



**CLEAN DEVELOPMENT MECHANISM
SMALL-SCALE PROGRAMME OF ACTIVITIES DESIGN DOCUMENT FORM
(CDM-SSC-PoA-DD) Version 01**

CONTENTS

- A. General description of small-scale programme of activities (SSC-PoA)
- B. Duration of the small-scale programme of activities ...
- C. Environmental Analysis
- D. Stakeholder comments
- E. Application of a baseline and monitoring methodology to a typical small-scale CDM Programme Activity (SSC-CPA)

Annexes

- Annex 1: Contact information on Coordinating/managing entity and participants of SSC-PoA
- Annex 2: Information regarding public funding
- Annex 3: Baseline information
- Annex 4: Monitoring plan

NOTE:

- (i) This form is for the submission of a CDM PoA whose CPAs apply a small scale approved methodology.
- (ii) At the time of requesting registration this form must be accompanied by a CDM-SSC-CPA-DD form that has been specified for the proposed PoA, as well as by one completed CDM-SSC-CPA-DD (using a real case).



SECTION A. General description of small-scale programme of activities (PoA)

A.1 Title of the small-scale programme of activities (PoA):

BWC Sustainable Small Hydropower Programme of Activities in Viet Nam
Version: 02.2
Date: 28/11/2012

A.2. Description of the small-scale programme of activities (PoA):

Description of the PoA

The “BWC Sustainable Small Hydropower Programme of Activities in Viet Nam” (later on referred to as “PoA”) will support the development of new small scale hydropower projects throughout Viet Nam that supply electricity to the grid. Each small-scale CDM Program Activity (referred to later on as “CPA”) under this PoA will comprise one or more such hydropower plants and have a combined installed capacity of no more than 15 MW, the threshold for small-scale renewable energy CDM projects.

1. General operating and implementing framework of PoA

The PoA is operated and implemented by Blue World Vietnam Co., Ltd. (hereinafter referred to as BWC). BWC is the “Coordinating / Managing Entity” (hereinafter referred to as CME). The hydropower plants developed under this PoA shall be addressed as Programme of Activities and the plant implementer(s) shall be addressed as “CPA implementer(s)” for this PoA.

This PoA will include: (i) small-scale run-of-river hydropower plants and (ii) small-scale with a dam hydropower plants.

BWC will take the following steps for the PoA implementation:

Step 1: Collect information of Project Activities.

Step 2: Scrutinize information regarding eligibility as CDM Program Activity as per Section A.4.2.2.

Step 3: Listing eligible CPAs.

Step 4: Propose DOE to check for the consistency of these CPAs.

Step 5: Inclusion of the eligible CPA(s) under PoA, as per the consistency check by DOE.

Step 6: Report on Monitoring Instruments & System to be installed at Project Site as per the Section E.7.2

Step 7: Undertaking periodic verification by engaging DOE.

BWC will work with small scale hydroelectric power plant developers to promote and support small scale hydroelectric power plant project activities in a way to reduce greenhouse gas emissions. Periodically the CME will include an undefined number of project activities in the programme.

2. Policy/measure or stated goal of the PoA

The objective of the PoA is to develop a platform for overcoming institutional, financial and structural hurdles for the construction of small hydropower projects. All projects connect to the grid and help to stabilize voltage and electricity supply in the surrounding area.

In this way the PoA will promote the development of renewable energy and facilitate the abatement of greenhouse gas emissions through replacement of fossil fuel based electricity in the country.



3. Confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity.

There are currently no laws or regulations in place in Viet Nam that mandate hydropower plant projects to seek CDM services. Likewise, no mandatory laws or regulations exist requiring the CME or any other party to develop a PoA for development of small scale hydropower plants in Viet Nam.

The CME is promoting the development of hydroelectric power plants on a voluntary basis and there are no regulations in place that oblige the CME to develop this programme. Hence, the PoA is a voluntary action being coordinated and managed by CME.

A.3. Coordinating/managing entity and participants of SSC-POA:

1. Coordinating/managing entity of PoA as the entity which communicates with the Board
Project participants being registered in relation to the proposed PoA are:

Name of Party involved (*) ((host) indicates a host Party)	Private and/or public entity(ies) project participants (*) (as applicable)	the Party involved wishes to be considered as project participant (Yes/No)
Viet Nam (host)	Private Entity: Blue World Vietnam Co., Ltd.	No
Netherlands	Private entity: Blue World Carbon SEA Pte Ltd	No

2. Project participants being registered in relation to the PoA. Project participants may or may not be involved in one of the CPAs related to the PoA.
- Blue World Vietnam Co., Ltd. (BWC) is a private company, the Coordinating or Managing Entity (CME) and participant of PoA
 - Blue World Carbon SEA Pte Ltd is a private company and participant of the PoA.

A.4. Technical description of the small-scale programme of activities:

A.4.1. Location of the programme of activities:

A.4.1.1. Host Party(ies):

Viet Nam

A.4.1.2. Physical/ Geographical boundary:

The PoA will be implemented within the geographical boundaries of Viet Nam (see figure A4.1.1).
The geographical coordinates of Viet Nam are¹: 16.1000 North, 107.5000 East.

¹ http://www.indexmundi.com/vietnam/geography_profile.html



National and sectoral policies in the relevant sector are the same within the geographical boundaries of Viet Nam. With regard to this PoA, there are no differences in the national or sectoral policies between regions or provinces.



Figure A4.1.1 Map of Viet Nam

A.4.2. Description of a typical small-scale CDM programme activity (CPA):

A typical CPA under this PoA comprises one or more Greenfield small-scale hydropower plants that are either run-of-river or with a dam with an installed capacity not exceeding 15 MW. The hydropower plants are constructed by one or more CPA implementers and generate electricity from hydropower that is fed into the Viet Nam national electricity grid. As outlined in Section A.4.2.2, a CPA participation in this PoA is limited to Greenfield hydroelectric power plants only and does not apply to activities in which capacity of existing hydro power plants is extended or where existing equipment is replaced or retrofitted.

The following scenarios are eligible for inclusion under the PoA:



Table A.4.2.1 - Description of a typical small-scale CDM programme activity

Project Scenario	Description of scenario
1	Hydroelectric run-of-river power plant
2	Hydroelectric power plant with a reservoir(s)

A.4.2.1. Technology or measures to be employed by the SSC-CPA:

The Project activity is a small-scale PoA Program activity and complies with Appendix B of the simplified modalities and procedures for small-scale CDM Project activities. A monitoring plan and data recording and archiving system will be implemented, where BWC will keep all records for the production of the monitoring reports.

The typical CPA consists of a small-scale hydroelectric project located in Viet Nam. The project will consist of the implementation of one or more turbines with a maximum combined installed capacity of 15 MW per CPA and will generate electricity to be delivered to the Viet Nam National Electricity Grid.

A small scale hydroelectric power plant consists of an installation that converts the water potential energy in kinetic energy through a turbine, and finally into electrical energy through a generator. The energy transformation process is accomplished by taking water from one or more sources; (i.e. lakes, dams, rivers, canals or any other water source) then by the force of gravity with which water enters through a conduction system (tunnels, channels, pipes, surge tanks) to the engine room, the potential energy is transformed into mechanical energy by the rotation of turbines (type Pelton, Francis, Kaplan, Dive, among others) and subsequently the generators transform the rotational energy in electrical energy. The generated electricity is distributed to the national electricity system.

There are two different types of hydroelectric projects types that are distinguished under this PoA:

1. Hydroelectric power plants with a reservoir(s): A significant volume of water is dammed and stored in a single reservoir or multiple reservoirs upstream of the turbines. The dam allows the regulation of the amount of water through the turbines and increases the drop (head) of the water mass.
2. Hydroelectric run-of-river power plants: This type of hydroelectric power plants has no significant water reservoirs upstream the turbines rather than water accumulations of low capacity. The turbines receive the available flow, with seasonal variations, and the excess water is lost by spillage.

In general terms, a small scale hydroelectric plant includes the following facilities:

1. The water accumulation, diversion and/or regulation system.
2. Adduction channel, water conduction piping (penstocks) to the turbine.
3. Power house equipped with turbines (one or more turbines), alternators and auxiliary equipment (e.g. hydraulic/electric control system).
4. The civil works for discharge channel towards natural water resource (tailrace).



5. Sand trap: necessary to clean water of coarse solids to prevent turbine damage.
6. Electrical equipment: transformer, electrical line for grid connection.
7. Monitoring Equipment

Monitoring system (all scenarios)

Each CPA will have proper monitoring equipment that will be calibrated as per the applied approved monitoring methodology. Staff involved will be trained to properly operate the monitoring system. Detailed description of the monitoring system is provided in each CPA-DD.

The data of the operational and monitoring parameters will be collected by CPA implementer and forwarded to BWC. Data will be recorded electronically (kept for two years after the end of the crediting period) and recorded separately. The monitoring data will be printed periodically as a backup procedure.

A.4.2.2. Eligibility criteria for inclusion of a SSC-CPA in the PoA:

The CME has all competencies to check the features of potential CPAs and ensure that each CPA meets all requirements and eligibility criteria (as tabulated below) before inclusion in the registered PoA. The relevant documents for the compliance of paragraph 16 (for development and implementation of management system) annex 05 of EB 70 has been provided to the DOE for validation.

