




**Validation report form for renewal of CDM programme of activities period
(Version 02.0)**

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

BASIC INFORMATION

Title and UNFCCC reference number of the programme of activities (PoA)	Ecoener Small Hydro Programme of Activities UNFCCC ref. no: 8655
Number and duration of the next period	2nd crediting period: 7 years (14/12/2019 - 13/12/2026)
Version number of the validation report	2
Completion date of the validation report	09/01/2020
Version number of PoA-DD to which this report applies	02.0
Coordinating/managing entity (CME)	Ecoener Ingeniería, Sociedad Anónima
Host Parties	Guatemala
Applied methodologies and standardized baselines	AMS-I.D. Grid connected renewable electricity generation (Version 18).
Mandatory sectoral scopes	1: Energy industries (renewable - / non-renewable sources)
Conditional sectoral scopes, if applicable	N/A
Estimated amount of annual average GHG emission reductions or GHG removals by sinks in the next programme of activities period	(For renewal, only the PoA-DD and the generic CPA are included)
Name and UNFCCC reference number of the DOE	AENOR INTERNACIONAL S.A.U UNFCCC ref. no: E-0021
Name, position and signature of the approver of the validation report	José Luis Fuentes  Climate Change Manager

SECTION A. Executive summary

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Ecoener Ingeniería, Sociedad Anónima has commissioned AENOR to validate the renewal of programme of activities period “Ecoener Small Hydro 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 methodologies that are applicable to the PoA.

This validation concerns a small scale CDM Programme of Activities (hereinafter PoA) implemented by Ecoener Ingeniería, Sociedad Anónima in Guatemala, to reduce emissions of CO₂ by means of the development of small scale hydropower plants, that either meet the suppressed energy demand and alleviates energy poverty and /or replaces non-renewable energy (typically energy generated from fossil fuels).

All documents reviewed as part of the scope of the activity is 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 SSC-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;

According to the paragraph 394 of validation and verification standard, the DOE shall apply the requirements in section 7.1.3 of VVS-PoA to validate the information provided by the coordinating/managing entity. Then, on-site inspection has been not performed as means of validation; as it is not mandatory according to the paragraph 183 of VVS-PoA.

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

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	Pellitero Martinez	Marcelino	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-SSC-PoA-DD, version 05.0 /4/
 Approved Methodology: AMS I.D, version 18.0 /5/
 Approved Methodology: ACM0002, version 19.0 /6/
 Tool to calculate the emission factor for an electricity system, version 07.0 /7/
 CDM SSC-PoA-DD Ecoener Small Hydro Programme of Activities, version 1 /8/
 CDM SSC-PoA-DD Ecoener Small Hydro Programme of Activities, version 2 /9/
 CDM SSC-Generic-CPA-DD /10/
 Updated Modalities of Communication Statement /11/
 Local regulation /12/ /14/ /14/ /15/
 Decision 3/CMP.1 and relevant decisions and guidelines from the EB. /16/
 Grid emission factor spreadsheet /17/
 Hourly data generation from Wholesale Market Manager /18/

C.2. On-site inspection

According to the paragraph 394 of validation and verification standard, the DOE shall apply the requirements in section 7.1.3 of VVS-PoA to validate the information provided by the coordinating/managing entity. Then, on-site inspection has been not performed as means of validation; as it is not mandatory when the estimated annual average of GHG emission reduction is less than 100,000 tCO₂e; for the component of the project activity. Furthermore, the information

transferred to the later valid version of the PoA-DD is materially the same as that in the registered PoA-DD one.

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.	Castro Huerta	Cristina	CDM Consultant	04/10/2019 - 09/12/2019	PoA-DD Update CPA design Update Changes in local regulation Ex-ante baseline determination: OM & BM (power plants, electricity production, start of operation, fuels, efficiencies, most recent data, etc.).	Richard Daniel Gonzales Toledo

C.4. Sampling approach

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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
Programme of activities			
Compliance with PoA-DD form	-	-	-
Programme of activities period	-	-	-
Coordinating/managing entity and the project participants	CL 2	-	-
Post-registration changes	-		
Generic component project activities			
Application and selection of methodologies and standardized baselines	-	CAR 1	-
Validity of original baseline or its update	-	-	-
Estimated emission reductions or net anthropogenic removals	-	CAR 2	
Validity of monitoring plan	-	-	-
Eligibility criteria for inclusion of CPAs	CL 1	-	-
Others (please specify)	-	-	-
Total	2	2	-

SECTION D. Validation findings

D.1. Programme of activities

D.1.1. Compliance with PoA-DD form

Means of validation	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 2) /9/, last version of applicable form /19/, which includes in its attachment the instructions for
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	filling out it, CDM rules and references and supported documents provided by the project participants.
Findings	No findings were found regarding this issue.
Conclusion	<p>The PoA-DD was completed in the version 09.0 of the form, latest version valid.</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, except for the relevant sections, which were updated in accordance with the relevant requirements in the Project standard (sections of the PoA-DD 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

