

<b>PoA Title</b>	<b>Energy Efficiency Program in Rural Bangladesh</b>
<b>Real Case CPA Title</b>	Energy Efficiency Program in Rural Bangladesh CPA001
<b>ERM CVS Project Reference</b>	2407.V1
<b>Client Name</b>	BRAC Impact Ventures Limited
<b>Client Address</b>	BRAC Centre (12th Floor) 75 Mohakhali C/A Dhaka 1212 Bangladesh

## CDM Validation Report

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<b>Version Control</b>	<b>Date</b>
Version 1.0	02 November 2012 (draft report)
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## Table of Contents

<b>1 PoA Information.....</b>	<b>4</b>
1.1 Key PoA information .....	4
<b>2 Summary and Validation Opinion .....</b>	<b>5</b>
<b>3 Introduction.....</b>	<b>7</b>
3.1 Validation Objectives.....	7
3.2 Scope.....	7
3.3 Contract Review.....	7
3.4 Validation Personnel .....	7
3.5 Summary of CVs of the validation personnel .....	8
<b>4 Validation Approach.....</b>	<b>9</b>
4.1 Document Review .....	9
4.2 Site visit and Interviews.....	10
4.3 Preparation of Draft Validation Report .....	10
4.4 Final Validation Report and Validation Opinion .....	10
4.5 Internal Quality Control .....	11
<b>5 Validation findings – Approval &amp; Participation, Authorisation, Contribution to Sustainable Development, and Modalities of Communication.....</b>	<b>12</b>
5.1 Approval & Participation .....	12
5.2 Authorisation .....	13
5.3 Contribution to Sustainable Development .....	14
5.4 Modalities of Communication .....	15
<b>6 Validation findings – GSP, POA-DD and PoA Description .....</b>	<b>16</b>
6.1 Main changes between the POA-DD version published for GSP and the final version submitted for registration.....	16
6.2 Global Stakeholder Consultation.....	16
6.3 Project Design Document (POA-DD) .....	16
6.4 PoA description .....	16
<b>7 Validation Findings - Eligibility Criteria for Inclusion of a CPA in a PoA.....</b>	<b>22</b>
<b>8 Validation findings – Baseline and Monitoring Methodology .....</b>	<b>27</b>
8.1 Validity of selected methodology and methodological tools .....	27
8.2 Applicability of the selected methodology to the generic CPA .....	27
8.3 Generic CPA Boundary.....	31
8.4 Baseline identification .....	32
8.5 Algorithms and/or formulae used to determine emission reductions.....	34
<b>9 Validation findings – Additionality.....</b>	<b>42</b>
9.1 Prior consideration of the CDM .....	42
9.2 Additionality of the PoA as a whole .....	42
9.3 Identification of alternatives.....	43
9.4 Assessment of additionality of a CPA .....	43
<b>10 Validation Findings - Operational, management and monitoring plan for the programme of activities .....</b>	<b>45</b>
10.1 Operation and Management Plan .....	45
10.2 PoA Sampling Plan .....	47
<b>11 Validation Findings - Monitoring plan of a Generic CPA.....</b>	<b>49</b>
11.1 Compliance of the monitoring plan with the approved methodology .....	49
11.2 Implementation of the monitoring plan .....	53
<b>12 Validation Findings – Sustainable Development, Local Stakeholder Consultation and Environmental Impact .....</b>	<b>56</b>
12.1 Sustainable Development .....	56
12.2 Local Stakeholder Consultation .....	56
12.3 Environmental Impacts.....	57
12.4 Public funding .....	58
<b>Appendix A: Documents and Interviewees.....</b>	<b>59</b>
A.1 DOCUMENT LIST .....	59
A.2 INTERVIEWS .....	61
<b>Appendix B: Remediation Form.....</b>	<b>62</b>

## Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CH <sub>4</sub>	Methane
CL	Clarification request
CME	Coordinating/Managing Entity
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
COP	Conference of the Parties
CPA	Component PoA
CPA-DD	CPA Design Document
DNA	Designated National Authority
FAR	Forward Action Request
DOE	Designated Operational Entity
EB	Executive Board
EIA	Environmental Impact Assessment
GHG	Greenhouse Gas
GSP	Global Stakeholder Process
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of approval
MOP	Meeting of the Parties
MP	Monitoring Plan
NCV	Net Calorific Value
NGO	Non-Governmental Organisation
ODA	Official Development Assistance
PoA	Programme of Activities
PoA-DD	Programme of Activities Design Document
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value-added tax
VVS	CDM Validation and Verification Standard

## PoA/Party specific abbreviations

BEIL	BRAC EPL Investments Limited
BIVL	BRAC Impact Ventures Limited
BRAC WASH	BRAC Programme on Water, Sanitation and Hygiene
DPHE	Department of Public Health Engineering
LC	Letter of Credit
LPG	Liquid Petroleum Gas
MICS	Multiple Indicator Cluster Survey
NRB	Non-Renewable Biomass
PO	Partner Organisation
SDW	Safe Drinking Water
OMP	Operations Management Plan
SDW	Safe Drinking Water
WPS	Water Purification System
WHO	World Health Organisation

# 1 PoA Information

## 1.1 Key PoA information

<b>PoA Title</b>	Energy Efficiency Program in Rural Bangladesh
<b>PoA Location(s)</b>	People's Republic of Bangladesh.
<b>Host Party</b>	People's Republic of Bangladesh
<b>Other Party(ies)</b>	NA
<b>CME</b>	BRAC Impact Ventures Limited
<b>Other Project Participants</b>	NA

<b>Methodology(ies) used</b>	AMS-III.AV Low greenhouse gas emitting safe drinking water production systems Version 3,EB 69  Valid from 28 September 2012 onwards.
<b>Methodological tool(s) used</b>	
<b>Sectoral Scope(s)</b> (as per <a href="http://cdm.unfccc.int/DOE/scopes.html">http://cdm.unfccc.int/DOE/scopes.html</a> )	Sectoral Scope 3: Energy Demand

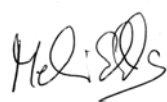
<b>PoA Design Document GSP Version</b>	Date: 14 August 2012	<b>PoA Design Document Final Version</b>	Date: 20 May 2013
	Version Number: 01		Version Number: 06

<b>Starting date of the PoA</b>	22 August 2012
<b>Lifetime of the PoA</b>	28 years
<b>Estimated annual average emission reductions</b>	55,198 tCO <sub>2</sub> e [1st CPA]

<b>Dates of GSP</b>	22 August 2012 - 20 September 2012
<b>Date(s) of validation site visit</b>	08 October 2012 – 13 October 2012

## 2 Summary and Validation Opinion

<b>PoA Title</b>	<b>Energy Efficiency Program in Rural Bangladesh</b>
<b>Name of Client</b>	BRAC Impact Ventures Limited
<b>Basis of validation</b>	<p>ERM CVS based its validation work on:</p> <ul style="list-style-type: none"> <li>• CDM approved monitoring methodology: AMS-III.AV Low greenhouse gas emitting safe drinking water production systems Version 3,EB 69</li> <li>• CDM Validation and Verification Standard (Version 03.0)</li> <li>• ERM CVS's internal CDM validation methodologies and templates</li> <li>• CDM decisions and guidance issued by the CDM Executive Board</li> <li>• UNFCCC criteria for the Clean Development Mechanism</li> <li>• Host Country criteria for the Clean Development Mechanism</li> </ul>
<b>Responsibilities of ERM CVS</b>	ERM CVS is responsible to provide a thorough independent third party assessment of the proposed CDM programme of activities (PoA) to ensure that the proposed CDM PoA meets all the identified and applicable criteria for registration of PoA under the CDM.
<b>Responsibilities of Project participants</b>	The Project Participants (PPs) are responsible for preparing the PoA-DD (covered in this validation report), 1 <sup>st</sup> real case CPA-DD (covered in a separate validation report), supporting documentation and providing all necessary evidences to support the information included in the PoA-DD and real case CPA-DD.
<b>Activities performed</b>	<p>ERM CVS conducted its activities in accordance with the CDM Validation and Verification Standard. The validation consisted of a review of project documentation, a site visit, interviews with relevant personnel, cross checking information through other reliable sources and reporting. Validation work was based on a validation report template that sets out relevant CDM requirements. Where necessary, Clarification Requests and Corrective Action Requests were raised and closed out with the Project participants. The validation work was subject to detailed Technical Review and assessment prior to submission.</p> <p>No component of the PoA was excluded from the validation.</p>
<b>ERM CVS Conclusion</b>	<p>ERM Certification and Verification Services (ERM CVS) has performed the validation of the programme of activities proposed to be registered as a single CDM PoA against the criteria for the Clean Development Mechanism as set out by the Conference of the Parties and the UNFCCC CDM Executive Board, and host country criteria. The validation employed standard auditing techniques, and addressed the requirements of the CDM Validation and Verification Standard.</p> <p>The Parties involved in the project fulfil the criteria for participation in the CDM, and have issued a letter of approval (LoA) for the PoA and authorised the CME and the Project participants. The LoA of the host Party confirms the contribution of the PoA towards sustainable development.</p> <p>The validation has provided sufficient evidence to demonstrate that the PoA is not the baseline scenario, and that emission reductions would be additional to what would have taken place in the absence of the CDM PoA.</p> <p>The PoA meets the applicability criteria and correctly applies methodology AMS-III.AV Low greenhouse gas emitting safe drinking water production systems Version 3,EB 69, and is therefore expected to result in real, measurable and long term reductions in greenhouse gas emissions.</p> <p>The monitoring plan provides for the collection and archiving of data sufficient to ensure that emission reductions can be verified. The DNA of the host Party has confirmed that the PoA assists in meeting sustainable development criteria.</p> <p>The description of the programme of activities includes verifiable eligibility criteria for inclusion of</p>

	<p>project activities as CDM programme activities (CPAs) under this PoA, and appropriate operational and management arrangements have been established for the implementation of the PoA.</p> <p>In summary, it is the opinion of ERM CVS that the PoA as described in the PoA-DD Version 06 of 20 May 2013, meets all stated criteria of the CDM, correctly applies the methodology, and is expected to result in real, measurable and long term emission reductions.</p> <p>ERM CVS therefore requests the CDM Executive Board approves registration of the programme of activities.</p>
<b>Signed on behalf of ERM CVS</b>	
<b>Name:</b>	Melanie Eddis
<b>Date:</b>	29 May 2013

## 3 Introduction

### 3.1 Validation Objectives

The purpose of validation is to ensure a thorough, independent assessment of activities submitted for registration as a proposed CDM Programme of Activities (PoA) against the applicable CDM requirements.

The DOE is responsible for reporting the results of its assessment in a validation report and submitting this validation report, along with the supporting documents to the CDM Executive Board as part of the request for registration of a proposed CDM programme of activities.

The DOE also presents its opinion on the compliance of the proposed CDM PoA with the applicable CDM requirements, and only requests registration if this is a positive opinion.

In the course of validation, ERM CVS assesses additionality of the PoA; eligibility criteria for inclusion of a proposed CPA in the registered PoA; operational and management arrangements established by the coordinating/managing entity (CME) for the implementation of the PoA; applicability of an approved CDM methodology; monitoring plan (MP); compliance with the relevant host country criteria.

#### Validation Criteria

ERM CVS applies the following principles in performing its validation:

- Consistency
- Transparency
- Impartiality, independence and safeguarding against conflicts of interest
- Confidentiality

In all aspects of its work, ERM CVS ensures that the information and data reported are accurate, conservative, relevant, credible, reliable and complete.

### 3.2 Scope

The validation scope addresses the Programme of Activities as described in the Programme of Activities design document (PoA-DD), first real case CPA-DD and associated documentation. The PoA-DD and associated documentation are reviewed against the criteria and requirements stated in the CDM Validation and Verification Standard (VVS) and Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords, as well as relevant decisions made by the CDM Executive Board.

The validation scope also included an assessment of completeness and accuracy of documentation, evaluation of evidences, information and assumptions made in the PoA-DD and supporting documentation.

### 3.3 Contract Review

Prior to contracting with the client, a full review of the project and the validation requirements was made. This addressed both commercial risk and project risks associated with conducting the validation activities and confirmed the availability of an appropriately qualified team to conduct the validation.

### 3.4 Validation Personnel

Based on ERM CVS's review of the project, a validation team was established that takes into account the coverage of the technical area(s), sectoral scope(s) and relevant host country experience.

Personnel who were involved in the validation of this PoA were:

## Validation Team

Name	Role	CDM Requirements	Technical area	Financial Expertise	Participated in site visit?
Neringa Pumputyte	Team Leader	Yes	Fully competent	NA	Yes
Alastair Woods	Assessor under observation	Yes	No	NA	Yes

## DOE Head Office

Name	Role	CDM Requirements	Knowledge relevant to the technical area
Jonathan Avis	Technical Reviewer	Yes	Yes

### 3.5 Summary of CVs of the validation personnel

**Neringa Pumputyte (Lead Assessor):** Neringa has been working with CDM for the past 5 years, initially as a consultant and project developer and now as a validator and verifier. Neringa has carried out 8 validations as an assessor in the sectors of renewable energy, LFG, and fugitive emissions (oil and gas), including 4 POA validations. Before joining ERM CVS, Neringa worked on hydro and cook stove projects as well as numerous waste handling projects as a CDM project developer. Neringa has completed the ERM CVS CDM training, as well as gold standard methodology training. Neringa also has a BSc and MSc in Geography, and an MSc in Environmental Change and Management from the University of Oxford.

**Alastair Woods (Assessor under observation):** Alastair has nearly a year's experience in CDM having participated in two PoA validations on successful completion of the ERM CVS CDM training. Alastair studied Development Economics at the University of Cape Town and went on to complete an MSc in Carbon Management at the University of Edinburgh. He has also completed the Gold Standard training. Previously, he has interned with the environmental consultancy Trucost, as an analyst, and as an assistant coordinator for the International Green Awards.

**Jonathan Avis (Technical Reviewer):** Jonathan is CDM Business Manager for ERM CVS, and a GHG Assessor and Technical Reviewer with over 6 years' experience in the CDM. Since joining ERM CVS Jonathan has worked as a Technical Reviewer or GHG Assessor on more than 30 CDM validations in Renewable Energy (scope 1), more than 10 CDM validations in Manufacturing Industries (scope 04), 6 CDM validations in Mining (scope 8), and 5 CDM validations in Waste Handling and Disposal (scope 13). Jonathan's previous work experience involved screening and due diligence of carbon projects, Project Design Document (PDD) development, quality assurance and technical review of CDM project documentation, the development of carbon monitoring plans, and management of carbon projects through the validation, registration and verification stages. Jonathan has completed the ERM CVS CDM training as well as the GHGMI Renewable Energy training and Gold Standard training. Jonathan holds a BA in Geography and an MSc in Environmental Change and Management from the University of Oxford.



## 4 Validation Approach

In carrying out its validation work, ERM CVS has:

- (a) Determined whether the proposed PoA complies with the requirements of paragraph 37 of the CDM Modalities and Procedures (M&Ps), the applicability conditions of the selected methodology and guidance issued by the Board;
- (b) Assessed the claims and assumptions made in the PoA design document (PoA-DD). The evidence used in this assessment has not been limited to that provided by the project participants.

