

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



**NAME /TITLE OF THE PoA: Hydro Alliance Programme of Activities**



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**CLEAN DEVELOPMENT MECHANISM  
SMALL-SCALE PROGRAM ACTIVITY DESIGN DOCUMENT FORM (CDM-SSC-CPA-DD)  
Version 01**

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**NOTE:**

- (i) This form is for submission of CPAs that apply a small scale approved methodology using the provision of the proposed small scale CDM PoA.
- (ii) The coordinating/managing entity shall prepare a CDM Small Scale Programme Activity Design Document (CDM-SSC-CPA-DD)<sup>1,2</sup> that is specified to the proposed PoA by using the provisions stated in the SSC PoA DD. At the time of requesting registration the SSC PoA DD must be accompanied by a CDM-SSC CPA-DD form that has been specified for the proposed SSC PoA, as well as by one completed CDM-SSC CPA-DD (using a real case). After the first CPA, every CPA that is added over time to the SSC PoA must submit a completed CDM-SSC CPA-DD.

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<sup>1</sup> The latest version of the template form CDM-CPA-DD is available on the UNFCCC CDM web site in the reference/document section.

<sup>2</sup> At the time of requesting validation/registration, the coordinating managing entity is required to submit a completed CDM-POA-DD, the PoA specific CDM-CPA-DD, as well as one of such CDM-CPA-DD completed (using a real case).

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**SECTION A. General description of small scale CDM programme activity (CPA)**

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

[CPA name] Hydroelectric Project, [region], [country] (SSC-CPA [short name])

Version 2

Date: 02/10/2012 [Please change this date to the date in which this form has been filled out for a specific CPA with the format: DD/MM/YYYY]

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

The SSC-CPA involves the construction of a hydropower plant located near [name river] river in [name village/municipality], [department/region], [country]. According to the generators' specifications, the installed capacity of the SSC-CPA is [ ] MW. The estimated annual gross power generation is [forecasted production].

The project's purpose is to supply renewable electricity to the [name grid] grid via [brief description of the contractual arrangement with the grid operator or distributor – PPA, interconnection contract, etc.]. The net electricity generated from this project – annual estimated volume is [forecasted production] MWh - will be supplied to the grid via a [line capacity] kV single line.

[Briefly explain regulatory or contractual requirements in regards of the ownership of the transmission/connection line].

The [CPA name] (referred later as the SSC-CPA [short name] or the project) is being proposed by [project implementer] (referred later as the Project Implementer) and will generate renewable power, which will displace part of the electricity otherwise supplied by fossil-fuel-fired power plants. Thus, GHG emission reductions can be achieved via this SSC-CPA.

The project's contributions to the sustainable development of the local area as well as the host country are as follows:

[contributions to sustainable development]

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

[Project Implementer] is the responsible project owner and implementer of the SSC-CPA [short name]; [and is also Project Participant / however is not Project Participant].

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

The proposed SSC-PoA falls in the type I scope 1 (Energy industries (renewable - / non-renewable sources) category).

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[project description]

[project diagram]

**Figure 1: Location of the equipment**

**Table 1: Main technical parameters of the proposed project activity**

Main parameters	Units	Values
<b>1. Turbine</b>		
• Type		
• Diameter of runner	m	
• Gross head	m	
• Number of turbine	set	
• Turbine discharge	m <sup>3</sup> /s	
• Efficiency	%	
• Installed Capacity	MW	
• Speed	rpm	
<b>2. Generator</b>		
• Number	set	
• Type		
• Rated voltage	kV	
• Rated capacity [If the installed capacity is provided in MW, please delete this row]	MVA	
• Ration of real to apparent power	-	
• Installed capacity [(calculation <sup>3</sup> in MW with a power factor of [ ] <sup>4</sup> )	MW	
• Efficiency	%	
<b>3. Transformer</b>		
• Number	set	
• Type		
• Installed capacity	MVA	
<b>4. Annual river flow</b>	m <sup>3</sup> /s	

**Source:** Technical specification from the [source]

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

Hydro Alliance Programme of Activities – CPA[Gua/Sal-4-digit CPA number].[CPA name]

**A.4.1.1. Host Party:**

<sup>3</sup> Given that the installed capacity is provided in MVA ([insert value]), the following formula has been used for units conversion:  $W=VA \times PF$  Source: <http://www.generatorguide.net/watt-acpower.html>

<sup>4</sup> Ratio of real to apparent power taken from [insert source]

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[Country]

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

The project is located in [village name] village, [municipality /district], [province], [country]. The project is located approximately [distance] km from [capital of province], the capital city of [province name] Province. The project unique identification is the location of its powerhouse at [latitude] and [longitude] (see below figure).

[figure]

Figure 2: Project Location. Source: [source]

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

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

[date] ([nature of the event chosen as project start date])

[justification]

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

[ ] years

**A.4.3. Choice of the crediting period and related information:**

**Renewable crediting period; or**

**Fixed Crediting period**

**[Delete the one that is not applicable]** [Individual CPAs are free to choose the crediting period most convenient as long as its duration does not exceed the duration of the PoA crediting period.]

**A.4.3.1. Starting date of the crediting period:**

[date]

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

[ ] years. Please note that the duration of the SSC-CPA crediting period does not exceed the duration of the PoA crediting period.

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

<b>Years</b>	<b>Annual estimation of emission reductions in tonnes of tCO<sub>2</sub>.eq</b>
Y1 ([ ])	[ ]
Y2 ([ ])	[ ]
Y3 ([ ])	[ ]
Y4 ([ ])	[ ]
Y5 ([ ])	[ ]
Y6 ([ ])	[ ]
Y7 ([ ])	[ ]
Total emission reductions (tonnes of CO <sub>2</sub> -eq)	[ ]
Total number of crediting years	7
Annual average over the crediting period of estimated reductions (tonnes of CO <sub>2</sub> -eq)	[ ]

**A.4.5. Public funding of the CPA:**

[ ]

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

The “Guidelines on assessment of de-bundling for SSC project activities” (EB54 annex 13) is used to demonstrate that the SSC-CPA included in the PoA is not a de-bundled component of a large-scale activity.

By using the precise geographical coordinates of the SSC-CPA provided in section A.4.1.2 and comparing it with the database of registered hydro CDM project activities and registered PoAs in El Salvador or Guatemala it has been established there is no other registered SSC-CPA of a PoA, no other application to register another small-scale CPA of a PoA and no other registered CDM project activity with the following characteristics:

- a) The same project implementer as [name of CPA].
- b) The boundary is within 1 km of the boundary of the proposed SSC-CPA, at the closest point.

Moreover, the Coordinating and Managing Entity does not manage another PoA of the same sectoral scope within the boundaries of this PoA.

Therefore, the project is not a de-bundled component.

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

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By using the precise geographical coordinates of the SSC-CPA provided in section A.4.1.2 and comparing it with the database of registered CDM project activities and registered PoAs it has been established that the SSC-CPA is neither registered as an individual CDM project activity nor is part of another registered PoA.

**SECTION B. Eligibility of small-scale CPA and Estimation of emissions reductions**

**B.1. Title and reference of the Registered PoA to which small-scale CPA is added:**

Hydro Alliance Programme of Activities (referred later on as SSC-PoA).

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

[CPA name] is eligible to be included to the SSC-PoA because it fulfils all eligibility requirement of the SSC-PoA. Specifically:

<b>Topic</b>	<b>Eligibility criterion</b>	<b>Evaluation criterion</b>
Geographical boundary	1 The SSC-CPA must be a hydroelectric plant located within the geographical boundary of either one of the host countries (Republic of El Salvador or the Republic of Guatemala).	The [CPA name] is a [installed capacity] MW hydroelectric plant located in [name of host country].
Double counting	2 The inclusion of the SSC-CPA in the SSC-PoA should not lead to double counting of the emissions reduction.	- Unique geographical co-ordinates. - Confirmation from CPA owner on not applying as an individual CDM project, neither being part of any other PoA. A check on the CDM website among registered projects and projects under Validation.
Technology	3 The SSC-CPA must consist of a hydroelectric power project, connected to the national grid of either El Salvador or Guatemala; and that comprises any technology that harvest the kinetic or potential energy of water. These can include capacity additions, replacements and retrofits.	[Detailed project report, quotation from technology provider, purchase order, EPC, feasibility study or any other similar information assessed or evaluated by a third party.]
Project Start date	4 The SSC-CPA must have a project start date in compliance with the definition of “Start date” as per the	As per [Start date of CPA can be verified from Equipment Purchase Contract or any applicable available document.],

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		CDM Glossary of Terms (version 6) 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, May 4, 2011).	SSC-CPA start date is [DD/MM/YYYY] <sup>5</sup> .
Compliance with applied methodology	5	The SSC-CPA must comply with all applicability conditions defined in the methodology AMS I.D. version 17.	See table below.
Additionality	6	<p>The SSC-CPAs must 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>a) Projects with an up to 5 MW of installed capacity and located in a Special Underdeveloped Zone (SUZ) of the host country are automatically additional<sup>6</sup>.</p> <p>b) For all the projects that do not fulfill the characteristics described in point a above, the project IRR must be lower than a benchmark in order to be deemed additional.</p>	The CPA [CPA name] satisfies additionality test [a/b], as assessed in section B.3 of the CPA-DD.
Local stakeholder consultation	7	A local stakeholder consultation must have been conducted.	A local stakeholder consultation has been conducted. See section D.
Environmental Impact Analysis	8	The SSC-CPA must comply with relevant environmental requirements applicable at the time of inclusion of the SSC-CPA into the SSC-PoA.	<ul style="list-style-type: none"> <li>- Policies showing that an environmental impact analysis is not required or;</li> <li>- Environmental impact analysis report outlined in section C of the SSC-</li> </ul>

<sup>5</sup> The starting date of a CDM programme activity is the earliest date at which either the implementation or construction or real action of a programme activity begins.”