Means of validation	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 14/12/2012; first crediting period goes from 14/12/2012 to 13/12/2019 and PoA duration is 28 years and will finalize on 22/03/2040.
Findings	No findings were found regarding this issue.
Conclusion	<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

Means of validation	<p>Ecoener Ingeniería, Sociedad Anónima, will be the Coordinating/Managing Entity (CME) for the project activities under the Programme of Activities (PoA). Ecoener Ingeniería, Sociedad Anónima, will communicate with the CDM Executive Board. It was validated against updates MoC /11/; also, has checked that the names of the CME and the project participants included in the updated PoA-DD are consistent with the names /20/ of the CME and the PP in the latest version of the MoC statement.</p> <p>Validation team, also, validated the identity of all project participants, the coordinating/managing entity and focal points included in the Modalities of Communication (MoC) statement by checking personal identification /20/</p>
Findings	AI clarification request was raised reading this issue (CL 1). All information regarding the findings are detailed in appendix 4.
Conclusion	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 in 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	Y	-	-

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.D.: Grid connected renewable electricity generation - Version 18.0) 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 criteria of	SSC-CPA Condition	
	This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: (a) Supplying electricity to a national or a regional grid; or (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	SSC-CPA will consist of a renewable energy generation unit (hydro) that supplies electricity to a national/regional grid within the host countries, or to an identified consumer facility via national/regional grid through a contractual arrangement.	
	This methodology is applicable to project activities that: (a) Install a Greenfield plant; (b) Involve a capacity addition in (an) existing plant(s); (c) Involve a retrofit of (an) existing plant(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s).	A SSC-CPA falls always under any of the mentioned options, and shall meet at least one option. Nevertheless, it's expected that the future plants will be newly built greenfield plants, this means under option (a).	
	Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: (a) The project activity is implemented in an existing of reservoir; (b) The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m ² ;	As per eligibility requirements, if the hydropower plant comprises a reservoir, the power density of the power plant shall be greater than 10 W/m ² as defined in ACM0002 /6/ (referred from AMS-I.D. small scale methodology) to avoid CH ₄ and CO ₂ emissions from the reservoirs.	

	(c) The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m ² .reservoir with no change in the volume	
	If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.	A SSC-CPA included in this SSC-PoA are hydropower plants of installed capacity below or equal to 15MW, and have only renewable components.
	Combined heat and power (co-generation) systems are not eligible under this category.	Not applicable.
	In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	If applicable, the added capacity will be lower or equal to 15MW installed capacity.
	In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW.	If applicable, the retrofitted or replaced capacity will be lower or equal to 15MW installed capacity.
	In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid then the baseline for the electricity component shall be in accordance with procedure prescribed under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as "AMS-I.C.: Thermal energy production with or without electricity" shall be explored.	Not applicable
	In case biomass is sourced from dedicated plantations, the applicability criteria in the tool "Project emissions from cultivation of biomass" shall apply.	Not applicable
	No standardized baseline is applied in this programme of activities	
Findings	A corrective action request was raised reading this issue (CAR 1). All information regarding the findings are detailed in appendix 4.	

Conclusion	<p>In accordance to paragraphs 97 to 104 of VVS-PoA, the validation team has confirmed, after performing the desk review, that the baseline and monitoring methodology has been applied correctly as well as its associated tools and guidelines. In particular the validation team has reviewed the final PoA-DD, generic CPA-SS, associated documents (calculation spreadsheets and evidence provided by the PP for closing the corrective actions and clarifications), and previous validation/verification documentation and information received in the interviews to assess the relevant information contained in the PoA-PDD for each applicability condition listed in the selected methodology.</p> <p>In AENOR's opinion the PPs have applied the correct version of the approved baseline and monitoring methodology in the final version of the PoA-DD, proposed generic CPA meets all the applicability conditions of the selected methodologies. All applicability criteria have been described properly, in accordance with the evidence provided by the PPs and the requirements of the applicable methodology and the CDM Programme of activities Standard.</p>
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D.2.2. Validity of original baseline or its update

Means of validation	<p>The audit team checked if the original baseline is still valid or if it must be updated through an assessment of the following issues:</p> <ul style="list-style-type: none"> 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; 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. <p>In the first case, validation team reviewed relevant applicable local regulation /12/ /13/ /14/ /15/. Validation team confirm that the general framework has not changed since PoA registration.</p> <p>In the second case it was reviewed the correct applicability of the methodology. The baseline grid emission factor has been updated for this crediting period. Validation team reviewed the spread sheet for calculating the grid emission factor /17/ and supporting evidences /18/ to confirm that PP has followed applicable methodology and tools.</p> <p>Validation team, also reviewed whether PP has followed the instruction stated in the tool: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period, in order to confirm that baseline is still valid /3/.</p>
Findings	<p>AI clarification request was raised reading this issue (CL 2). All information regarding the findings are detailed in appendix 4.</p>
Conclusion	<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 the requirements established in the tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" and the Programme activities Standard.</p>

Therefore, according to the step 1.1., the audit team could check the current baseline complies with all relevant mandatory national and sectorial policies. Moreover, according to the step 1.2., the audit team could assess that there are no important changes in the market characteristics and the conditions used to determine the baseline emissions in the previous crediting period are still valid.