Each of the CPA to be included in the proposed PoA shall meet the following applicable eligibility criteria (considering paragraph 16, annex 05 of EB 70) in table A.4.2.2 below:

In order for a CPA to enrol in this PoA, the following conditions are to be met:

Table A.4.2.2 – Eligibility criteria for a CPA to enrol in the PoA according to Annex 05 of EB 70

Nr.	Eligibility criteria description	Information requirement	Eligibility check outcome (to be confirmed at CPA level by the CME)
(a)	The CPA shall be located within the geographical territory of Viet Nam.	<p>One of the following documents shall be provided:</p> <p><input type="checkbox"/> Declaration from the CPA implementer confirm that the boundary of the implemented CPA is within the geographical territory of Viet Nam and including information regarding geographic reference (latitude and longitude), name and address of the SSC-CPA.</p> <p><input type="checkbox"/> The location of the CPA will be indicated in the approved FSR and/or the Approval of FSR by the local authorities</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>



Nr.	Eligibility criteria description	Information requirement	Eligibility check outcome (to be confirmed at CPA level by the CME)
		<input type="checkbox"/> The EIA's approval	
(b)	<p>Confirmation that the SSC-CPA is not registered or being registered as a stand-alone CDM project outside of this PoA, a bundled CDM Project Activity or another registered PoA.</p> <p>The SSC-CPA shall not lead to double counting of emission reductions or other GHG trading schemes.</p>	<p>The following document shall be provided:</p> <p><input type="checkbox"/> Declaration from the CPA Implementer confirming that the project is not registered or in the process of being registered as a stand-alone CDM project, outside of the PoA, a bundled CDM Project Activity or another registered PoA. Moreover, the declaration will include the unique identification of the CPA location (longitude and latitude). Hence, the CPA will not lead to double counting of emission reductions or any other GHG trading schemes.</p> <p>And:</p> <p><input type="checkbox"/> Confirmation described in the SSC-CPA-DD that states that the project is not registered or in the process of being registered as a stand-alone CDM project, outside of the PoA.</p> <p><input type="checkbox"/> Confirmation check by reviewing the website of the UNFCCC/DNA or other relevant websites.</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>
(c)	The SSC-CPA shall be a hydroelectric run-of-river or with a reservoir(s) power plant with an installed capacity less than 15 MW	<p>Any of the following documents shall be provided:</p> <p><input type="checkbox"/> Feasibility Study / Project Proposal of the project that describes the project technology.</p> <p><input type="checkbox"/> Declaration from the CPA Implementer confirming the CPA is a hydroelectric power plant with an installed capacity</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>



Nr.	Eligibility criteria description	Information requirement	Eligibility check outcome (to be confirmed at CPA level by the CME)
		less than 15 MW	
	The plant shall be a newly built plant and must not involve capacity addition, retrofitting or modifying of an existing facility for renewable energy generation.	Any of the following documents shall be provided: <input type="checkbox"/> Feasibility Study / Project Proposal of the project that describes the project technology.	<input type="checkbox"/> Yes <input type="checkbox"/> No
(d)	The start date of the SSC-CPA shall not be before the commencement of validation of the PoA as a whole (date the PoA was published for global stakeholders comment 17/03/2012).	One of the following documents shall be provided: <input type="checkbox"/> In case available, the earliest signed equipment or (sub) contractor agreement with a total contract value that is significant to the project activity (the date of signing the purchase order by SSC-CPA Implementer shall constitute the starting date of the SSC-CPA). <input type="checkbox"/> Declaration of from the CPA Implementer that no contracts have been signed prior to the start date of the PoA	<input type="checkbox"/> Yes <input type="checkbox"/> No
(e)	The CPAs shall meet the applicability and other requirements of the methodology AMS.I.D Version 17 and the related tools that applied for PoA, refer to section E.2 of the PoA-DD	As described in section E.2 of the PoA DD, the CPA shall meet relevant requirement of the meth and the required document shall be supplied to the DOE at the time of inclusion. Applicability of the methodology shall be assessed at in the specific CPA-DD. The required evidence documentation shall be provided to the DOE at the time of inclusion. The details will be clarified in the E.2 section below of PoA-DD.	<input type="checkbox"/> Yes <input type="checkbox"/> No
(f)	Additionality for the CPAs is demonstrated by applying one of	Any of the following documents at CPA level	<input type="checkbox"/> Yes



Nr.	Eligibility criteria description	Information requirement	Eligibility check outcome (to be confirmed at CPA level by the CME)
	<p>the two options as following:</p> <p><u>Approach 1:</u> In case the CPAs falling into Microscale projects (up to 5 MW): Documentation to support the conditions satisfied based on “Guidelines for demonstrating additionality of microscale project activity”, version 04, Annex 26 of EB 68;</p> <p><u>Approach 2:</u> For CPAs as small scale project activities: evidences that at least one of the barriers described in the section E.5.1 (according to the “Attachment A of Appendix B” now changed to “Guidelines on the Demonstration of Additionality of Small-Scale Project Activities”, version 09.0, Annex 27 of EB 68 or the latest version at the time of inclusion) would prevent the implementation of the proposed CPAs.</p>	<p>shall be provided:</p> <p><input type="checkbox"/> In case the CPAs falling into Microscale projects (up to 5 MW): Documentation to support the conditions satisfied based on “Guidelines for demonstrating additionality of microscale project activity”, version 04, Annex 26 of EB 68; or</p> <p><input type="checkbox"/> For CPAs as small scale project activities: evidences that at least one of the barriers described in the section E.5.1 (according to the “Attachment A of Appendix B” now changed to “Guidelines on the Demonstration of Additionality of Small-Scale Project Activities”, version 09.0, Annex 27 of EB 68 or the latest version at the time of inclusion) would prevent the implementation of the proposed CPAs.</p>	<p><input type="checkbox"/> No</p>
(g)	<p>The CPA shall conduct a local stakeholder consultation and Environmental Analysis (if mandated by law) at CPA level. This shall be carried out prior to the inclusion.</p>	<p>The following document shall be provided:</p> <p><input type="checkbox"/> Meeting minutes and other related documents of the local stakeholder consultation.</p> <p>If law / regulations mandate environmental analysis: <input type="checkbox"/> Copy of environmental analysis report.</p> <p>If there is no law / regulation to mandate environmental analysis: <input type="checkbox"/> Declaration from CPA implementer regarding applicable laws for the CPA</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>



Nr.	Eligibility criteria description	Information requirement	Eligibility check outcome (to be confirmed at CPA level by the CME)
		and explanation why environmental analysis is not required.	
(h)	Confirmation on involvement of public funding or ODA from Annex I Parties in SSC-CPA	<p>One of the following document shall be provided:</p> <p><input type="checkbox"/> Declaration from the CPA Implementer regarding the no involvement of public funding or ODA from Annex I Parties.</p> <p>And:</p> <p><input type="checkbox"/> Confirmation in the SSC-CPA-DD regarding no involvement of public funding or ODA from Annex I Parties.</p> <p>or:</p> <p><input type="checkbox"/> In case of public funding, an affirmation/confirmation/declaration that such public funding does not result in diversion of ODA from Annex I Parties.</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>
(i)	The plant must be connected to Viet Nam National Electricity Grid.	Any of the following documents shall be provided: <input type="checkbox"/> Feasibility Study / Project Proposal of the project that describes the project technology.	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>
(k)	Every CPA in aggregate meets the small-scale or micro scale threshold criteria and remains within those thresholds throughout the crediting period of the CPA.	Confirmation described in the SSC-CPA-DD that states that the SSC-CPA shall meet the small-scale (less than 15 MW) or micro scale threshold criteria (up to 5 MW) and remains within those thresholds throughout the crediting period of the CPA.	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>
(l)	Confirmation that the CPA is not a de-bundled component of another large-scale CPA or CDM project activity as per Annex 13 of EB 54 "Guidelines on assessment of debundling for SSC	<p>The following document shall be provided:</p> <p><input type="checkbox"/> Declaration from the CPA Implementer confirming that the CPA is not a de-bundled component</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>



Nr.	Eligibility criteria description	Information requirement	Eligibility check outcome (to be confirmed at CPA level by the CME)
	project activities” as indicated in section A.4.4.1 of PoA-DD.	of another large-scale CPA or CDM project activity as per latest guidance given by the CDM Executive Board. And: <input type="checkbox"/> Confirmation that the SSC-CPA is not a de-bundled component of another large-scale CPA or CDM project activity as per latest guidance given by the CDM Executive Board shall be provided in the SSC-CPA-DD.	
The CPAs may meet some additional criteria as below in case relevant:			
1.	The CPA implementer is aware of its participation in the PoA and has provided a declaration to confirm/accept relevant terms and conditions in relation to inclusion in the PoA.	The following document shall be provided: <input type="checkbox"/> Declaration from the CPA Implementer confirming its participation in the PoA and affirmation of relevant terms and conditions.	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.	The CPA implementer shall be duly registered by the Vietnamese authorities prior to inclusion	The following document shall be provided: <input type="checkbox"/> Business license of the CPA Implementer issued by Vietnamese local authorities.	<input type="checkbox"/> Yes <input type="checkbox"/> No
3.	The SSC-CPA shall be in conformance to statutory requirements of Viet Nam.	The following document shall be provided: <input type="checkbox"/> Business license of the CPA Implementer issued by Vietnamese local authorities. <input type="checkbox"/> The approval document of Environmental Impact Assessment (EIA) Report of CPAs by Vietnamese local authorities.	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.	Confirmation on the crediting period of the SSC-CPA which shall not exceed the length of the PoA (28 years) regardless of the time of inclusion of CPA in the PoA	Confirmation described in the SSC-CPA-DD that states that the crediting period of the SSC-CPA shall not exceed the length of the PoA.	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.	Energy generating equipment is	One of the following	<input type="checkbox"/> Yes



Nr.	Eligibility criteria description	Information requirement	Eligibility check outcome (to be confirmed at CPA level by the CME)
	not transferred from another activity	document shall be provided <input type="checkbox"/> Confirmation letter from CME that the energy generating equipment is new and has not been transferred from another activity. <input type="checkbox"/> Feasibility Study / Technical Proposal of the project that describes the project technology	<input type="checkbox"/> No

Calculation of the power density and compliance with the eligibility criteria:

Prior to inclusion of any CPA, in those cases resulting in new reservoir(s), the CME will calculate the resulting power density according to the provisions in ACM0002 version 12.3.0. In cases in which power density is lower than 4 W/m², the proposed project will not be in compliance with the eligibility criteria of the PoA and, thus, will not be included.

In cases resulting in new reservoirs, the information and evidences for the demonstration of the power density over 4W/m² will be made available for inspection by the DOE and information will be included in the CPA-DD.

A.4.3. Description of how the anthropogenic emissions of GHG by sources are reduced by a SSC-CPA below those that would have occurred in the absence of the registered PoA (assessment and demonstration of additionality):

(i) The proposed PoA is a voluntary coordinated action;

The PoA is a voluntary action and the CME is not in any way enforced to accomplish its objectives. There are currently no laws or regulations in place in Viet Nam that mandate hydropower project implementers to seek CDM services. Likewise, no mandatory laws or regulations exist requiring the CME or any other party to develop a PoA for hydropower projects in Viet Nam. Except CDM there is no other method in which the CME is able to provide a platform for the development of hydro power project activities.

(ii) If the PoA is implementing a voluntary coordinated action, it would not be implemented in the absence of the PoA;

According to paragraph 07, Annex 5 of EB 70, “Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities” version 02.0: “additionality shall be demonstrated by establishing that in the absence of the CDM, none of the implemented CPAs would occur.”



In the absence of the PoA, which means in the absence of the CDM financial support, CPA under this PoA would not be implemented. As per eligibility criteria of this PoA each CPA is required to demonstrate additionality. This is appropriate since there are various prohibitive barriers to small hydro power plants in Viet Nam, as described in detail in section E.5.1. These barriers may apply differently to different CPAs under the PoA. Therefore, additionality analysis is best performed at CPA level. This CPAs additionality implies PoA additionality, because, if CPAs were feasible without CDM, then the promoters of the CPAs would not need to participate in the PoA, and there would be no scope for it.