<sup>6</sup> The definition of Special Underdeveloped Zone (SUZ) is taken from the EB 68 Annex 26 paragraph 2.a i): SUZ is a region in the host country (zone, municipality or any other designated official administrative unit) identified by the Government in official notifications for development assistance including for planning, management, and investment satisfying any one of the following conditions using most recent available data:

- the proportion of population with income less than 2 USD per day (purchasing power parity) is greater than 50%, or
- the GNI per capita in the country is less than USD 3000 and the population of the region is among the poorest 20% in the poverty ranking of the host country as per the applicable national policies and procedures.

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		CPA-DD.
Diversion of official development assistance	9 The SSC-CPA should not result into the diversion of official development assistance.	[Declaration from CPA implementer and if available, loan funding documents.]
Target group	10 The SSC-CPA must be a project activity that will: a) install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); b) involve a capacity addition; c) involve a retrofit of (an) existing plant(s); or d) involve a replacement of (an) existing plant(s).	As per [Detailed project report, quotation from technology provider, purchase order, EPC, feasibility study or any other similar information assessed or evaluated by a third party.] the SSC-CPA consists of a project activity that will: [install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant) / involve a capacity addition / involve a retrofit of (an) existing plant(s) / involve a replacement of (an) existing plant(s).]
Target group	11 The SSC-CPA must export the generated renewable electricity to a relevant and clearly identified grid within the geographical boundary of El Salvador or Guatemala	[Power Purchase Agreement, Letter of Understanding with a potential buyer, authorization of interconnection issued by the grid company, or similar]
Target group	12 If the power plant comprises a reservoir <sup>7</sup> , the power density of the power plant shall be greater than 10 W/m <sup>2</sup> .	The [reservoir/regulation tank] power density is greater than 10 W/m <sup>2</sup> . The power density is [ ] Refer to section B.5.2.
Small-scale threshold	13 Generates electricity with a capacity below or equal to the type I small-scale threshold during the whole crediting period of the SSC-CPA.  In case of a capacity addition/retrofit/replacement activity at an existing hydropower plant the electricity generation by the total installed capacity must be below the type I small-scale threshold during the whole crediting period of the SSC-CPA.  SSC-CPAs that fall into this category,	As per [name of document] the installed capacity of the SSC-CPA is [] MW, which is below the type I small-scale threshold of 15MW.  For each monitoring period the CPA owner must provide the CME with a declaration under oath that the SSC-CPA remains within the 15 MW threshold. Additionally, during each verification visit the CME will check the total installed capacity to ensure that it remains under the threshold of 15 MW.

<sup>7</sup> Please note that for calculation and eligibility criteria purposes, regulation tanks will be considered as reservoirs.



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		shall comply with the requirements of the Guidelines on the Demonstration of Additionality of Small-Scale Project Activities, version 9. This requirement must be fulfilled in case CPA is following additionality test b, as described in section E.5.2 of the PoA-DD. If additionality test a is done, this eligibility criterion does not need to be considered.	
Micro-scale threshold	14	<p>As per the Guidelines for Demonstrating Additionality of Microscale Project Activities version 4, CPAs with a total maximum installed capacity below or equal to 5 MW shall be considered “Microscale CDM Project Activities” and must fulfil the requirements of such guidelines.</p> <p>The total installed capacity of the SSC-CPA must remain within the microscale threshold during the whole crediting period.</p> <p>This requirement must be fulfilled in case CPA is following additionality test a, as described in section E.5.2 of the PoA-DD. If additionality test b is done, this eligibility criterion does not need to be considered.</p>	<p>[As per the contract with the technology provider, the installed capacity of the SSC-CPA is [ ]MW, which is below the micro-scale threshold that is 5MW.</p> <p>Additionally, during each verification visit the CME will check the total installed capacity to ensure that it remains under the threshold of 5 MW.</p> <p>/ Not applicable, since additionality is proven via test b the evaluation criteria stated in eligibility requirement 13 above shall be applied instead].</p>
Others required by the CME	15	<p>The SSC-CPA included in the SSC-PoA must not a de-bundled component of another CDM programme activity (CPA) or CDM project activity<sup>8</sup>.</p> <p>SSC-CPA shall be deemed to be a de-bundled component of a large scale activity if there is already an activity, which satisfies both conditions (a) and (b) below:</p>	As assessed in section A.4.6.

<sup>8</sup> Please notice that as per Guidelines on Assessment of De-bundling for SSC Project Activities issued version 3 (EB54 annex 13), only hydropower projects with a size greater than 150 kW will perform the de-bundling check.

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		<p>(a) Has the same activity implementer as the proposed small scale CPA or has a coordinating or managing entity, which also manages a large scale PoA of the same technology/measure, and;</p> <p>(b) The boundary is within 1 km of the boundary of the proposed small-scale CPA, at the closest point.</p>	
Others required by the CME	16	Have an agency contract with the CME that governs the SSC-CPA's participation in the Hydro Alliance PoA, and comply with the code of conduct of the CME	Contract with the CME.
Others required by the CME	17	Provide a letter of compliance for the project activity, issued by the DNA, if required by the internal procedures of the DNA.	Letter of compliance, only if applicable.
Others required by the CME	18	<p>In the case of a SSC-CPA that involves the replacement of existing equipment at the project site; the replaced equipment must be scrapped or destroyed. The scrapping of the replaced equipment must be monitored and documented by an independent Party.</p> <p>The SSC-CPA shall not consider the installation of existing equipment transferred from another hydropower plant.</p>	<p>[Not applicable as the SSC-CPA is a Greenfield project. / Detailed project report, feasibility study, purchase order, or any other similar information assessed or evaluated by a third party that shows that the SSC-CPA will not comprise the installation of existing equipment transferred from another hydropower plant.</p> <p>In case of replacement of existing equipment at the project site, a quotation from scrapping facility or final waste disposal site, or proofs of such disposal are required.]</p>
Others required by the CME	19	In the case of a SSC-CPA that involves the addition of renewable energy generation units at an existing renewable power generation facility, the added generating units must be capable of generating electricity without the operation of existing units, and must not directly affect the mechanical, thermal, or electrical characteristics of the existing facility.	[Not applicable as the SSC-CPA is a Greenfield project. / Detailed project report, quotation from technology provider, purchase order, EPC, feasibility study or any other similar information assessed or evaluated by a third party].

[CPA name] fulfils also all eligibility requirement of AMS I.D. version 17:

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<p>This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:<sup>9</sup></p> <p>(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.</p>	<p>As per eligibility criteria 1 and 11, the SSC-CPA consists of a hydroelectric plant that supplies electricity to an existing electricity grid, [name of grid], in [name of host country].</p>
<p>This methodology is applicable to project activities that (a) install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); (b) involve a capacity addition<sup>10</sup>; (c) involve a retrofit<sup>11</sup> of (an) existing plant(s); or (d) involve a replacement<sup>12</sup> of (an) existing plant(s).</p>	<p>As per eligibility criterion 10, the SSC-CPA consists of a project activity that [Choose as applicable: consists of a Greenfield plant as per option (a) / involves a capacity addition as per option (b) / involves a retrofit of (an) existing plant(s) as per option (c) / involves a replacement of (an) existing plant(s) as per option (d).]</p>
<p>Hydropower plants with reservoirs<sup>13</sup> that satisfy at least one of the following conditions are eligible to apply this methodology:</p> <ul style="list-style-type: none"> <li>• The project activity is implemented in an existing reservoir with no change in the volume of reservoir;</li> <li>• The project activity is implemented in an existing reservoir,<sup>14</sup> 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<sup>2</sup>;</li> <li>• The project activity results in new reservoirs and</li> </ul>	<p>According to [insert source] the CPA comprises a [regulation tank /existing reservoir without changes in the volume of the reservoir as per [insert source] /existing reservoir where the volume of the reservoir is increased and the power density of the CPA is greater than 4 W/m<sup>2</sup> / new reservoir and the power density of the CPA is greater than 4 W/m<sup>2</sup>]. As per eligibility criterion 12, a SSC-CPA that comprises a reservoir shall have a power density greater than 10 W/m<sup>2</sup>. Calculations of the power density to ensure that this condition is met are provided in section B.5.2</p>

<sup>9</sup> Refer to EB 23, annex 18 or the definition of renewable biomass.

<sup>10</sup> A capacity addition is an increase in the installed power generation capacity of an existing power plant through:  
(i) The installation of a new power plant besides the existing power plant/units; or (ii) The installation of new power units, additional to the existing power plant/units. The existing power plant/units continue to operate after the implementation of the project activity.

<sup>11</sup> Retrofit (or rehabilitation or refurbishment). It involves an investment to repair or modify an existing power plant/unit, with the purpose to increase the efficiency, performance or power generation capacity of the plant, without adding new power plants or units, or to resume the operation of closed (mothballed) power plants. A retrofit restores the installed power generation capacity to or above its original level. Retrofits shall only include measures that involve capital investments and not regular maintenance or housekeeping measures.