On the other hand, the step 1.3. is not applied because the tool clarifies that it should be assessed “whether the remaining technical lifetime of the equipment that would have continued to be used in the absence of the project activity, as determined in the PoA-DD, exceeds the crediting period for which renewal is requested” and the project activity does not increase the lifetime of the technical equipment during the crediting period.

Regarding the step 1.4 and the validity of the data and parameters, applied methodology (AMS-ID) was updated from version 17.0 to 18.0, in consequence applicable tool, also has been updated. Since data and parameters that were only determined at the start of the crediting period and not monitored during the crediting period (grid emission factor was fixed) are not valid anymore because the methodology and tools applied have been updated; then, the current baseline needs to be updated for the subsequent crediting period.

Finally, following the instruction of validity assessment tool; according PP has updated baseline and the data and parameters.

D.2.3. Estimated emission reductions or net anthropogenic removals

Means of validation	<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 methodologies and tools that are applicable to the registered CDM programme of activities as follows:</p> <p><u>Baseline Emissions</u></p> <p>The baseline emissions are the product of electrical energy baseline $EG_{PJ,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor.</p> $BE_y = EG_{PJ,y} \times EF_{grid,y}$ <p>Where:</p> <table border="1" data-bbox="467 1518 1455 1845"> <tr> <td>BE_y</td><td>Baseline Emissions in year y (tCO₂)</td></tr> <tr> <td>$EG_{PJ,y}$</td><td>Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)</td></tr> <tr> <td>$EF_{grid,y}$</td><td>Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (tCO₂/MWh)</td></tr> </table> <p><u>Calculation of baseline emission factor ($EF_{grid,CM y}$):</u></p> <p>To calculate the grid emission factor, PP has followed the six steps, stated in the tool to calculate the emission factor for an electricity system, version 07.0 /XX/.</p>	BE_y	Baseline Emissions in year y (tCO ₂)	$EG_{PJ,y}$	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)	$EF_{grid,y}$	Combined margin CO ₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (tCO ₂ /MWh)
BE_y	Baseline Emissions in year y (tCO ₂)						
$EG_{PJ,y}$	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)						
$EF_{grid,y}$	Combined margin CO ₂ emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (tCO ₂ /MWh)						

Validation team reviewed updated spreadsheet /17/ to confirm that the instruction of the applied tool has been followed. Supporting evidence such as: power plant hourly generation from Wholesale Market Manager for year 2014 to 2018 /18/ have been reviewed and compared with original sources (information is publicly available at <http://www.amm.org.gt/>).

The calculation of combined margin CO₂ emission factor has been done ex-ante at PoA level. Operation margin was calculated as “Simple adjusted OM”. Grid emission factor calculation is detailed in appendix 4 of PoA-DD.

The calculation of Operating Margin CO₂ emission factor has been done ex-ante at SSC-PoA-DD level. The value obtained for the emission factor is the following:

Year	$EF_{grid,OM-adj,y}$
2016	0.6961
2017	0.4605
2018	0.6051

For the operating emission factor, PP has chosen ex-ante option; therefore, 3-year generation-weighted average, based on the most recent data available at the time of submission is used. Then, $EF_{grid,OM-adj} = 0.5872 \text{ tCO}_2e$

The calculation of Build margin CO₂ emission factor has been done ex-ante at SSC-PoA-DD level. The value obtained for the emission factor is $EF_{grid,BM,2018} = 0.1065 \text{ tCO}_2e$

The calculation of the combined margin CO₂ emission factor has been done ex-ante at SSC-PoA-DD level. The weighted average CM method (option A) is used as the chosen option. Then, the combined margin emissions factor is calculated as follows:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times \omega_{OM} + EF_{grid,BM,y} \times \omega_{BM}$$

Where:

$EF_{grid,OM,y}$	Operating margin CO ₂ emission factor in year y (tCO ₂ /MWh)
$EF_{grid,BM,y}$	Build margin CO ₂ emission factor in year y (t CO ₂ /MWh)
ω_{OM}	Weighting of operating margin emissions factor (per cent)
ω_{BM}	Weighting of build margin emissions factor (per cent)

Since this is the second crediting period for the project, $\omega_{OM} = 0.25$ and $\omega_{BM} = 0.75$ are applied.

$EF_{grid,OM,y}$ (tCO ₂ e)	ω_{OM}	$EF_{grid,BM,y}$ (tCO ₂ e)	ω_{BM}	$EF_{grid,CM,y}$ (tCO ₂ e)
0.5872	0.25	0.1065	0.75	0.2267

Calculation of Project Emissions

Calculation of the Power Density (If Reservoir):

In case of SSC-CPA hydropower plant comprises a reservoir, the power density of the power plant shall be greater than 10 W/m² as per eligibility criteria. Power density is defined in ACM0002 (referred from AMS-I.D) to avoid CH₄ and CO₂ emissions from the reservoirs.