The validation was carried out in accordance with the most recent version of the VVS. The validation process employed standard auditing techniques and undertook necessary cross-checks and follow-up actions to ascertain the correctness of the information. The validation team included staff with experience in the relevant technical areas within the sectoral scope, and financial expertise where relevant. The validation report and associated documents have undergone a thorough technical review by ERM CVS before being submitted to the CDM Executive Board for registration. The validation consisted of the following key stages:

- Upload of the PoA-DD and 1<sup>st</sup> real case CPA-DD for Global Stakeholder Process (GSP), receipt of any comments from stakeholders
- Review of documentation including PoA-DD, first real case CPA-DD, methodology and key supporting documents and references
- A visit to the site of the 1<sup>st</sup> real case CPA proposed to be included in the PoA, interviews with the CME and personnel responsible for developing the PoA
- Development of a draft validation report, identifying non-compliances including Corrective Action Requests (CARs) and Clarification Requests (CLs), taking into account findings of the GSP, desk review and site visit / interviews
- Resolution of outstanding issues (CARs and CLs) and development of a final validation report and validation opinion
- Independent technical review and report approval

### 4.1 Document Review

A detailed document review of the PoA-DD, methodology and all other associated documentation and references took place in advance of the site visit, and additional documents that were not available for the desk review were requested for review during the site visit. The document review includes:

- A review of data and information to verify the correctness, credibility and interpretation of presented information;
- Cross checks between information provided in the PoA-DD and information from other sources, not limited to those provided by the PPs, applying ERM CVS's sectoral or local expertise and, if necessary, with independent background investigations
- Reference to available information relating to PoAs, projects or technologies similar to the proposed PoA
- Review, based on the approved methodology being applied, of the appropriateness of formulae and accuracy of calculations

Where the review of the PoA-DD at the document review stage raised issues, these were further reviewed and validated through supporting documentation and cross-checking from other sources and interviewing the CME and relevant personnel involved in the PoA during the site visit. During the document review the project team also compared the proposed PoA with available information relating to PoAs, projects or technologies similar to the proposed CDM PoA under validation. Where appropriate, the validation team assessed the appropriateness of formulae and the correctness of calculations presented by the PPs. A list of all documents reviewed or referred to in the course of this validation is included in Appendix A.

## 4.2 Site visit and Interviews

The site visit included a visit to the CME offices, where original documents were reviewed and interviews were conducted with the CME and its partner organisation BRAC WASH that will be involved in the PoA implementation. In addition, the site visit team toured the physical site of the 1<sup>st</sup> CPA to be included in the PoA, at Matlab Uttar, in the Chandpur region, and interviewed various project stakeholders (including end-users, local staff of BRAC WASH and local water authorities).

Site visits and interviews provide additional background to the PoA as well as cross checks with PoA documentation. Interviews were undertaken with relevant stakeholders in the host country, as well as personnel with knowledge of the PoA design and implementation. A list of interviewees, and the main topics discussed with each person can be found in appendix A.

The site visit was designed to enable the validation team to

- undertake a detailed review of additional PoA documentation and verify the supporting documentation;
- inspect the site of the proposed 1<sup>st</sup> real case CPA and confirm the validity of the PoA description in the PoA-DD;
- assess the validity of the PoA boundary;
- cross-check the validity of the PoA information with other sources of information, including cross checks between information provided by interviewed personnel (i.e. by checking sources or other interviews) to ensure that no relevant information has been omitted; and
- interview relevant stakeholders in the host country, and personnel with knowledge of the PoA design and implementation.

## 4.3 Preparation of Draft Validation Report

Based on the findings of the desk review and site visit, ERM CVS prepared a draft validation report including a list of CARs and CLs, and provided this to the PPs. Where issues are identified that need to be further elaborated, researched or added to in order to confirm that the PoA meets the CDM requirements and can achieve credible emission reductions, ERM CVS identified these issues in the DVR so that they could be discussed with the PPs and concluded upon in the final validation report (FVR).

### Remediation requests

Where issues were identified, ERM CVS raised one of the following remediation requests:

Clarification Request (CL): where information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

Corrective Action Request (CAR): where:

- Mistakes have been made that will influence the ability of the PoA to achieve real, measurable additional emission reductions;
- The CDM requirements have not been met; or
- There is a risk that emission reductions cannot be monitored or calculated.

Forward Action Requests (FAR): where it was necessary to highlight issues related to project implementation that require review during the first verification of the PoA. FARs shall not relate to the CDM requirements for registration.

CARs and CLs must be 'closed out' before the validation can be concluded. Close out is only possible where the PPs modify the PoA design, rectify the PoA-DD or provide adequate additional explanation or evidence that satisfies ERM CVS's concerns. The validation process may be halted until the CARs and CLs are addressed to the validation team's satisfaction.

## 4.4 Final Validation Report and Validation Opinion

The final validation report (FVR) is completed when the CARs and CLs have been closed out to the satisfaction of ERM CVS. The FVR includes the validation opinion that sets out the validation conclusion regarding the compliance of the PoA with CDM requirements.

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## 4.5 Internal Quality Control

The process of validation and decision of the validation team has been subject to an independent Technical Review. The scope of the Technical Review process is to independently assess that all procedures have been followed, necessary requirements have been met, and all conclusions are justified. The final validation decision is based on the findings and conclusions of the validation team, assessing the compliance of the PoA with the CDM requirements, and the technical evaluation of the independent technical reviewer. The final report is then reviewed and approved by the qualified signatory / final decision maker within ERM CVS.

## 5 Validation findings – Approval & Participation, Authorisation, Contribution to Sustainable Development, and Modalities of Communication

### 5.1 Approval & Participation

As per VVS section 7.6, ERM CVS assessed whether the DNA of each Party indicated as being involved in the PoA has provided an appropriate letter of approval (LoA).

	ERM CVS has confirmed that the LoA has been issued and provides confirmation of:			
Party	Ratified Kyoto Protocol?	Voluntary Participation	Contribution to Sustainable Development	Exact PoA title
Bangladesh (Host Party)	Yes	Yes	Yes	Yes

ERM CVS received the LoA from the CME, BRAC Impact Ventures Limited. The authenticity is not doubted.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
5.1.1	Are LoAs in place for every PP that confirm <ul style="list-style-type: none"> <li>▪ Ratification of the Kyoto Protocol</li> <li>▪ Voluntary Participation</li> <li>▪ Reference to the precise project title in the PoA-DD</li> <li>▪ Contribution to sustainable development (host party only)</li> </ul>	<p>The LoA was not provided at the time of the site visit – please see CAR 1</p> <p>The PP subsequently provided ERM CVS with the LoA from Bangladesh /02/. The LoA confirmed that:</p> <ul style="list-style-type: none"> <li>• Bangladesh ratified the Kyoto Protocol</li> <li>• Bangladesh participates voluntarily in this PoA</li> <li>• The LoA references the precise PoA title as in the PoA-DD</li> <li>• The LoA states that this PoA will contribute to sustainable development</li> </ul> <p>CAR 1 was closed.</p>	CAR 1	OK
5.1.2	Is the information in the LoAs consistent with the other PoA documentation, including PP names, etc	<p>ERM CVS reviewed the LoA and PoA-DD and can confirm that information in the LoA issued by the Bangladesh DNA on the PPs, CME and PoA name is consistent with the PoA-DD /01/02/.</p> <p>CAR 1 was closed.</p>	CAR 1	OK

ERM CVS also reviewed whether the LoAs contain any additional specifications:

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
5.1.3	Does any LoA contain additional specification or conditions of the PoA? If so, are these conditions fully	<p>At the time of the site visit, this was pending CAR 1</p> <p>The Bangladesh LoA was subsequently provided /02/ and it was confirmed by</p>	CAR 1	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
	complied with?	ERM CVS that it does not include any additional specifications or conditions of the PoA.  CAR 1 was closed.		
5.1.4	If the LoA references a specific version of the Validation Report and this version cannot be submitted, then has either of the following been submitted? <ul style="list-style-type: none"> <li>a statement indicating final LoA has not been received or</li> <li>an updated Validation Report</li> </ul>	At the time of the site visit, this was pending CAR 1  The Bangladesh LoA was subsequently provided, and ERM CVS found this question is not applicable, as there is no reference to any version of the validation report in the Bangladesh LoA /02/.  CAR 1 was closed.	<del>CAR 1</del>	OK
5.1.5	If the project is a bundled activity (more than 1 project in the same POA-DD) does the LoA from the host party acknowledge the bundle activity?	The project is not a bundled activity. Not applicable.	OK	OK

## Conclusion

ERM CVS confirmed that the LoA has been received from Bangladesh, the only party involved in the PoA.

ERM CVS's validation of the approval status of the PoA confirmed that:

- Each Party is a Party to the Kyoto Protocol
- Participation is voluntary
- In the case of the Host Party, the PoA contributes to the sustainable development of the country
- The title of the PoA is identical in the LoAs and the POA-DD.

ERM CVS therefore confirms that the LoAs are in accordance with paragraphs 38-44 of the VVS.

## 5.2 Authorisation

As per VVS section 7.7, ERM CVS evaluated whether all PPs are listed in a consistent manner in sections A.3 and A.4 and Appendix 1 of the POA-DD and have been appropriately authorised by a Party to the Kyoto Protocol. ERM CVS also checked the consistency of information between the POA-DD, Letters of Approval (LoAs) and the Modalities of Communication (MoC).

PPs (list all)	Is the CME or PP listed in Section A.3 of POA-DD?	Are contact details given in Annex 1 of POA-DD?	Does the LoA name the authorised PP and the CME?	Is information in the MoC consistent with POA-DD and LoA?
BRAC Impact Ventures Limited (also CME)	Yes	Yes	Yes	Yes

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
5.2.1	Is the correct information provided on PPs, and consistently applied in section A and Appendix 1 of the PoA-DD and other project documentation (Letters of Approval and Modalities of Communication)?	Based on the interviews and review of company registration documents /4.a-4.f/. ERM CVS can confirm that the correct information on BRAC Impact Ventures Limited has been provided in section A.4 of the PoA-DD /01/. The information is consistent between section A.4 and Appendix 1 of the PoA-DD /01/, and consistent with that provided in the MoC /03/.  The LoA was not provided at the time of the site visit – please see CAR 1. The LoA was subsequently provided /02/. The first version of the PoA did not include authorisation of the CME but a revised version was subsequently provided, which include authorisation. Information provided on PP was confirmed to be consistent with the final PoA-DD. CAR 1 was closed.  Section A.3 was initially not consistent with the rest of the PoA-DD as the CME name was different, hence CAR 2 was raised. However, this has been correctly amended and CAR 2 was closed.	<del>CAR 1</del>  <del>CAR 2</del>	OK
	Can it be confirmed that there are no entities other than those approved as PPs included in section A or Appendix 1 of the PoA-DD.	Section A.3 of the GSP PoA-DD, which has to state the CME of the PoA, gives an incorrect name of the CME – please refer to CAR 2.  Please refer to the question above. CAR 2 was closed. It is confirmed that there are no entities other than those approved as PPs included in section A or Appendix 1 of the PoA-DD /01/.	OK	OK
	Does the host party wish to be considered a Project Participant? If so, is this correctly presented in the PDD?	The GSP PoA-DD stated that the host party does not wish to be considered a PP. However, this could not be validated at the time of the site visit as the LoA had not yet been provided – please see <b>CAR 1</b> .  Subsequently, the LoA from the host party, Bangladesh, was provided /2/. ERM CVS confirms that the host party does not wish to be considered a Project Participant, based on the LoA /02/ from Bangladesh. This is correctly presented in the PoA-DD /1/ in Section A.4.  CAR 1 was closed.	<del>CAR 1</del>	OK

## Conclusion

All PPs to the PoA have been authorised by a party to the Kyoto Protocol and the CME has been authorised by the Host Party, and ERM CVS has reviewed the letters of approval to confirm this. The PPs and CME are listed in a consistent manner in the POA-DD and all related PoA documentation, including the LoAs and Modalities of Communication. No entities other than the CME and those approved as PPs are included in sections A.3, A.4 or Appendix 1 of the POA-DD.

## 5.3 Contribution to Sustainable Development

As per VVS section 7.8, ERM CVS evaluated whether the letter of approval by the DNA of the host Party confirms the contribution of the proposed CDM PoA to the sustainable development of the host Party.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
5.3.1	Does the LoA from the Host Party confirm that the PoA contributes to the sustainable development of that country?	At the time of the site visit and draft report the LoA had not yet been provided – please see CAR 1  Subsequently the LoA has been provided and reviewed. The Host Party, Bangladesh, confirm in the LoA /2/ that the project activity supports sustainable	<del>CAR 1</del>	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		development in Bangladesh.  CAR 1 is closed.		

## 5.4 Modalities of Communication

As per VVS section 7.9, ERM CVS validated that the MoC statement has been correctly completed and duly authorised. ERM CVS also, validated the corporate identity of all project participants and focal points included in the Modalities of Communication (MoC) statement, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories (VVS para 53).

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
5.4.1	Are all corporate and personal details in the MoC, including specimen signatures, correct?	<p>In order to validate the MoC, ERM CVS reviewed the following documentation:</p> <ul style="list-style-type: none"> <li>- Certificate of Incorporation of BRAC Impact Ventures Limited /4.a/</li> <li>- Trade License of BRAC Impact Ventures Limited (written in Bengali) /4.b/</li> <li>- Tax Identification Number (TIN) certificate of BRAC Impact Ventures Limited /4.d/</li> <li>- VAT Registration certificate (in bengali) of BRAC Impact Ventures Limited /4.c/</li> <li>- Memorandum of Association and Articles of Association of BRAC Impact Ventures Limited /4.e/</li> <li>- Personal Identification of Javed Bin Karim (National ID Card)</li> <li>- ToR of CEO and Managing Director (including authorization to sign documents) for BRAC Impact Ventures Limited</li> <li>- Filled in and signed MoC form /3/</li> </ul> <p>The evidence confirms that the corporate and personal information in the MoC including the specimen signature is correct and consistent.</p> <p>In addition, the site visit team witnessed the MoC being signed by the authorised representative of BRAC Impact Ventures Limited.</p>	OK	OK
	<p>Has the MoC statement been correctly completed, including:</p> <ul style="list-style-type: none"> <li>• Using the latest form?</li> <li>• All information, including Annex 1, has been correctly provided?</li> <li>• Listing all PPs?</li> </ul>	ERM CVS confirmed that the MoC statement /03/ is completed with the latest available form (Version 02.1). Company documents and interview /04a-e, IV 1/ confirmed that all the information, including the PP details, have been correctly provided.	OK	OK
	<p>Has the MoC been signed by the authorised signatories of the PP?</p> <p>Are the signatories consistent with the names given in Appendix 1 of the MoC?</p>	The site visit team witnessed the MoC being signed by the authorised representative of BRAC Impact Ventures Limited. The signatory is consistent with the name given in the company documents and in Annex 1 of the MoC /03/.	OK	OK

## Conclusion

ERM CVS has performed due diligence on the MoC statement in accordance with the requirements established in the VVS. ERM CVS can confirm that the MoC statement complies with all relevant forms and requirements.

## 6 Validation findings – GSP, POA-DD and PoA Description

### 6.1 Main changes between the POA-DD version published for GSP and the final version submitted for registration

- Changes related to the CARs and CLs, as identified in Appendix B of this report
- Version numbers updated for the applied AMS-III.AV Low greenhouse gas emitting safe drinking water production systems Version 3, EB 69, i.e. the PoA-DD was revised to apply version 3 of the methodology instead of version 2, which was used in the GSP PoA-DD.

### 6.2 Global Stakeholder Consultation

At the start of the validation, in accordance with the latest version of the Project Cycle Procedure, the unvalidated POA-DD and 1<sup>st</sup> real case CPA-DD of a CPA to be included in the PoA, supplied by the client was uploaded on the UNFCCC website for global stakeholder review for a period of 30 days. The global stakeholder process (GSP) period was from 22 August 2012 - 20 September 2012 .

<https://cdm.unfccc.int/ProgrammeOfActivities/Validation/DB/DTYFA2C351YZZ75XHNC66K8M2OB6MH/view.html>

### No comments were received. 6.3 Project Design Document (POA-DD)

As per VVS section 7.10, ERM CVS reviewed the POA-DD to determine whether it has been prepared in accordance with the latest POA-DD form (template) and guidance from the CDM Executive Board available on the UNFCCC website.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
6.3.1	Is the POA-DD prepared in accordance with the latest forms and guidance required by the CDM EB?  <a href="http://cdm.unfccc.int/Reference/POA-DDs_Forms/POA-DDs/index.html">http://cdm.unfccc.int/Reference/POA-DDs_Forms/POA-DDs/index.html</a>	ERM CVS can Confirm that the POA-DD has been checked against the latest "Guidelines for completing the programme design document form for small-scale CDM programmes of activities" (Ver02.1, EB67 Annex30), and the latest template for the simplified PoA Design Document (version 02.0) available on the CDM website. The final POA-DD is in compliance with the template and guidelines.	OK	OK

### Conclusion

ERM CVS has confirmed that the POA-DD has been prepared in accordance with the latest relevant forms and guidance.