<sup>12</sup> Replacement. It involves investment in a new power plant or unit that replaces one or several existing unit(s) at the existing power plant. The installed capacity of the new plant or unit is equal to or higher than the plant or unit that was replaced.

<sup>13</sup> A reservoir is a water body created in valleys to store water generally made by the construction of a dam.

<sup>14</sup> A reservoir is to be considered as an “existing reservoir” if it has been in operation for at least three years before the implementation of the project activity.

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the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m <sup>2</sup> .	of this SSC-CPA-DD.
If the unit added has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15MW for a small-scale CDM project activity applies only to the renewable component. If the unit added co-fires fossil fuel <sup>15</sup> the capacity of the entire unit shall not exceed the limit of 15MW.	[Choose as applicable:  As per [source] the project does not consist of both renewable and non-renewable components. / As per eligibility criteria 13, the total installed capacity of the plant is not greater than 15 MW.]
Combined heat and power (co-generation) systems are not eligible under this category.	Not applicable because as per eligibility criterion 3, the proposed SSC-PoA does not include combined heat and power systems.
In the case of project activities that involve the 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 <sup>16</sup> from the existing units.	[Choose as applicable: As per eligibility criteria 13, the total installed capacity does not exceed 15 MW and because it is a Greenfield project, there is not addition of renewable energy generation units at an existing renewable power generation facility.  As per eligibility criteria 13 and 19, the total installed capacity does not exceed 15 MW, and the operation of the added units does not interfere with the operation of the existing units; therefore, must be “physically distinct”.]
In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	As per eligibility criterion 13 the total installed capacity does not exceed 15 MW.
In the specific case of biomass project activities the applicability of the methodology is limited to either project activities that use biomass residues only or biomass from dedicated plantations complying with the applicability conditions of AM0042.	Not applicable as per eligibility criterion 3.
In the specific case of biomass project activities the determination of leakage shall be done following the general guidance for leakage in small-scale biomass project activities (attachment C of appendix B of simplified modalities and procedures for small-scale clean development	Not applicable as per eligibility criterion 3.

<sup>15</sup> Co-fired system uses both fossil and renewable fuels.

<sup>16</sup> Physically distinct units are those that are capable of generating electricity without the operation of existing units, and that do not directly affect the mechanical, thermal, or electrical characteristics of the existing facility. For example, the addition of a steam turbine to an existing combustion turbine to create a combined cycle unit would not be considered “physically distinct”.

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mechanism project activities; decision 4/CMP.1) or following the procedures included in the leakage section of AM0042.	
In case the project activity involves the replacement of equipment, and the leakage from the use of the replaced equipment in another activity is neglected, because the replaced equipment is scrapped, an independent monitoring of scrapping of replaced equipment needs to be implemented. The monitoring should include a check if the number of project activity equipment distributed by the project and the number of scrapped equipment correspond with each other. For this purpose scrapped equipment should be stored until such correspondence has been checked. The scrapping of replaced equipment should be documented and independently verified.	Not applicable because the SSC-CPA consist of a Greenfield project. / As per eligibility criterion 18.

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

As per section E.5.1 of the SSC-PoA-DD, project participants can prove additionality either on the basis of Test a or Test b described below. If SSC-CPA meeting Test a qualification, Test b must not be performed accordingly.

Test a: Additionality is demonstrated pursuing EB68, Annex 26, paragraph 2

Projects with an up to 5 MW of installed capacity and located in a special underdeveloped zone of the host country are automatically additional.

Test b: Additionality is demonstrated in accordance with the Guidelines on the demonstration of Additionality of Small-Scale Project Activities, version 09<sup>17</sup> pursuing an investment analysis.

As each hydropower project generates financial benefits other than CDM-related income, the benchmark analysis will be used to demonstrate additionality. For all the projects that do not fulfill the characteristics described in test a above, the project IRR must be lower than a benchmark in order to be deemed additional.

To be additional, each SSC-CPA will have to pass one of these two tests.

**Prior consideration of the CDM:**

[define project start date]

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<sup>17</sup> EB 68 Annex 27

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[project timeline]

**Test a: Is the installed capacity of the CPA below or equal to 5 MW, and is the SSC-CPA located in a special underdeveloped zone of any of the host countries?**

This additionality test is based on annex 2 of EB68<sup>18</sup> according to which renewable energy projects are deemed additional if their total installed capacity is below or equal to 5 MW and are located in a special underdeveloped zone of the host country.

For this test, the size of the renewable project is chosen as per the generator installed capacity. The definition of the special underdeveloped zone will be considered as per paragraph 2.a i) of the “Guidelines for demonstrating additionality of microscale project activities (version 4)”. The location of the CPA will be determined as the location of the powerhouse.

[Briefly describe how poverty is defined for this CPA and include the source]

Test	Yes	No
CPA capacity is below or equal to 5MW.		
<p>CPA is undertaken in a country or municipality considered a special underdeveloped zone (SUZ).</p> <p>SUZ is a region in the host country (zone, municipality or any other designated official administrative unit) identified by the Government in official notifications for development assistance including for planning, management, and investment satisfying any one of the following conditions using most recent available data:</p> <ul style="list-style-type: none"> <li>the proportion of population with income less than 2 USD per day (purchasing power parity) is greater than 50%, or</li> <li>the GNI per capita in the country is less than USD 3000<sup>19</sup> and the population of the region is among the poorest 20% in the poverty ranking of the host country as per the applicable national policies and procedures<sup>20</sup></li> </ul>		

**Table 1: Parameters for Test a**

The SSC-CPA [CPA name] [does/does not] meet both conditions of the additionality test a. The PPs [will/will not] not proceed with test b.

**Test b: Investment analysis**

<sup>18</sup> “Guidelines for demonstrating additionality of microscale project activities” (Version 04)

<sup>19</sup> PPP or the World Bank atlas method or another comparable method.

<sup>20</sup> Information on per capita income or other economic indicators used for the ranking purposes shall be provided in USD.

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An investment analysis has been conducted for the proposed project which has included the various variables and input data for the capital investment, operating & maintenance cost, and revenues as shown in the following table. The predefined form has been used to elaborate the [pre-/post-]tax project IRR.

	Unit	Value	Reference
Technical lifetime	Year	[ ]	[ ]
Investment decision date	DD/MM/YYYY	[ ]	[ ]
Construction start year	Year	[ ]	[ ]
Year in which project starts operating	Year	[ ]	[ ]
Annual electricity generation	MWh/year	[ ]	[ ]
<b>FINANCIAL PARAMETERS</b>			
	Unit	Value	Reference
Electricity tariff	Local currency/kWh	[ ]	[ ]
Increase in electricity tariff	% per year	[ ]	[ ]
Inflation	% per year	[ ]	[ ]
Exchange rate	Foreign/local currency	[ ]	[ ]
<b>COSTS AND EQUIPMENT</b>			
	Unit	Value	Reference
Total investments	USD	[ ]	[ ]
Other revenues	USD	[ ]	[ ]
Operation & Maintenance cost	USD/year	[ ]	[ ]
Other operating expenditure	USD/year	[ ]	[ ]
Insurance	% of Capex p.a.	[ ]	[ ]

**Table 2: Input data for financial analysis for Project IRR calculation**

The benchmark used to compare the return of the project has been chosen as the [type of benchmark] and has been calculated with the investment decision date as base date.

[Description of the applied benchmark and its underlying references]

[In the case of WACC as benchmark:

The predefined WACC calculation form has been applied, following calculation steps described in the PoA-DD. In order to determine the WACC the [CAPM / describe model or source] has been used to estimate the cost-of-equity. The list of parameters used to estimate the WACC is provided below [please delete and add rows as needed as per the chosen model to estimate the CE]:

Parameters	Description	Source	Value
RFR	Risk Free Rate in a	U.S long-term government	

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	mature equity market	bond is considered as risk free instrument. Bond rate is taken as the 3 month average prior to the investment decision and for a duration equal to the technical lifetime of the project activity Source: <a href="http://www.treasury.gov">http://www.treasury.gov</a>	
$\beta$ <i>unlevered</i>	Beta (unlevered)	Total Beta ( <i>Unlevered</i> ) from Damadoran (Stern University) for the relevant industrial sector; most recent before the investment decision was made. It reflects a firm's total exposure to risk rather than just the market risk component. It is a function of the market beta and the portion of the total risk that is market risk. These betas might provide better estimates of costs of equity for undiversified owners of businesses.  <a href="http://pages.stern.nyu.edu/~adamodar/">http://pages.stern.nyu.edu/~adamodar/</a> "Total Beta by industry sector"	
RP	Total Risk Premium	The Total Risk Premium includes an Equity Risk Premium and a Country Risk Premium. The reason behind this premium stems from the risk-return trade off, in which a higher rate of return is required to entice investors to take on riskier investments.  <a href="http://pages.stern.nyu.edu/~adamodar/">http://pages.stern.nyu.edu/~adamodar/</a> "Risk Premium for other	



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		Markets"	
CD	Cost of debt	The cost of debt can be assumed as the commercial lending rate in the host country or the yield of a 10 year bond issued by the government of the host country or, if this is not available, the bond with the maturity which is closest to 10 years. - EB62 Annex 5, Para 16.) if a company's internal benchmark is used. If the WACC is based on parameters that are standard in the market, the cost of debt can be taken as the cost of financing in the capital markets, eg the host country commercial lending rate in the host country as per EB62 Annex 5, Para 16)	
% Debt	% of finance from debt	As per EB 62, Annex 5, Para 17, 18	
% Equity	% of finance from equity	As per EB 62, Annex 5, Para 17, 18	
CE	Cost of Equity, ie Average expected return on equity	Calculated as per [CAPM, etc.]	
T	Tax rate		

**Table 3: Input data for financial analysis for WACC calculation]**

As per the date of investment the [name of the applied benchmark] has been found as [XX] %.