According to ACM0002 If the power density of the project activity (PD) is greater than 10 W/m², Project emissions from reservoirs of hydro power plants ($PE_{HP,y}$) are zero. Then,

$$PE_{HP,y} = 0$$

The power density of the project activity (PD) is calculated as:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}}$$

Where,

PD	Power density of the project activity (W/m ²)
Cap_{PJ}	Installed capacity of the hydro power plant after the implementation of the project activity (W)
Cap_{BL}	Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero.
A_{PJ}	Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m ²)
A_{BL}	Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m ²). For new reservoirs, this value is zero.

Leakage

According to methodology AMS-I.D., for renewable energy projects leakage are equal to 0.

Calculation of emission reductions:

In accordance with the methodology AMS-I.D. the emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Where,

ER_y	Emission reductions in year y (tCO ₂ /y)
BE_y	Baseline Emissions in year y (tCO ₂ /y)
PE_y	Project emissions in year y (tCO ₂ /y)
LE_y	Leakage emissions in year y (tCO ₂ /y)

For this SSC-CPA under the SSC-PoA, PE_y and LE_y are zero as mandatory per eligibility criteria 5.6 and 5.7 respectively, so only BE_y must be calculated.

Ex-ante calculation of emission reductions is:

	$ER_y = BE_y - 0 - 0$ $ER_y = BE_y$ $ER_y = [] \text{ tonnes of CO}_2\text{e}$
Findings	A corrective action request was raised reading this issue (CAR 2). All information regarding the findings are detailed in appendix 4.
Conclusion	<p>In AENOR's opinion, the PPs have documented in the final version of the PoA-DD and the spreadsheets the calculation, data, formulae and 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 PoA-DD clearly documents how each equation is applied and the actual calculations are clearly presented in the annexed spreadsheets. The selection of parameters and GHG calculations is complete and transparent. The accuracy of the calculations has been verified. The emissions estimated can be replicated using the data and parameter values provided and supporting files submitted for validation. Data sources have been validated by AENOR.</p> <p>AENOR has validated that data and assumptions considered are listed in the PoA-DD and spreadsheet calculations are consistent with stated data. Furthermore, AENOR has reproduced the calculation in a clear and transparent manner to obtain the same results, which confirms that the baseline methodology has been correctly applied.</p> <p>Therefore, AENOR, based on the above assessment, confirms that:</p> <ul style="list-style-type: none"> • All assumptions and data used by the project participant is listed in the PoA-DD, including their references and sources; • All documentation used by project participant as the basis for assumptions and source of data is correctly quoted and interpreted in the PoA-DD; • All values used in the PoA-DD are considered reasonable in the context of the proposed CDM programme activity; • The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions; and • All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PoA-DD.

D.2.4. Validity of monitoring plan

Means of validation	<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 methodologies and tools that are applicable to the registered CDM project activity.</p> <p>On the other hand, the parameter included in the monitoring plan to be monitored during the second crediting period are the following:</p> <p>$EG_{facility,y}$ Quantity of net electricity supplied to the grid as a result of the implementation of the project activity in year y.</p> <p>The net electricity production will be measured continuously by meters and at least monthly recording will be implemented. The net electricity will be calculated by subtracting the electricity exported with the electricity imported by the SSC-CPA.</p>
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	<p>A high level of accuracy of the measurements will be achieved due to the use of high-precision equipment calibrated and tested according to recognized standards in AMM</p> <p>$\sigma_{historical}$ Standard deviation of the annual average historical net electricity generation delivered to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity.</p> <p>Calculated from data used to establish $EG_{historical}$. It will be calculated as the standard deviation of the annual generation. This parameter is used for retrofit or replacement project activities.</p> <p>Cap_{PJ} Installed capacity of the hydro power plant after the implementation of the project activity (W).</p> <p>Determine the installed capacity based on recognized standards (Nameplate of the electric generator or another official document of the electricity system operator/national authorities)</p> <p>A_{PJ} Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m²).</p> <p>Will be measured from topographical surveys, maps, satellite pictures, etc.</p>
Findings	No findings were raised regarding this issue.
Conclusion	<p>In AENOR's opinion, the CME have 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>All parameters to be monitored applicable to the proposed project activity and consistent with the project description in the PoA-DD, which are required by the applicable methodology and associated tools have been quoted in the POA-DD and generic CPA-DD. In addition, the quality control and quality assurance to apply for monitoring activities, including the metering equipment, calibration requirements have also been detailed.</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 calibration frequencies of all the equipment involved in the monitoring are included in the PoA-DD and are deemed as appropriate by the DOE team because they are defined according to the specifications stated in the applied methodologies and tools.</p>

D.2.5. Eligibility criteria for inclusion of CPAs

Means of validation	<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>
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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.