Conclusion

The PoA is a voluntary initiative, initiated by the CME. Furthermore, the PoA is not implementing any mandatory policy/regulation requirement in Viet Nam which enforce the establishment or development of hydropower projects.

Hence, implementation of this PoA and avoidance of anthropogenic GHG emissions are additional to those that would have occurred in absence of this PoA.

(iii) If the PoA is implementing a mandatory policy/regulation, this would/is not enforced;

Not applicable, the proposed PoA's objective is not considered mandatory policy/regulation in Viet Nam.

(iv) If mandatory a policy/regulation are enforced, the PoA will lead to a greater level of enforcement of the existing mandatory policy/regulation.

Not applicable, the proposed PoA's objective is not considered mandatory policy/regulation in Viet Nam.

A.4.4. Operational, management and monitoring plan for the <u>programme of activities</u> (PoA):

A.4.4.1. Operational and management plan:
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As its operation and management plan the CME establish and maintain an electronic database that containing information of all the CPA's in the programme². Details of the operation and monitoring plan are as follows:

² CME Management System Manual developed by the CME of the POA has covered all requirements from (a) to (l) as required in Annex 5 of EB 70.

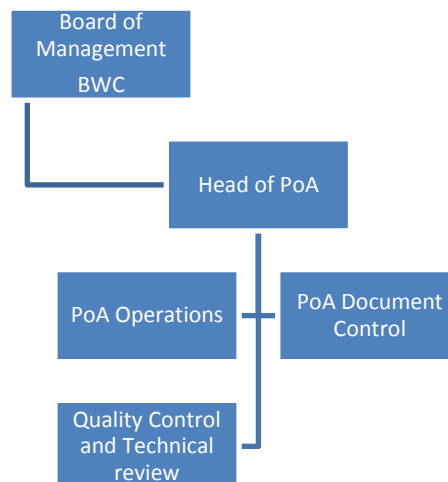


Figure A.4.4.1.1 - CME organisation chart for PoA Management and development

Based on the above defined chart the roles and responsibilities can be defined as shown in the table A.4.4.1.1.

Table A.4.4.1.1 - CME organisation roles and responsibilities

Department	Management Responsibilities and Arrangements
Board of Management	<ul style="list-style-type: none">▪ Registration of the PoA▪ Implementation of the Program objectives▪ Ensuring proper overall management of the PoA▪ CER issuance
Head of the PoA	<ul style="list-style-type: none">▪ Program operation as per CDM guidelines and board of management strategy.▪ Proper and timely validation of the PoA▪ Review of program compliance as per guidelines▪ Awareness creation and promotion of the PoA▪ Ensuring proper CDM project operation and management as per required guidelines and board of management strategy throughout the crediting period.
PoA Operations	<p>This department has two main objectives: securitizing and preparation of documentation for initial inclusion of a CPA and monitoring and verification of included CPAs.</p> <p>(Pre) inclusion activities:</p> <ul style="list-style-type: none">▪ Review of CPA compliance as per guidelines▪ Identification of CPA▪ Listing of eligible CPA's▪ CPA-DD and PoA-DD Development▪ Investment analysis for CPA's▪ Ensure verification of CPAs▪ Inclusion of eligible CPAs under PoA <p>Validation and verification activities:</p>



	<ul style="list-style-type: none"> ▪ Validation and verification support to CPA implementer throughout the crediting period. ▪ Preparation of monitoring report for Emission Reduction ▪ Monitoring and record keeping of monitoring parameters. ▪ Review and improvement suggestions of monitoring system and plan ▪ Monitoring Support to CPA implementers
PoA Document Control	<ul style="list-style-type: none"> ▪ Collecting information and documentation of the CPA ▪ Collection and scrutiny of all documents related to the eligibility criteria of CPA inclusion ▪ Focal point for CPA Implementers ▪ Collection of necessary statutory approvals from CPA implementers ▪ General document control
Quality Control and Technical review	<ul style="list-style-type: none"> ▪ Internal quality audit, ▪ Process and continuous improvement proposal reporting to stakeholders and management. ▪ Quality control of supporting documents and site information ▪ Technical review of the CPA-DD documentation.

In addition to the above management tasks, the BWC will implement the following operational elements to ensure proper management and oversight of the proposed PoA.

(i) A record keeping system for each CPA under the PoA

In order to unambiguously identify CPA participating in the PoA a serial numbering system will be implemented that uniquely identifies each CPA through numbers for the CPA and the CPA implementer. This serial numbering system will be used to record baseline and monitoring data on a continuous basis using a database. In this way, the PoA CME will be able to track the emission reduction of each CPA over the full duration of the crediting period.

In summary, BWC will record and document CPA detail information as follows:

- CPA Identification number
- Name of the CPA and its production capacity
- The name, address, and CPA implementer details of each participating CPA
- The geographical coordinates and location of each CPA
- The record of technical specification of CPA participating in the PoA
- Date of inclusion in the PoA.

BWC will be responsible for the management of records and data associated with each CPA. The database will be updated manually using the data supplied by the participating CPA. It will form the basis for the verification of CPAs and be available for inspection by the DOE at any point in time.

The record keeping will be carried out by using the field instruments, hardware and software installed at every project site and/or manual data recording in the log book. The captured data will be stored by the CME, which will have provision to archive the data as per individual CPAs. Each CPA implementer will carry out a periodic analysis (quarterly) of data for the individual Project. In case of any anomalies identified during the review by the CPA implementer, appropriate corrective actions will be taken.

(ii) A system/procedure to avoid double counting:



The CME will confirm as per EB 55 Annex 38 Paragraph 6(i), that the Project Activities included in the SSC CPA is not registered in any other CPA of a PoA or any other registered CDM Project Activity through following procedure to avoid double counting of CPA under any other CDM or PoA activity:

1. At time of CPA eligibility check, CME will seek confirmation of CPA and also check any- double counting using public information sources like UNFCCC website data.
2. The CME will keep track of the CPAs included in the PoA in a database

Furthermore at the time of inclusion the CME provides a declaration from the CPA implementers stating that *"there is no double counting of CERs from this CPA under any CDM Project or CPA in another PoA"*.

(iii) The SSC CPA included in the PoA is not a debundled component of another CDM Programme Activity or another CDM Project activity:

The CME will follow the *"Guidance for determining the occurrence of de-bundling under a Programme of Activity"* (version 03, EB 54, Annex 13) to ensure that the proposed CPA is not a de-bundled component of a large scale activity.

Paragraph 8. For the purposes of registration of a Programme of Activities (PoA),³ a proposed small-scale CPA of a PoA shall be deemed to be a de-bundled component of a large scale activity if there is already an activity⁴, which satisfies both conditions (a) and (b) below:

- (a) Has the same activity implementer as the proposed small scale CPA or has a coordinating or CME, which also manages a large scale PoA of the same technology/measure, and;*
- (b) The boundary is within 1 km of the boundary of the proposed small-scale CPA, at the closest point.*

Paragraph 9. If a proposed small-scale CPA of a PoA is deemed to be a debundled component in accordance with paragraph 2 above, but the total size of such a CPA combined with a registered small-scale CPA of a PoA or a registered CDM project activity does not exceed the limits for small-scale CDM as set out in Annex II of the decision 4/CMP.1⁵ and 5/CMP.1 respectively, the CPA of a PoA can qualify to use simplified modalities and procedures for small-scale CDM project activities.

Paragraph 10. If each of the independent subsystems/measures included in the CPA of a PoA is no larger than 1% of the small-scale thresholds defined by the methodology applied⁶, then that CPA of PoA is exempted from performing de-bundling check i.e., considering as not being a de-bundled component of a large scale activity.

In relation to the Paragraph 8 of the Guidance, if CPA does not satisfy both the condition 8 (a) & 8 (b), the proposed small scale CPA of a PoA is not deemed to be de-bundled component of a large-scale activity, therefore is eligible to use the simplified modalities and procedures for small-scale Project activities. However if CPA satisfy above conditions and the total size of the SSC CPA does not

³ Only those PoAs need to be considered in determining de-bundling that are: (i) in the same geographical area; and (ii) use the same methodology; as the POA to which proposed CPA is being added

⁴ Which may be a (i) registered small-scale CPA of a PoA, (ii) an application to register another small-scale CPA of a PoA or (iii) another registered CDM project activity.

⁵ Limits have been revised as set in paragraph 28 of decision 1/CMP.2.

⁶ i.e., 15 kW installed capacity or 0.6 GWh annual energy savings or 0.6 ktCO₂e annual emission reductions.



exceed the limit for SSC Project activity, the proposed small scale CPA of a PoA is deemed to be de-bundled component of a large-scale activity but can qualify to use the simplified modalities and procedures for small-scale Project activities.

In relation to paragraph 9 of the Guidance, CPAs will only be included if the total size of such a CPA combined with a registered small-scale CPA of a PoA or a registered CDM Project activity does not exceed the limits for small-scale CDM Project activity.

In relation to paragraph 10 of the Guidance, the rated thermal capacity of Project activity under CPA included in this PoA will be larger than 1% (i.e. 0.6 ktCO_{2e} annual emission reduction) of the small scale thresholds defined by the methodology applied. Hence the CPAs included in PoA will have to perform de-bundling check as per above mentioned paragraph 8 & 9.

(iv) The CPA Implementers are aware and have agreed that their activity is being subscribed to the PoA.

The CPA implementer will provide the mandate to CME stating that, they are aware and have agreed that their activity is subscribed to the PoA.

A.4.4.2. Monitoring plan:

The CME has opted for verification of each CPA individually.

The project database shall be maintained by each of the CPA implementers at the respective project sites and shared with CME.

Each of the CPA implementer shall maintain all the relevant documents for all of the related parameters as mention in the section E.7.1 and E.7.2 of the PoA DD.

The project database (at individual CPA level) shall record the start and end dates of each monitoring period and the emission reductions attributable for the monitoring period. Verification of each CPA shall be done by an appointed DOE. The CME of the PoA shall prepare the monitoring report based on the data gathered from the individual CPAs. This report will unambiguously set-out the data relating to the emission reductions generated by each of the CPAs during the monitoring period. Database shall be maintained in digital format to the extent possible with data control procedures in place. Appropriate record keeping procedures would be implemented to ensure that each monitoring period data set can be transparently attributed to its corresponding CPAs, preventing any occurrences of double counting.