The results of the financial analysis show that the project is not financially viable. The [pre-/ post-]tax Project IRR without CDM revenue shows an IRR of [XX] %, which is below the benchmark rate of return of [XX] % as computed above. Moreover, as shown in the table below, while altering [parameter 1, parameter 2, parameter 3], the IRR stays below the benchmark. Therefore, the proposed SSC-CPA is considered as additional.

	<b>IRR</b>
Initial	[ ]%
Parameter 1 (Specify variation)	[ ]%
Parameter 2 (Specify variation)	[ ]%

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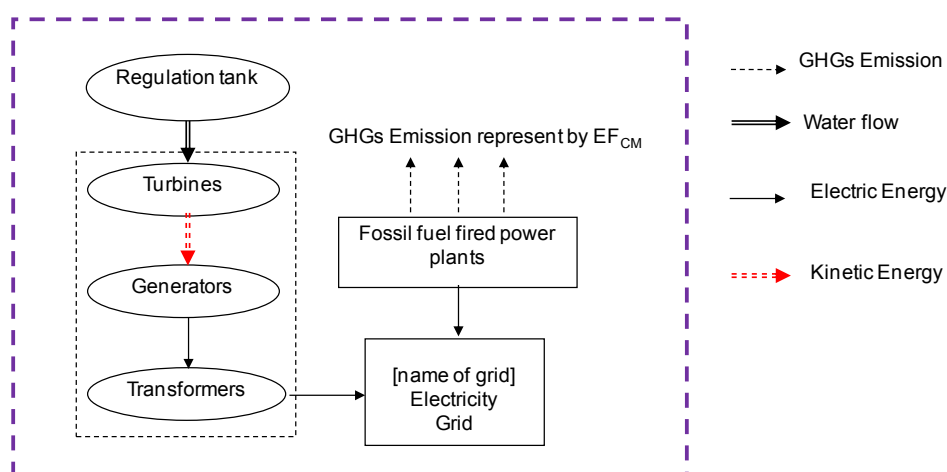
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Parameter 3 (Specify variation)	[ ]%
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**B.4. Description of the sources and gases included in the project boundary and proof that the small-scale CPA is located within the geographical boundary of the registered PoA.**

[CPA name] is located within the boundaries of [host country]. As per AMS I.D. v17, “the project boundary encompasses the physical, geographical site of the renewable generation source delineates the project boundary”. The project boundary encompasses the hydropower project site from the water intake to the substation or interconnection point where the electricity is delivered to the grid, and all power plants connected physically to the electricity system that the CDM project power plant is connected to. The project boundary for [CPA name] is visualized below in the figure below:



[CPA name] is a renewable and lean energy and does not involve any project emissions. Gases and emissions in the project boundary are sourced exclusively from fossil-fuel-fired power plants connected to the [name of grid]

The GHG emission sources included in or excluded from the project boundary are as follows:

	Source	Gas	Included?	Justification/Explanation
Baseline	[name of grid]	CO <sub>2</sub>	Yes	Main emission source
		CH <sub>4</sub>	No	Minor emission source
		N <sub>2</sub> O	No	Minor emission source
Project Activity	[CPA name]	CO <sub>2</sub>	No	[If it is included, choose “Main emission source from fossil fuel combustion”. If it is excluded, choose “Minor emission source”]
		CH <sub>4</sub>	No	Minor emission source
		N <sub>2</sub> O	No	Minor emission source

**Table 4: GHG Sources included to within project boundary**

The project is located within the boundaries of [host country] as specified in A.4.1.2.

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**B.5. Emission reductions:**

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

[Choose as applicable]

**Guatemalan Grid calculation**

Data/Parameter:	$EF_{OM,y}$
Data unit:	tCO <sub>2</sub> /MWh
Description:	$EF_{OM,y}$ is the average operating margin CO <sub>2</sub> emission factor of power plant connected to the host country electricity grid in 3 recent years available data. For Guatemala it is calculated as the simple adjusted OM method. During the first crediting period, this factor is calculated based on ex-ante emissions.
Source of data to be used:	Administration of the Wholesale Market; Executed Load Dispatch from the Interconnected National System, 2008, 2009, 2010: <a href="http://www.amm.org.gt/">http://www.amm.org.gt/</a> Installed capacity in the National Electric System: <a href="http://www.amm.org.gt/pdfs/capacidad_instalada.pdf">www.amm.org.gt/pdfs/capacidad_instalada.pdf</a> Guatemalan Centre of Research and Capacity Building on Sugar Reed, Cengicana: <a href="http://www.cengicana.org/">www.cengicana.org/</a> Statistics Report, Year 10, No.2, November 2009.
Value applied:	0.8138
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	The value of $EF_{OM,y}$ is estimated at PoA level and fixed for the first crediting period and would be revised during the next crediting period.

Data/Parameter:	$EG_{m,2008}$
Data unit:	MWh
Description:	Net electricity generated by power plant/unit $m$ in year 2008
Source of data to be used:	Administration of the Wholesale Market; Executed Load Dispatch from the Interconnected National System, 2008: <a href="http://www.amm.org.gt/">http://www.amm.org.gt/</a>
Value applied:	3,193,774
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the $EF_{OM,2008}$

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Data/Parameter:	$EG_{k,2008}$
Data unit:	MWh
Description:	Net electricity generated by power plant/unit $k$ in year 2008
Source of data to be used:	Administration of the Wholesale Market; Executed Load Dispatch from the Interconnected National System, 2008: <a href="http://www.amm.org.gt/">http://www.amm.org.gt/</a>
Value applied:	4,714,381
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the $EF_{OM,2008}$

Data/Parameter:	$EG_{m,2009}$
Data unit:	MWh
Description:	Net electricity generated by power plant/unit $m$ in year 2009
Source of data to be used:	Administration of the Wholesale Market; Executed Load Dispatch from the Interconnected National System, 2009: <a href="http://www.amm.org.gt/">http://www.amm.org.gt/</a>
Value applied:	3,693,376
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the $EF_{OM,2009}$

Data/Parameter:	$EG_{k,2009}$
Data unit:	MWh
Description:	Net electricity generated by power plant/unit $k$ in year 2009
Source of data to be used:	Administration of the Wholesale Market; Executed Load Dispatch from the Interconnected National System, 2009: <a href="http://www.amm.org.gt/">http://www.amm.org.gt/</a>
Value applied:	4,195,173
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the $EF_{OM,2009}$

Data/Parameter:	$EG_{m,2010}$
Data unit:	MWh
Description:	Net electricity generated by power plant/unit $m$ in year 2010

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Source of data to be used:	Administration of the Wholesale Market; Executed Load Dispatch from the Interconnected National System, 2010: <a href="http://www.amm.org.gt/">http://www.amm.org.gt/</a>
Value applied:	2,849,222
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the $EF_{OM,2010}$

Data/Parameter:	$EG_{k,2010}$
Data unit:	MWh
Description:	Net electricity generated by power plant/unit $k$ in year 2010
Source of data to be used:	Administration of the Wholesale Market; Executed Load Dispatch from the Interconnected National System, 2010: <a href="http://www.amm.org.gt/">http://www.amm.org.gt/</a>
Value applied:	4,961,216
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the $EF_{OM,2010}$

Data/Parameter:	$EF_{BM,2010}$
Data unit:	tCO <sub>2</sub> /MWh
Description:	$EF_{BM,y}$ is the build margin CO <sub>2</sub> emission factor of power plants connected to the host country electricity grid in year 2010, calculated ex-ante based on the $SET_{sample-CDM}$ including power plants registered under the CDM and excluding those older than 10 years.
Source of data to be used:	Administration of the Wholesale Market; Executed Load Dispatch from the Interconnected National System, 2010: <a href="http://www.amm.org.gt/">http://www.amm.org.gt/</a> Installed capacity in the National Electric System: <a href="http://www.amm.org.gt/pdfs/capacidad_instalada.pdf">www.amm.org.gt/pdfs/capacidad_instalada.pdf</a>
Value applied:	0.2611
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	The value of $EF_{BM,2010}$ is estimated at PoA level and fixed for the first crediting period and would be revised during the next crediting period.

Data/Parameter:	$EG_{m,2010}$
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Data unit:	MWh
Description:	Net electricity generated by sample group of power units $m$ in year 2010
Source of data to be used:	Administration of the Wholesale Market; Executed Load Dispatch from the Interconnected National System, 2010: <a href="http://www.amm.org.gt/">http://www.amm.org.gt/</a>
Value applied:	2,016,875
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the $EF_{BM,2010}$

Data/Parameter:	$EF_{CM,y}$
Data unit:	tCO <sub>2</sub> /MWh
Description:	$EF_{CM,y}$ is the combined margin CO <sub>2</sub> emission factor of power plants connected to the host country electricity grid in year 'y', calculated ex-ante based on the weighted average of $EF_{OM,y}$ and $EF_{BM,y}$
Source of data to be used:	Administration of the Wholesale Market; Executed Load Dispatch from the Interconnected National System, 2008, 2009, 2010: <a href="http://www.amm.org.gt/">http://www.amm.org.gt/</a> Installed capacity in the National Electric System: <a href="http://www.amm.org.gt/pdfs/capacidad_instalada.pdf">www.amm.org.gt/pdfs/capacidad_instalada.pdf</a> Guatemalan Centre of Research and Capacity Building on Sugar Reed, Cengicana: <a href="http://www.cengicana.org/">www.cengicana.org/</a> Statistics Report, Year 10, No.2, November 2009.
Value applied:	0.5375
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	The value of $EF_{CM,y}$ is estimated at PoA level and it is fixed for the first crediting period. It would be revised during the next crediting period.