No.	Eligibility requirement	Source of the requirement	Document or evidence
1	<u>The geographical boundary of the CPA</u> shall consist with the geographical boundary set in the PoA.	SPoA	Location of SSC-CPA project shall be in Guatemala, thus included in the boundary of the host country.
2	<u>Conditions to avoid double counting of GHG emission reductions or net anthropogenic GHG removals</u> The CPA implementer shall certify: 1. The SSC-CPA has a unique identification and location and is not part of another CDM project 2. The SSC-CPA is not producing CERs in another CDM project activity to avoid double counting.	SPoA	The SSC-CPA shall have a unique identification and location.
3	<u>Specification of the technology/measure, such as the level and type of service, as well as performance specification based on, inter alia, testing/certification</u> 1. The <i>Technology</i> shall be ROR hydropower plant. 2. The <i>type of service</i> shall be to supply electricity to national grid. 3. The Installed <i>capacity</i> shall be below 15MW	SPoA	These requirement are included in the list of compliance of the methodology AMS-I.D for SSC-CPA. Documentary evidence of the target group (CPA project, feasibility studies, etc...)
4	<u>Conditions to check the start date of the CPA:</u> The SSC-CPA must have a project start date in compliance with the definition of "Start date" as per the CDM Glossary of Terms (version 7) and after the PoA validation start date (which is the date in which the PoA-DD, generic SSC-CPA-DD, and specific SSC-CPA-DD were submitted to the UNFCCC for public comments, March 24, 2012).	SPoA	A project timeline and chronogram with more details will be provided

	5	<p><u>Conditions that ensure compliance with applicability and other requirements of single or multiple methodologies applied by CPAs</u></p> <p>The SSC-CPA shall fulfil all the eligibility requirements (technology/measure) according to the approved small scale methodology “AMS-I.D. Grid connected renewable electricity generation”</p>	SPoA	A list of AMS-I.D. requirements that are fulfilled by the project is detailed in the following sub-points.
		<p><u>5.1. AMS-I.D Requirement:</u></p> <p>This methodology comprises renewable energy generation units, such as hydro.</p> <p>(a) Supplying electricity to a national or a regional grid;</p>	AMS-I.D	The SSC-CPA project is a ROR Hydropower plant that supplies electricity to the national grid of the host country.
		<p><u>5.2. AMS-I.D Requirement:</u></p> <p>This methodology is applicable to project activities that:</p> <p>(a) Install a greenfield plant;</p> <p>(b) Involve a capacity addition in (an) existing plant(s);</p> <p>(c) Involve a retrofit of (an) existing plant(s);</p> <p>(d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or</p> <p>(e) Involve a replacement of (an) existing plant(s).</p>	AMS-I.D	<p>Documentary evidence of the target group (CPA project, feasibility studies, etc...) that demonstrate that:</p> <p>(a) the SSC-CPA is a newly built hydropower plant and there is no other energy power plant operating in the same site.</p> <p>(b) the SSC-CPA is an addition of capacity.</p> <p>(c) the SSC-CPA involves a retrofit</p> <p>(e) the SSC-CPA involves a retrofit.</p> <p>(d) the SSC-CPA is a replacement of an existing plant.</p>
		<p><u>5.3. AMS-I.D Requirement:</u></p> <p>If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.</p>	AMS-I.D	<p>Documentary evidence of the target group (CPA project, feasibility studies, etc...) that demonstrate that the installed capacity is below 15MW.</p>

		<p>5.4. <u>AMS-I.D Requirement:</u></p> <p>In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.</p>	AMS-I.D	Documentary evidence of the target group (CPA project, feasibility studies, etc...) that demonstrate that the SSC-CPA is a capacity addition and is lower than 15 MW and are physically distinct from the existing units.
		<p>5.5. <u>AMS-I.D Requirement:</u></p> <p>In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW.</p>	AMS-I.D	Documentary evidence of the target group (CPA project, feasibility studies, etc...) that demonstrate that the SSC-CPA is a retrofit or replacement and the total output of the retrofitted or replacement units doesn't exceed the limit of 15 MW.
		<p>5.6. <u>CME Requirement:</u></p> <p>If the hydropower plant comprises a reservoir, the power density of the power plant shall be greater than 10 W/m² as defined in the most recent version of the ACM0002 (referred from AMS-I.D. small scale methodology) to avoid CH₄ and CO₂ emissions from the reservoirs.</p>	CME	[Indicate through documentary evidence (CPA project, feasibility studies, etc...) if the project has reservoir, and the power density.
		<p>5.7. <u>CME Requirement:</u></p> <p>The SSC-CPA shall not consider the installation of existing equipment transferred from another hydropower plant, thus leakage is not to be considered and equal to zero.</p>	CME	Indicate through documentary evidence (CPA project, feasibility studies, etc...) that the SSC-CPA is not using equipment transferred from another project activity