A.4.5. Public funding of the programme of activities (PoA):

No public funding is used to implement this Programme of activities (PoA). Furthermore the CME will ensure that, at the time of inclusion of CPA, there is no public funding from Annex - I parties received. This can be confirmed through mandate/declaration given by CPA implementer to CME. In case public funding is received for CPA, an affirmation will be provided that such funding does not result in a diversion of Official Development Assistance (ODA).



SECTION B. Duration of the programme of activities (PoA)

B.1. Starting date of the programme of activities (PoA):

The starting date of the PoA is 17/03/2012. The start date of the PoA was determined as the date of publication of the PoA-DD for global stakeholder consultation according to “Glossary of CDM terms” version 07.0.

B.2. Length of the programme of activities (PoA):

This PoA has a length of 28 years and 0 months.

SECTION C. Environmental Analysis

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:

1. Environmental Analysis is done at PoA level ☐
2. Environmental Analysis is done at SSC-CPA level ☒

The Environmental Analysis would be carried out at the CPA level, due to the nature of the individual CPA (depending on the location, size, and design). The impacts are confined to each CPA and all CPAs must follow all regulations under the Vietnamese Law which will guarantee the environmental integrity of each CPA at the time of inclusion.

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

The environmental impacts analysis will be done at CPA level.

Please refer to section C.3 for the justification why the environmental impact analysis will be performed at CPA level.

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

At the time of application for the PoA, the Environment Protection Law of Viet Nam 2005 (Article 18) and Decree No. 80/2006/ND-CP dated August 9, 2006 contain specific guidelines regarding the Environment Protection Law. These regulations state that hydropower projects shall get the Environment Impact Assessment (EIA) Approval by the local authorities. However, all CPAs under this PoA which are not expected to have significant impacts to the environment. The CPA implementers shall conduct environmental protection activities following applicable laws and regulations at the time of CPA inclusion.



SECTION D. Stakeholders' comments

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

1. Local stakeholder consultation is done at PoA level ☐
2. Local stakeholder consultation is done at SSC-CPA level ☒

Local and focalized impacts of each hydropower project justify a local stakeholder consultation at CPA level.

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

This will be addressed at the individual SSC-CPA-DD level.

D.3. Summary of the comments received:

This will be addressed at the individual SSC-CPA-DD level.

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

This will be addressed at the individual SSC-CPA-DD level.

SECTION E. Application of a baseline and monitoring methodology

This section shall demonstrate the application of the baseline and monitoring methodology to a typical SSC-CPA. The information defines the PoA specific elements that shall be included in preparing the PoA specific form used to define and include a SSC-CPA in this PoA (PoA specific CDM-SSC-CPA-DD).

E.1. Title and reference of the approved SSC baseline and monitoring methodology applied to a SSC-CPA included in the PoA:

The title of approved baseline and monitoring methodology:

AMS.I.D: "Grid connected renewable electricity generation";

Type I- Renewable Energy Projects

Version 17, EB 61.

Sectoral Scope: 01.

Reference to the applied methodology:

<http://cdm.unfccc.int/methodologies/SSCmethodologies/approved>

The relevant methodology tools applied for SSC-CPAs under this PoA are provided below:

"Tool to calculate the emission factor for an electricity system" (Version 02.2.1, EB 63 Annex 19)



E.2. Justification of the choice of the methodology and why it is applicable to a SSC-CPA:

The project activities in this PoA comply with the applicability conditions as stipulated in AMS.I.D as indicated in the table below.

Table E.2.1: Applicability conditions of methodology AMS.I.D

Applicability Conditions	CPA Status
<p>Ref: AMS.I.D Version 17, §1: This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:⁷</p> <p>(a) Supplying electricity to a national or a regional grid; or</p> <p>(b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.</p>	<p>A CPA will consist of a renewable energy generation unit (hydro) that:</p> <p>a) supplies electricity to a national grid in Viet Nam; or</p> <p>b) supplies electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.</p>
<p>Ref: AMS.I.D Version 17, §2: Illustration of respective situations under which each of the methodology (i.e. AMS-I.D, AMS-I.F and AMS-I.A⁸) applies is included in Table 2.</p>	<p>All CPA will conform to AMS.I.D:</p> <p>(a) Supplying electricity to a national or a regional grid; or</p> <p>(b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.</p>
<p>Ref: AMS.I.D Version 17, §3: This methodology is applicable to project activities that:</p> <p>(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);</p> <p>(b) Involve a capacity addition;⁹</p> <p>(c) Involve a retrofit¹⁰ of (an) existing plant(s); or</p>	<p>All CPAs will be involved in installing new power plants at the sites where there was no renewable energy power plant operating prior to the implementation of the CPAs (Greenfield plant).</p>

⁷ Refer to EB 23, annex 18 or the definition of renewable biomass.

⁸ AMS-I.D “Grid connected renewable electricity generation”, AMS-I.F “Renewable electricity generation for captive use and mini-grid” and AMS-I.A “Electricity generation by the user”

⁹ 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.

¹⁰ 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.



(d) Involve a replacement ¹¹ of (an) existing plant(s).	
<p>Ref: AMS.I.D Version 17, §4: Hydro power plants with reservoirs¹² that satisfy at least one of the following conditions are eligible to apply this methodology:</p> <ul style="list-style-type: none"> A. The project activity is implemented in an existing reservoir with no change in the volume of reservoir; B. The project activity is implemented in an existing reservoir,¹³ 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/m²; C. The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m². 	<p>As per inclusion criteria, a selected CPA must comply to one of the following conditions:</p> <ul style="list-style-type: none"> A. The CPA is implemented in an existing reservoir with no change in the volume of reservoir; B. The CPA is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m²; C. The CPA results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m².
Ref: AMS.I.D Version 17, §5: If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.	CPAs will be exclusively hydro plants and thus units added do only have renewable components.
Ref: AMS.I.D Version 17, §6: Combined heat and power (co-generation) systems are not eligible under this category.	Not applicable , the PoA does not include combined heat and power systems.
Ref: AMS.I.D Version 17, §7: 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 from the existing units.	Not applicable , capacity additions are not eligible under the PoA.
Ref: AMS.I.D Version 17, §8: In the case of retrofit or replacement, to qualify as a small-scale project, the	Not applicable. A CPA will not retrofit or modify an existing facility

¹¹ 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.

¹² A reservoir is a water body created in valleys to store water generally made by the construction of a dam.

¹³ 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.



total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	for renewable energy generation
Ref: AMS.I.D Version 17, §25: 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 the CPA are not biomass project activities.
Ref: AMS.I.D Version 17, §26: 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 ¹⁴ of simplified modalities and procedures for small-scale clean development mechanism project activities; decision 4/CMP.1) or following the procedures included in the leakage section of AM0042.	Not applicable , as the CPA are not biomass project activities.
Ref: AMS.I.D Version 17, §27: 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 , as the CPA will not involve replacement of equipment. The CPA will be new (greenfield) facilities.

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E.3. Description of the sources and gases included in the SSC-CPA boundary

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According to “Indicative simplified baseline and monitoring methodologies for selected small scale CDM project activity categories, AMS-I.D., Version 17, EB 61, 3 June 2011, the spatial extent of the CPA its project boundary includes the physical and geographical site of the renewable generation source that includes such as diversion channel, intake, weir, headrace, settling pond, waterway, penstock, power plant and tailrace as well as the sub-station connection to the relevant electricity grid (a regional grid system). Figure E.3.1 and E.3.2 show the project flowchart and its boundaries.

The project boundary of the CPAs falling scenario 1 (Hydroelectric run-of-river power plant) shall be as the diagram below:

¹⁴ Available on <<http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html>>.

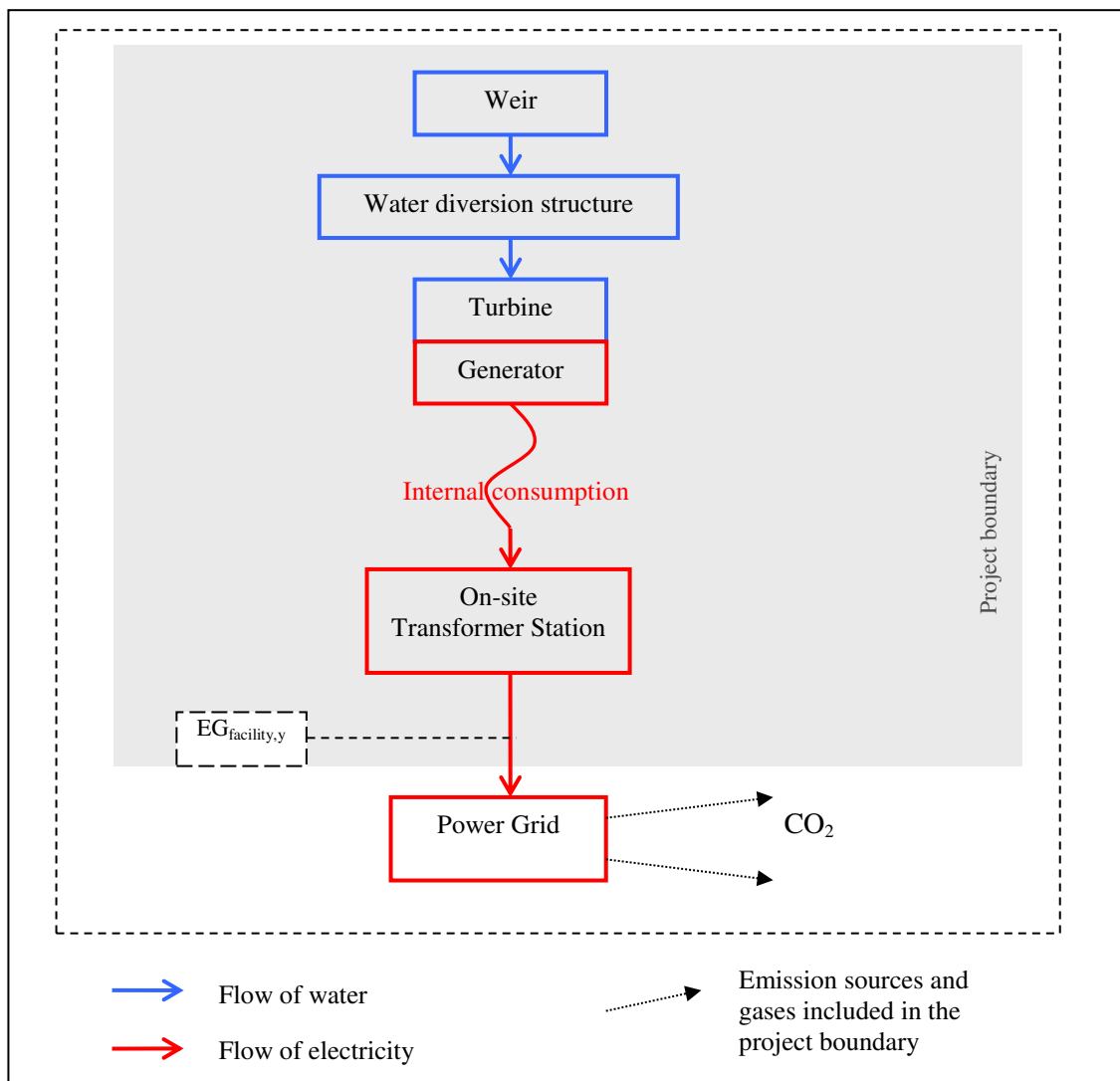


Figure E.3.1 Description of the SSC-CPA boundary (scenario 1: without reservoir)