Data/Parameter:	$\eta_{m,y}$
Data unit:	-
Description:	Average net energy conversion efficiency of power unit $m$ in year $y$
Source of data to be used:	The default values provided in the table in Annex 1 of the <i>Tool to calculate the emission factor for an electricity system</i> (v. 2.2.1) were used.
Value applied:	As per Annex 1 of the <i>Tool to calculate the emission factor for an electricity system</i> (v. 2.2.1)
Justification of the choice of data or	No measurement required. Data is obtained based on publicly available information.

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description of measurement methods and procedures actually applied :	
Any comment:	For conservativeness reasons, whenever data of the type of technology is not available, the efficiency has been chosen as the highest efficiency of the applicable options.

Data/Parameter:	$\eta_{k,y}$
Data unit:	-
Description:	Average net energy conversion efficiency of power unit $k$ in year $y$
Source of data to be used:	The default values provided in the table in Annex 1 of the Tool to calculate the emission factor for an electricity system (v. 2.2.1) were used.
Value applied:	37.5% and 39%
Justification of the choice of data or description of measurement methods and procedures actually applied :	No measurement required. Data is obtained based on publicly available information.
Any comment:	For conservativeness reasons, whenever data of the type of technology is not available, the efficiency has been chosen as the highest efficiency of the applicable options.

**El Salvadorian Grid calculation**

Data/Parameter:	$EF_{OM,y}$
Data unit:	tCO <sub>2</sub> /MWh
Description:	$EF_{OM,y}$ is the average operating margin CO <sub>2</sub> emission factor of power plant connected to the host country electricity grid in 3 recent years available data. For El Salvador it is calculated as the simple adjusted OM method. During the first crediting period, this factor is calculated based on ex-ante emissions.
Source of data to be used:	Schedule Summary of Wholesale Electricity Market from Jan 1, 2008 to December 31, 2010. Transaction Unit, <a href="http://www.ut.com.sv">http://www.ut.com.sv</a> Electric Statistics Bulletin No. 12 2010. General Electricity and Telecommunications Superintendence. (SIGET) Type of Fuel Report. Transaction Unit, <a href="http://www.ut.com.sv">http://www.ut.com.sv</a>
Value applied:	0.7915
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	The value of $EF_{OM,y}$ is estimated at PoA level and fixed for the first crediting

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	period and would revised during the next crediting period.
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Data/Parameter:	EG <sub>m,2008</sub>
Data unit:	MWh
Description:	Net electricity generated by power plant/unit <i>m</i> in year 2008
Source of data to be used:	Electric Statistics Bulletin No. 12 2010. General Electricity and Telecommunications Superintendence. (SIGET)
Value applied:	2,163,695
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the EF <sub>OM,2008</sub>

Data/Parameter:	EG <sub>k,2008</sub>
Data unit:	MWh
Description:	Net electricity generated by power plant/unit <i>k</i> in year 2008
Source of data to be used:	Electric Statistics Bulletin No. 12 2010. General Electricity and Telecommunications Superintendence. (SIGET)
Value applied:	3,643,653
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the EF <sub>OM,2008</sub>

Data/Parameter:	EG <sub>m,2009</sub>
Data unit:	MWh
Description:	Net electricity generated by power plant/unit <i>m</i> in year 2009
Source of data to be used:	Schedule Summary of Wholesale Electricity Market from Jan 1, 2008 to December 31, 2010. Transaction Unit, <a href="http://www.ut.com.sv">http://www.ut.com.sv</a>
Value applied:	2,449,317
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the EF <sub>OM,2009</sub>

Data/Parameter:	EG <sub>k,2009</sub>
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Data unit:	MWh
Description:	Net electricity generated by power plant/unit $k$ in year 2009
Source of data to be used:	Schedule Summary of Wholesale Electricity Market from Jan 1, 2008 to December 31, 2010. Transaction Unit, <a href="http://www.ut.com.sv">http://www.ut.com.sv</a>
Value applied:	3,272,607
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the $EF_{OM,2009}$

Data/Parameter:	$EG_{m,2010}$
Data unit:	MWh
Description:	Net electricity generated by power plant/unit $m$ in year 2010
Source of data to be used:	Schedule Summary of Wholesale Electricity Market from Jan 1, 2008 to December 31, 2010. Transaction Unit, <a href="http://www.ut.com.sv">http://www.ut.com.sv</a>
Value applied:	2,021,701
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the $EF_{OM,2010}$

Data/Parameter:	$EG_{k,2010}$
Data unit:	MWh
Description:	Net electricity generated by power plant/unit $k$ in year 2010
Source of data to be used:	Schedule Summary of Wholesale Electricity Market from Jan 1, 2008 to December 31, 2010. Transaction Unit, <a href="http://www.ut.com.sv">http://www.ut.com.sv</a>
Value applied:	3,860,292
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the $EF_{OM,2010}$

Data/Parameter:	$EF_{BM,y}$
Data unit:	tCO <sub>2</sub> /MWh
Description:	$EF_{BM,y}$ is the build margin CO <sub>2</sub> emission factor of power plants connected to

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	the host country electricity grid in year 2010, calculated ex-ante based on the $SET_{\text{sample-CDM} \rightarrow 10\text{yrs}}$ including power plants registered under the CDM and those older than 10 years.
Source of data to be used:	Electric Statistics Bulletin No. 12 2010. General Electricity and Telecommunications Superintendence. (SIGET) Type of Fuel Report. Transaction Unit, <a href="http://www.ut.com.sv">http://www.ut.com.sv</a>
Value applied:	0.4139
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	The value of $EF_{\text{BM},y}$ is estimated at PoA level and fixed for the first crediting period and would revised during the next crediting.

Data/Parameter:	$EG_{m,2010}$
Data unit:	MWh
Description:	Net electricity generated by sample group of power units m in year 2010
Source of data to be used:	Electric Statistics Bulletin No. 12 2010. General Electricity and Telecommunications Superintendence. (SIGET) Type of Fuel Report. Transaction Unit, <a href="http://www.ut.com.sv">http://www.ut.com.sv</a>
Value applied:	1,668,105
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	This value is used to estimate the $EF_{\text{BM},2010}$

Data/Parameter:	$EF_{\text{CM},y}$
Data unit:	tCO <sub>2</sub> /MWh
Description:	$EF_{\text{CM},y}$ is the combined margin CO <sub>2</sub> emission factor of power plants connected to the host country electricity grid in year 'y', calculated ex-ante based on the weighted average of $EF_{\text{OM},y}$ and $EF_{\text{BM},y}$
Source of data to be used:	Schedule Summary of Wholesale Electricity Market from Jan 1, 2008 to December 31, 2010. Transaction Unit, <a href="http://www.ut.com.sv">http://www.ut.com.sv</a> Electric Statistics Bulletin No. 12 2010. General Electricity and Telecommunications Superintendence. (SIGET) Type of Fuel Report. Transaction Unit, <a href="http://www.ut.com.sv">http://www.ut.com.sv</a> Statistics of Hourly Summary. Transaction Unit, <a href="http://www.ut.com.sv">http://www.ut.com.sv</a>
Value applied:	0.6027
Justification of the	No measurement required. Data is obtained based on publicly available

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choice of data or description of measurement methods and procedures actually applied:	information.
Any comment:	The value of $EF_{CM,y}$ is estimated at PoA level and it is fixed for the first crediting period. It would be revised during the next crediting period.

Data/Parameter:	$\eta_{m,y}$
Data unit:	-
Description:	Average net energy conversion efficiency of power unit m in year y
Source of data to be used:	The default values provided in the table in Annex 1 of the <i>Tool to calculate the emission factor for an electricity system</i> (v. 2.2.1) were used.
Value applied:	As per Annex 1 of the <i>Tool to calculate the emission factor for an electricity system</i> (v. 2.2.1)
Justification of the choice of data or description of measurement methods and procedures actually applied:	No measurement required. Data is obtained based on publicly available information.
Any comment:	For conservativeness reasons, because data of the type of technology is not available, the efficiency has been chosen as the highest efficiency of the applicable options.

**Baseline information**

<b>Data / Parameter:</b>	$Cap_{BL}$
Data unit:	MW
Description:	Installed capacity of the power plant before the implementation of the project activity.
Source of data to be used:	[Not applicable/Detailed Project Report/Purchase contracts if available]
Value applied:	[ ]
Justification of the choice of data or description of measurement methods and procedures actually applied:	The values reflect the expected capacity to be installed at the power plant according to the plant design parameters; therefore, it is based on the nameplate capacity at the generator installed before the project activity.
Any comment:	[This value is zero because the SSC-CPA consists of a Greenfield project. / The final capacity that will be installed at the plant might differ from the value declared in the CPA-DD since the technical parameters planned initially at the time of preparation of the SSC-CPA DD might undergo alterations during project implementation.]

