be checked through the electronic CPA database during verification, or</li> <li>3. Contract of CPA implementer with CME</li> <li>4. ER Calculation sheet to confirm the adjustment of leakage</li> </ol>

			<p>4. Under this methodology, emission reductions cannot be claimed only due to fuel-switch aspect and proposed project activities shall introduce new renewable energy based technologies, i.e. technology switch is also involved.</p> <p>5. The leakages are estimated and accounted for, if required, on a sample basis using a 90/30 precision for the selection of samples, as per paragraph 39. of the methodology. transfer.</p>	
	(f)	Additionality	<p>The maximum power output of the technology shall be 100 kW or less, in order to remain on the positive list of Tool 32 v2.0</p>	<p><b><u>Documents/evidence to be checked</u></b></p> <ul style="list-style-type: none"> <li>Power output of biodigester calculation sheet to confirm that each plant is not larger than 100 kW</li> <li>Contract of CPA implementer with CME</li> </ul>
	(g1)	Stakeholder consultation	<p>All CPAs will perform the CPA level stakeholder consultation and adhere to these minimum requirements:</p> <ul style="list-style-type: none"> <li>be a physical meeting</li> <li>invite parties that will be impacted by the projects or who are involved in the cook stove sector (end users, NGO, government agencies) or similar relevant sectors</li> <li>provide an overview of the project</li> <li>collect comments from participants</li> <li>take account of the comments</li> </ul>	<p><b><u>Documents/evidence to be checked</u></b></p> <ul style="list-style-type: none"> <li>CPA level stakeholder consultation report</li> </ul>
	(g2)	Environmental Impact Analysis	<p>Environmental Impact Analysis is carried out on PoA level.</p>	<p><b><u>Documents/evidence to be checked</u></b></p> <ul style="list-style-type: none"> <li>Environmental Impact Analysis is carried out on PoA level.</li> </ul>
	(g3)	Monitoring	<p>As per the methodology, <i>"monitoring shall consist of checking of all appliances or a representative sample thereof, at least once every two years (biennial) to ensure that they are still operating or are replaced by an equivalent in service appliance."</i></p> <p>The CPAs have procedures in place to track distribution of biodigesters. The tracking system will involve the recording of biodigester size, date of construction, contact information of owner and any other information that is</p>	<p><b><u>Documents/evidence to be checked</u></b></p> <ul style="list-style-type: none"> <li>Electronic CPA database and hard copy files or equivalent in case the implementer uses digital tools, of biodigesters at the time of verification.</li> </ul>

		deemed useful to locate the biodigester. Each biodigester will have a unique identification code.	
(g4)	Approval of CPA by CME	<p>All CPAs will have a project implementer that is either the Coordinating Managing Entity or another entity that has signed a contractual agreement with the Coordinating Entity to become a CPA implementer.</p> <p>Those agreements include all rights and responsibilities of both parties, e.g. approval procedures by the CME, monitoring requirements, CER rights transfer. This eligibility criterion is not necessary if the CPA implementer is the CME.</p> <p>All biodigesters listed in the CPA should be implemented under the National Biodigester Programmes lead by SNV and its partners.</p>	<p><b><u>Documents/evidence to be checked</u></b></p> <ul style="list-style-type: none"> <li>CPA implementer contract with CME</li> <li>National Biodigester Programme is established</li> </ul>
(g5)	Inclusion of CPA	Each CPA inclusion by CME shall be reviewed/approved by a DOE (except of the first CPA submitted with PoA for validation)	<p><b><u>Documents/evidence to be checked</u></b></p> <ul style="list-style-type: none"> <li>CME CPA inclusion report</li> <li>DOE inclusion approval</li> </ul>
(g6)	CER rights transfer	The households installing the biodigesters are the owner of the plants. They shall sign an agreement with the CME to transfer the carbon credit rights of these plants.	<p><b><u>Documents/evidence to be checked</u></b></p> <ul style="list-style-type: none"> <li>CER right transfer agreement clause in the biodigester documents</li> </ul>
(g7)	fNRB	All CPAs in one country use the same value of fraction of nonrenewable biomass. The fraction and source will be fixed for each country upon inclusion of the first CPA.	<p><b><u>Documents/evidence to be checked</u></b></p> <ul style="list-style-type: none"> <li>CPA-DDs</li> </ul>
(h1)	Funding from Annex I countries	Each CPA will state clearly in the CPA-DD the source of public funding, if any.	<p><b><u>Documents/evidence to be checked</u></b></p> <ul style="list-style-type: none"> <li>Statement of the CPA implementer</li> </ul>
(h2)	No diversion of ODA	If funding from Annex -1 parties is received for any CPA, it should be confirmed that funding from Annex-1 parties does not result in a diversion of official development assistance.	<p><b><u>Documents/evidence to be checked</u></b></p> <ul style="list-style-type: none"> <li>Statement of the CPA implementer</li> </ul>
(i)	Target Group and distribution mechanism	Target group of all the CPAs will be cattle and/or pigs holding household in the rural and semi urban areas of Benin and Burkina Faso, which are using non renewable biomass as cooking fuel; and are interested to use the biogas for cooking purpose. These households will be distributed across the three countries.	<p>Biodigesters will be installed by Biodigester Construction Companies (BCCs) contracted by the CPA implementer.</p> <p>Prior construction survey form will be filled in by BCCs before the installation of biodigesters in any household. Number of animals, use of non-renewable biomass for cooking before the installation of biodigester, and</p>