The project boundary of the CPAs falling scenario 2 (Hydroelectric power plants with a reservoir(s)) shall be as the diagram below:

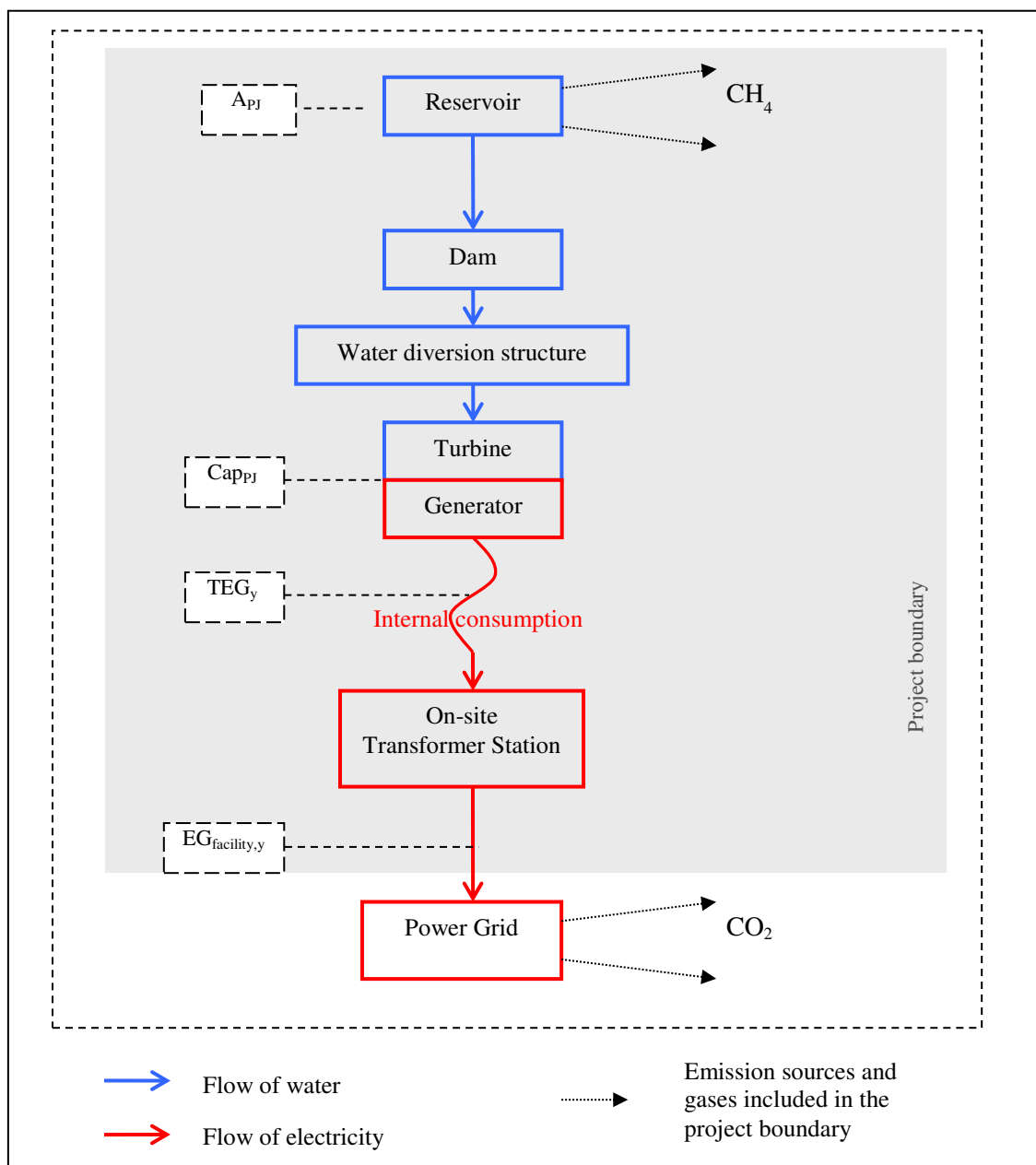


Figure E.3.2 Description of the SSC-CPA boundary (scenario 2: with reservoir)



Table E.3.1 Emission sources and gases included in the SSC-CPA boundary

	Source	Gas	Included?	Justification / Explanation
Baseline	CO ₂ emission from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO ₂	Included	Main emission source
		CH ₄	Excluded	Minor emission source.
		N ₂ O	Excluded	Minor emission source.
CPA activity	CH ₄ emission from the operation of the reservoir	CO ₂	Excluded	Minor emission source.
		CH ₄	Included	Included if the CPA has dam/reservoir with power density of the project activity (PD) is greater than 4 W/m ² and less than or equal to 10 W/m ² (according to AMS.I.D which referred to the most recent version of ACM0002).
		N ₂ O	Excluded	Minor emission source.

The use of backup diesel generator for emergency cases shutdown will be specified in each CPA-DD.

E.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:

In accordance with AMS-I.D. version 17, paragraph 10: *the baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.*

The baseline emissions are the product of electrical energy baseline $EG_{BL,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor. The emission factor can be calculated in a transparent and conservative manner as follows:

- (a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the “Tool to calculate the Emission Factor for an electricity system”;

OR

- (b) The weighted average emissions (in t CO₂/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.



The selected option: Emission factor based on the Combined Margin

Option (a) is selected which uses a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the latest version of “Tool to calculate the emission factor for an electricity system”.

The details of EF calculation will be provided in Annex 3 of CPA-DDs based on the data available at the time of inclusion.

E.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the SSC-CPA being included as registered PoA (assessment and demonstration of additionality of SSC-CPA): >>

E.5.1. Assessment and demonstration of additionality for a typical SSC-CPA:

The determination of additionality for a CPA under the present PoA shall be performed as presented below, in accordance with Attachment A to Appendix B to Annex II of 4/CMP.1 (“Attachment A”) and/or the “Guidelines for Demonstrating Additionality of Microscale Project Activities” (Version 04, Annex 26 of EB 68).

For each CPA, additionality is demonstrated by applying one of the two options as presented below, provided that the CPA satisfies its predefined conditions. The set of conditions for each option and how the demonstration of their fulfilment shall be performed at the time of inclusion of a CPA is explained below and summarized in section E.5.2.

A. MICROSCALE PROJECTS (up to 5 MW)

According to the “Guidelines for Demonstrating Additionality of Microscale Project Activities” (Version 04, EB 68 Annex 26) a project activity is additional if it falls into the following category of projects:

Project activities up to five megawatt¹⁵ that employ renewable energy technology¹⁶ are additional if any one of the conditions below is satisfied¹⁷:

- (a) *The geographic location of the project activity is in one of the least developed countries or the small island developing States (LDCs/SIDS) or in a special underdeveloped zone (SUZ) of the host country identified by the government;*
 - (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*

¹⁵ A positive list of technologies that are automatically defined as additional are included in “Guidelines on the demonstration of additionality of small-scale project activities” for which it is not required to satisfy the conditions indicated here (see EB 68, annex 27 EB 63, annex 22).

¹⁶ All technologies/measures included in approved Type I Small Scale CDM methodologies are eligible to be considered. Furthermore at its fifty-seventh meeting the Board clarified that all CDM project activities that meet the criteria specified in these guidelines are eligible to apply the guidelines irrespective of the scale of the approved CDM methodology applied to the project activity.

¹⁷ Otherwise other means for demonstrating additionality shall be used (e.g. the tool “Tool for demonstration of additionality”, or “Guidelines on the demonstration of additionality of small-scale project activities”)



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 USD 2 per day (PPP)¹⁸ in the region is greater than 50%;*
- *The GNI per capita in the country is less than USD 3000¹⁹ 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;²⁰*

(ii) *In cases where, based on the recommendation of the designated national authority of the host country,²¹ the SUZ in the host country has been approved by Executive Board (hereinafter referred to as the Board) of the clean development mechanism (CDM), the list of such SUZ shall be maintained on the UNFCCC website (e.g. at <<http://cdm.unfccc.int/DNA/submissions/index.html>>). In the case of these SUZ listed on the CDM website there is no need for the project proponents to provide proofs as indicated in paragraph 2 (a) above.²²*

(b) *The project activity is an off-grid activity supplying energy to households/communities (less than 12 hours grid availability per 24 hrs is also considered “off-grid” for this assessment)²³;*

(c) *The project activity is designed for distributed energy generation (not connected to a national or regional grid²⁴) with both conditions (i) and (ii) satisfied;*

- i. *Each of the independent subsystems/measures in the project activity is smaller than or equal to 1500kW electrical installed capacity;*
- ii. *End users of the subsystems or measures are households/communities/small and medium enterprises (SMEs)²⁵.*

(d) *The project activity employs specific renewable energy technologies/measures recommended by the host country designated national authority (DNA) and approved by the Board to be additional in the host country. The following conditions shall apply for DNA recommendations:*

¹⁸ Purchasing power parity.

¹⁹ PPP or the World Bank atlas method or another comparable method.

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

²¹ DNA recommendations will be based on conditions indicated in paragraph 2(a)(i).

²² Forms and procedures for DNA recommendations shall be developed and made available at a later date.

²³ **Note:** As outlined in table A.4.2.1, the CPAs participating in this PoA must be connected to the unique Electricity Grid of Viet Nam (National Electricity Grid-EVN).

²⁴ **Note:** As outlined in table A.4.2.1, the CPAs participating in this PoA must be connected to the unique Electricity Grid of Viet Nam (National Electricity Grid-EVN).

²⁵ “communities” of consumers may for example include households, commercial facilities such as shops, public services/buildings and small, medium and micro enterprises (SMMEs); Applications may include lighting (interior, public street lighting), electrical appliances such as refrigerators, agricultural water pumps”.