### 6.4 PoA description

As per VVS sections 7.11, 8.4.3 and 8.4.5, ERM CVS reviewed the description of the PoA in the PoA-DD in order to confirm the framework developed for the implementation of the PoA, and for defining a CPA under the PoA, and to evaluate whether it provides a clear and accurate description of the proposed CDM PoA and generic CPA. Validation of the PoA description was based on review of documentation, a physical inspection of the site of the first real case CPA, and interviews.

#### Policy/measure or stated goal of the PoA:

The objective of the Program of Activities is to provide safe drinking water to the people living at the Base of the Pyramid (BoP) (meaning low-income households) in rural Bangladesh.

Zero greenhouse gas emitting water purification systems (WPS) will be deployed under the PoA with the objective of increasing access to safe drinking water (SDW), reducing GHG Emissions and improving health conditions.

With the assistance of carbon finance, this project can be economically sustainable throughout the lifetime of the program.

The stated goal of the PoA is to serve at least 1 million rural households in Bangladesh.



## Actual Description of the PoA:

The PoA will be located within the geographic boundary of Bangladesh. Free or subsidised zero emission purification technology units will be distributed to rural households and information about all these units will be recorded in an electronic database. Zero greenhouse gas emitting water purification systems that will be selected to deploy under the program will meet the “Protective” performance target as per (i) the WHO standard “Evaluating household water treatment options: Health based targets and microbiological performance specifications” /07/ or (ii) an applicable national standard or guideline /08/.

Through the reduction in use, and demand, for non-renewable biomass, which would have been used to boil water as a means of water purification in the absence of the Programme of Activities (PoA), the PoA will result in a reduction in greenhouse gas (GHG) emissions.

In exchange for a free or subsidised unit, emissions reductions will be transferred to the CME and end users will be informed about the assignment of carbon credit rights.

The PoA aims to provide health benefits, through improved water quality, and less polluted indoor air (due to the reduction in indoor biomass combustion), as well as socio-economic benefits, such as cheaper access to safe drinking water, employment opportunities, and further economic development and expansion.

The findings of our validation of the project description in the PoA-DD are set out below.

## PoA Boundary, Location and Status

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
6.4.2 (a)	<b>Boundary:</b> Is the definition of the boundary for the PoA correctly stated in terms of a geographical area (e.g., municipality, region within a country, country or several countries) within which all CPAs included in the PoA will be implemented, taking into consideration all applicable national and/or sectoral policies and regulations? How was this validated?	<p>The PoA will cover the whole host country (Bangladesh) and will focus on rural areas. This was validated based on interviews with the CME. Bangladesh is divided into administrative divisions, these are subdivided into districts (<i>zila</i>). Each district is further subdivided into <i>upazila</i> (subdistricts) or <i>thana</i>. The area within each police station, except for those in metropolitan areas, is divided into several <i>unions</i>, with each union consisting of multiple villages. In the metropolitan areas, police stations are divided into wards, which are further divided into <i>mahallas</i>. The POA will be implemented in unions, which means in rural areas.</p> <p>The PoA boundary was validated by reviewing donor, research and other project/programme reports and relevant national policies /09 - 14/. National policies for providing safe drinking water have largely failed in rural areas of Bangladesh. The PoA is designed to overcome the prevalence of water-borne illnesses and reduce the fuelwood consumption by rural households in the country. The circumstances are broadly similar throughout the country as indicated by the research papers /09, 10, 11, 14/.</p> <p>However, the description provided in the GSP PoA, on the contribution to sustainable development, referred only to global data and did not provide information specific to Bangladesh— <b>CL 1</b> was raised to describe in the PoA-DD how the PoA contributes to the sustainable development of Bangladesh.</p> <p>In the revised PoA-DD, the description on how the PoA contributes to sustainable development has been amended to be more Bangladesh-specific.</p> <p>CL 1 was closed.</p>	CL-4	OK
6.4.2 (b)	<b>Purpose and general description of PoA:</b> Does the PoA fully describe the operating and implementing framework?	<p>The description of the PoA in the PoA-DD supplied at the draft report stage was not sufficient or clear:</p> <ul style="list-style-type: none"> <li>The description was not consistent whether only instant microbiological purifiers will be used, or other technologies will be included as well</li> <li>Whilst the CME clarified during the site visit that the PoA will be implemented in rural areas and will target poor households, this was not sufficiently clear in the PoA description</li> <li>it was not clear whether only technologies without project emissions will</li> </ul>	CL-2	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		<p>be included, or technologies with project emissions will also be eligible</p> <ul style="list-style-type: none"> <li>the description refers to capacity limit of 18,000 litres, which is specific to Lifestraw® technology to be used in the first CPA and it was unclear if this limit will be applied to all technologies</li> <li>it was not clear from the description, and information is not consistent elsewhere in the PoA-DD whether the PoA will focus on rural areas or will cover both urban and rural areas, and whether it will focus on households, or will also cover schools and community centres or other types of users</li> <li>it is not clear if the POA will involve technology transfer</li> </ul> <p><b>CL 2</b> was raised to clarify these aspects.</p> <p>Subsequently, the revised PoA-DD was provided to ERM CVS, where the purpose and general description of PoA has been amended. The issues were addressed as follows:</p> <ol style="list-style-type: none"> <li>The revised PoA-DD includes multiple purification technologies, the types of which have been clarified in the project description. The PoA-DD has been revised to ensure that only one type of water purification technology will be used per CPA, i.e. CPAs will be defined according to technology type, as well as a list of unions (geographical area).</li> <li>Criterion 10 has been amended in the revised PoA-DD to state that the CPAs will only be deployed in rural areas</li> <li>The PoA-DD was revised to make it clear that only technologies without project emissions are eligible under this PoA.</li> <li>The Lifestraw-specific capacity limit has been removed from the revised PoA description. In addition, part II of the PoA-DD was amended to prompt each CPA-DD section A.5. to describe the indicator of when to repair/replace a water purification system deployed in the specific CPA,</li> </ol> <p>Section A.2 of part I of the PoA-DD is revised to state the objective and goal of the PoA. Furthermore, the revised PoA-DD now clarifies that only rural areas in Bangladesh will be eligible, and both residential and institutional applications (in the community) will be eligible. As explained above, administratively the area within each police station in Bangladesh, except for stations in metropolitan areas, is divided into several unions, with each union consisting of multiple villages. i.e. unions are located in rural areas. This was confirmed against the Local Government (Union Parishads) Act /15/ .</p> <ol style="list-style-type: none"> <li>No technology transfer from Annex I countries is envisioned currently and this is in line with the interviews with the CME.</li> </ol> <p>CL 2 is closed.</p>		
6.4.2 (c)	<p><b>Policy/measure or stated goal of the PoA:</b> Does the PoA-DD describe the policy/measure or stated goal that the PoA seeks to promote? How was this validated?</p>	<p>Section A.2 of the PoA-DD describes the stated goal of the PoA, however, further clarification is required regarding the technology – please refer to <b>CL 2</b>.</p> <p>CL 2 has been closed. Please see the full explanation in question 6.4.2 (b).</p> <p>The revised PoA-DD is clear that it includes multiple purification technologies, the types of which have also been clarified in the project description and are in line with the applied methodology. The PoA-DD has been revised to ensure that only one type of water purification technology will be used per CPA, i.e. CPAs will be defined according to technology type (as well as a list of unions, i.e. geographical area).</p>	<del>CL-2</del>	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		In addition, the revised PoA-DD now includes Bangladesh-specific objectives and goals of the PoA-DD, and is consistent in only referring to 'rural' areas instead of 'rural' and 'slum' areas.  ERM CVS confirms that the PoA-DD correctly and sufficiently describes the policy/measure and stated goal that the PoA seeks to promote.		
6.4.2 (d)	<b>Confirmation of voluntary action:</b> Does the POA-DD provide confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity? How was this validated?	Yes, section A.2 of the PoA-DD includes confirmation that the proposed PoA is a voluntary action. ERM CVS has confirmed this by review of relevant host country water regulations /12, 13/, donor-funded programme publications /09, 10/, BRAC WASH (BRAC Programme on Water, Sanitation and Hygiene) study /11/, and other publicly available literature sources /14/, as well as interviews with the Department of Public Health Engineering /IV 6/, to confirm that zero greenhouse gas emitting safe drinking water purification projects are not mandated by any laws or regulations in the host country.	OK	OK
6.4.2 (e)	<b>Technologies/measures:</b> Does the PoA-DD clearly describe technologies and measures involved in the PoA?	Section A.6 of the GSP PoA-DD provided description of the first technology that will be used in the PoA – Lifestraw® Family water filters. This was validated by reviewing the manufacturer specifications /16/ and interviewing a representative of the technology provider Vestergaard Frandsen /IV 4/. The description was also clear that other technologies may be used. However, the types of technologies to be covered by the PoA were not sufficiently clear – please refer to CL 2.  CL 2 has been closed. Please see the full explanation in question 6.4.2 (b).  The revised PoA now states that only zero greenhouse gas emitting purification systems are eligible  Section A.1 of Part II: Generic component project activity has set the minimum amount of information that needs to be provided at CPA level to provide a clear CPA description.  Thus Part II of the PoA-DD can adequately provide a generic template for the CPA, i.e. CPAs without project emissions.  ERM CVS confirms that it is clear which technologies and measures are involved in the PoA.	<del>CL-2</del>	OK

## Conclusion

The process undertaken to validate the accuracy and completeness of the PoA description is set out in detail above. ERM CVS has confirmed that the description in the PoA-DD provides a clear, accurate and complete understanding of the nature of the proposed CDM PoA.

### Description of a generic CPA

The description of a generic CPA in the PoA-DD has been validated as follows:

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
6.4.3 (a)	<b>(i) Description: Generic CPA design</b>  Does the description of the generic CPA in the PoA-DD section A.1 of part II provide a clear, accurate and sufficiently detailed	During the site visit, ERM CVS found the GSP PoA-DD to correctly contain a description of a generic CPA. The team visited sites of the proposed 1 <sup>st</sup> CPA, which will cover the distribution of Lifestraw® Family 2 water purification units in part of Chandpur district, and interviewed representatives of the CME and operators of the proposed CPA.  However, ERM CVS did raise the following issues with the Generic CPA design	<del>CL-2</del>  <del>CL-3</del>	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	<p>description of all relevant elements of a generic CPA? Specifically, does the CPA description provide clear indication of:</p> <ul style="list-style-type: none"> <li>a) List of main technologies involved</li> <li>b) List of main equipment and installations</li> <li>c) The lifetime of the project equipment</li> <li>d) Monitoring equipment and its location</li> <li>e) Capacities and efficiencies</li> <li>f) Emissions sources and GHGs involved in the PoA</li> <li>g) Existing and forecast energy and mass flows and balances</li> <li>h) Interaction with processes/equipment outside the project boundary, if any, is stated.</li> <li>i) Description of technology transfer from Annex I countries (if applicable)</li> </ul>	<p>in the GSP PoA-DD:</p> <ul style="list-style-type: none"> <li>a) Technologies to be involved are not sufficiently clear – Please refer to <b>CL 3</b></li> <li>b) List of main equipment and installations: Please refer to CL 2. In addition, the section is not sufficiently clear on what minimum amount of information needs to be provided at CPA level to provide a clear CPA description –<b>CL 3</b> was raised.</li> <li>c) The lifetime of the project equipment is not stated in the PoA-DD but this is considered appropriate given that equipment will be specified at CPA level. However, the section is not clear what minimum information needs to be provided at CPA level – please refer to CL 3</li> <li>d) Description of typical monitoring equipment is not included in the GSP PoA-DD, but this is considered appropriate as monitoring data will be included through sampling and surveys.</li> <li>e) The description is not clear whether capacity or efficiency of water purification technologies/equipment needs to be specified at the CPA level - Please refer to CL 3</li> <li>f) The description does not include explanation on sources and GHGs but the PoA description in part I of the PoA-DD is clear that the PoA reduces the need to purify water by boiling it using non-renewable biomass. Further details on emission sources and GHGs are provided in section B.3 of the part II of the PoA-DD</li> <li>g) Energy and mass flows and balances have not been included in the description, but this is considered not necessary in the PoA-DD for this PoA as description provides sufficient clarity and further details will be provided at CPA level. Please refer to CL 3.</li> <li>h) Interaction with processes/equipment outside the project boundary is not applicable, which is in line with this methodology. Potential sources of leakage are considered in Section 8.5.</li> <li>i) Description of technology transfer from Annex I countries was not discussed in GSP PoA-DD – please refer to <b>CL 2</b>.</li> </ul> <p>ERM CVS reviewed the revised PoA-DD Section A.1 of part II and confirms that the generic CPA now includes an indication of the minimum amount of information required by each CPA. This requires the CPA Implementer to specify information such as the technology type and specifications, capacity, lifetime, target group, and other aspects necessary to understand the CPA. CL 3 was closed.</p> <p>The POA does not include technology transfer from Annex I countries although technologies included in subsequent CPAs may include technology transfer – CL 2 was closed, please refer to appendix B.</p> <p>ERM CVS concludes that the description of the generic CPA in the revised PoA-DD section A.1 of part II provides a clear, accurate and sufficiently detailed description of all relevant elements of a generic CPA</p>		
6.4.3 (b)	<p><b>Description: Existing installations</b></p> <ul style="list-style-type: none"> <li>a) If the generic CPA involves the alteration of an existing facility, installation or process, does the description clearly state the differences resulting from the PoA</li> </ul>	<p>Not applicable. The existing stoves will not be replaced, as their primary use is for cooking fuel, which will not be affected by this PoA.</p>	OK	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	<p>compared to the pre-project situation?</p> <p>b) How has the description of the existing facility, installation or process been validated?</p> <p>c) Is the description of the existing facility, installation or process consistent with information provided in other parts of the CPA-DD such as common practice and baseline selection?</p>			

## **Conclusion**

ERM CVS has confirmed that the description in the PoA-DD provides a clear, accurate and complete understanding of the precise nature of the PoA and the technical aspects of its implementation. The description sufficiently covers all relevant elements, is accurate, and clearly states the differences resulting from the PoA compared to the pre-project situation.

The description of a generic CPA provides the reader with a clear understanding of the nature of a generic CPA and its baseline.