				<p>purpose of biodigester are recorded together with other information.</p> <p>Only households fulfilling the criteria will be included in the CPA database by the CPA implementer.</p> <p><b><u>Documents/evidence to be checked</u></b></p> <ul style="list-style-type: none"> <li>• BCC contract with the CPA implementer</li> <li>• CPA database</li> </ul>
	(j)	Sampling	<p>A statistically valid sample of the locations where the systems are deployed, with consideration, in the sampling design, of occupancy and demographics differences can be used to determine parameter values used to determine emission reductions, as per relevant requirements in the <i>“Standard for sampling and surveys for CDM project activities and programme of activities v8.0”</i></p> <p>The sampling plan contains information relating to: (a) sampling design; (b) data to be collected; and (c) implementation plan.</p> <p>The CPA complies with the following confidence interval and error requirement:</p> <ul style="list-style-type: none"> <li>• When biennial inspection is chosen a 95% confidence interval and a 10% margin of error requirement for the sampling parameter.</li> <li>• When annual inspection is used, a 90% confidence interval and a 10% margin of error requirement is achieved for the sampled parameters.</li> <li>• In cases where survey results indicate that 90/10 precision or 95/10 precision (above) is not achieved, the lower bound of a 90% or 95% confidence interval of the parameter value is chosen as an alternative to repeating the survey efforts to achieve the 90/10 or 95/10 precision.</li> </ul> <p>Sampling across CPA is possible if the CPAs are located in the same country and are disseminating the same type of biodigesters.</p>	<p><b><u>Documents/evidence to be checked</u></b></p> <ul style="list-style-type: none"> <li>• Description of sampling methodology in CPA-DD.</li> </ul>

	(k)	SSC Limit for CPA	Each CPA will include only so many biogas digesters to fit within a small-scale threshold of no more than 45 MWth of aggregated power output, and will remain within this threshold throughout the crediting period of the CPA	Each CPA estimates the number of biogas digesters to be installed in the CPA-DD. Please note that not all biogas digesters may have been deployed at CPA inclusion stage, however the number of biogas digesters included in each CPA can be checked through the electronic CPA database during verification. <b><u>Documents/evidence to be checked</u></b> <ul style="list-style-type: none"><li>• Statement in CPA-DD</li><li>• Biogas digester output calculation sheet</li></ul>
	(l)	De-bundling	As per Methodological Tool 20 – Assessment of de-bundling for small-scale project activities paragraph 17: <i>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.</i>	1% of the SSC threshold is 450 kWth, which is larger than the additionality requirement criterion f of 100 kW biogas digester size limit. CPA's that meet criterion f automatically meet the de-bundling requirements.
<b>Findings</b>	No findings were raised regarding this issue			
<b>Conclusion</b>	Therefore, AENOR, based on the paragraphs 123 and 124 paragraphs of the “CDM project standard for programmes of activities” confirms that the updated PoA-DD complies with the eligibility criteria for inclusion of CPAs in the PoA and the valid version of the methodology.			