- i. *“Specific renewable energy technologies/measures” refers to grid connected renewable energy technologies of installed capacity equal to or smaller than 5 MW;*
- ii. *The ratio of installed capacity of the specific grid connected renewable energy technology in the total installed grid connected power generation capacity in the host country shall be equal to or less than 3 per cent;*
- iii. *Most recent available data on the percentage of contributions of specific renewable energy technologies shall be provided to demonstrate compliance with the 3 per cent threshold. In no case shall data older than three years from the date of submission be used;*
- iv. *Technologies/measures recommended by DNAs and approved by the Board to be additional in the host country remain valid for three years from the date of approval. However, additionality of eligible project activities applying the guidelines remains valid for the entire crediting period;*
- v. *DNA submissions shall include the specific grid connected renewable electricity generation technologies that are being recommended and provide the required data as indicated above (e.g. wind power, biomass power, geothermal power, hydropower).*

B. SMALL SCALE PROJECT ACTIVITIES

All small scale projects may follow the approaches defined in Attachment A to Appendix B to Annex II of 4/CMP.1 (“Attachment A”), now changed to “Guidelines on the Demonstration of Additionality of Small-Scale Project Activities”, version 09.0, EB68, Annex 27, to prove additionality. The analysis method chosen to demonstrate the existence of an investment barrier is determined provided below.

Investment analysis

There are 3 (three) analysis methods recommended to conduct investment analysis, including simple cost analysis (option I), investment comparison analysis (option II) and benchmark analysis (option III).

The simple cost analysis is not applicable as CPAs generate revenue from the sales of electricity generation other than CDM revenue. If the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services, then an investment comparison analysis shall be used instead of a benchmark analysis. If the alternative to the CPA is the supply of electricity from the grid, this is not to be considered an investment and a benchmark approach is considered appropriate.

Among the options available in the tools, benchmark analysis (option III) is chosen. Equity Internal Rate of Return (IRR) parameter of the project will be used in the benchmark analysis. We refer to the appendix of the “Guidelines of the Assessment of Investment Analysis” (EB 62, Annex 5) and apply the costs of equity of group 1 (including energy industries) of Viet Nam which is 12.75%. This cost of equity is expressed in real terms and therefore needs to be adjusted to represent the nominal terms as does the financial indicator. This is done by adjusting for the inflation at the time of the investment decision. The benchmark is calculated within the following equation by Irving Fisher²⁶.

²⁶ http://everything.explained.at/Fisher_equation/



$$(1 + r_n) = (1 + r_r) \times (1 + i)$$

where:

r_n is the nominal value return on Equity

r_r is the real value return on Equity

i is the rate of inflation

Without the availability of sufficient inflation targets/forecast as published by the Bank of Viet Nam we apply the 5 year average inflation forecast figures as published by the IMF or the sources in Viet Nam available has been considered as the reliable sources for the benchmark calculation.

The benchmark will thus be determined based on the following indicators in table E.5.1.1:

Table E.5.1.1 – Calculation of ROE

Rate	Value	Source
Real value Return on Equity (r_r)	12.75%	Default value for expected return on equity
Inflation (i)		Public data
Nominal value Return on Equity (r_n)		Calculation

Calculation of financial indicators

The calculation of the IRR of a typical CPA shall be presented in excel format and will be submitted along with the CPA DD. All assumptions of critical parameters have to be substantiated in table E.5.1.2 with reliable sources or evidence where available. The following table presents the key parameters and alternatives for appropriate sources:

Table E.5.1.2: Key parameters applied in the calculation of the CPA Equity IRR

Parameter	Unit	Value
Installed capacity	MW	
Total investment	VND (billion) or USD (million)	
Annual O&M cost	VND (billion) or USD (million)	
Annual net electricity exported to the grid	MWh	
Electricity tariff	VND/kWh	
Income Tax	%	
Project lifetime	years	

For each of the parameters indicated in Table E.5.1.2, values as per best available sources available at the time of the investment decisions shall be presented to the DOE together with a cash flow model that calculates the Equity IRR of the CPA.

Comparison of the financial indicator against the benchmark



The results of the calculation of the IRR compared to the benchmark and the CPA implemented with CER revenues will be presented in the table E.5.1.3 as below:

Table E.5.1.3: result of investment analysis

IRR of CPA without CER revenues	%
Benchmark	%

As a result of the investment analysis it will clearly be demonstrated that the proposed CPA is financially unattractive.

Sensitivity analysis

The essential parameters for the profitability of a hydroelectric project are the total investment and the electricity tariff, the annual O&M cost and the net electricity exported to the grid as indicated in table E.5.1.4. Other parameters such as O&M costs have only a minor impact, but are also considered. The assessment is based on a sensitivity of +/-10% which is consistent with Annex 5 of EB 62.

Table E.5.1.4: Sensitivity Analysis on total investment and electricity price

Factor	Variation		
	-10%	0%	10%
Total investment			
Net electricity export			
Annual O&M Cost			
Electricity tariff			
Benchmark			

The summary of the sensitivity analysis will also be shown by the graph inserted into the specific CPA-DD.

For a typical CPA even the most favourable variations, e.g. +10% electricity price or -10% investment and O&M cost, will not help the project to reach the required benchmark. Hence, with the results of the sensitivity analysis it can be further substantiated that the project is financially unattractive.

In addition, in case of scenarios where the IRR would cross the benchmark by based on the -10/+10% sensitivities on any of the parameters indicated in table E.5.1.4, the likelihood of such sensitivities will be evaluated. In case it appears unlikely that the relevant parameters will reach the indicated sensitivities it is demonstrated that the project remains unattractive.

In case it can be demonstrated by the investment analysis and the sensitivity analyses that the CPA is unattractive, each CPA in this PoA is deemed additional.

E.5.2. Key criteria and data for assessing additionality of a SSC-CPA:

A. MICROSCALE PROJECTS (up to 5 MW)

For a CPA following Approach A in section E.5.1 the following criteria and data shall be assessed:



1. Compliance of the project with the “Guidelines for Demonstrating Additionality of Microscale Project Activities” (Version 04, EB 68 Annex 26).

B. SMALL SCALE PROJECT ACTIVITIES

For a CPA following Approach B in section E.5.1 the following criteria and data shall be assessed:

1. The applicable benchmark, calculated based section E.5.1. Applied financial indicators have to be included with sources.
2. The IRR of the CPA is calculated based on section E.5.1. The key parameters for the calculation have to be included with sources.
3. A sensitivity analysis on key factors (such as net electricity export, annual O&M cost, electricity tariff and total investment as presented section E.5.1 has to be presented.
4. The CPA fulfils this additionality criterion if the IRR (including all realistic scenarios of the sensitivity analysis) is below the benchmark.

E.6. Estimation of Emission reductions of a CPA:

E.6.1. Explanation of methodological choices, provided in the approved baseline and monitoring methodology applied, selected for a typical SSC-CPA:
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The baseline emissions are the product of electrical energy baseline $EG_{BL,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor. The emission factor can be calculated in a transparent and conservative manner as follows:

- (a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the “Tool to calculate the Emission Factor for an electricity system”;

OR

- (b) The weighted average emissions (in t CO₂/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.

The selected option: Emission factor based on the Combined Margin

Option (a) is selected which uses a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the latest version of “Tool to calculate the emission factor for an electricity system”.

The details of EF calculation will be provided in Annex 3 of CPA-DDs based on the data available at the time of inclusion.



E.6.2. Equations, including fixed parametric values, to be used for calculation of emission reductions of a SSC-CPA:

The baseline emissions (BE_y) are the product of the baseline emissions factor calculated above times the net electricity supplied by the project activity to the national grid ($EG_{BL,y}$), as per the formula given below:

$$BE_y = EG_{BL,y} * EF_{CO_2,grid,y}$$

Equation (1) of AMS.I.D Version 17

Where:

BE_y Baseline Emissions in year y (t CO₂)

$EG_{BL,y}$ Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)

$EF_{CO_2,grid,y}$ CO₂ emission factor of the grid in year y (t CO₂/MWh)

In case all CPAs including this PoA are Greenfield Hydropower CPA, hence $EG_{BL,y} = EG_{facility,y}$, that is quantity of net electricity supplied to the grid in year y (MWh/year).

The grid emission factor (ex-ante calculation for the real case CPA) has been calculated based on combined margin approach considering the data from DNA Viet Nam, which was available at the time of preparation and webhosting of the PoA DD. Although the DNA published data is based on tool version 01.1, however the approach and the applied formula for calculating OM and BM in accordance with tool version 02.2.1 has not undergone any change.

The CPAs of the PoA shall calculate the combined margin emission factor for the grid which the CPAs is connected to at the time of inclusion and that emission factor shall be fixed ex-ante for the CPA. Information about the calculation of the emission factor will be presented in section E.6.2 and annex 3 of the CPA-DD.

Project Emission (PE_y)

According to paragraph 20 of AMS.I.D version 17 the project emissions associated with emissions from water reservoirs of the hydropower project shall be calculated following the provisions mentioned in ACM0002 version 12.3.0.

Hydroelectric power plants with a dam, which employ (a) reservoirs, classified as type 1 CPAs as per section A.4.2.1, should therefore include all project emissions as a result of water reservoirs. Run-of-the river hydro power plants, classified as type 2 CPAs as per section A.4.2.1, employ no significant reservoir and can ignore such emissions.

For hydroelectric power project activities that result in new single or multiple reservoirs and hydro power project activities that result in the increase of existing reservoirs, project proponents shall account for CH₄ and CO₂ emissions from the reservoir, estimated as follows:



(a) If the power density of the single or multiple reservoirs (PD) is greater than 4 W/m^2 and less than or equal to 10 W/m^2 :

$$PE_{HP,y} = \frac{EF_{Res} \cdot TEG_y}{1000} \quad \text{Equation (3) of ACM0002 Version 12.3.0}$$

Where:

$PE_{HP,y}$ = Project emissions from water reservoirs ($\text{tCO}_2\text{e/yr}$)
 EF_{Res} = Default emission factor for emissions from reservoirs of hydro power plants in year y ($\text{kgCO}_2\text{e/MWh}$)
 TEG_y = Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (MWh)

(b) If the power density of the project activity (PD) is greater than 10 W/m^2 :

$$PE_{HP,y} = 0 \quad \text{Equation (4) of ACM0002 Version 12.3.0}$$

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

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}} \quad \text{Equation (5) of ACM0002 Version 12.3.0}$$

Where:

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

Note:

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

Leakage (LE_y)

According to AMS.I.D version 17, if the energy generating equipment is transferred from another activity, leakage is to be considered. Otherwise, it will be neglected.

As per eligibility criteria for this PoA, only CPA that employ new equipment are eligible to be included. Therefore, $LE_y = 0$.