## 7 Validation Findings - Eligibility Criteria for Inclusion of a CPA in a PoA

### Description of Eligibility Criteria

As per VVS section 8.4.9 and following guidance from the Standard on Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities (CDM-EB65-A03-STAN), ERM CVS evaluated the eligibility criteria contained in section B.2 of the PoA-DD to evaluate whether they are verifiable, sufficiently objective and comprehensive to permit the assessment of the inclusion of CPAs in the PoA.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
7.1.1	Do the eligibility criteria include the geographical boundary of the CPA including any time-induced boundary consistent with the geographical boundary set in the PoA (for example, an emission factor for electricity generation is dependent on the boundaries of regional or state or sub-regional grids)? Are the relevant criteria verifiable and sufficiently objective?	Yes, the eligibility criteria include a criterion on geographical boundary (Bangladesh). The boundary of each CPA will be within the POA boundary and will be stated in the CPA DD (Section A.7). The criterion is sufficiently objective and verifiable.	OK	OK
7.1.2	Do the criteria include conditions that avoid double counting of emission reductions, like unique identifications of product and end-user locations (e.g. programme logo)? Are the relevant criteria verifiable and sufficiently objective?	<p>During the draft report stage, the eligibility criteria on avoiding double counting in the PoA-DD referred to identification numbers for CPAs and it was not clear from the PoA-DD if each unit distributed will also have unique identification numbers – <b>CL 4</b> was raised.</p> <p>CL 4 was closed when ERM CVS reviewed the revised PoA-DD and confirmed that the eligibility criteria have been correctly amended, requiring unique identification of purifiers and geographical coordinates of stationary purifiers, and confirmation from the CPA implementer that double counting has not occurred.</p> <p>The double counting avoidance criteria are therefore verifiable and sufficiently objective.</p>	<del>CL 4</del>	OK
7.1.3	Do the criteria include the specifications of technology/measure including the level and type of service, and performance specifications, including compliance with testing/certifications? Are the relevant criteria verifiable and sufficiently objective?	<p>At the draft report stage, the technology eligibility criteria were not sufficiently clear as it was not clear if technologies other than Lifestraw® would be included, and whether only technologies without project emissions will be included, or technologies with project emissions will also be eligible – please refer to CL 2. After the revised PoA-DD was reviewed CL 2 was closed, as the revised PoA now states that only zero greenhouse gas emitting safe drinking water production systems are eligible under this PoA, i.e. purification technologies with project emissions are not covered.</p> <p>In addition, the GSP PoA-DD included eligibility criteria which were not consistent on which standard(s) will be used in evaluating whether technologies provide sufficient quality of water – <b>CL 5</b> was raised.</p> <p>The PoA-DD provides two options: WHO standard “Evaluating household water treatment options: Health based targets and microbiological performance specifications” /07/ or Health based targets and microbiological performance specifications of “The Environment Conservation Rules, 1997; Schedule 3 (B): Standards for drinking water” /08/, which is the applicable national standard. The PoA-DD makes it clear that compliance with either can be used if both are available. Both options are in line with the methodology, as it allows a choice between the WHO performance target or applicable national standard or guidance. CL 5 was therefore closed.</p> <p>ERM CVS conclude that the criteria include the specifications of technology/measure including the level and type of service, and performance specifications, including compliance with testing/certifications, and that the</p>	<del>CL 2</del>  <del>CL 5</del>	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		relevant criteria are verifiable and sufficiently objective.		
7.1.4	Do the criteria include conditions to check the start date of the CPA through documentary evidence? Are the relevant criteria verifiable and sufficiently objective?	<p>At the draft report stage, the criteria to check the CPA start date in the GSP PoA-DD did not make it clear how the start date of a CPA will be determined – <b>CL 6</b> was raised.</p> <p>CL 6 was closed when the eligibility criterion on the starting date of the CPA has been clarified: the revised PoA-DD includes a clear description of what will be regarded as a starting date of any CPA, that being documentary proof of WPS purchased. As this would be the earliest date of real action, this is in line with the definition of starting date in the CDM Glossary of Terms.</p> <p>ERM CVS concludes that the eligibility criteria include conditions to check the start date of the CPA through documentary evidence, and that the relevant criteria are verifiable and sufficiently objective.</p>	<del>CL-6</del>	OK
7.1.5	Do the eligibility criteria include conditions that ensure compliance with applicability and other requirements of single or multiple methodology/ies applied by CPAs? Are the relevant criteria verifiable and sufficiently objective?	<p>The eligibility criteria include conditions relevant to checking if CPAs comply with applicability conditions of the methodology. However, Please refer to CL 2 and CL 5 that were raised by ERM CVS relating to technologies to be included in the POA and standards to be used for evaluating efficiency of technology (water quality).</p> <p>In addition, ERM CVS requested clarification on the following issues in the GSP PoA-DD:</p> <ul style="list-style-type: none"> <li>It is not clear what evidence is required to determine whether a public distribution network of safe drinking water exists, and thus on what basis it will be assessed whether a CPA meets eligibility criterion. The means of proof refers to checking annually – but annual check would be done after CPA inclusion, therefore cannot form part of the check against eligibility criteria</li> <li>The methodology requires that documented measures are in place to ensure end users have access to replacement purification systems of comparable quality. Suggested means of proof for this criterion describes the suggested measures/procedures but does not indicate whether/where these are/will be documented.</li> </ul> <p><b>CL 7</b> was raised to clarify these issues.</p> <p>ERM CVS reviewed the eligibility criteria on methodology applicability conditions in the revised PoA-DD:</p> <ul style="list-style-type: none"> <li>The means of proof to determine whether a public distribution network exists have been provided in the revised PoA-DD, and the PoA requires the CPA implementer to demonstrate that safe drinking water was not supplied in the CPA area prior to the implementation of the project activity.</li> <li>Criterion 4 has been revised to require the actual CPA-DD to explain lifetime based on manufacturer's specifications, indication when and how it can be recognised if a unit needs replacement, and measures that will have to be followed for each CPA to ensure that end users have access to replacement purification systems. At the PoA level, repair and replacement services are described in the operations management plan /17/. This is in line with the methodology.</li> </ul> <p>CL 7 was therefore closed.</p> <p>Furthermore, CL 2 and CL 5 have been closed (see questions above and Appendix B for further explanation).</p> <p>The eligibility criteria in the revised PoA-DD therefore ensure compliance with applicability and other requirements of the methodology applied by the CPAs. These relevant criteria are deemed verifiable and sufficiently objective by ERM CVS.</p>	<del>CL-2</del>  <del>CL-5</del>  <del>CL-7</del>	OK



	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
7.1.6	Do the eligibility criteria include conditions that ensure that CPAs meet the requirements pertaining to the demonstration of additionality (please refer to the latest approved version of the <i>Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities</i> ); Are the relevant criteria verifiable and sufficiently objective?	<p>In the GSP PoA-DD, a condition was included that distribution of water purification units is complimentary, i.e. for free. This is because the PoA claimed investment barrier. Please refer to section on validation of PoA additionality below and CL 18 raised there, as well as Appendix B on how it was closed.</p> <p>In the revised PoA-DD, the criterion on additionality no longer specifies that units are complimentary (given for free) but it is clear on what will have to be checked at CPA inclusion stage to confirm that a CPA is automatically additional: (a) whether the emission reduction of a CPA are within the small scale limit, (b) that the target group are residential or institutional applications such as schools or community centres in rural areas, and (c) that one unit represents less than 1% (hence also less than 5%) of the small scale project limit. These conditions are in accordance with the Guidelines for demonstration of additionality of small scale project activities version 09, and the criterion is in line with the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities. CL 18 was therefore closed.</p> <p>ERM CVS concludes that the eligibility criteria in the revised PoA-DD include conditions that ensure that CPAs meet the requirements pertaining to the demonstration of additionality, and that these relevant criteria are verifiable and sufficiently objective.</p>	CL 18	OK
7.1.7	Do the eligibility criteria include, if applicable, any PoA-specific requirements stipulated by the CMEs including any conditions related to undertaking local stakeholder consultations and environmental impact analysis (See also paragraph 6 (m) of Procedures for registration of a programme of activities as a single CDM project activity and issuance of CERs for a PoA). Are the relevant criteria verifiable and sufficiently objective?	<p>The following issues were PoA-specific requirements that ERM CVS found to require further clarification at the draft report stage: The eligibility criteria in the GSP PoA-DD included a criterion for the Local Stakeholder Consultation (LSC) and Environmental Impact Assessment (EIA). However, in this criterion it was stated that the LSC and EIA will be determined at PoA level, so it was not clear why this is included as a criterion for CPA inclusion – <b>CL 8</b> was raised. In the revised PoA-DD, the eligibility criterion for the Local Stakeholder Consultation (LSC) is not included, as the LSC was conducted at the PoA level. Eligibility Criteria 16 in the revised PoA-DD has a requirement for checking that the technology used in the CPA is in line with Bangladesh environmental laws/regulations. After these revisions, CL 8 was closed.</p> <p>In addition, in the GPS PoA-DD, eligibility criteria on CPA development, management and distribution were not sufficiently clear and it was not clear on what basis eligibility can be assessed – <b>CL 9</b> was raised. CL 9 was closed after the eligibility criteria have been amended to include requiring written approval (authorisation) from the CME of each CPA.</p> <p>Therefore, the PoA-specific eligibility requirements are verifiable and sufficiently objective</p>	CL 8 CL 9	OK
7.1.8	Do the criteria include, where applicable, the target group (e.g. domestic/ commercial/ industrial, rural/ urban, grid-connected/off-grid) and distribution mechanisms (e.g. direct installation)? (This is to re-test the validity of assumptions made at the PoA level. For example, in a lighting efficiency application, lighting usage hours of 3.5 hours per day would be valid if the target group is residences/households. Usage hours would be different in commercial applications and vice versa), Are the relevant criteria verifiable and sufficiently objective?	<p>The eligibility criteria in the GSP PoA-DD did not cover provisions of Paragraph 16(i) of the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities, despite it being applicable to this PoA. (i.e. eligibility criteria have not been defined regarding the target group and distribution mechanisms) – <b>CAR 3</b> was raised.</p> <p>CAR 3 was closed when the revised PoA-DD was found to include criteria regarding the distribution mechanisms and target group – criteria 9 i) and 10.</p> <p>These criteria require BIVL to manage and/or contract the distribution of zero GHG Emitting water purification systems (WPS), and state that water purification systems to be deployed under each CPA shall be for residential or institutional applications such as systems installed at a school or a community centre in rural areas. Based on interviews with the CME, the CME intends to sub-contract BRAC WASH programme to distribute the filters to final users. Based on interviews with BRAC WASH Programme's director and some of the field staff /IV 5, 7-9/, BRAC Wash has an established field officers network in rural areas of Bangladesh and is well placed to conduct distribution water purification units. In one of the villages visited during the site visit, the DOE checked the social mapping of the village done by BRAC WASH in consultation with the villagers – it is clear that the BRAC</p>	CAR 3	OK



	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		<p>WASH programme staff are well placed to target households most in need.</p> <p>The relevant criteria on target groups and distribution mechanisms are verifiable and sufficiently objective.</p>		
7.1.9	Do the criteria include, where applicable, the conditions related to sampling requirements for a PoA in accordance with the approved guidelines/standard from the Board pertaining to sampling and surveys? Are the relevant criteria verifiable and sufficiently objective?	<p>The PoA-DD at the draft report stage included a very generic condition that all sampling requirements for CPAs are based on the PoA-DD. Suggested means of proof was 'sampling records' but these will not be available at the time of CPA inclusion – <b>CL 10</b> was raised.</p> <p>In the revised PoA-DD the criterion refers to sampling described in the CPA-DD having to be in line with the requirements in the PoA-DD, which is reasonable. As this is a criterion for inclusion, sampling records will not be available. Therefore, written proof of the sampling plan in the CPA-DD, in line with that prescribed in the PoA-DD, is sufficient. CL 10 was therefore closed.</p> <p>This relevant criterion is therefore verifiable and sufficiently objective.</p>	CL 10	OK
7.1.10	Do the criteria include, where applicable, conditions that ensure that the CPA in aggregate meets the small-scale or micro-scale threshold criteria (please refer to the latest approved version of the Guidelines for demonstrating additionality of microscale project activities and the latest approved version of the General Guidelines to SSC CDM methodologies) and remain within those thresholds throughout the crediting period of the CPA? Are the relevant criteria verifiable and sufficiently objective?	<p>Yes, the eligibility criteria in the PoA-DD include a criterion that CPA annual emissions reductions are required to be under the Type III SSC threshold of 60,000 tCO<sub>2</sub>e per year over the entire crediting period. This PoA does not consider micro-scale CPAs and therefore does not include micro-scale threshold criteria. This is in line with the <i>Clean Development Mechanism Project Standard</i>, version 03.0, is verifiable by validating ex-ante emission reduction calculations for a CPA, and sufficiently objective.</p>	OK	OK
7.1.11	Do the criteria include, where applicable, the requirements for the debundling check, in case CPAs belong to small-scale (SSC) or microscale project categories (please refer to the latest approved version of the Guidelines on assessment of debundling for SSC project activities)? Are the relevant criteria verifiable and sufficiently objective?	<p>The eligibility criteria in the GSP PoA-DD included a requirement for conducting the debundling check. However, according to the <i>Guidelines on Assessment of Debundling for SSC Project Activities</i>, version 03.0, this project is exempt from requiring a debundling check, so it is not clear why conducting a check is included in the eligibility criteria – <b>CL 11</b> was raised.</p> <p>CL 11 was closed after the criterion was revised to refer to what will have to be checked at CPA inclusion stage to confirm that a CPA is exempt from a debundling check. The criterion refers to emissions from each water purification unit being no more than 1% of the small scale threshold (60,000 tCO<sub>2</sub>e annually). The criterion is in accordance with the provisions of the <i>Guidelines on Assessment of Debundling for SSC Project Activities</i>.</p> <p>This revised criterion is therefore verifiable and sufficiently objective.</p>	CL 11	OK
7.1.12	Do the criteria include conditions to provide an affirmation that funding from Annex I parties, if any, does not result in a diversion of official development assistance? Are the relevant criteria verifiable and sufficiently objective?	<p>Yes, the eligibility criteria in the PoA-DD include a requirement that no public funding is used, and that Annex I party funding, if any, does not result in a diversion of official development assistance. However, the means of proving this is not sufficiently clear in case public funding is used – attestation signed by the CPA implementer would not be sufficient in such case. I.e. it is not clear what evidence CPA implementers can provide to demonstrate that this criterion has been met. – <b>CL 12</b> was raised.</p> <p>CL 12 was closed when the revised PoA-DD was found to be sufficiently clear on what documentation is required to satisfy the criterion on non-diversion of the</p>	CL 12	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		<p>ODA. In case public funding is used, a letter from the relevant Annex I party and/or a letter from the provider of public funds would be required to confirm that the funding does not result in the diversion of ODA.</p> <p>The criterion is therefore verifiable and sufficiently objective.</p>		
7.1.13	Does the CME have the competencies to check the features of potential CPAs and ensure that each CPA meets all requirements and eligibility criteria before inclusion in the registered PoA?	<p>ERM CVS interviewed representatives of the CME and BRAC EPL Investment Ltd (BEIL), with whom the CME has a service contract for CDM consulting /05/, and can confirm that the CME has sufficient competencies to check the features of potential CPAs and ensure that each CPA meets all requirements and eligibility criteria.</p> <p>Please also refer to the validation of the operation and management system of the CME in section 9 of the validation report.</p>	OK	OK
7.1.14	Is the set of eligibility criteria sufficiently objective and comprehensive to permit the assessment of the inclusion of CPAs in the PoA?	<p>To be confirmed after closure of CLs 4-12.</p> <p>CLs 4 to 12 were closed (please refer to questions above and Appendix B).</p> <p>ERM CVS was able to confirm that the set of eligibility criteria in the revised PoA-DD are sufficiently objective and comprehensive to permit the assessment of the inclusion of CPAs in the PoA. Please see the remediation form in Appendix B, or the questions above, for further elucidation on the eligibility criteria.</p>	<del>CLs 4-12</del>	OK

## **Conclusion:**

ERM CVS can confirm that the CME has developed eligibility criteria for inclusion of a CPA under the PoA and has included these criteria in the PoA design document and demonstrated their usability to assess the inclusion of CPAs. The POA-DD provides a detailed description of the eligibility criteria for inclusion of a project activity as a CPA under the PoA, which includes criteria for demonstration of additionality of the CPA, and the type and/or extent of information (e.g. criteria, indicators, variables, parameters or measurements) that shall be provided by each CPA in order to ensure its eligibility. The eligibility criteria are verifiable, and are sufficiently objective and comprehensive to permit the assessment of the inclusion of CPAs in the PoA. ERM CVS has assessed the specified eligibility criteria and can conclude that the criteria are sufficient to ensure that all CPAs would comply with the CDM requirements applicable to the PoA.

## 8 Validation findings – Baseline and Monitoring Methodology

ERM CVS has evaluated the baseline and monitoring methodology selected by the PPs to confirm its applicability and whether or not it has been appropriately applied in the PoA-DD.

### 8.1 Validity of selected methodology and methodological tools

As per VVS section 7.12, ERM CVS validated that an approved and currently valid baseline and monitoring methodology (and associated methodological tools) have been applied for this proposed CDM PoA.