## SECTION E. Internal quality control

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Following the completion of the assessment process by the validation team, all documentation undergoes an internal quality control through a technical review before submission to the CDM-EB. The Technical reviewer is a qualified member of AENOR, independent from the team that carried out the validation of the project activity. The technical reviewer or the team appointed for the technical review are qualified in the technical area(s) and sectoral scope(s) of the project activity.

**SECTION F. Validation opinion**

&gt;&gt;

AENOR has performed the validation (renewal of crediting period) of the Programme of Activities **“West African Biodigester Programme of Activities”**. The validation process was performed on the basis of all UNFCCC issues, the host countries criteria and also on the criteria given for the Programmes of Activities to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following phases: i) a desk review of the project design and the baseline and monitoring plan; ii) the resolution of outstanding issues and the issuance of the final validation report and opinion. In the course of the validation process 2 corrective actions and 2 clarification were raised, all have been successfully closed.

The review of the PoA-DD has provided to AENOR enough evidence to determine the validity of the original baseline scenario and the update of the baseline. The project correctly applies the baseline and monitoring methodology: AMS-I.E, Switch from non-renewable biomass for thermal applications by the user, Version 11.0

In AENOR’s opinion, the project meets all relevant UNFCCC requirements and the relevant host country criteria for the renewal of the crediting period. Hence, AENOR requests the renewal of the crediting period of the PoA.

The validation has been performed using a risk based approach, as described above. The only purpose of this report is its use during the registration process as part of the CDM PoA cycle.

Hence, AENOR cannot be held liable by any party for decisions made or not made based on the validation opinion, which goes beyond the purpose.

Madrid, 22 March 2021



Richard Daniel GONZALES TOLEDO  
Team Leader



Jose Luis FUENTES PEREZ  
Climate change Manager



## Appendix 1. Abbreviations

Abbreviations	Full texts
AMS-I.E.	AMS-I.E.: Switch from non-renewable biomass for thermal applications by the user --- Version 11.0
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM -PoA-DD	CDM Programme of Activities Design Document
CER	Certified Emission Reductions
CI	CPA Implementer
CL	Clarification Action
CME	Coordinating and Managing Entity
CO <sub>2</sub>	Carbon dioxide
DECISION 17/CP.7	Modalities and Procedures for a Clean Development Mechanism as Defined in Article 12 of the Kyoto Protocol
DOE	Designated operational Entity
DR	Desk review
EB	Executive Board of the CDM of the Kyoto Protocol
EF	Emission factor
FAR	Forward action request
GHG	Greenhouse Gasses
GWh	Electrical Giga Watt hour
IPCC	Intergovernmental Panel on Climate Change
MoC	Modality of Communication
MP	Monitoring plan
MWth	Megawatt thermal
PS-PoA	CDM project standard for programmes of activities, Version 02.0
PP	Project participant
RCP	Renewal of crediting period
tCO <sub>2</sub> e	Carbon dioxide equivalent tonnes
UNFCCC	United Nations Framework Convention on Climate Change
VVS-PoA	CDM validation and verification standard for programmes of activities, Version 02.0

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

### CERTIFICATE OF QUALIFICATION

**Subject:** Validation and Technical Review Team for “West African Biodigester Programme of Activities”

Madrid, 22/03/2021

Hereby I confirm the following records of qualification, according with AENOR internal instruction “Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities” IE-DTC-039, and in relation with the verification process of the above-mentioned project activity:

Name: **Richard Daniel GONZALES TOLEDO**

CDM team leader: YES

CDM validator: YES

CDM verifier: N.A.

External technical expert: N.A.

Technical areas related with the project activity:

TA 1.2. Renewables



Jose Luis Fuentes  
**Climate change manager**

**CERTIFICATE OF QUALIFICATION**

**Subject:** Validation and Technical Review Team for “West African Biodigester Programme of Activities”

Madrid, 22/03/2021

Hereby I confirm the following records of qualification, according with AENOR internal instruction “Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities” IE-DTC-039, and in relation with the verification process of the above-mentioned project activity:

Name: **Luis Javier ARRIBAS ALONSO**

CDM team leader: N.A

CDM validator: YES

CDM verifier: N.A.

External technical expert: N.A.