Emission reductions (ER_y)

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y \quad \text{Equation (10) of AMS.I.D Version 17.}$$

Where



ER_y = Emission reductions in year y (t CO₂/year)
 BE_y = Baseline emissions in year y (t CO₂/year)
 PE_y = Project emissions in year y (t CO₂/year)
 LE_y = Leakage emissions in year y (t CO₂/year)

E.6.3. Data and parameters that are to be reported in CDM-SSC-CPA-DD form:

Data / Parameter:	A_{BL}
Data unit:	m ²
Description:	Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m ²).
Source of data used:	To be specified for each CPA
Value applied:	To be specified for each CPA; For new reservoirs, this value is zero
Justification of the choice of data or description of measurement methods and procedures actually applied :	To be specified for each CPA
Any comment:	This parameter only applies to scenario 2: for CPAs that result in new reservoirs and CPAs that result in the increase of existing reservoirs

Data / Parameter:	EF_{Res}
Data unit:	kgCO ₂ e/MWh
Description:	Default emission factor for emissions from reservoirs of hydro power plants
Source of data used:	Decision by EB23
Value applied:	90 kgCO ₂ e/MWh
Justification of the choice of data or description of measurement methods and procedures actually applied :	According to ACM0002 version 12.3.0, the default value for EF_{Res} is 90 kgCO ₂ e/MWh.
Any comment:	Used for equation (3) of ACM0002 Version 12.3.0

Data / Parameter:	Cap_{BL}
Data unit:	W
Description:	Installed capacity of the hydro power plant before the implementation of the project activity.
Source of data used:	To be specified for each CPA
Value applied:	To be specified for each CPA; For new hydro power plants, this value is zero
Justification of the choice of data or description of measurement methods and procedures actually applied :	To be specified for each CPA



Any comment:	-
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Data / Parameter:	EF_{CO2,grid,y}
Data unit:	tCO ₂ e/MWh
Description:	CO2 emission factor of the grid in year y.
Source of data used:	As stipulated by Vietnamese DNA or per approach defined in section E.6.1 of the SSC-PoA-DD
Value applied:	To be specified for each CPA
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data is used to estimate the baseline emission.
Any comment:	

E.7. Application of the monitoring methodology and description of the monitoring plan:

E.7.1. Data and parameters to be monitored by each SSC-CPA:

Data / Parameter:	EG_{facility,y}
Data unit:	MWh/yr
Description:	Quantity of net electricity generation supplied by the project to the grid in year y
Source of data to be used:	Measured by electricity meter(s) for each CPA
Value of data applied for the purpose of calculating expected emission reductions in section B.5	To be defined with respect to each CPA.
Description of measurement methods and procedures to be applied:	Continuous monitoring, hourly measurement and at least monthly recording.
QA/QC procedures to be applied:	To be defined with respect to each CPA.
Any comment:	To be defined with respect to each CPA.

The following parameters only have to be reported for CPAs that result in new reservoirs and CPAs that result in the increase of existing reservoirs.

Data / Parameter:	Cap_{PI}
Data unit:	W
Description:	Installed capacity of the hydro power plant after the implementation of the project activity
Source of data to be used:	To be specified for each CPA in case applicable



Value of data applied for the purpose of calculating expected emission reductions in section B.5	To be specified for each CPA in case applicable
Description of measurement methods and procedures to be applied:	Determined yearly for each CPA based on recognized standards
QA/QC procedures to be applied:	To be specified for each CPA in case applicable
Any comment:	

Data / Parameter:	A_{PJ}
Data unit:	m^2
Description:	Area of the 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:	Measured at CPA site
Value of data applied for the purpose of calculating expected emission reductions in section B.5	To be specified for each CPA in case applicable
Description of measurement methods and procedures to be applied:	Measured from topographical surveys, maps, satellite pictures, etc. The monitoring frequency is annually
QA/QC procedures:	To be specified for each CPA in case applicable
Any comment:	Only required for CPAs that result in new reservoirs or CPAs that result in the increase of existing reservoirs.

Data / Parameter:	TEGy
Data unit:	MWh/yr
Description:	Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y
Source of data to be used:	On-site measurements
Value of data applied for the purpose of calculating expected emission reductions in section B.5	To be specified for each CPA in case applicable
Description of measurement methods and procedures to be applied:	Measurements will be undertaken using energy meters certified to national or IEC standards. Monitoring will be continuous with hourly measurement and at least monthly recording.



QA/QC procedures to be applied:	Calibration will be undertaken as prescribed in paragraph 17 c) of “General Guidelines to SSC CDM Methodologies” version 17, i.e. 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.
Any comment:	Applicable only to CPAs with reservoirs with a power density of (PD) greater than 4 W/m ² and less than or equal to 10 W/m ²

E.7.2. Description of the monitoring plan for a SSC-CPA:

The proposed CPA is connected to the Grid through one or more on-site transformer stations. The project will be connected to nearest Substation through available power lines and might in the future also connect to the grid through other main power lines. The CPA may furthermore be connected to a back-up power line to provide emergency power in case the project is not operational. An indicative grid connection diagram is provided in figure E.7.2.1. The solid lines indicate connection lines that are currently intended with the dotted lines indicating potential future additions.

The grid connection diagram indicates the principles for positioning of metering instruments that will be used in the monitoring of emission reductions. A separate detailed grid connection diagram will be prepared which is updated on the basis of the actual implementation of the project’s grid connection and which will serve as the basis for periodic verification.

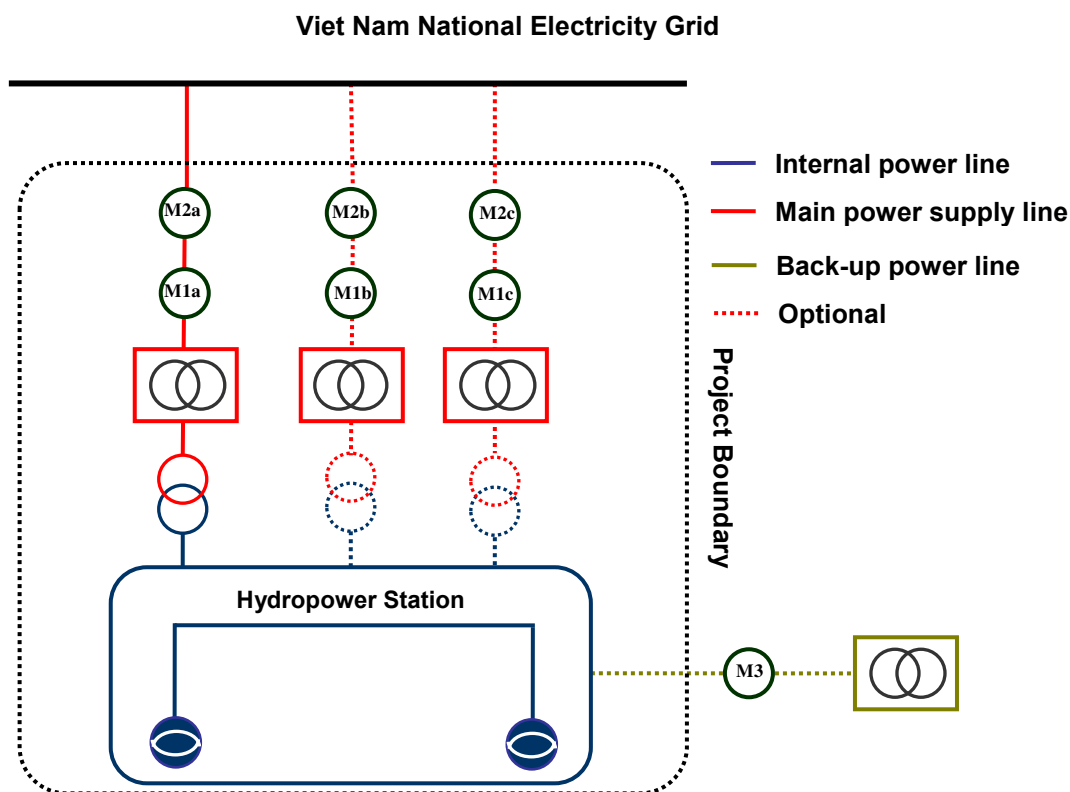


Figure E.7.2.1 Indicative grid connection diagram



The CPA implementer will meter electric power according to the following principles:

The CPA implementer is responsible for operation and maintenance of all the meters installed in the plant (the grid company will calibrate the electricity meter before installation and protect the same with integrate seal).

- **Power supplied to the grid through main power line(s):** As indicated in Figure E.7.2.1, the CPA might be connected by one or more main power lines (indicated in red) which will deliver power generated by the project to the grid. Net power supplied to the grid is metered as below:
 - The power supplied to the grid is metered by the primary and backup meters at a point after power has been transformed to the transmission voltage. Therefore, no further transformer losses will occur before the project is connected to the grid. The power supply of the project to the grid will be metered with standard electricity meters in accordance with national regulations. The meters should record the net supply as the main power supply lines can transfer power in both directions. The metering instruments may record either a net figure of power delivered to the grid or two readings (bidirectional meters), i.e. power delivered to the grid and power received from the grid. The electricity recorded by the primary meter will be used for the purpose of billing and emission reduction verification as long as the error of the primary meter is still in the range of permission.
 - The CPA implementer and the grid company read and check the primary meter (M1x) for commercial electricity generation by the CPA, and records the data from two meters (primary and backup) in the end of every month; The meter readings with signatures will be kept by each side.
 - Based on the monthly record, the CPA implementer will provide a power sales invoice for the electricity of the CPA exported to the grid. A copy of this power sales invoice is stored by the CPA implementer. In addition, the CPA implementer provides DOE for verification the copies of the power sales invoices for the imported electricity that the CPA implementer has Hydroelectric power plants imported from the grid on an annual or monthly basis (depending on agreement between state utility (EVN) and CPA implementer).
 - The CPA implementer monitors and stores the records of the primary meter and backup meter's data readings for verification by the DOE.
 - Calibration: Calibrations are carried out by the grid company or by a certified third party according to the national standards and reference points or IEC standards and recalibrated at appropriate intervals according to manufacturer specifications. If there are any substantial discrepancies between the readings of the metering instruments throughout the year, both instruments will be recalibrated.
- **Power received through back-up power lines:** As indicated in Figure E.7.2.1 the CPA may be connected by a back-up emergency power line (indicated in brown) which delivers power from the grid to the project in case of emergencies or when the turbines of the proposed CPA are not in operation. Net power received from the grid is metered as below:
 - Grid company:
The grid company will meter the power supplied to the project with its own metering equipment (M3x) in accordance with national regulations. Accordingly, the grid company will provide the electricity invoices for the imported electricity that the CPA implementer would have purchased from the Grid every month or every year (depending



on the power consumption amount), and one hard copy of the electricity invoice is stored by the CPA implementer.