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Data / Parameter:	$A_{BL}$
Data unit:	$m^2$
Description:	Area of the existing reservoir prior to the implementation of the project activity, measured in the surface of the water, before the implementation of the project activity, when the reservoir is full.
Source of data to be used:	Project Site (measured from topographical surveys, maps, satellite pictures, etc.)
Value applied:	[ ]
Justification of the choice of data or description of measurement methods and procedures actually applied:	The design of the hydro power plant, including its dam, clearly defines the expected water surface area.
Any comment:	[This value is zero because the SSC-CPA consists of a Greenfield project./ Describe]

[In case this parameter does not apply, please delete.]

<b>Data / Parameter:</b>	$EG_{historical}$
Data unit:	MWh
Description:	Annual average historical net electricity generation by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity
Source of data to be used:	Company registries from previous measurements of electricity meter(s)
Value applied:	[ ]
Justification of the choice of data or description of measurement methods and procedures actually applied:	<p>Project participants may choose between the following two historical periods (This allows some flexibility; the use of the longer time period may result in a lower standard deviation and the use of the shorter period may allow a better reflection of the (technical) circumstances observed during the more recent years):</p> <ul style="list-style-type: none"> <li>(a) The three last calendar years (five calendar years for hydro project) prior to implementation of the project activity; or</li> <li>(b) The time period from the calendar year following <math>DATE_{hist}</math>, up to the last calendar year prior to the implementation of the project, as long as this time span includes at least three calendar years (five calendar years for hydro project), where <math>DATE_{hist}</math> is latest point in time between: <ul style="list-style-type: none"> <li>(i) The commercial commissioning of the plant/unit;</li> <li>(ii) If applicable: the last capacity addition to the plant/unit; or</li> <li>(iii) If applicable: the last retrofit of the plant/unit</li> </ul> </li> </ul>

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	Measurement registries will be crossed-check with records for sold electricity.
Any comment:	Only applicable for non-Greenfield projects

<b>Data / Parameter:</b>	DATE <sub>BaselineRetrofit</sub>
Data unit:	Date
Description:	Point in time when the existing equipment would need to be replaced in the absence of the project activity
Source of data to be used:	Project activity site
Value applied:	[ ]
Justification of the choice of data or description of measurement methods and procedures actually applied:	As per option a or b specified in section E.6.2 of the PoA-DD. The date shall be verified with information assessed or developed by a third party.
Any comment:	Only applicable for non-Greenfield projects

<b>Data / Parameter:</b>	DATE <sub>hist</sub>
Data unit:	Date
Description:	Point in time from which the time span of historical data for retrofit or replacement project activities may start
Source of data to be used:	Project activity site
Value applied:	[ ]
Justification of the choice of data or description of measurement methods and procedures actually applied:	DATE <sub>hist</sub> is the latest point in time between: (i) The commercial commissioning of the plant/unit; (ii) If applicable: the last capacity addition to the plant/unit; or (iii) If applicable: the last retrofit of the plant The date shall be verified with internal registries.
Any comment:	Only applicable for non-Greenfield projects

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

Total emission reductions of the SSC-CPA are calculated on the basis of the equations and parameters presented and explained in section E.6.1 of the SSC-PoA-DD and B.5.1 of this document. For the outcomes of the grid emission factor estimation, please refer to Annex 3 of this CPA-DD form. Baseline information for the combined margin emission factor is calculated by the Coordinating and Managing Entity referring to publicly available information in [county DNA website or relevant source].

**Baseline emissions**

Input data:

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Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
EG <sub>PJ,y</sub> (MWh/year)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

**Table 5: Net electricity generation of the project**

$$EF_{\text{grid, CM, y}} = [\text{XXX}] \text{ tCO}_2/\text{MWh}$$

Equation:

$$BE_y = EG_{\text{PJ, y}} \cdot EF_{\text{grid, CM, y}}$$

Where:

BE<sub>y</sub> Baseline Emissions in year y (tCO<sub>2</sub>)

EG<sub>PJ,y</sub> 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<sub>grid, CM, y</sub> Combined margin CO<sub>2</sub> emission factor for grid connected power generation in year y calculated using the “Tool to calculate the emission factor for an electricity system”, version 2.2.1 (tCO<sub>2</sub>/MWh)

[In the specific case of retrofit/capacity addition where power generation can vary significantly from year to year, due to natural variations in the availability of the renewable source, the use of few historical years to establish the baseline electricity generation can therefore involve a significant uncertainty. The methodology addresses this uncertainty by adjusting the historical electricity generation by its standard deviation. This ensures that the baseline electricity generation is established in a conservative manner and that the calculated emission reductions are attributable to the project activity. Without this adjustment, the calculated emission reductions could mainly depend on the natural variability observed during the historical period rather than the effects of the project activity. The baseline emissions ( $BE_{\text{retrofit, CO}_2, y} / BE_{\text{Add, CO}_2, y}$ ) are thus calculated as follows:

Year	Year 1	Year 2	Year 3
EG <sub>historical</sub> (MWh/year)	[ ]	[ ]	[ ]

Annual average historical net electricity generation by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity

$$\sigma_{\text{historical}} = [ ]$$

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
EG <sub>PJ, facility, y</sub> (MWh/year)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

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Quantity of net electricity supplied to the grid by the project plant/unit in year  $y$

Equation:

$$[ EG_{BL,retrofit,y} = EG_{PJ,facility,y} - (EG_{historical} + \sigma_{historical}) \quad /$$

$$EG_{BL,Add,y} = EG_{PJ,Add,y} - (EG_{historical} + \sigma_{historical}) \quad ]$$

$$[ EG_{BL,retrofit,y} = 0 \text{ on / after } DATE_{BaselineRetrofit} \quad / \quad EG_{BL,Add,y} = 0 \text{ on / after } DATE_{BaselineAdd} ]$$

$$DATE_{BaselineRetrofit} \quad / \quad DATE_{BaselineAdd} = [ \quad ]$$

Result:

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
BE <sub>y</sub> (tCO <sub>2</sub> /year)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

**Table 6: Baseline emissions from electricity generation**

**Project emissions**

As per AMS I.D v17, emissions from water reservoirs of hydro power plants have to be considered following the procedure described in the most recent version of ACM0002; and CO<sub>2</sub> emissions from on-site consumption of fossil fuels due to the project activity shall be calculated using the latest version of the “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion”.

As per the methodology ACM0002 version 12.3.0, the SSC-CPA project emissions are calculated as follows:

$$PE_y = PE_{FC,y} + PE_{GP,y} + PE_{HP,y}$$

Where:

PE<sub>y</sub> = Project emissions in year  $y$  (tCO<sub>2</sub>e/yr)

PE<sub>FC,y</sub> = Project emissions from fossil fuel consumption in year  $y$  (tCO<sub>2</sub>/yr)

PE<sub>GP,y</sub> = Project emissions from the operation of geothermal power plants due to the release of non-condensable gases in year  $y$  (tCO<sub>2</sub>e/yr)

PE<sub>HP,y</sub> = Project emissions from water reservoirs of hydro power plants in year  $y$  (tCO<sub>2</sub>e/yr)

Where:

Emissions from fossil fuel consumption (PE<sub>FC,i,y</sub>)

[Choose : Not applicable because the project does not comprise a fossil fuel engine. / Or:

$$PE_{FC,j,y} = \sum_i FC_{i,j,y} \times COEF_{i,y}$$

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Where:

- $PE_{FC,i,y}$  = CO<sub>2</sub> emissions from fossil fuel combustion in process  $j$  during the year  $y$  (tCO<sub>2</sub>/yr)  
 $FC_{i,j,y}$  = Quantity of fuel type  $i$  combusted in process  $j$  during the year  $y$  ([mass or volume unit]/yr)  
 $COEF_{i,y}$  = CO<sub>2</sub> emission coefficient of fuel type  $i$  in year  $y$ ; (tCO<sub>2</sub>/[mass or volume unit])  
 $i$  = Fuel types combusted in process  $i$  during the year  $y$

The project emissions will be monitored if the project implementer has a fossil fuel engine as a back-up during power plant shutdown.

The CO<sub>2</sub> emission coefficient  $COEF_{i,y}$  can be calculated using one of the following two Options, depending on the availability of data on the fossil fuel type  $i$ , as follows:

Option A: The CO<sub>2</sub> emission coefficient  $COEF_{i,y}$  is calculated based on the chemical composition of the fossil fuel type  $i$ , using the following approach:

If  $FC_{i,j,y}$  is measured in a mass unit:

$$COEF_{i,y} = w_{C,i,y} \times 44/12$$

If  $FC_{i,j,y}$  is measured in a volume unit:

$$COEF_{i,y} = w_{C,i,y} \times \rho_{i,y} \times 44/12$$

Where:

- $COEF_{i,y}$  = Is the CO<sub>2</sub> emission coefficient of fuel type  $i$  (tCO<sub>2</sub>/[mass or volume unit])  
 $w_{C,i,y}$  = Is the weighted average mass fraction of carbon in fuel type  $i$  in year  $y$  (tC/[mass unit of the fuel])  
 $\rho_{i,y}$  = Is the weighted average density of fuel type  $i$  in year  $y$  ([mass unit]/[volume unit] of the fuel)  
 $i$  = Are the fuel types combusted in process  $j$  during the year  $y$

Option B: The CO<sub>2</sub> emission coefficient  $COEF_{i,y}$  is calculated based on net calorific value and CO<sub>2</sub> emission factor of the fuel type  $i$ , as follows:

$$COEF_{i,y} = NCV_{i,y} \times EF_{CO2,i,y}$$

Where:

- $COEF_{i,y}$  = Is the CO<sub>2</sub> emission coefficient of fuel type  $i$  (tCO<sub>2</sub>/[mass or volume unit])  
 $NCV_{i,y}$  = Is the weighted average net calorific value of the fuel type  $i$  in year  $y$  (GJ/[mass or volume unit])  
 $EF_{CO2,i,y}$  = Is the weighted average CO<sub>2</sub> emission factor of fuel type  $i$  in year  $y$  (tCO<sub>2</sub>/GJ)  
 $i$  = Are the fuel types combusted in process  $j$  during the year  $y$



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[Explain option chosen and delete from the table below the parameters that are not applied]

[Please delete the last 3 columns if the chosen crediting period is 7 years]

Year	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
PE <sub>FC,i,y</sub> (tCO <sub>2</sub> /year)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
FC <sub>i,y</sub> ([mass or volume unit]/year)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
w <sub>C,i,y</sub> (tC/[mass unit of the fuel])	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
ρ <sub>i,y</sub> ([mass unit]/[volume unit])	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
NCV <sub>i,y</sub> (GJ/[mass or volume unit])	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
EF <sub>CO<sub>2</sub>,i,y</sub> (tCO <sub>2</sub> /GJ)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
COEF <sub>i,y</sub> (t CO <sub>2</sub> /[mass or volume unit])	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

**Table 7: CO<sub>2</sub> emissions from fossil fuel combustion and applied parameters**

Emissions from the operation of geothermal plants (PE<sub>GP,y</sub>)

As per eligibility criterion 3 PE<sub>GP,y</sub>=0 since the SSC-PoA does not comprise geothermal power plants.

Emissions from water reservoirs of hydro power plants (PE<sub>HP,y</sub>)

As per eligibility requirements, the power density of the SSC-CPA must be greater than 10 W/m<sup>2</sup>; therefore:

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

The power density is calculated as follows:

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

Where:

PD = Power density of the project activity (W/m<sup>2</sup>)

Cap<sub>PJ</sub> = Installed capacity of the hydro power plant after the implementation of the project activity (W)

Cap<sub>BL</sub> = 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<sub>PJ</sub> = 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<sup>2</sup>)

A<sub>BL</sub> = 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<sup>2</sup>). For new reservoirs, this value is zero

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[Please delete the last 3 columns if the chosen crediting period is 7 years]

Year	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
PE <sub>HP,y</sub> (tCO <sub>2</sub> /year)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
PD (W/m <sup>2</sup> )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Cap <sub>BL</sub> (W)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Cap <sub>PJ</sub> (W)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
A <sub>BL</sub> (m <sup>2</sup> )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
A <sub>PJ</sub> (m <sup>2</sup> )	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

**Table 8: CO<sub>2</sub> emissions from water reservoirs and applied parameters**

**Leakage Emissions**

LE<sub>y</sub> = 0

**B.5.3. Summary of the ex-ante estimation of emission reductions:**

Year	Estimation of project activity emissions (tonnes of CO <sub>2</sub> e)	Estimation of baseline emissions (tonnes of CO <sub>2</sub> e)	Estimation of leakage (tonnes of CO <sub>2</sub> e)	Estimation of overall emission reductions (tonnes of CO <sub>2</sub> e)
Year 1	0	[ ]	0	[ ]
Year 2	0	[ ]	0	[ ]
Year 3	0	[ ]	0	[ ]
Year 4	0	[ ]	0	[ ]
Year 5	0	[ ]	0	[ ]
Year 6	0	[ ]	0	[ ]
Year 7	0	[ ]	0	[ ]
Total estimated emissions and emission reductions in tonnes of CO <sub>2</sub> e	0	[ ]	0	[ ]

**Table 9: Ex-ante estimation of emission reductions**

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

**B.6.1. Description of the monitoring plan:**

The monitoring plan of [CPA name] is consistent with methodology AMS 1.D. “Grid connected renewable electricity generation” (version 17). The description of the monitoring plan is presented below.

**1. Monitoring Plan Objective and Organisation**

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The project implementer will monitor the electricity delivered to the [name of grid] grid by the respective project. The project implementer personnel will be trained adequately for this task. The data will be archived electronically and be stored for 2 years after the end of the crediting period of the SSC-CPA. To ensure that the data is reliable and transparent, the project implementer will also establish Quality Assurance and Quality Control (QA/QC) measures to effectively control and manage data reading, recording, auditing as well as archiving data and all relevant documents.

## **2. Monitoring Data**

Data to be monitored is the net electricity delivered to the [name of grid] grid by the project. The monitoring of electricity delivered as follows:

- a) Every month the CPA implementer personnel and the grid company will take a meter reading and record this figure in the operational data record. The operational data record will be used as the electricity invoice preparation.
- b) If electricity meter failed to record the exported electricity from the proposed SSC-CPA, the meter reading and record will be taken from the back-up meter reading that is installed near to the main meter. The entity responsible for monitoring, which is the CPA implementer, will provide the verifying DOE with meter readings for electricity delivered and calibration certificates.

## **3. Quality Assurance and Quality Control**

QA&QC procedures for recording, maintaining and archiving data shall be implemented as part of this SSC-CPA.

The location of the meters will be at the first interconnected point with the [ ] kV [ ] Grid transmission line. The CPA implementer will implement QA&QC measures to calibrate and guarantee the accuracy of metering and safety of the project operation.

The electricity meter will be calibrated at least once every 3 years<sup>21</sup> to guarantee its accuracy in metering and recording the net electricity production of the SSC-CPA.

## **4. Verification of Monitoring Results**

The CME is responsible for preparation of the monitoring report and the emission reduction estimation. The CPA implementer, with the help of the Coordinating and Managing Entity will carry the responsibility for providing the DOE with all required necessary information, before, during and in the event of queries, after the verification.

The parameter to be monitored is:

<b>Data / Parameter:</b>	$EG_{facility,y}$
<b>Data unit:</b>	MWh
<b>Description:</b>	Quantity of net electricity supplied to the grid by the project plant/unit in year <i>y</i>

<sup>21</sup> As per the “General Guidelines to SSC CDM methodologies” version 17.

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Source of data to be used:	Measured by electricity meter(s)
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[ ]
Description of measurement methods and procedures to be applied:	<p>The net electricity production will be measured continuously and recorded at least, monthly.</p> <p>The net electricity is calculated by subtracting the electricity exported with the electricity imported by the CPA. However, project participants will install bidirectional meters, which direct reading corresponds to the net energy generated by the project and to be supplied to the grid.</p> <p>The accuracy and precision of the meters shall not be lower than the level defined as per national standards at the date of installation. Additionally, the equipment shall be calibrated and tested according to recognized standards, as stated in E.7.2 of the PoA-DD</p>
QA/QC procedures to be applied:	Measuring equipment should be certified to national or IEC standards and calibrated according to the national standards and reference points or IEC standards and recalibrated at appropriate intervals according to manufacturer specifications, but at least once in three years <sup>22</sup> .
Any comment:	Additionally, measurement results will be cross-checked with records for sold electricity.

[In case these parameters do not apply, please delete.]

<b>Data / Parameter:</b>	$\sigma_{historical}$
Data unit:	MWh
Description:	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.
Source of data to be used:	Calculated from data used to establish $EG_{historical}$ parameter.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[ ]
Description of measurement methods and procedures to be	Parameter to be calculated as the standard deviation of the annual generation data used to calculate $EG_{historical}$ for retrofit or replacement project activities.

<sup>22</sup> As per the “General Guidelines to SSC CDM methodologies” version 17.

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applied:	
QA/QC procedures to be applied:	-
Any comment:	Only applicable for non-Greenfield projects.

<b>Data / Parameter:</b>	$PE_{FC,y}$
Data unit:	tCO <sub>2</sub> /yr
Description:	Project emissions from fossil fuel consumption in year $y$
Source of data used:	As per the “Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion”.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[ ]
Description of measurement methods and procedures actually applied:	As per the “Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion”.
QA/QC procedures to be applied:	As per the “Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion”.
Any comment:	[if any]

<b>Data / Parameter:</b>	$FC_{i,j,y}$
Data unit:	Mass or volume unit per year (e.g. ton/yr or m <sup>3</sup> /yr)
Description:	Quantity of fuel type $i$ combusted in process $j$ during the year $y$
Source of data used:	Onsite measurements
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[ ]
Description of measurement methods and procedures actually applied:	<ul style="list-style-type: none"> <li>• Use either mass or volume meters. In cases where fuel is supplied from small daily tanks, rulers can be used to determine mass or volume of the fuel consumed, with the following conditions: The ruler gauge must be part of the daily tank and calibrated at least once a year and have a book of control for recording the measurements (on a daily basis or per shift);</li> <li>• Accessories such as transducers, sonar and piezoelectronic devices are accepted if they are properly calibrated with the ruler gauge and receiving a reasonable maintenance;</li> <li>• In case of daily tanks with pre-heaters for heavy oil, the calibration will be made with the system at typical operational conditions.</li> </ul>
QA/QC procedures to	The consistency of metered fuel consumption quantities should be cross-

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be applied:	checked by an annual energy balance that is based on purchased quantities and stock changes.  Where the purchased fuel invoices can be identified specifically for the CDM project, the metered fuel consumption quantities should also be cross-checked with available purchase invoices from the financial records.
Any comment:	[if any]