Technical areas related with the project activity:

TA 1.2. Renewables



Jose Luis Fuentes  
**Climate change manager**

**CERTIFICATE OF QUALIFICATION**

**Subject:** Validation and Technical Review Team for “West African Biodigester Programme of Activities”

Madrid, 22/03/2021

Hereby I confirm the following records of qualification, according with AENOR internal instruction “Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities” IE-DTC-039, and in relation with the verification process of the above-mentioned project activity:

Name: **Elena LLORENTE PEREZ**

CDM team leader: N.A

CDM Technical reviewer: YES

CDM verifier: N.A.

External technical expert: N.A.

Technical areas related with the project activity:

TA 1.2. Renewables

A handwritten signature in blue ink, consisting of a stylized 'J' and 'L' followed by a flourish.

Jose Luis Fuentes  
**Climate change manager**

## Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	UNFCCC	CDM validation and verification standard for programmes of activities	version 02.0	UNFCCC Website
2	UNFCCC	CDM project standard for programmes of activities	Version 02.0	UNFCCC Website
3	UNFCCC	Methodological Tool: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period	Version 03.0.1	UNFCCC Website
4	UNFCCC	Registered CDM-PoA-DD	Version 03	UNFCCC Website
5	UNFCCC	Approved Methodology: AMS-I.E.: Switch from non-renewable biomass for thermal applications by the user	Version 11.0	UNFCCC Website
6	UNFCCC	Methodological tool: Calculation of the fraction of non-renewable biomass	version 02.0	UNFCCC Website
7	UNFCCC	Methodological tool: Project and leakage emissions from biomass,	version 04.0	UNFCCC Website
8	UNFCCC	Methodological tool: Assessment of de-bundling for small-scale project activities	version 04.0	UNFCCC Website
9	UNFCCC	Methodological tool: Methodological tool: Positive lists of technologies	version 02.0	UNFCCC Website
10	UNFCCC	Guideline on Sampling and surveys for CDM projects activities and programmes of activities,	version 04.0	UNFCCC Website
11	CME	Initial version of CDM-PoA-DD	version 1.1	CME
12	CME	Final version of CDM -PoA-DD	version 1.7	CME
13	CME	CDM-Generic-CPA-DD	-	CME
14	UNFCCC	Updated Modalities of Communication Statement	-	UNFCCC Website
15	CME	Generic emission reduction calculation for CPAs spreadsheet	-	CME
16	UNFCCC	Decision 3/CMP.1 and relevant decisions and guidelines from the EB.	-	UNFCCC Website
17	CARBON CHECK	PoA validation report	Revision number: 04	UNFCCC Website
18	Benin's Ministry of energy, petroleum and mining research and	Benin's National Renewable energy plan	-	CME

No.	Author	Title	References to the document	Provider
	renewable energy development			
19	Burkina Faso's Ministry of Mines and Energy	Burkina Faso's National Renewable Energies Action Plan	-	CME
20	UNFCCC	Standard for Sampling and surveys for CDM project activities and programmes of activities,	version 08.0	UNFCCC Website
21	CME and AENOR	Validation contract		AENOR
22	CME	Photographic evidence		CME
23	CME	Video recordings of the biodigesters		CME

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

Table 1. CL from this validation

<b>CL ID</b>	01	<b>Section no.</b>	D.2.2	<b>Date:</b> 03/11/2020
<b>Description of CL</b>				
<i>CME is requested to provide a list and summary of current law and regulation, which could be applicable to the PoA.</i>				
<b>Project participant response</b>				<b>Date:</b> 19/03/2021
After consulting with the concerned authorities, we were informed that there are no laws and/or regulations in place that are applicable to the PoA. It is included in section I.5 v PoA-DD.				
<b>Documentation provided by project participant</b>				
-				
<b>DOE assessment</b>				<b>Date:</b> 22/03/2021
CME has provided requests information, regarding local regulation. Validation team confirmed that the general framework has not changed since first crediting period. Then CL 1 is closed				

<b>CL ID</b>	02	<b>Section no.</b>	D.2.3	<b>Date:</b> 03/11/2020
<b>Description of CL</b>				
<i>CME is requested to clarify the sampling method to obtain operational biodigesters number do to the fact that applied equation, for sampling size, is different from (equation 1) the stated in the current version of the Guideline on Sampling and surveys for CDM projects activities and programmes of activities", version 04.0.</i>				
<b>Project participant response</b>				<b>Date:</b> 19/03/2021
The equation is corrected in PoA-DD and now matching with the guideline equation 1				
<b>Documentation provided by project participant</b>				
PoA-DD				
<b>DOE assessment</b>				<b>Date:</b> 22/03/2021
CME has updated the PoA in accordance to applicable guideline. Then, CL 2 is closed				