Baseline methodology applied	AMS-III.AV Low greenhouse gas emitting safe drinking water production systems Version 3,EB 69
Methodological tools applied as required by the methodology	N/a

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.1.1	Is the number, title and version of the approved methodology clearly and correctly stated in the PoA-DD?	ERM CVS determined at the draft report stage that the methodology was correctly quoted and applied by comparing with the actual text of the applicable version of the methodology available on the UNFCCC CDM website. The methodology was within its period of validity.	OK	OK
	Is the methodology within their period of validity?	Subsequently, the version of the applied methodology has been updated in the revised PoA-DD into version 03. ERM CVS confirms that this is the latest version of the methodology, it is within its period of validity, and has been correctly stated throughout the revised PoA-DD.		
	Are all the required tools applied and fully referenced in the PoA-DD and generic CPA-DD?	In the PoA-DD provided at the draft report stage, the methodology referred to the Tool to calculate project or leakage CO2 emissions from fossil fuel combustion and Tool to calculate baseline, project and/or leakage emissions from electricity consumption. It was not clear if these tools would be applicable to the POA, as it was not clear whether the PoA will cover technologies that have project emissions. Please refer to CL 2.	CL-2	OK
	Are the version numbers applicable at the time of validation?	Subsequently, the revised PoA-DD is clear in that technologies with project emissions are not eligible under the PoA, only zero GHG emitting purification technologies are eligible. CL 2 was closed.		
		The PoA-DD therefore does not need to use the above mentioned tools in line with the methodology.		
	If applicable, has any specific guidance provided by the CDM EB relating to the applied methodology been considered?	N/a – There is no additional specific guidance related to the applied methodology, so none was used in the PoA-DD and generic CPA-DD.	OK	OK

**Conclusion** The applied methodology has been correctly described and is approved by the CDM Executive Board. No methodological tools have to be used. All versions are currently valid.

### 8.2 Applicability of the selected methodology to the generic CPA

As per VVS section 7.12.2, ERM CVS evaluated whether the selected baseline and monitoring methodology applied in the proposed PoA is applicable to the generic CPA described in the PoA-DD. This evaluation was based on a review of the PoA-DD and associated documentation and a visit to the first real case CPA proposed to be included in the PoA. ERM CVS has validated whether the applicability conditions of the methodology and relevant tools are met and whether the PoA is not expected to result in emissions other than those allowed by the methodology.

ERM CVS has assured the compliance of the generic CPA with each of the applicability conditions of the selected methodology and tools, set out in sections B.3 of part I and B.2 of part II of the PoA-DD :

	Applicability Conditions in methodology and/or tools	Discussed in PoA-DD (yes/no)	Applicable (Yes/No, or state that this condition is not relevant for the project)	Validation findings (including justification and substantiation of information, data and evidence).	Draft OK/ CAR/CL	Final OK/ Not OK
8.2.1	This methodology comprises introduction of low greenhouse gas emitting water purification systems to provide safe drinking water (SDW). Water purification technologies that involve point-of use (POU) or point-of-entry (POE) treatment systems for residential or institutional applications such as systems installed at a school or a community centre are included. The examples include, but are not limited to water filters (e.g. membrane, activated carbon, ceramic filters), solar energy powered ultraviolet (UV) disinfection devices, solar disinfection techniques, photocatalytic disinfection equipment, pasteurization appliances, chemical disinfection methods (eg. chlorination), combined treatment approaches (eg. flocculation plus disinfection).	Yes	Yes	<p>ERM CVS interviewed the CME during the site visit. Please refer to CL 2 raised at the draft report stage: it was not sufficiently clear what types of water purification systems would be accepted under this PoA.</p> <p>CL 2 has been closed. Please see the questions above and remediation form in Appendix B. The revised PoA-DD makes it clear which technologies are eligible under the PoA.</p> <p>In the GSP PoA-DD, the discussion of the applicability condition provided details of Lifestraw® technology and how it meets the applicability conditions. However, based on interviews with the CME ERM CVS understands that this will not be the sole technology used in this PoA, therefore this information is not applicable to all CPAs. <b>CAR 4</b> was raised</p> <p>In the revised PoA-DD that discussion is no longer specified to Lifestraw and it is clear that different technologies would be accepted. The technologies eligible are sufficiently specified in the revised PoA-DD and in line with the methodology, and CAR 4 was closed.</p> <p>ERM CVS confirms that the CPA will need to comprise introduction of zero greenhouse gas emitting water purification systems to provide safe drinking water.</p>	<p><del>CL-2</del></p> <p><del>CL-5</del></p> <p><del>CAR-4</del></p>	OK

	Applicability Conditions in methodology and/or tools	Discussed in PoA-DD (yes/no)	Applicable (Yes/No, or state that this condition is not relevant for the project)	Validation findings (including justification and substantiation of information, data and evidence).	Draft OK/ CAR/CL	Final OK/ Not OK
	<p>Prior to the implementation of the project activity, a public distribution network supplying SDW to the project boundary does not exist.</p> <p>If during the crediting period SDW is made available through a public distribution network, the emission reductions pertaining to the households/buildings supplied by the public system cannot be claimed from that point onwards. This condition should be checked annually during the crediting period</p>	Yes	Yes	<p>Section B.2 of part II of the GSP PoA-DD provides information on lack of provision of drinking water in rural and urban areas of Bangladesh. Whilst ERM CVS was able to confirm validity of some these statements for the 1<sup>st</sup> CPA based on interview with a representative from the Department of Public Health Engineering, no documentary evidence was provided at the draft report stage to substantiate claims for a wider PoA boundary – <b>CL 13</b> was raised.</p> <p>In the revised PoA-DD evidence for the lack of provision of safe drinking water by public distribution network in rural areas of Bangladesh was found to be provided in Annex 3. The information was validated by reviewing Multiple Indicator Cluster Survey 2009 /23/, Bangladesh Demographic and Health Survey 2007 /22/, and article "Microbiological Analysis of Tube-Well Water in a Rural Area of Bangladesh" /43/, as well as based on interview with the representatives of the Department for Public Health and Engineering from Chandpur district.</p> <p>Please also refer to CL 7 – it was not clear at the draft report stage how the existence of public distribution network of safe drinking water would be assessed for each CPA area.</p> <p>In the revised PoA-DD, criterion 2 requires the CPA implementer to demonstrate that safe drinking water was not supplied in the CPA area prior to the implementation of the project activity, and the means of proof to determine whether a public distribution network exists have been provided, and CL 7 was closed (please refer to Appendix B for other part of CL 7).</p>	<p><del>CL 13</del></p> <p><del>CL 7</del></p>	OK
	<p>It shall be demonstrated based on laboratory testing or official notifications (for example notifications from the national authority on health) that the application of the project technology/equipment achieves compliance either with: (i) at a minimum the performance target as per "Evaluating household water treatment options: Health based targets and microbiological performance specifications" (WHO, 2011); or (ii) an applicable national standard or guideline</p>	Yes	Yes	<p>The GSP PoA-DD was not consistent on which standard(s) will be used in evaluating water quality – Please refer to <b>CL 5</b>.</p> <p>CL 5 was closed when the revised PoA-DD was found to refer to technologies having to meet either the WHO standard referred to in the methodology /07/, or the national standard /08/, which is specified in the PoA-DD.</p>	<del>CL 5</del>	OK
	<p>In cases where the life span of the water treatment technologies is shorter than the crediting period of the project activity, there must be</p>	Yes	Yes	<p>The PoA-DD at draft report stage described the procedure that should ensure that beneficiaries have access to replacement water purifiers but it was not clear whether/where the procedures are/will be documented separately as required by</p>	<del>CL 7</del>	OK

	Applicability Conditions in methodology and/or tools	Discussed in PoA-DD (yes/no)	Applicable (Yes/No, or state that this condition is not relevant for the project)	Validation findings (including justification and substantiation of information, data and evidence).	Draft OK/ CAR/CL	Final OK/ Not OK
	documented measures in place to ensure that end users have access to replacement purification systems of comparable quality.			<p>the methodology – please refer to CL 7 part b.</p> <p>CL 7 was closed when the eligibility criterion and means to prove it were changed to require that in cases where the life span of the water treatment technologies is shorter than the crediting period of the project activity, Section D.7.2 of the CPA-DD would have to specify what documented measures are in place to ensure that end users have access to replacement purification systems of comparable quality. At the PoA level, repair and replacement services provided by the PoA are described in the operations management plan /17/.</p>		
	<p>Applicability of this methodology is foreseen in the following types of situations that shall be reassessed at the beginning of each crediting period:</p> <p>(a) Case 1: Project activities implemented in rural or urban areas of countries with proportion of rural or urban population using an improved drinking-water source equal to or less than 60%, confirmed by:</p> <p>(i) <i>Proportion of populations using an improved drinking-water source for the most recent year for which data is available from WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation shall be used (&lt;<a href="http://www.wssinfo.org/data-estimates/table/&gt;">http://www.wssinfo.org/data-estimates/table/&gt;</a>) for this purpose. Definition of improved and unimproved drinking water source shall be as per the information provided by JMP;</i></p> <p>(ii) <i>Using official data such as publicly available statistical data from a government agency or an independently commissioned study by an international organization or an university.</i></p> <p>(iii) <i>Using survey methods (use 90/10 confidence/precision for sampling)</i></p> <p>(b) Case 2: Project activities implemented in areas not included in Case 1.</p>	Yes	Yes	<p>The PoA-DD states that either one of the source options specified by the methodology must be used by the CPA implementer to demonstrate whether the CPA in question is Case 1 or Case 2</p> <p>This is in line with the methodology.</p>	OK	OK

## Conclusion

The applied methodology is fully applicable to the generic CPA and is correctly applied in the PoA-DD. The associated tools are not relevant to the generic CPA. There were no greenhouse gas emissions sources identified within the proposed generic CPA boundary as a result of the implementation of the proposed CPA which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.

## 8.3 Generic CPA Boundary

As per VVS section 7.12.5 ERM CVS reviewed the description of the project boundary in the PoA-DD, including the sources and gases included in the boundary of the proposed generic CPA for the purpose of calculating project and baseline emissions for the generic CPA.

### Emission sources

The emissions sources included in or excluded from the generic CPA boundary, as set out in the applied methodology are as follows:

	Source	Gas	Included in Generic CPA?	Is inclusion / exclusion justified in the PoA-DD?	How has this been validated?
Baseline emissions	Emissions from fossil fuels/NRB utilized or fossil fuels/NRB that would be utilized for obtaining safe drinking water displaced due to project activity	CO <sub>2</sub>	Yes	Yes	This was validated based on the site visit and review of the methodology: CO <sub>2</sub> emissions from the combustion of NRB will be the main baseline emissions source. Please refer to the table below for more information
		CH <sub>4</sub>	No	Yes	This is in accordance with the applied methodology
		N <sub>2</sub> O	No	Yes	This is in accordance with the applied methodology
Project emissions	Emissions from implementation and use of water purification technology	CO <sub>2</sub>	No	Yes	This is in accordance with the applied methodology. Only zero GHG emitting purification systems are eligible under this PoA.
		CH <sub>4</sub>	No	Yes	This is in accordance with the applied methodology. Only zero GHG emitting purification systems are eligible under this PoA.
		N <sub>2</sub> O	No	Yes	This is in accordance with the applied methodology. Only zero GHG emitting purification systems are eligible under this PoA.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.3.1	Has the PoA-DD justified the inclusion/exclusion of all potential sources of GHG emissions as set out in the applied baseline methodology  Is this information also stated consistently in the generic CPA-DD?	ERM CVS found that the generic part of the PoA-DD at the draft report stage did not include explanation and justification on sources and gases in the project scenario. This was not in accordance with the methodology and Guidelines for completing the programme design document form for small-scale CDM programmes of activities. <b>CAR 5</b> was raised.  In the revised PoA-DD the explanation and justification of sources and gases was found to be sufficiently clear. As water purification technologies with project emissions are not eligible under this PoA, it is correct to exclude project emission sources from this PoA, i.e. they are not applicable. CAR 5 was therefore closed.  In the GSP PoA-DD, clarification and justification was needed whether fossil fuels or woody biomass (NRB) is used for boiling water in the baseline – <b>CL 14</b> was raised.  Further explanation was provided by the PP regarding the fuel that is used for boiling water in the baseline, showing the baseline stove is a biomass stove. ERM CVS reviewed the article published in the Journal of Basic and Applied	<del>CAR 5</del>  <del>CL 14</del>	OK



	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		<p>Scientific Research /18/. The article analyses household energy consumption pattern in rural areas of Bangladesh that are far from supply of natural gas. Based on interviews with the CME and the validated eligibility criteria, the PoA will be implemented in rural areas. BRAC generally targets poor rural households, and these are always far from supply of natural gas. In addition to this source, the PoA-DD refers to the study prepared by Impact Investments Department of BRAC EPL Investments Limited (BEIL) based on survey results of BRAC's Water, Sanitation, &amp; Hygiene (WASH) programme /19/. ERM CVS interviewed the WASH programme's head and field staff of various levels working on the ground and can confirm that they are deeply knowledgeable of the situation in the PoA's target areas. Both sources /18, 19/ show that there is a small use of fossil fuels in Bangladesh but little is used for cooking (LPG used by 0.5% of households), and the households targeted by the PoA do not use LPG. ERM CVS cross-checked this against the World Bank Policy Research Paper "Energy Access, Efficiency, and Poverty. How Many Households Are Energy Poor in Bangladesh?" /21/, which states that cooking in rural Bangladesh is done almost exclusively using biomass (mostly fuelwood). ERM CVS also visited a few villages in the area covered by the 1<sup>st</sup> CPA and can confirm that all visited households use unimproved cookstoves that use firewood as fuel. As the revised PoA-DD sufficiently described and justified that the baseline is the use of woody biomass, part of CL 14 on the fuel was closed. Please refer to question 8.4.1 below on how part of the CL on stove type was closed.</p> <p>ERM CVS therefore confirms that the revised PoA-DD has justified the inclusion/exclusion of all potential sources of GHG emissions as set out in the applied baseline methodology.</p>		

## Conclusion

The identified boundary and the selected sources and gases included in the final PoA-DD and generic CPA-DD are appropriately described and justified in accordance with the applied methodology. The information is correctly described in section E.3 of the PoA-DD and section B.4 of the generic CPA-DD.

### Emission sources not addressed by the methodology

ERM CVS evaluated whether there are any emission sources that will be affected by the generic CPA and are not addressed by the applied methodology.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.3.2	Were any emission sources identified that will be affected by the generic CPA and are not addressed by the selected approved methodology? If so, was clarification of, revision to or deviation from the methodology approved in accordance with required procedures.	Based on interviews and the visit to the first CPA area, ERM CVS did not identify any emission sources that will be affected by the generic CPA and are not addressed by the selected approved methodology.	OK	OK

## 8.4 Baseline identification

As per VVS section 7.12.6, ERM CVS reviewed the PoA-DD to assess whether it correctly identifies the baseline for proposed CPAs, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed CPAs.



ERM CVS evaluated whether any procedure contained in the methodology to identify the most reasonable baseline scenario has been correctly applied. The selected methodology (AMS III.AV) uses a simplified and standardised approach, where it is assumed that fossil fuel or non-renewable biomass (NRB) is used to boil as means of water purification in the absence of the project activity. The emissions are calculated based on the energy demand for boiling water, and in case of displacement of NRB the baseline emissions are corrected for the fraction of the biomass that can be demonstrated to be non-renewable. Only purified water consumed for drinking purposes can be used in the baseline calculation.

ERM CVS evaluated whether the guidance in the methodology and tools was applied properly. ERM CVS checked each step in the procedure described in the PDD against the requirements of the methodology and tool.