	6	<p><u>The conditions that ensure that CPAs meet the requirements pertaining to the demonstration of additionality</u></p> <p>All SSC-CPAs shall comply with one of the additionality tests outlined in section E.5.1 and detailed in section E.5.2 of the SSC-PoA-DD.</p> <p>6.1. <u>Test A</u>: Demonstrating additionality using the Methodological tool: Demonstration of additionality of microscale project activities (version 09.0 EB101 Annex15)". Projects with installed capacity up to 5 MW (Test A.1.) and located in a Special Underdeveloped Zone (SUZ) of the host country (Test A.2.1 and A2.2) or are additional.</p> <p>6.2. <u>Test B</u>: Demonstrating additionality using the "Methodological tool: Demonstration of additionality of small-scale project activities (version 12.0 EB99 Annex27)". Project participants shall provide an explanation to show that the project activity would not have occurred anyway due to at least one of the following barriers:</p> <p>(a) Investment barrier: the equity IRR must be lower than a benchmark in order to be deemed additional;</p> <p>(b) Technological barrier</p> <p>(c) Barrier due to prevailing practice</p> <p>(d) Other barriers</p>	TA	Evidence that the CPA project meet requirements of the simplified modalities and procedures for microscale (6.1 Test A) or Small-scale(6.2 Test B) CDM project activities according to mentioned guidelines.
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7	<p><u>The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis:</u></p> <p>7.1. The CPA Implementer (CI) shall provide to CME local stakeholder consultations about the CPA project, providing surveys, summary results and collecting all comments. Also it must be noted how the local stakeholder consultations were collected.</p> <p>7.2. The CPA Implementer (CI) shall provide the environmental instrument approved by the competent Ministry of Environment and Natural Resources (MARN)</p>	TA	<p>This is supported by a contract of services and cessation of rights with the CME that governs the CPA's participation in the Ecoener PoA, in which there is a clause that CI shall provide local stakeholder consultancy and the environmental instrument approved by MARN.</p> <p>Furthermore, CI shall provide the following documentary evidence: local stakeholder consultations and environmental instrument approved by MARN.</p>
	<p><u>7.3. CME Requirement:</u></p> <p>The CPA Implementer (CI) must have contract of services and cessation of rights with the Managing Entity (CME) that governs the CPA's participation in the Ecoener PoA, and must accept the code of conduct of the Managing Entity.</p>	CME	<p>This shall be certified by the contract of services and cessation of rights with the CME that governs the CPA's participation in the Ecoener PoA.</p>
	<p><u>7.4. CME Requirement:</u></p> <p>The SSC-CPA shall export the renewable electricity generated to a relevant and clearly identified grid within the geographical boundary of the host country.</p>	CME	<p>The SSC-CPA shall deliver renewable electricity to the national grid SNI (Interconnected national system) of the host country.</p> <p>This shall be certified by a clause in the contract of services and cessation of rights with the CME that governs the CPA's participation in the Ecoener PoA and other documentary evidence (CPA project, feasibility studies, etc...)</p>
	<p><u>7.5. CME Requirement:</u></p> <p>The SSC-CPA shall be in line with laws and regulations available at the time of inclusion of the SSC-CPA into the SSC-PoA.</p>	CME	<p>To certify that the SSC-CPA project is in line to laws and regulations.</p>

		<u>7.6. CME Requirement:</u> The SSC-CPA implementers shall provide a letter of acknowledgment for the project activity, issued by the DNA, if required by the internal procedures of the DNA of the host country.	CME	The CI shall certify this by providing a letter of acknowledgment for the project activity, issued by the DNA.
		<u>7.7. CME Requirement:</u> The SSC-CPA project implementer must not have seriously considered grid connected electricity generation with a different technology as an alternative to the project. The CI shall sign a written statement that no further alternatives are available to the project implementers of the SCC-CPAs under this SSC-PoA, thus the proposed SCC-CPA won't be undertaken without CDM contribution.	CME	This shall be supported by statement written by the CI, or included as a clause in the contract of services and cessation of rights with the CME that governs the CPA's participation in the Ecoener PoA.
		<u>7.8. CME Requirement:</u> The CPA Implementer must provide the economic feasibility studies and the data sources used at the time of investment decision.	CME	The economic feasibility studies and the data sources used at the time of investment decision are available to CME.
		<u>7.9. CME Requirement:</u> The Starting Date of the SSC-CPA-DD should be later than March 23, 2012 which is the date when the SSC-PoA-DD was submitted to make it publicly available on the UNFCCC CDM website.	CME	Indicate the CPA starting date that should be later than March 23, 2012.
	08	<u>The SSC-CPA should not result into the diversion of official development assistance</u>	SPoA	No public funding is provided for the project.
	09	<u>The target group (e.g. domestic/commercial/industrial, rural/urban, grid-connected/off-grid).</u> The CPA shall be grid-connected ROR small scale hydroelectric plants.	SPoA	The Target group is grid-connected electricity generation hydropower plant.
	10	<u>If there is a CPA in aggregate, shall meet the small-scale threshold criteria and shall remain within that threshold throughout the crediting period of the CPA;</u>	SPoA	It's not foreseen to have CPAs in aggregate but in any case each CPA will be a ROR hydropower plant with an installed capacity below the type I small-scale threshold (15MW)