Table 2. CAR from this validation

<b>CAR ID</b>	01	<b>Section no.</b>	D.1.1	<b>Date:</b> 03/11/2020
<b>Description of CAR</b>				
<i>The following sections of updated PoA-DD has not been completed following the instructions for completing the PoA-DD form. i.e.:</i>				
<ul style="list-style-type: none"> <li>✓ <i>Section H.3. does no include additional specific instructions for generic small-scale CPAs, it is not included the small-scale project type (Type I, Type II and/or Type III) applicable to the generic CPA in accordance with the project standard.</i></li> <li>✓ <i>Section I.1. does not refer to other applies tools (e.g. Methodological Tools: 16, 20, 30, 32)</i></li> </ul>				
<b>Project participant response</b>				<b>Date:</b> 19/03/2021
<ul style="list-style-type: none"> <li>• This is now added in section H.3</li> <li>• The tools are now included in section I.1</li> </ul>				
<b>Documentation provided by project participant</b>				
PoA-DD				
<b>DOE assessment</b>				<b>Date:</b> 22/03/2021
PoA-DD has been updated in accordance to instruction for completing the PoA-DD. Then CAR 1 is closed.				

<b>CAR ID</b>	02	<b>Section no.</b>	D.2.2	<b>Date:</b> 03/11/2020
<b>Description of CAR</b>				
<p><i>The PoA-DD does not describe how the CME shall demonstrate the validity of the original baseline or how to update it for each of the corresponding CPAs in accordance with the provisions in paragraphs 288–291 of the CDM project standard for programmes of activities.</i></p>				
<b>Project participant response</b>				<b>Date:</b> 19/03/2021
<p>As per paragraph 288: <i>To demonstrate the validity of the original baseline or its update, the coordinating/managing entity is not required to re-assess the baseline scenario. Instead, the coordinating/managing entity shall assess the modalities to calculate GHG emission reductions or net anthropogenic GHG removals that would have resulted from that scenario.</i></p> <p>The CME has updated the modalities to calculate the GHG emission reductions as per latest version of the methodology. Also in section B.3 some information is added regarding the baseline scenario where it is demonstrate that there is no change in Benin and Burkina Faso. In both countries the reliance on wood for cooking remains very high</p>				
<b>Documentation provided by project participant</b>				
PoA-DD				
<b>DOE assessment</b>				<b>Date:</b> 22/03/2021
<p>The CME has updated the modalities to calculate the GHG emission reductions as per latest version of the methodology and due to the parameters for determining the baseline emission have not changed, no additional assessment was done. CAR 2 is closed</p>				

Table 3. FAR from this validation

<b>FAR ID</b>	01	<b>Section no.</b>	D.2.3	<b>Date:</b> 21/01/2021
<b>Description of FAR</b>				
<p>The coordinating entity shall apply in accordance with the EB meeting report 108, paragraph 7, the following issues:</p> <ul style="list-style-type: none"> <li>✓ 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</li> <li>✓ Update their programme design documents in accordance with any requirements of the CMP guidance.</li> </ul>				
<b>Project participant response</b>				<b>Date:</b> DD/MM/YYYY
-				
<b>Documentation provided by project participant</b>				
-				
<b>DOE assessment</b>				<b>Date:</b> DD/MM/YYYY
-				

### Document information

Version	Date	Description
03.0	7 January 2021	Revision to: <ul style="list-style-type: none"> <li>Remove the row of “Estimated amount of annual average GHG emission reductions or GHG removals by sinks in the next programme of activities period” from cover page and related instructions;</li> <li>Make editorial improvements.</li> </ul>



<i>Version</i>	<i>Date</i>	<i>Description</i>
02.0	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) and version 02.0 of the “CDM project cycle procedure for programmes of activities” (CDM-EB93-A09-PROC);</li><li>• Make editorial improvements.</li></ul>
01.0	29 December 2017	Initial publication.

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Decision Class: Regulatory  
Document Type: Form  
Business Function: Renewal of crediting period  
Keywords: crediting period, programme of activities, validation report

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