The baseline identification has been validated as follows:

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.4.1	Does the PoA-DD identify the baseline for a generic CPA, a scenario that represents the anthropogenic emissions by sources of GHG that would occur in the absence of the generic CPA?	<p>The methodology (AMS III.AV) provides an assumed baseline scenario where fossil fuel or non-renewable biomass (NRB) is used to boil as a means of water purification in the absence of the project activity</p> <ul style="list-style-type: none"> <li>- However, the explanation in the GSP PoA-DD was not complete, requiring further clarification and justification: the PoA-DD was not consistent whether baseline fuel is biomass, fossil fuels, or a combination of both</li> <li>- Although the validation team visited some households and saw that pre-project and baseline stoves are traditional low efficiency stoves, documentary evidence has not been provided to substantiate the claim that baseline stove is a 3-stone fire, and it is not clear in the GSP PoA-DD whether the baseline varies between CPAs.</li> </ul> <p>Please refer to <b>CL 14</b>.</p> <p>Please see question 8.3.1 above for further explanation how it was validated that the fuel used in baseline stoves for this PoA is biomass.</p> <p>In order to check the type of baseline stoves, ERM CVS reviewed a report by Winrock International /09/ and a study by Accenture Development Partnerships prepared for Global Alliance for Clean Cookstoves /20/ and can confirm that the majority of rural households use unimproved cooking stoves without a grate or chimney. There is a small penetration rate of improved cook stoves – in 2012, 510,000 improved stoves were estimated to be in use. In order to confirm that 40,000 of these were given to exclusively urban users, ERM CVS checked UPPRBD annual report 2011 /44/ and can confirm that the statement is correct. The remaining 470,000 improved stoves might also include stoves in urban households which are not targeted by this PoA and are therefore not relevant for the baseline of this PoA. However, without further information it is conservative to assume all these remaining stoves are used by rural households. The PoA-DD explains how a weighted average efficiency of baseline stoves was estimated, assuming that 470,000 households use improved stoves with the default efficiency of 0.2 as dictated by the methodology AMS-II.AV, and the remaining majority of households use unimproved stoves without a grate or chimney, with efficiency of 0.1 in line with the methodology. The total number of rural households used in calculations was validated by reviewing the Populations and Housing Census 2011, Socio-economic and demographic report by the Bangladesh Bureau of Statistics /30/ - there were estimated 25,535,877 rural households in Bangladesh in 2011. Calculating weighted average efficiency of baseline stoves is in line with the methodology.</p> <p>CL 14 was therefore closed</p> <p>ERM CVS confirms that it is now clear in the revised PoA-DD that the baseline fuel is biomass use on the unimproved cookstoves.</p>	CL-14	OK
	Have the procedures/ steps to identify the most	The methodology provides a simplified and standardised approach for defining the baseline scenario. Please refer to CL 14: further justification and evidence was	CL-14	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	reasonable baseline scenario, as required by the methodology and applicable tools, been documented clearly in the PoA-DD for a generic CPA?	needed on the baseline fuel and stove.  CL 14 has been closed. Please see question 8.3.1 for further explanation. ERM CVS confirms that the revised PoA-DD provides the procedures/ steps used to identify the most reasonable baseline scenario, as required by the methodology and applicable tools.		

## Conclusion

### 8.5 Algorithms and/or formulae used to determine emission reductions

As per VVS section 7.12.7, ERM CVS has evaluated whether the steps taken and equations applied to calculate project emissions, baseline emissions, leakage, and emission reductions comply with the requirements of the selected baseline and monitoring methodology.

ERM CVS conducted validation activities to determine whether the equations and parameters in the PoA-DD have been correctly applied by comparing them to those in the selected approved methodology. Where the methodology provides for selection between different options for equations or parameters, ERM CVS confirmed that adequate justification has been provided (based on the choice of the baseline scenario, context of the proposed generic CPA and other evidence provided) and that the correct equations and parameters have been used, in accordance with the methodology selected.

### Ex Ante Data and Parameters

Each parameter required by the methodology and tools for this project type is listed and validated in detail as follows:

Parameter required as per methodology / tools	Description of the parameter (as per methodology)	Is the parameter included in the PoA-DD?	Title and description in the PoA-DD line with the Methodology?	Data unit correctly expressed in PoA-DD?	Value in PoA-DD correct and provides for conservative estimate of Emission Reductions?  How was this validated?	Measurement method correctly described in the PoA-DD (if applicable)
$f_{NRB,y}$	Fraction of woody biomass used in the absence of the project activity in year y that can be established as non renewable as per the relevant provisions of AMS-I.E "Switch from Non-Renewable Biomass for Thermal Applications by the User"	Yes	Yes	Yes	Yes – please refer to the table below for details.	N/A – the value is determined based on calculations using publicly available information
WH	Specific heat of water	Yes	Yes	Yes	Yes – the PoA-DD correctly provides the default value from the methodology (AMS III-AV).	N/a – default value
$T_f$	Final temperature of water	Yes	Yes	Yes	Yes – the PoA-DD correctly provides the default value from the	N/a – default value

Parameter required as per methodology / tools	Description of the parameter (as per methodology)	Is the parameter included in the PoA-DD?	Title and description in the PoA-DD line with the Methodology?	Data unit correctly expressed in PoA-DD?	Value in PoA-DD correct and provides for conservative estimate of Emission Reductions?  How was this validated?	Measurement method correctly described in the PoA-DD (if applicable)
					methodology (AMS III-AV).	
$T_i$	Initial temperature of water	Yes	Yes	Yes	Yes – the PoA-DD correctly provides the default value from the methodology (AMS III-AV).	N/a – default value
WHE	Latent heat of water evaporation	Yes	Yes	Yes	Yes – the PoA-DD correctly provides the default value from the methodology (AMS III-AV).	N/a – default value
$\eta_{wb}$	Efficiency of the water boiling systems being replaced	Yes	Yes	Yes	Yes – the value in the PoA-DD is a weighted average value using default values provided by the methodology and weighting determined from publicly available information. Please to the question 8.4.1 on how it was validated that the baseline is unimproved cookstoves	N/a – it is a calculated value based on published information
$EF_{\text{projected\_fossil fuel}}$	Emission factor as per AMS-I.E procedures when NRB is displaced or the emission factor of the fossil fuel substituted ( $tCO_2/TJ$ )	Yes	Yes	Yes	Yes. As per AMS-I.E, this value represents the emission factor of the substitution fuels likely to be used by similar users, on a weighted average basis. The value for woody biomass is used. Please to the question 8.4.1 on how the weighted average was validated	N/a
$FRAC_{wb}$	Fraction of total population serviced by the project equipments for which the practice of water purification would have been water boiling (For Case 1 a value of 1 will be applied)	Yes	Yes	Yes	According to AMS-III.AV, Version 03, EB69 for Case 1 CPAs, no adjustment to total project population is required and therefore is set to 1.0. For Case 2 CPAs ex-ante surveys will be carried out to determine what percentage of the population would boil water prior to drinking	N/a - Default value of 1.0 is applied for Case 1 CPAs; For Case 2 CPAs, value is based on ex ante baseline surveys.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.5.1	<p>Have the parameters required by the methodology / tools been correctly described in the PoA-DD?</p> <p>Where the methodology provides for selection between different options for data and parameters; is the choice of data and parameters justified?</p>	<p>Based on review of the GSP PoA-DD, the following issues were raised:</p> <ul style="list-style-type: none"> <li><math>f_{NRB}</math> – further justification is required for determining the fraction of non-renewable biomass. <b>CL 15</b> was raised</li> <li>The PoA-DD Section B.6 provides options for the efficiency of water boiling systems (<math>\eta_{wb}</math>), but it is not clear how it will be determined which value to use for each CPA. Further, the parameter is not correctly denoted in the PoA-DD – <b>CL 16</b> was raised.</li> <li>The parameter <math>FRAC_{wb}</math> (for CPAs that fall under Case 2, the proportion of total population for which the common practice of water boiling is or would have been water boiling) is provided but it is not clear how this is used in the methodological choices/calculations – <b>CL 17</b> was raised. Further, please refer to section on the monitoring plan</li> <li>In addition, further justification was required on which fuel is used in the baseline – Please refer to <b>CL 14</b>.</li> </ul> <p>According to the methodology used in this PoA, the <math>f_{NRB}</math> is a fraction of woody biomass used in the absence of the project activity that can be established as non renewable as per the relevant provisions of AMS-I.E “Switch from Non-Renewable Biomass for Thermal Applications by the User”. According to the methodology AMS-I.E, this fraction can be established using survey methods or government data or approved default country specific fraction of non-renewable woody biomass values available on the CDM website (<a href="http://cdm.unfccc.int/DNA/fNRB/index.html">http://cdm.unfccc.int/DNA/fNRB/index.html</a>). The website refers to the information note “Default values of fraction of non-renewable biomass for least developed countries and small island developing states” (EB 67 Annex 22) that explains the approach to calculate the <math>f_{NRB}</math> values as well as provides the calculated default values. The PP has used this note and the methodology outlined in the note for the calculation of the country-wide NRB fraction. The calculations outlined in Appendix 4 of the PoA-DD follow the CDM Information note but presents arguments substantiating why two of the input parameters for calculating <math>f_{NRB}</math> should have a different value than those used in the Information note.</p> <p>According to the Information Note EB 67 Annex 22, a national-level default value for <math>f_{NRB}</math> is derived by calculating Total Annual Biomass Removals (R) from each country as a proxy for <math>B_y</math> (the quantity of woody biomass used in the absence of the project activity) and estimating the proportion of R that is demonstrably renewable (DRB) and non-renewable (NRB). The parameter R (total annual biomass removals) is inferred by calculating the sum of Mean Annual Increment in biomass growth (MAI) and the Annual Change in Living Forest Biomass stocks (<math>\Delta F</math>). The parameter MAI in turn is calculated as the product of the Extent of Forest (F) and the country-specific Growth Rate (GR) of the Mean Annual Increment. Demonstrably Renewable Biomass is calculated as the product of Protected Area Extent of Forest (PA) and the previously referred Growth Rate (GR). The Information note also provides values of these parameters to show how the default NRB fractions were calculated.</p> <p>The PP has used the approach of calculations as in the Information Note but suggested using different values for two of the above-mentioned parameters: the Annual Change in Living Forest Biomass stocks (<math>\Delta F</math>) and Protected Area Extent of Forest (PA).</p> <p>In order to validate these arguments, ERM CVS checked all documents referenced in the Appendix 4 of the PoA-DD:</p> <ol style="list-style-type: none"> <li>FAO Forest Resource Assessment 2010 Global Tables, Table 11 /28a/ states that the annual change of the carbon stock in living forest biomass in Bangladesh is “not significant, indicating a very small value”. Based on overview of the table it is clear that in case the annual change is less than 1000 tonnes of Carbon per year, the change is recorded as not significant. However, there is a difference in the carbon</li> </ol>	<p><del>CL 44</del></p> <p><del>CL 15</del></p> <p><del>CL 16</del></p> <p><del>CL 17</del></p>	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		<p>stock in living forest biomass between 2005 and 2010 as stated in the same table: it was 82 million tonnes in 2005 and 80 tonnes in 2000. Even though the calculated annual rate is small, in the context of small overall forest cover in the country the change appears to have an impact. The PP used the annual change calculated based on stock values in 2005 and 2010, i.e. based on the same official source of data.</p> <p>b) The FAO Forest Resource Assessment 2010 Global Tables, Table 6 /28a/ states that forest within protected areas in Bangladesh covers 247,000 ha. The PP provided a list of protected areas which they claim are not managed properly, and therefore they should be excluded from the 247,000 ha. A variety of references on specific protected areas are used to substantiate these claims /32 - 42/. In ERM CVS's opinion, these evidences provide sufficient justification for poor management of the protected forest resources in the protected areas listed in the table in Appendix 4 of the PoA-DD. The references cite illegal logging, land use change, fuel wood collection, hill burning, encroachment and non-timber forest product collection as the pressing issues that result in ineffective management of these protected forests.</p> <p>In order to cross-check these arguments, ERM CVS reviewed the Bangladesh Forestry Outlook Study by the FAO (Asia-Pacific Forestry Sector Outlook Study II, Working Paper No. APFSOS II/ WP/ 2011/ 33) published in 2011 /27/, which provides the following information:</p> <ul style="list-style-type: none"> <li>The area classified as forested covers about 2.52 Mha in total. Out of this, 1.52 Mha are under the management of the Forest Department (FD) and the rest is under the management of the Ministry of Land through Deputy Commissioners. Out of the 1,520,000 ha of forest area under the management of FD, protected forests are said to cover nearly 37,000, i.e. the area provided in this study is smaller than the one from the Global tables. In addition, the study says that out of the forests managed by the FD, about 89 thousand ha were under encroachment as of June 2006. By now, the area of encroachment is likely to have increased.</li> <li>Attempts to prepare separate management plans for the protected areas have only started relatively recently. Management plans have been prepared for 5 protected areas, and enforcement is just starting, therefore it is too early to evaluate sustainability and effectiveness of these plans. The study concludes that in brief, sustainable forest management is yet to be initiated in Bangladesh.</li> </ul> <p>Therefore the detailed FAO study on Bangladesh confirms that protected forest areas are poorly managed and therefore their protection is only declared but not enforced. The area of protected extent of forest is disputed, and a registered CDM PoA (PoA 4791 "Improved Cooking Stoves in Bangladesh") claimed that there no forest area managed sustainably and derives a Bangladesh-wide NRB fraction of 100%. Therefore the approach taken by this proposed PoA, where only the part of the protected areas that can be shown with 3<sup>rd</sup> party references to have substantial degradation is taken out of the calculations, is more conservative.</p> <p>ERM CVS agrees with the PP's arguments that two of the parameters for calculating country-wide NRB fraction for Bangladesh using the Information note's methodology should be different than the values stated in the note and agrees with the values proposed by the PP. Further, the CDM website with default <math>f_{NRB}</math> values does not show that the value proposed in the Information note for Bangladesh has been accepted by the DNA of Bangladesh, indicating there is a disagreement. However, the DNA declined to share information on this.</p> <p>It should be noted that the same FAO study on forestry outlook in Bangladesh /27/ states that the major portion of the country's wood supply is actually met from homesteads. This was also seen by ERM CVS during the site visit: apart from</p>		

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		<p>fuelwood bought at the market, the households were using branches collected from trees in the villages. However, data on woody biomass in homesteads is sparse and out of date. As the homesteads are small and therefore do not fall under the category of forests, and as there is no reliable data on wooded parts of homesteads in Bangladesh, this part of woody biomass supply is not counted in the calculation of the NRB fraction using the methodology AMS-I.D or the Information Note EB 67 Annex 22.</p> <p>As further information on NRB fraction was provided together with supporting evidence, CL 15 was closed.</p> <p>Please refer to section 8.3 on how baseline fuel was confirmed and CL 14 closed.</p> <p>CL 16 was closed when the revised PoA-DD was found to clearly select the value of <math>\eta_{wb}</math> for all CPAs. The value is a weighted average efficiency of stoves used by the target group of this PoA,. The majority of rural households use unimproved stoves without a grate or chimney (default efficiency of 0.1 in accordance with the methodology), and there is a small penetration of improved cookstoves, for which a default efficiency of 0.2 is used in accordance with the methodology. Please refer to section 8.4 for further details how this was validated.</p> <p>CL 17 was closed after ERM CVS reviewed the methodological choices/calculations in the revised PoA-DD and could confirm that it is now clear in the section B.6.1 of part II of the PoA-DD how the parameter <math>FRAC_{wb}</math> is to be used</p>		

## Equations and calculations used to calculate emission reductions

The following steps are applied in the PoA-DD to determine emission reductions of proposed CPAs, in accordance with the methodology and tools applied:

### Baseline emissions

The baseline emissions shall be calculated as follows:

$$BE_y = QPW_y * SEC * f_{NRB,y} * EF_{project\_fossilfuel} * 10^{-9}$$

Where:

$BE_y$  Baseline emissions during the year  $y$  in (tCO<sub>2</sub>e)

$QPW_y$  Quantity of purified water in year  $y$  (litres)

Some CPAs may apply case 1 and some may apply case 2;  
For case 1 the quantity of purified water is the total amount of water treated by the project activity in year  $y$ .

For case 1, it is demonstrated that all of the purified water produced and monitored during the project period is consumed for drinking purposes only, e.g. establishing the population serviced by the project equipment using surveys or official statistics and based on an average volume of drinking water per person per day estimated using surveys or official data or peer reviewed literature or local expert opinion (a value of 5.5 litres per person per day 5 shall not be exceeded)

For case 2 the quantity of purified water is monitored, and the total amount is subject to a cap derived from the number of total project population for which it can be demonstrated through documentation that the common practice of water purification is or would have been water boiling multiplied by the maximum volume of drinking water per person per day, set at 5.5 litres per person per day.