	11	<u>The requirements for the debundling check:</u> Certify that there is not another SSC-CPA registered as small-scale CDM project activity or an application to register another small-scale CDM project activity 1. With the same project participants; 2. In the same project category and technology/measure; and 3. Registered within the previous 2 years; and 4. Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point.	SPoA	The SSC-CPA shall provide information to confirm that it is not a de-bundled component of a large-scale project activity.
	No findings were raised regarding this issue			
	In AENOR’s opinion eligibility criteria in the PoA-DD are sufficient to ensure that all CPAs would comply with the CDM requirements applicable to the PoA. These requirements include the means of demonstrating the additionality of the CPA and the applicability of the applied methodology.			
Findings				
Conclusion				

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

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AENOR has performed the validation (renewal of crediting period) of the Programme of Activities **“Ecoener Small Hydro Programme of Activities”** in Guatemala. The validation process was performed on the basis of all UNFCCC issues, the host country criteria and also on the criteria given for the Programmes of Activities to provide for consistent project operations, monitoring and reporting. The conclusions of this report show that the Programme of Activities, as it was described in the PoA documentation, is in line with all criteria applicable for the validation.

The validation consisted of the following four phases: 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 and the issuance of the final validation report and opinion. In the course of the validation process, 2 corrective actions and 2 clarifications were raised; all have been successfully closed.

The review of the programme design documentation and additional documents related to baseline and monitoring methodology, and the subsequent background investigation, follow-up interviews and review of comments by parties and stakeholders have provided AENOR with sufficient evidence to validate the fulfilment of the stated criteria.

The conclusions can be summarised in detail as follows:

- The PoA is in line with all relevant host country criteria of Guatemalan DNA and with all relevant UNFCCC requirements for CDM.

- The operational and management plan established by the coordinating entity is suitable for the PoA validated.
- The baseline has been appropriately identified as per the applied methodology.
- Eligibility criteria in the PoA-DD are sufficient to ensure that all CPAs would comply with the CDM requirements applicable to the PoA. These requirements include the means of demonstrating the additionality of the CPA and the applicability of the applied methodology.
- The Monitoring Plan and the Operational and Management Plan are transparent and adequate.
- The calculation of validated CPA emission reductions has been carried out in a transparent and conservative manner, following the approved methodology AMS.I.D version 18.0.
 - All information has been also consistently applied in the generic CPA-DD form.

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.

Appendix 1. Abbreviations

Abbreviations	Full texts
AMS-I.D.	Grid connected renewable electricity generation - Version 18.0
ACM0002	Large-scale Consolidated Methodology Grid-connected electricity generation from renewable sources19.0
BM	Build margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM SSC-CPA-DD	Small Scale CDM Programme Activity Design Document
CDM SSC-PoA-DD	Small Scale CDM Programme Of Activities Design Document
CER	Certified Emission Reductions
CI	CPA Implementer
CL	Clarification Action
CM	Combined margin
CME	Coordinating and Managing Entity
CO2	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
GHG	Greenhouse Gasses
GSC	Global stakeholder consultation
GWh	Electrical Giga Watt hour
IPCC	Intergovernmental Panel on Climate Change
LC/MR	Low cost/Must run
LoA	Letter of Approval
MoC	Modality of Communication
MP	Monitoring plan
MEM	Ministry of energy and mines from Guatemala
MW	Megawatt
NGO	Non-Governmental Organisation
OM	Operating margin
PDD	Project Design Document
PS-PoA	CDM project standard for programmes of activities Version 02.0
PP	Project participant
RCP	Renewal of crediting period

tCO ₂ 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
WMM	Wholesale Market Manager

Appendix 2. Competence of team members and technical reviewers

CERTIFICATE OF QUALIFICATION

Subject: Validation and Technical Review Team for “Ecoener Small Hydro Programme of Activities”

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

CDM Technical Reviewer: N/A

External Technical Expert: N/A

Technical areas related with the project activity:

Energy industries (renewable - / non-renewable sources)

Madrid, 09/01/2020

A handwritten signature in blue ink, consisting of a stylized 'J' and 'F' intertwined.

Jose Luis Fuentes
Technology coordinator

CERTIFICATE OF QUALIFICATION

Subject: Validation and Technical Review Team for "Ecoener Small Hydro Programme of Activities"

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: Marcelino PELLITERO MARTINEZ

CDM Team Leader: N/A

CDM Validator: N/A

CDM Verifier: N/A

CDM Technical Reviewer: Yes

External Technical Expert: N/A

Technical areas related with the project activity:

Energy industries (renewable - / non-renewable sources)

Madrid, 09/01/2020

A handwritten signature in blue ink, consisting of a stylized 'J' and 'F' intertwined.