<b>Data / Parameter:</b>	$w_{C,i,y}$						
Data unit:	tC/mass unit of the fuel						
Description:	Weighted average mass fraction of carbon in fuel type $i$ in year $y$						
Source of data to be used:	The following data sources may be used if the relevant conditions apply: <table border="1"> <thead> <tr> <th>Data source</th><th>Conditions for using the data source</th></tr> </thead> <tbody> <tr> <td>a) Values provided by the fuel supplier in invoices</td><td>This is the preferred source</td></tr> <tr> <td>b) Measurements by the project participants</td><td>If a) is not available</td></tr> </tbody> </table>	Data source	Conditions for using the data source	a) Values provided by the fuel supplier in invoices	This is the preferred source	b) Measurements by the project participants	If a) is not available
Data source	Conditions for using the data source						
a) Values provided by the fuel supplier in invoices	This is the preferred source						
b) Measurements by the project participants	If a) is not available						
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[ ]						
Description of measurement methods and procedures to be applied:	Measurements should be undertaken in line with national or international fuel standards.						
QA/QC procedures to be applied:	Verify if the values under a) and b) are within the uncertainty range of the IPCC default values as provided in Table 1.2, Vol. 2 of the 2006 IPCC Guidelines. If the values fall below this range collect additional information from the testing laboratory to justify the outcome or conduct additional measurements. The laboratories in b) should have ISO17025 accreditation or justify that they can comply with similar quality standards.						
Any comment:	The mass fraction of carbon should be obtained for each fuel delivery, from which weighted average annual values should be calculated.  This parameter will be monitored only when the SSC-CPA comprises a fossil fuel backup engine, and if equations of Option A described in section E.6.2 of the SSC-PoA-DD is used to estimate $COEF_{i,y}$ .						

<b>Data / Parameter:</b>	$\rho_{i,y}$
Data unit:	Mass unit/volume unit
Description:	Weighted average density of fuel type $i$ in year $y$
Source of data to be used:	The following data sources may be used if the relevant conditions apply:

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	<b>Data source</b>	<b>Conditions for using the data source</b>
	a) Values provided by the fuel supplier in invoices	This is the preferred source
	b) Measurements by the project participants	If a) is not available
	c) Regional or national default values	If a) is not available  These sources can only be used for liquid fuels and should be based on well-documented, reliable sources (such as national energy balances).
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[ ]	
Description of measurement methods and procedures to be applied:	Measurements should be undertaken in line with national or international fuel standards.	
QA/QC procedures to be applied:	-	
Any comment:	<p>The density of the fuel should be obtained for each fuel delivery, from which weighted average annual values should be calculated.</p> <p>This parameter will be monitored only when the SSC-CPA comprises a fossil fuel backup engine, and if equation</p> $COEF_{i,y} = w_{C,i,y} \times \rho_{i,y} \times 44/12$ <p>of Option A described in section E.6.2 of the PoA-DD is used to estimate <math>COEF_{i,y}</math>. Preferably the same data source should be used for <math>w_{C,i,y}</math> and <math>\rho_{i,y}</math>.</p>	

Data / Parameter:	NCV <sub>i,y</sub>	
Data unit:	GJ per mass or volume unit (e.g. GJ/m³, GJ/ton)	
Description:	Weighted average net calorific value of fuel type <i>i</i> in year <i>y</i>	
Source of data to be used:	The following data sources may be used if the relevant conditions apply:	
	<b>Data source</b>	<b>Conditions for using the data source</b>
	a) Values provided by the fuel supplier in invoices	This is the preferred source if the fraction of the fuel is not provided (Option A)
	b) Measurements by the project participants	If a) is not available
c) Regional or national default values	If a) is not available	These sources can only be used for

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		liquid fuels and should be based on well-documented, reliable sources (such as national energy balances).
	d) IPCC default values at the upper limit of the uncertainty at a 95% confidence interval as provided in Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories	If a) is not available
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[ ]	
Description of measurement methods and procedures to be applied:	For a) and b): Measurements should be undertaken in line with national or international fuel standards	
QA/QC procedures to be applied:	Verify if the values under a), b) and c) are within the uncertainty range of the IPCC default values as provided in Table 1.2, Vol. 2 of the 2006 IPCC Guidelines. If the values fall below this range collect additional information from the testing laboratory to justify the outcome or conduct additional measurements. The laboratories in a), b) or c) should have ISO17025 accreditation or justify that they can comply with similar quality standards.	
Any comment:	<p>For a) and b): The NCV should be obtained for each fuel delivery, from which weighted average annual values should be calculated</p> <p>For c): Review appropriateness of the values annually</p> <p>For d): Any future revision of the IPCC Guidelines should be taken into account</p> <p>This parameter will be monitored only when the SSC-CPA comprises a fossil fuel backup engine, and if equation</p> $COEF_{i,y} = NCV_{i,y} \times EF_{CO2,i,y}$ <p>of Option A described in section E.6.2 of the PoA-DD is used to estimate <math>COEF_{i,y}</math>.</p>	

<b>Data / Parameter:</b>	$EF_{CO2,i,y}$	
Data unit:	tCO <sub>2</sub> /GJ	
Description:	Weighted average CO2 emission factor of fuel <i>i</i> in year <i>y</i>	
Source of data to be used:	The following data sources may be used if the relevant conditions apply:	
	<b>Data source</b>	<b>Conditions for using the data source</b>
	a) Values provided by the fuel supplier in invoices	This is the preferred source



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	b) Measurements by the project participants	If a) is not available
	c) Regional or national default values	If a) is not available  These sources can only be used for liquid fuels and should be based on well-documented, reliable sources (such as national energy balances).
	d) IPCC default values at the upper limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories	If a) is not available
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[ ]	
Description of measurement methods and procedures to be applied:	For a) and b): Measurements should be undertaken in line with national or international fuel standards.	
Any comment:	<p>For a) and b): The CO<sub>2</sub> emission factor should be obtained for each fuel delivery, from which weighted average annual values should be calculated. For c): Review appropriateness of the values annually For d): Any future revision of the IPCC Guidelines should be taken into account</p> <p>Applicable where option B is used.</p> <p>For a): If the fuel supplier does provide the NCV value and the CO<sub>2</sub> emission factor on the invoice and these two values are based on measurements for this specific fuel, this CO<sub>2</sub> factor should be used. If another source for the CO<sub>2</sub> emission factor is used or no CO<sub>2</sub> emission factor is provided, Options b), c) or d) should be used.</p>	

<b>Data / Parameter:</b>	Cap <sub>PJ</sub>
Data unit:	MW
Description:	Installed capacity of the power plant after the implementation of the project activity.
Source of data to be used:	Detailed Project Report/Purchase contracts if available
Value of data applied	[ ]

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for the purpose of calculating expected emission reductions in section B.5	
Description of measurement methods and procedures to be applied:	The values reflect the expected capacity to be installed at the power plant according to the plant design parameters; therefore, it is based on the nameplate capacity at the generator installed for the project activity.
QA/QC procedures to be applied:	-
Any comment:	The final capacity that will be installed at the plant might differ from the value declared in the CPA-DD since the technical parameters planned initially at the time of preparation of the SSC-CPA DD might undergo alterations during project implementation.

<b>Data / Parameter:</b>	$A_{PJ}$
Data unit:	$m^2$
Description:	Area of the new reservoir, measured in the surface of the water after the implementation of the project activity, when the reservoir is full.
Source of data to be used:	[Project Site (measured from topographical surveys, maps, satellite pictures, etc.)]
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[ ]
Description of measurement methods and procedures to be applied:	The design of the hydro power plant, including its dam, clearly defines the expected water surface area when the reservoir is full.
QA/QC procedures to be applied:	-
Any comment:	This parameter shall only be applied for non runoff river hydro power plants.

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

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

The local impact of each hydropower project—depending on the location, capacity, and type of construction (a dam or other type)—justifies a separate environmental assessment for each SSC-CPA. Environmental analysis will, therefore, be conducted for each hydropower plant included in a SSC-CPA according to the applicable environmental policies at the time of inclusion of SSC-CPA in the SSC-PoA.

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

[description of environmental impacts]

**C.3. Please state whether an environmental impact assessment is required for a typical CPA, included in the programme of activities (PoA), in accordance with the host Party laws/regulations:**

[ ]

**SECTION D. Stakeholders' comments**

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

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

Local and focalized impacts of each hydro project (depending on the location, capacity, and construction or not of a dam, among others) justify a LSC at CPA level.

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

[description of the invitation procedure]

**D.3. Summary of the comments received:**

[ ]

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

[ ]

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**Annex 1**

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

Organization:	<input type="text"/>
Street/P.O.Box:	<input type="text"/>
Building:	<input type="text"/>
City:	<input type="text"/>
State/Region:	<input type="text"/>
Postfix/ZIP:	<input type="text"/>
Country:	<input type="text"/>
Telephone:	<input type="text"/>
FAX:	<input type="text"/>
E-Mail:	<input type="text"/>
URL:	<input type="text"/>
Represented by:	<input type="text"/>
Title:	<input type="text"/>
Salutation:	<input type="text"/>
Last Name:	<input type="text"/>
Middle Name:	<input type="text"/>
First Name:	<input type="text"/>
Department:	<input type="text"/>
Mobile:	<input type="text"/>
Direct FAX:	<input type="text"/>
Direct tel:	<input type="text"/>
Personal E-Mail:	<input type="text"/>

**Annex 2**

**INFORMATION REGARDING PUBLIC FUNDING**

**Annex 3**

**BASELINE INFORMATION**

**Annex 4**

**MONITORING INFORMATION**

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