Both cases can be used in this PoA

$SEC$  Specific energy consumption required for boiling one litre of water (kJ/L)

$f_{NRB,y}$  Fraction of woody biomass used in the absence of the project activity in year  $y$  that can be established as non renewable as per the relevant provisions of AMS-I.E "Switch from Non-Renewable Biomass for Thermal Applications by the User". If the displaced fuel is fossil fuel use a default value of 1.0

$EF_{\text{projected\_fossilfuel}}$  Emission factor as per AMS-I.E procedures when NRB is displaced or the emission factor of the fossil fuel substituted (tCO<sub>2</sub>/TJ)

Specific energy consumption required to boil one litre of water is to be calculated as follows:

$$SEC = [WH * (T_f - T_i) + 0.01 * WHE / \eta_{wb}]$$

Where:

$WH$  Specific heat of water (kJ/L °C)  
Use a default value of 4.186 kJ/L °C

$T_f$  Final temperature (°C)  
Use a default value of 100 °C

$T_i$  Initial temperature of water (°C)  
Use annual Average ambient temperature; or  
Use a default value of 20 °C

$WHE$  Latent heat of water evaporation (kJ/L)  
Use a default value of 2260 kJ/L

The latent heat required to boil one litre of water for five minutes is assumed to be equivalent to latent heat for the evaporation of 1% of the water volume (WHO recommends a minimum duration of five minutes of water boiling)

$\eta_{wb}$  Efficiency of the water boiling systems being replaced

The methodology allows one of the options below:

- (1) The efficiency of the water boiling system shall be established using representative sampling methods or based on referenced literature values (fraction), use weighted average values if more than one type of systems are encountered;
- (2) 0.10 default value may be optionally used if the replaced system or the system that would have been used is a three stone fire or a conventional system for woody biomass lacking improved combustion air supply mechanism and flue gas ventilation system i.e. without a grate as well as a chimney; for the rest of the systems using woody biomass 0.2 default value may be optionally used.
- (3) 0.5 default value may be used if the replaced system or the system that would have been used is a fossil fuel combusting system

The baseline in the PoA activities is the use of mainly unimproved cookstoves with small proportion of improved stoves, therefore option 1 is used and weighted average efficiency is calculated.

Further, the PoA-DD provides a description how QPW will be calculated in this PoA:

$$QPQ_y = QPW_{lppd,y} * N * 365$$

Where:

$QPW_{lppd,y}$  Average quantity of purified drinking water consumed by per person per day in litre i.e.(lppd);

$N$  Total population serviced by the project equipment:

$$N = (WPS_{n,y} * FRAC_{OC}) * (n * FRAC_{PDN} * FRAC_{WB})$$

Where:

$WPS_{n,y}$  Total number of water purification systems in year y

$FRAC_{OC}$  Fraction of water purification systems that are operational

$FRAC_{PDN}$  Fraction of total population serviced by the project equipments that still do not have access to supply of SDW by public distribution network

$n$  Average Number of persons supplied with purified water from each of the Water purification systems

$FRAC_{WB}$  Fraction of total population serviced by the project equipments for which the practice of water purification would have been water boiling (For Case 1 a value of 1 will be applied)

## Project emissions



This PoA does not include technologies that have project emissions.

## Leakage emissions

Where relevant leakage relating to the non-renewable woody biomass shall be assessed as per the relevant procedures of AMS-I.E. Leakage related to the non-renewable woody biomass saved by the project activity shall be assessed based on ex post surveys of users and the areas from which this woody biomass is sourced (using 90/30 precision for a selection of samples). The following potential source of leakage shall be considered:

- The use/diversion of non-renewable woody biomass saved under the project activity by non-project households/users that previously used renewable energy sources. According to the methodology, if this leakage assessment quantifies an increase in the use of non-renewable woody biomass used by the non-project households/users, that is attributable to the project activity, then  $f_{NRB,y}$  is adjusted to account for the quantified leakage. Alternatively,  $f_{NRB,y}$  is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required. The latter option is chosen by the CME for this PoA
- If the equipment currently being utilized is transferred from outside the boundary to the project boundary, leakage is to be considered. This source is not relevant for this PoA, as the units used in the PoA will be new.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.5.2	Has the PP correctly applied all relevant calculations as required by the methodology and associated tools?  Is it fully explained how the procedures provided in the Methodology and applicable Tools are applied by the proposed PoA? (i.e. Are the required steps clearly followed?)	<p>The PoA-DD at the draft report stage did not sufficiently explain or justify relevant leakage sources and how leakage would be determined:</p> <ol style="list-style-type: none"> <li>Section B.6.1 of part II of the PoA-DD stated that leakage related to NRB use outside the project boundary was not relevant for this PoA but justification for this was not provided.</li> <li>Potential leakage source related to baseline equipment transfer was not discussed.</li> <li>PoA-DD lacks description how leakage related to use/diversion of non-renewable woody biomass will be assessed</li> </ol> <p><b>CAR 6</b> was raised.</p> <p>ERM CVS reviewed Section B.6.1 of part II of the revised PoA-DD:</p> <ol style="list-style-type: none"> <li>The statement that NRB use outside the project boundary is not relevant for this PoA has been removed. It is clear from in the revised PoA-DD that fractional increases in NRB usage by households outside of project boundary will be considered in the PoA as leakage – please see bullet point c). This is in accordance with the applied methodology.</li> <li>Justification has been provided why leakage related to equipment transfer is not applicable to this POA, and justification is reasonable based on ERM CVS' sector knowledge.</li> <li>The Leakage parameter in section B.7.1 of the revised PoA-DD has been amended. In accordance with AMS-I.E. (paragraph 10.a), <math>ER_y</math> will be multiplied by a net gross adjustment factor of 0.95 to account for leakage. The methodology states that ex post surveys of users is not necessary if this option is selected.</li> </ol> <p>ERM CVS therefore found explanation of the Leakage parameter and sources to be sufficient and CAR 6 was closed.</p> <p>Section B.6.1 of part II of the GSP PoA-DD stated that there will be no project emissions but it was not clear from the PoA-DD what types of water purification systems will be accepted under this PoA (e.g. zero or low greenhouse gas emitting). Please refer to <b>CL 2</b>. This CL was closed when the PP clarified in the revised PoA-DD that only zero emission water purification units (i.e. without project emissions) can be used in the CPAs.</p>	<p><del>CAR 6</del></p> <p><b>CL 2</b></p>	OK
	Where the methodology or tool(s) provides for selection between different options for equations; is every choice of	The methodology does not provide different choices for equations but provides choices for estimating values of parameters $EF_{\text{projected\_fossil\_fuel}}$ and $\eta_{\text{wb}}$ . Please refer to CL 14 and CL 16 on these parameters and section 8.5.1 on how the values were validated and these CLs closed.	<p><del>CL 14</del></p> <p><b>CL 16</b></p>	OK



	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	options for calculating project emissions, baseline emissions and leakage offered by the methodology correctly justified in the context of the PoA and baseline scenario?			
	Are the formulae required for the determination of project emissions, baseline emissions and leakage correctly presented in a complete and transparent manner, enabling a complete identification of parameters to be used and / or monitored?	<p>At the draft report stage it could not be validated whether all the relevant calculations have been provided. Please refer to:</p> <ul style="list-style-type: none"> <li>CL 17 on the use of parameter <math>FRAC_{wb}</math> and calculations in case 2.</li> <li>CAR 6 on leakage emissions.</li> </ul> <p>In the revised PoA-DD, a formula was provided explaining how quantity of purified water would be adjusted in Case 2 CPAs, and this includes the use of parameter <math>FRAC_{WB}</math>. CL 17 was therefore closed</p> <p>Please refer to the question above for explanation how CAR 6 on leakage was closed.</p> <p>Therefore, in the revised PoA-DD, all the formulae required for the determination of baseline emissions and leakage are correctly presented in a complete and transparent manner, enabling a complete identification of parameters to be used and / or monitored. No equations for project emissions are needed, as the PoA will not include technologies that include project emissions.</p>	CL 17 CAR 6	OK
	If applicable, are detailed calculations provided in a traceable spreadsheet showing relevant information?	Not applicable. It is clear that detailed calculations will be conducted at CPA level.	OK	OK

## Conclusion

The PoA-DD correctly applies the methodology and appropriate tools to provide a framework for calculating the emission reductions of a generic CPA. All assumptions and data used are properly listed, including references and sources where applicable. Calculation of actual baseline and leakage emissions will be made only at CPA level.

## 9 Validation findings – Additionality

As per the VVS sections 7.12.8 to 7.12.13 and 8.4.8, as well as the ‘Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities’ (CDM-EB65-A03-STAN), ERM CVS assessed the PoA-DD to determine whether it clearly describes how the proposed CDM PoA is additional, as supported by sufficient and appropriate evidence. In accordance with the standard, additionality must be demonstrated for the POA as a whole, and it must be demonstrated that each of the individual CPAs are additional. As per the CDM Project Standard, the CME must demonstrate that the proposed CDM PoA is additional in accordance with the “Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities”. A full additionality assessment is not required in the context of CPA. Instead, the confirmation of additionality for CPAs should be conducted by means of the eligibility criteria.

As per the ‘Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities’, additionality of a PoA must be demonstrated by establishing that in the absence of CDM, none of the implemented CPAs would occur. PoAs that will include one or more microscale projects as CPA shall include eligibility criteria derived from all the relevant requirements of the ‘Guidelines for demonstrating additionality of microscale project activities’. PoAs that will include one or more small-scale projects as CPAs shall include eligibility criteria derived from all the relevant requirements of Attachment A of Appendix B of the Simplified modalities and procedures for small-scale CDM project activities. PoAs that will include one or more large-scale projects as CPA shall include eligibility criteria derived from all the relevant requirements contained in the additionality section of the large-scale methodology(ies).

ERM CVS has validated the additionality of the PoA as a whole and that the PoA-DD includes adequate eligibility criteria to ensure the additionality of individual CPAs, as per the CDM Project standard. ERM CVS has ensured that all additionality guidelines set out in the approved methodology and tools have been included within the CPA eligibility criteria. ERM CVS assessed and verified the reliability and credibility of all data, rationales, assumptions, justifications and documentation provided by the PPs to support the demonstration of additionality in order to critically assess the presented evidence, using local knowledge and sectoral and financial expertise.

In undertaking this aspect of the validation, ERM CVS considered tools and documents provided by the CDM Executive Board to demonstrate the additionality of proposed CDM PoA, as well as specific complementary or alternative requirements included in the approved CDM methodology.

In the sections below, ERM CVS describes all steps taken, and sources of information used, to cross-check the information contained in the PoA-DD on additionality. Where appropriate, we describe how the validation team determined that the documentation assessed is authentic.

### 9.1 Prior consideration of the CDM

Based on the site visit ERM CVS can confirm that to its knowledge there is no component of the programme that commenced prior to the start of validation.

### 9.2 Additionality of the PoA as a whole

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
9.2.1	Has the CME demonstrated that in the absence of the CDM either:  (i) the proposed voluntary measure would not be implemented, or  (ii) the mandatory policy/regulation would be systematically not enforced and that non-compliance with those requirements is widespread in the country/region, or	The CME intends to demonstrate that in the absence of the CDM, the proposed voluntary measure would not be implemented. At the draft report stage, the CME used the Investment barrier to demonstrate PoA additionality by stating that using Lifestraw® purifiers are more expensive than continuing buying woodfuel. However, no quantitative information was provided on fuelwood costs over the lifetime of Lifestraw® purifier. It was also not clear how this applies to other water purification technologies – <b>CL 18</b> was raised.  The PoA-DD was revised to make it generic for all types of technologies allowed by the methodology. Additionality argument is also revised and is based on satisfying Eligibility Criteria 8,10 and 15, which in turn correspond to conditions specified by the Guidelines for the demonstration of additionality of small scale project activities, for the project activities that are automatically additional. One of the conditions in the PoA-DD refers to a water purification unit being smaller than 1% of the small scale limit, which is a condition for project activities that do not need to demonstrate debundling, but it also satisfies the threshold of 5% from the above mentioned additionality guidelines. The revised eligibility criteria are now	<del>CL 48</del>	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	(iii) that the PoA will lead to a greater level of enforcement of the existing mandatory policy /regulation.	clear on what will have to be checked at CPA inclusion stage to confirm that a CPA is automatically additional.  CL 18 is closed.		

## 9.3 Identification of alternatives

The approved methodology that is selected by the proposed CPA provides a simplified and standardised approach: it is assumed that fossil fuel or non-renewable biomass is used to boil water in the baseline. Therefore alternatives do not need to be identified.

## 9.4 Assessment of additionality of a CPA

ERM CVS has validated whether compliance with the additionality-related eligibility criteria set in the PoA design document will ensure that all the relevant additionality-related guidelines, tools or any requirements embedded in the methodologies are met.

Validation how the framework was used in the first real case CPA is described in a separate CPA validation report.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
9.4.1	Does the description of assessment of CPA additionality correctly follow the methodology and relevant tool(s) and guidance?	The CME initially intended to demonstrate additionality of CPAs using the additionality-related eligibility criteria that water purification units are given for free, as the GSP PoA-DD used investment barrier to demonstrate additionality. However, as described above in Section 9.2, further clarification and justification was needed – Please refer to <b>CL 18</b> .  CL 18 was subsequently closed. Please refer to question 9.2.1 for further details.  Additionality of a CPA is demonstrated if it is demonstrated that the CPA meets the PoA eligibility criteria on additionality. If these criteria are met, then the CPA is automatically additional, which is in line with the <i>Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programmes of Activities</i> version 02.1	CL 18	OK

*“Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programmes of Activities” version 02.1*, is applicable to CMEs to demonstrate the additionality of emission reductions under a PoA; [Refer to Section 4(a)]

The relevant criteria under paragraph 9, of 3.1, Demonstration of Additionality of EB 70 Annex 5 are as follows

PoAs that consist of one or more small-scale projects as CPAs shall include eligibility criteria derived from all the relevant requirements of the *“Guideline on the Demonstration of Additionality of Small-Scale Project Activities.”*

Following *Guideline on the Demonstration of Additionality of Small-Scale Project Activities Version 09*, project participants shall provide an explanation to show that the project activity would not have occurred anyway due to at least one of the barriers specified in the guideline.

However, following paragraph 2 of the guideline, documentation of barriers is not required for the positive list of technologies and project activity types that are defined as automatically additional for project sizes up to and including the small-scale CDM thresholds.

The positive list comprises of:

- a) Grid-connected and off-grid renewable electricity generation technologies;
- b) Off-grid electricity generation technologies where the individual units do not exceed the specified threshold;
- c) Project activities solely composed of isolated units where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs) and where the size<sup>1</sup> of each unit is no larger than 5 per cent of the small-scale CDM thresholds;
- d) Rural electrification project activities using renewable energy sources in countries with rural electrification rates less than 20 per cent.

As a Type III project<sup>2</sup>, each CPA is limited to annual emission reductions of 60,000 tCO<sub>2</sub>. Each CPA will demonstrate that annual emissions reductions of each CPA shall not go beyond the limits of 60 ktCO<sub>2</sub>e/y over the entire crediting period. This is a criterion for inclusion of a CPA under the PoA (Eligibility criteria 8)

As the CPAs under the PoA are deemed small-scale activities, the *Guideline on the Demonstration of Additionality of Small-Scale Project Activities Version 09* applies to the demonstration of additionality for CPAs under the PoA.

The target groups of every CPA included under the PoA are households or institutional applications in communities such as schools. This is a criterion for inclusion of a CPA under the PoA (Eligibility criteria 10).

In addition, each CPA will demonstrate it is exempt from a de-bundling check as each subsystem is no more than 1 per cent of the small-scale threshold<sup>3</sup> (Eligibility criteria 15).

The small-scale threshold is 60,000 tCO<sub>2</sub> per annum<sup>4</sup>. Each water purification system saves less than 600 tCO<sub>2</sub> annually (i.e. 1 per cent of 60,000 tCO<sub>2</sub>).<sup>5</sup> It follows that each CPA included under the PoA satisfies criterion 8, 10 and 15 and thereby meets the requirements of item c) under the positive list of the *Guideline on the Demonstration of Additionality of Small-Scale Project Activities Version 09*:

- Each CPA is composed solely of isolated units where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs);
- Each unit under a CPA is no larger than 1 per cent of the small-scale CDM thresholds as required for demonstrating exemption from debundling, and therefore also less than the required 5 per cent of the small-scale threshold, which is a threshold for automatic additionality.

As each CPA under the PoA meets the requirements of item c) under the positive list of the *Guideline on the Demonstration of Additionality of Small-Scale Project Activities Version 09*, it follows that each CPA under the PoA is automatically additional and further documentation of Barriers are not required.