Jose Luis Fuentes
Technology coordinator

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
2	UNFCCC	CDM project standard for programmes of activities	Version 02.0	UNFCCC
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
4	PP	Registered CDM-SSC-PoA-DD	Version 05.0	PP
5	UNFCCC	Approved Methodology: AMS I.D	Version 18.0	UNFCCC
6	UNFCCC	Approved Methodology: ACM0002	version 19.0	UNFCCC
7	UNFCCC	Tool to calculate the emission factor for an electricity system,	Version 07.0	UNFCCC
8	PP	CDM SSC-PoA-DD Ecoener Small Hydro Programme of Activities,	Version 1	PP
9	PP	CDM SSC-PoA-DD Ecoener Small Hydro Programme of Activities,	Version 2	pp
10	PP	CDM SSC-Generic-CPA-DD	-	PP
11	PP	Updated Modalities of Communication Statement	-	PP
12	MEM	The National Energy Policy for the 2013-2027	-	MEM
13	MEM	The General Electricity Law (LGE) (entered into force in 1996)	-	MEM
14	MEM	Regulation for Generating Plants less than 5 MW (GDR)	-	MEM
15	MEM	Law of Protection and Environment Improvement:	-	MEM
16	UNFCCC	Decision 3/CMP.1 and relevant decisions and guidelines from the EB	-	UNFCCC
17	PP	Grid emission factor spreadsheet	-	PP
18	Dispatch centre	Hourly data generation from Wholesale Market Manager	-	Dispatch centre website

CDM-PoA-RCPV-FORM

19	UNFCCC	CDM-PoA-DD-FORM Programme of activities design document form	Version 09.0	UNFCC C
20	PP	Personal identities from PP (ID Card)	-	PP

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

Table 1. CL from this validation

CL ID	01	Section no.	-	Date: 10/10/2019
Description of CL				
<i>CME is requested to confirm whether MoC statement is up to date (refer to paragraph 294 of PoA standard). Also, it shall be provided the evidence to confirm that the names of the coordinating/managing entity and the project participants included in the updated PoA-DD are consistent with the names of the coordinating/managing entity and the project participants in the latest version of the MoC statement.</i>				
CME response				Date: 25/10/2019
<i>MoC statemet up to date has been sent to UNFCCC with the relevant modifications in the contact details of the coordinating/managing entities.</i>				
Documentation provided by CME				
CDM-MOC-FORM Standard Template-ECOENER				
DOE assessment				Date: 06/11/2019
<i>CEM has provided updated MoC statement; and provided ID card from project participants. Then, CL is closed.</i>				

CL ID	02	Section no.	-	Date: 10/10/2019
Description of CL				
<i>CME is requested to provide list of current law and regulation, which could be applicable to the PoA.</i>				
CME response				Date: 25/10/2019
<i>Attached is a list of the legislation in force that applies to the PoA</i>				
Documentation provided by CME				
REGULATION APPLICABLE_ECOENER SMALL HYDRO				
DOE assessment				Date: 06/11/2019
<i>List of local regulation have been provided. They were verified throw official web page (http://www.cnee.gob.gt), to confirm that they do not affect additionality. CL is closed.</i>				

Table 2. CAR from this validation

CAR ID	01	Section no.	I	Date: 10/10/2019
Description of CAR				
<i>In some section of the PoA-DD, the CME has not used the valid version of the methodologies and methodological tools (refer to paragraph 284 of PoA standard). For example, the applicability of the methodology, stated in section I.2; formulas and references to <u>paragraphs in the tool to calculate grid emission factor</u>. In both cases correspond to the previous version.</i>				
CME response				Date: 25/10/2019
<i>Attached is the PoA-DD with the valid version of the methodologies and methodological tools.</i>				
Documentation provided by CME				
CDM-PoA-DD-ECOENER_v2				
DOE assessment				Date: 06/11/2019
<i>PoA-DD has been updated taking into consideration current versions of methodology an tools. Then, CAR is closed</i>				

CAR ID	02	Section no.	I	Date: 10/10/2019
Description of CAR				
<p>The spreadsheet for calculating the grid emission factor, the sheet "M-Tool-07_v07.0_SAdjOM_2018", Energy produced (GWH) for year 2016, includes the description of the technology, but not the energy generation.</p> <p>On the other hand, CME is requested to specify the evidence for commissioning date of power plants.</p>				
CME response				Date: 25/10/2019
<p>The spreadsheet for calculating the grid emission factor has been modified and a new version of the spreadsheet is attached</p> <p>As mentioned in the spreadsheet, evidence of Commissioning dates can be found on the following website https://www.amm.org.gt/portal/?page_id=145, selecting the "Installed Capacity" option and the reference year</p>				
Documentation provided by CME				
ER Calculation – PoA Ecoener_v2				
DOE assessment				Date: 06/11/2019
<p>Spreadsheet of grid emission factor was properly corrected. No inconsistencies were found. Moreover, requested evidence were provided and it is in accordance with information provided in the spreadsheet. Then, CAR is closed</p>				

Table 3. FAR from this validation

FAR ID	xx	Section no.		Date: DD/MM/YYYY
Description of FAR				
N/A				
Project participant response				Date: DD/MM/YYYY
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				Date: DD/MM/YYYY
N/A				