○ Calibration:

Calibrations are carried out by the grid company or by a certified company.

Determination of net electricity supply to the grid by CPA:

The CPA implementer will collect the power sales invoices for power imported and exported to the grid (or the net power sales receipt) as evidences. The net supply (i.e. total electricity export minus total electricity import to the project) will be used in the calculations. All records of power delivered to the grid, sales receipts and the results of calibration will be collated in a central place by the CPA implementer.

An overview of detailed information on minimum accuracy requirements of the metering instruments, measuring intervals, recording form, calibration and available documentation is provided in table E.7.2.1 below.

Based on the imported and exported electricity records monthly, the project participant will calculate the net electricity generation by the CPA ($EG_{BL,y}$ in section E.7.1.) as following:

$$EG_{BL,y} = EG_{\text{export},y} - EG_{\text{import},y}$$

With:

- $EG_{\text{export},y}$: total electricity exported to the Grid by the CPA in year y through the main power line(s) (in MWh) measured by the primary meter (evidenced by monthly sales receipts) and cross-checked against the readings of metering instruments of the CPA Implementer.
- $EG_{\text{import},y}$: total electricity imported from the Grid to the CPA in year y through possible back-up power line(s) measured by the meter (M3x) and/or by the primary meter (M1x) in case there is power imported from the grid via the main power line(s) (evidenced by monthly billing receipts).

Table E.7.2.1 Details of metering instruments

Meter	Operated by	Electronic measurement	Manual logging	Recording	Calibration	Accuracy	Documentation
M1 _x	CPA implementer (primary meter)	Continuous	Daily (optional) ²⁷	Monthly or less	Annually	1s(IEC 62053-22) ²⁸ or more accurate	Print out of electronic record and optional paper log. Data will consist of two readings, i.e. power delivered to the grid and power received from the

²⁷ The CPA Implementer intends to log the readings of meters M1x and M2x manually in daily logs, but these logs will not form a formal requirement during verification. The AMS.I.D methodology requires continuous electronic measurement and these manual log records will only be maintained for back-up purposes. The CPA Implementer may deviate from this procedure during actual operation of the project.

²⁸ Based on the Circular 32/2010/TT-BCT by Ministry of Industrial and Trade dated 30th July 2010 or the latest relevant regulations available at the time of CPA's inclusion.



							grid or combined as <u>net</u> supply.
M2 _x	CPA implementer (backup meter)	Continuous	-	Monthly or less	Annually	1 or negotiation between CPA implementer and Grid Company ²⁹	Monthly sales receipts (for power delivered to grid) and billing invoices (for power received from the grid), or alternatively a single receipt which shows <u>net</u> power received.
M3 _x	Grid company	Continuous	-	Monthly or less	Annually	2 or more accurate ³⁰	Monthly billing invoices (for power received from the grid).

Reporting, archiving and preparation for periodic verification

The CPA implementer will in principle report the monitoring data annually but may deviate to report at intervals corresponding to agreed verification periods and will ensure that these intervals are in accordance with CDM requirements. The CPA implementer will ensure that all required documentation is made available to the verifier. Data record will be archived for a period of 2 years after the crediting period to which the records pertain.

PROCEDURES IN CASE OF DAMAGED METERING EQUIPMENT / EMERGENCIES

Damages to metering equipment:

In case metering equipment is damaged and no reliable readings can be recorded the CPA Implementer will estimate net supply by the proposed project activity according to the following procedure:

1. **In case primary metering equipment is damaged only:**
The metering data measured by the backup meter will be used as record of net power supplied to the grid for the days for which no record could be recorded.
2. **In case both metering equipment operated by CPA implementer and grid company are damaged:**
The CPA Implementer and the grid company will jointly calculate a conservative estimate of power supplied to the grid. A statement will be prepared indicating:
 - the background to the damage to metering equipment
 - the assumptions used to estimate net supply to the grid for the days for which no record could be recorded
 - the estimation of power supplied to the grid
 The statement will be signed by both a representative of the project entity as well as a representative of the grid company.

²⁹ Based on the Circular 32/2010/TT-BCT by Ministry of Industrial and Trade dated 30th July 2010 or the latest relevant regulations available at the time of CPA's inclusion.

³⁰ Normally regulated by Grid company



The CPA implementer will furthermore document all efforts taken to restore normal monitoring procedures.

Emergencies:

In case of emergencies, the CPA implementer will not claim emission reductions due to the CPA activity for the duration of the emergency. The CPA implementer will follow the below procedure for declaring the emergency period to be over:

1. The CPA implementer will ensure that all requirements for monitoring of emission reductions have been re-established.
2. The monitoring officer and the head of operations of the hydropower station will both sign a statement declaring the emergency situation to have ended and normal operations to have resumed.

OPERATIONAL AND MANAGEMENT STRUCTURE FOR MONITORING

The monitoring of the emission reductions will be carried out according to the scheme shown in figure E.7.2.2. The CPA implementer will engage its CDM advisor, BWC to assure that all monitoring requirements are met. Within the CPA implementer a monitoring officer is appointed who will carry the day-to-day supervision responsibility. The first step is the measurement of the electrical energy supplied to the grid and reporting of daily operations, which will be carried out by the plant operation staff.

The monitoring officer who will be responsible for verification of the measurement, collection of sales receipts, collection of billing receipts of the power supplied by the grid to the hydropower plant and the calculation of the emissions reductions. The monitoring officer will prepare operational reports of the project activity, recording the daily operation of the hydropower station including operating periods, power delivered to the grid, equipment defects, etc. The selection procedure, tasks and responsibilities of the monitoring officer are described in detail in Annex 4. Finally, the monitoring reports will be reviewed by BWC.

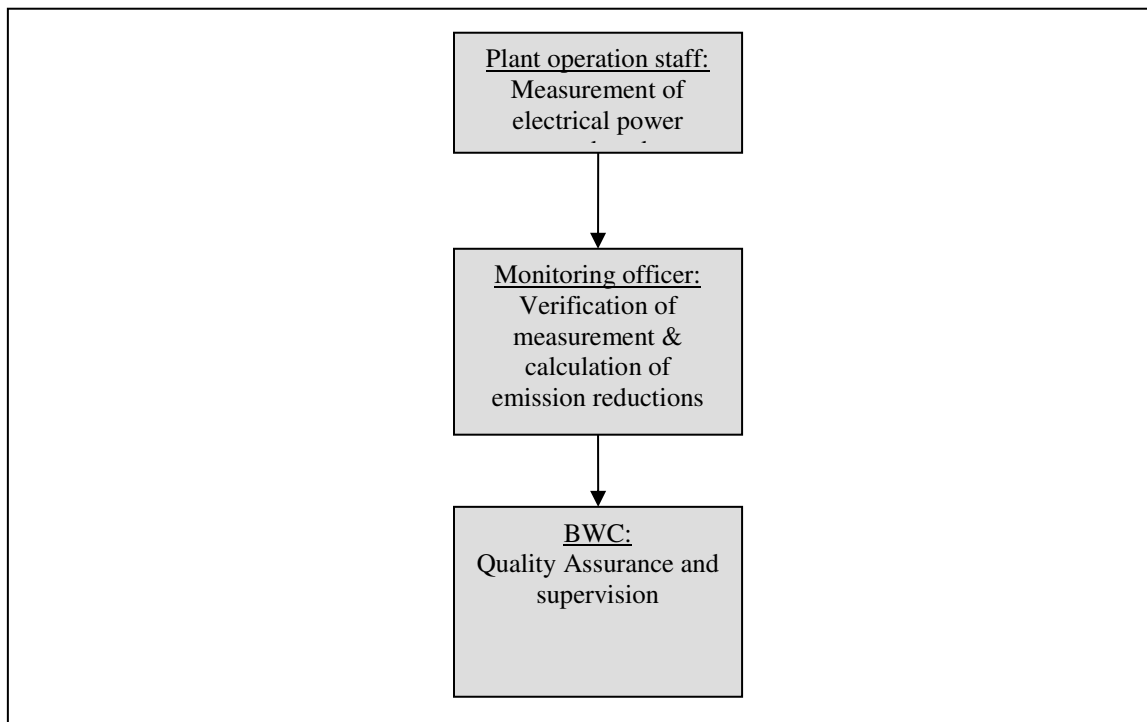


Figure E.7.2.2 Management structure in order to monitor emission reductions

E.8 Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)

Date of completion: 14/03/2012.

Responsible persons for determination of baseline study and monitoring methodology:

Blue World Carbon SEA Pte Ltd

Mr. Willem Christiaens – Director of Operations

Email: willem.christiaens@blueworldcarbon.com



Annex 1

**CONTACT INFORMATION ON COORDINATING/MANAGING ENTITY and
PARTICIPANTS IN THE PROGRAMME of ACTIVITIES**

Organization:	Blue World Vietnam Co., Ltd.
Street/P.O.Box:	204/28 National Road No.13, Ward 26
Building:	
City:	Ho Chi Minh City
State/Region:	Binh Thanh District
Postfix/ZIP:	
Country:	Viet Nam
Telephone:	
FAX:	
E-Mail:	
URL:	
Represented by:	Joost Willem van Acht
Title:	
Salutation:	Mr.
Last Name:	van Acht
Middle Name:	
First Name:	Joost Willem
Department:	
Mobile:	
Direct FAX:	
Direct tel:	+65 6338 9411
Personal E-Mail:	joost.van.acht@blueworldcarbon.com



SMALL-SCALE CDM PROGRAMME OF ACTIVITIES DESIGN DOCUMENT FORM
(CDM SSC-PoA-DD) - Version 01



CDM – Executive Board

page 44

Organization:	Blue World Carbon SEA Pte Ltd
Street/P.O.Box:	19 China Street, #03-02 Far East Square
Building:	
City:	Singapore
State/Region:	
Postfix /ZIP:	049561
Country:	Singapore
Telephone:	+65 6338 9411
FAX:	
E-Mail:	singapore@blueworldcarbon.com
URL:	www.blueworldcarbon.com
Represented by:	Joost Willem van Acht
Title:	Managing Director
Salutation:	Mr.
Last Name:	van Acht
Middle Name:	
First Name:	Joost Willem
Department:	
Mobile:	
Direct FAX:	
Direct tel:	
Personal E-Mail:	joost.van.acht@blueworldcarbon.com



Annex 2

INFORMATION REGARDING PUBLIC FUNDING

The PoA does not receive any public funding from Parties included in Annex I of the UNFCCC.



Annex 3

BASELINE INFORMATION

Details on the determination of the baseline emission factor will be described in Annex 3 of each specific CPA-DD.



Annex 4

MONITORING INFORMATION

Please refer to section E.7.2.

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