<sup>1</sup> That is the size of each unit under 750 kW installed capacity or under 3000 MWh of energy savings per year or 3000 tonnes of emission reductions per year

<sup>2</sup> Annex 23, EB 66 General Guidelines to SSC CDM methodologies

<sup>3</sup> Annex 13, EB 54, Guidelines on Assessment of debundling for SSC project activities

<sup>4</sup> Annex 23, EB 66 General Guidelines to SSC CDM methodologies

<sup>5</sup> Refer to Part II: Section B.6.3. Moreover, each CPA-DD section A 12 will provide detail calculation on estimated ERs per unit to satisfy eligibility criteria 15 stated under Section B.2 of part I of the PoA-DD

## 10 Validation Findings - Operational, management and monitoring plan for the programme of activities

As per VVS section 8.4.1 ERM CVS has validated the management system described in the PoA-DD in accordance with the 'Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities' (CDM-EB65-A03-STAN). According to the requirements, the CMEs shall have the competencies to check the features of potential CPAs and ensure that each CPA meets all requirements and eligibility criteria before inclusion in the registered PoA. ERM CVS has validated the management system as developed and implemented by the CME as follows.

### 10.1 Operation and Management Plan

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
10.1.1	Has the CME demonstrated that there is an operational and management system for the implementation and management of the PoA?	<p>Operational and management system is briefly described in the PoA-DD but no separate document or internal procedures were provided which would clearly document the operational and management system for the implementation and management of the PoA. Please also refer to questions raised on separate elements of the system – <b>CL 19</b> was raised.</p> <p>The PP subsequently provided a separate Operations Management Plan (OMP) /17/ and amended Section C of part I in the revised PoA-DD /01/. Therefore, ERM CVS concluded the following:</p> <ul style="list-style-type: none"> <li>(a) An Operations Management Plan (OMP) has now been provided with the revised PoA-DD.</li> <li>(b) Roles and responsibilities have been specified in the revised PoA-DD /01/ and in the OMP, and are consistent with what was determined during the site visit.</li> <li>(c) The technical review process for CPA inclusion is described in the revised PoA-DD and the OMP.</li> <li>(d) The revised PoA-DD has been amended to state that each CPA will have unique identification, and that each WPS within the CPA will also have unique identification.</li> <li>(e) The revised PoA-DD and OMP sufficiently describe the documentation control process.</li> <li>(f) The revised PoA-DD does not mention quality policy and quality objectives. Instead the quality assurance and quality control procedures have been revised and described in section B.7.2 of part II of the PoA-DD and in section 2.5 of the OMP. Internal Audit process is described in section 2.7 of the OMP.</li> </ul> <p>CL 19 was therefore closed.</p> <p>Based on review of the PoA-DD and OMP /01, 17/ and interviews with the CME and its CDM consultant (BEIL), ERM CVS therefore confirms that there is an operational and management system for the implementation and management of the PoA.</p>	<del>CL-19</del>	OK
10.1.2	Does the operational and management system include clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies?	<p>ERM CVS has assessed the management system through interviews on site, and found the roles and responsibilities described on site were not consistent with those described in the GSP PoA-DD. Roles related to training, maintaining database and preparation of monitoring reports were not clear – Please refer to <b>CL 19</b>.</p> <p>Please see explanation in question 10.1.1 above on how CL 19 was closed. The Operations Management Plan (OMP) /17/ and revised PoA-DD /01/ provided to ERM CVS after the site visit include prescriptions for the roles and responsibilities</p>	<del>CL-19</del>	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		as well as competence requirements for the roles, and are consistent with what was determined during the site visit.		
10.1.3	Does the system include records of arrangements for training and capacity development for personnel?	ERM CVS has assessed the management system through interviews on site. A short description is given in the revised PoA-DD and the Operations Management Plan (OMP) that training will be provided for staff and contractors and that records will be kept.	OK	OK
10.1.4	Does the system include procedures for technical review of inclusion of CPAs?	ERM CVS has assessed the management system through interviews on site, and found the technical review process was not fully described in the GSP PoA-DD, where it was not clear how CPA inclusion will be technically reviewed given that CPA developer is the also the CME – Please refer to <b>CL 19</b> .  Please see explanation in question 10.1.1 above on how CL 19 was closed  The Operations Management Plan (OMP) /17/ and revised PoA-DD /01/ provided to ERM CVS after the site visit include requirements for the technical review process for CPA inclusion. For example, the revised PoA-DD states the CEO of BIVL will designate appropriately trained technical staff (Program Manager) for technical review of the inclusion of CPAs. CME staff conducting the CPA inclusion and technical review will be properly trained by BEIL, the CDM Consultant. BEIL will also assist CME staff during CPA inclusions during initial phases.	<del>CL 19</del>	OK
10.1.5	Does the system include a procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA)?	The procedure on avoiding double counting described in the GSP PoA-DD referred to identification numbers for CPAs and it was not clear if units will have unique identification numbers – Please refer to CL 19.  Please see explanation in question 10.1.1 on how CL 19 was closed. The Operations Management Plan (OMP) /17/ and revised PoA-DD /01/ provided to ERM CVS after the site visit include requirements that each CPA will have unique identification, and that each WPS within the CPA will also have unique identification.	<del>CL 19</del>	OK
10.1.6	Does the system include records and documentation control process for each CPA under the PoA?	ERM CVS has assessed the management system through interviews on site, and found the description of documentation control process to be vague and not sufficiently clear. – Please refer to <b>CL 19</b> .  Please see explanation in question 10.1.1 on how CL 19 was closed. The Operations Management Plan (OMP) /17/ and revised PoA-DD /01/ provided to ERM CVS after the site visit include sufficient description of the documentation control process. The CME will keep a database and description is provided what information will be kept in that database. Internal Audit process is described in section 2.7 of the OMP.	<del>CL 19</del>	OK
10.1.7	Does the system include measures for continual improvements of the PoA management system?	The PoA-DD refers to quality policy, quality objectives, audits, corrective and management review. Evidence of such policies and provisions needs to be provided. – please refer to <b>CL 19</b> .  Please see explanation in question 10.1.1 on how CL 19 was closed. The system for continual improvement of the PoA management processes is sufficiently explained in the revised PoA-DD /01/. Internal audits are prescribed, and the frequency and nature of the audits is explained. The revised PoA-DD also states that any changes to the methodology or standard must be incorporated into the management system.	<del>CL 19</del>	OK

## Conclusion

ERM CVS has assessed the operational and management arrangements which have been established by the CME in order to determine that these arrangements are suitable for the PoA being validated. The arrangements are considered to be sufficient

to ensure that the CME will have control of all records and information related to the implementation of individual CPAs and will be in a position to ensure each CPA is being operated in accordance with the specific requirements of the programme.

## 10.2 PoA Sampling Plan

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
10.2.1	<p>Has the CME chosen to produce a sampling method/procedure for use by DOEs rather than have all CPAs verified?</p> <p>Is the proposed sample size and sampling method adequate to achieve the minimum confidence/precision requirements? Is the DOE able to reproduce the sample size calculation in order to validate the proposed sample size?</p> <p>Will the proposed sampling plan ensure that samples are randomly selected and are representative of the population?</p>	<p>The PoA will determine a number of ex-ante and monitoring parameters using sampling method. However, the sampling requirements in PoA-DD provided at the draft report stage included inconsistencies and was not in compliance with the <i>Standard for sampling and surveys for CDM project activities and programme of activities version 03</i>, and it was not clear in the eligibility criteria how these requirements would be met:</p> <ul style="list-style-type: none"> <li>- The list of parameters to be determined using sampling method was not clear or consistent with the sections B.6.2 and B.7.1 of Part II of the PoA-DD</li> <li>- Estimated parameter values and their variances were not included</li> <li>- Some elements of the sampling plan (target population, reliability requirements and sample size) were not appropriate for some of parameters to be determined using sampling</li> <li>- Features of target population were not described</li> <li>- The provision to use lower bound value of confidence interval if minimum sample size requirements are not met, was not in line with the <i>Standard for sampling and surveys for CDM project activities and programme of activities version 03</i></li> <li>- Justification was not provided on how sampling approach prescribed is suitable</li> <li>- Implementation/field activities were not described</li> <li>- Provisions for quality assurance were not sufficient</li> </ul> <p><b>CAR 7</b> was raised.</p> <p>ERM CVS reviewed the sampling requirements in the revised PoA-DD section B.7.2:</p> <p>(a) The list of monitored parameters has been revised in B.7.1 and B.7.2 to be consistent. The sampling plan has been expanded to include the sampling procedure for all the parameters that are determined through sampling, and parameters in the sampling plan are consistent with the parameters in section B.7.2. The parameters determined through sampling include <math>n</math> (number of persons supplied with purified water from each of the water purification systems), Water Quality, <math>FRAC_{PDN}</math> (proportion of total population serviced by the project equipments that still do not have access to supply of SDW by public distribution network during the crediting period), and <math>FRAC_{OC}</math> (proportion of water purification systems that are operational). In addition, ERM CVS confirms that the confidence/precision requirements are consistent throughout the PoA-DD.</p> <p>(b) It is clear from the sampling plan that examples of estimated parameter values and their variances have been provided by BRAC WASH. These values were used for calculating the sample size using an example scenario of number and types of CPAs.</p> <p>(c) The sampling plan now includes more specifications including reliability requirements and calculations of the sample size, specified for each of the parameters monitored by means of sampling. The revised PoA-DD makes it clear that one combined survey will be undertaken, where the largest available sample size (as outlined for each parameter) will be used. This excludes the water quality parameter, which will be sampled separately.</p> <p>(d) Target population is now defined in the Sampling Plan described in section B.7.2 of part II of the PoA-DD. This is consistent with a criterion</p>	<del>CAR 7</del>	OK



	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		<p>for inclusion of a CPA under the PoA (Eligibility criteria 10).</p> <p>(e) The sampling plan has been amended to state that in case confidence/precision requirements of the sampled data are not reached the sample size will be increased. This is in line with the <i>Standard for sampling and surveys for CDM project activities and programme of activities</i></p> <p>(f) Justification of the suitability of the selected sampling approach has been clarified on the rationale of sampling per strata (district). The revised PoA-DD clarifies that CPAs will first be grouped according to the technology type, and then within each group, stratified sampling will be undertaken where different districts are considered as different strata, and sampling within strata (district) will be drawn randomly.</p> <p>(g) Implementation/field activities have been provided in the revised PoA-DD, with further specification in the Operations Management Plan (OMP) /17/.</p> <p>(h) Provisions for quality assurance is revised in Section B..7.2 of part II of the revised PoA-DD (Sampling Plan).</p> <p>The revised sampling plan is in line with the <i>Standard for sampling and surveys for CDM project activities and programme of activities version 03</i> and <i>Guidelines for sampling and surveys for CDM project activities and programme of activities version 02</i>, and CAR 7 was therefore closed.</p>		

## Conclusion

ERM CVS confirms that the proposed sample size and sampling method is adequate to achieve the minimum confidence/precision requirements. In addition, the proposed sampling plan ensures that samples are randomly selected and are representative of the population.



## 11 Validation Findings - Monitoring plan of a Generic CPA

As per VVS section 8.4.11 ERM CVS evaluated the monitoring plan for the generic CPA to ensure that it is based on the approved monitoring methodology that has been applied. As per the VVS section 7.12.14, ERM CVS applied a two-step process, based on review of the documented procedures, interviews with relevant personnel, project plans and any physical inspection, to assess:

a) *Compliance of the monitoring plan with the approved methodology:*

- (i) By means of document review, identify the list of parameters required by the selected approved methodology;
- (ii) Confirm that the monitoring plan contains all necessary parameters, that they are clearly described and that the means of monitoring described in the plan complies with the requirements of the methodology.

b) *The Implementation of the monitoring plan, taking into account:*

- (i) Whether the monitoring arrangements described in the monitoring plan are feasible within the generic CPA design;
- (ii) Whether the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed CPAs and PoA can be reported ex post and verified.

### 11.1 Compliance of the monitoring plan with the approved methodology

ERM CVS validated whether the monitoring plan for a generic CPA in the PoA-DD includes all parameters necessary for monitoring of this type of project in accordance with the approved methodology that has been applied for the generic CPA. ERM CVS checked whether the parameters are clearly described and the means of monitoring described in the plan complies with the requirements of the methodology.

#### Completeness of monitoring parameters

The monitoring parameters required by the methodology and applicable tools are:

Parameter Name	Parameter Description	Is the parameter appropriately included in the Monitoring Plan? (including justification and substantiation of information, data and evidence)
QPW <sub>y</sub> , in this PoA it is QPW <sub>ppd,y</sub>	Quantity of purified water in year y, in the PoA-DD described as quantity of purified water consumed for drinking per person per day (litres)	This parameter is required by the methodology for all projects, and is included in the monitoring plan
Operational check (in this PoA it is FRAC <sub>OC</sub> )	Fraction of distributed water purification units that are operating or are replaced by an equivalent in service appliance as per the relevant sampling requirements of AMS-I.E	This parameter is required by the methodology for all projects, and is included in the monitoring plan.
Annual check if a SDW public distribution network is installed (in this PoA it is parameter FRAC <sub>PDN</sub> )	Check whether a public distribution network supplying safe drinking water to the project boundary exists. In this PoA it is accounted by monitoring fraction of total population serviced by the project equipments that still do not have access to supply of SDW by public distribution network	This parameter is required by the methodology for all projects, and is included in the monitoring plan.

Parameter Name	Parameter Description	Is the parameter appropriately included in the Monitoring Plan? (including justification and substantiation of information, data and evidence)
Water quality	Safe drinking water quality on a sample basis.	The revised PoA-DD includes suitable purified water quality testing requirements. This is in line with the PoA description and the applied methodology.
N/a	Number of persons supplied with purified water from each of the functional project appliances	This parameter is required by the methodology for project activities that fall under the case 2 as defined by the methodology. In this PoA, average number of persons supplied with purified water from each of the Water purification systems will be monitored for all CPAs as it will be used for calculating QPW
Leakage	<p>The use/diversion of non-renewable woody biomass saved under the project activity by non-project households/users that previously used renewable energy sources.</p> <p>Increase in the use of non-renewable woody biomass outside the project boundary to create non-renewable woody biomass baselines can also be a potential source of leakage.</p> <p>Also, if the equipment currently being utilized is transferred from outside the boundary to the project boundary, leakage is to be considered.</p>	<p>These potential leakage sources should be assessed and monitored if relevant. For the first two sources, alternatively a default net to gross adjustment factor of 0.95 to account for leakages can be used according to the methodology AMS-I.E referred to in the methodology used in this PoA. The CME opted to choose this default adjustment factor. Justification has been provided why leakage related to equipment transfer is not applicable to this POA, and justification is reasonable based on ERM CVS' sector knowledge.</p>
WPS <sub>n,y</sub>	Number of water purification systems distributed	Yes, the monitoring plan includes description how number of distributed units will be tracked

Quantity of electricity consumed in the project activity and Amount of fuel consumed in the project activity in year y do not have to be monitored in this PoA as it does not cover technologies that include project emissions from electricity or fossil fuel consumption.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
11.1.1	Are all required parameters included in the monitoring plan?	<p>The PoA-DD provided at the draft report stage included a monitoring plan which was not in compliance with the applied methodology and feasibility could not be assessed:</p> <ul style="list-style-type: none"> <li>- QPW: for Case 1 CPAs, the monitoring of the parameter did not consider the methodology provisions to check if purified water is consumed for drinking purposes. The procedure was not clear how this parameter will be monitored. <b>CAR 8</b> was raised.</li> <li>- The PoA-DD effectively suggested not to monitor water quality, which was a deviation from the methodology requirements. Arguments for this deviation were specific to Lifestraw. <b>CAR 9</b> was raised</li> <li>- Please refer to CAR 6 raised to further justify which leakage sources are relevant and how they would be determined.</li> <li>- Please refer to CL 2 part (c): it was not clear if the PoA includes technologies that consume electricity and/or fossil fuels.</li> </ul> <p>The revised PoA-DD includes all the necessary parameters in the monitoring plan:</p> <ul style="list-style-type: none"> <li>- The revised PoA-DD clarifies that the survey will be designed to determine quantity of purified water used for drinking purposes. Operational and management plan was checked by the verification team. <b>CAR 8</b> was closed.</li> </ul>	<p><del>CAR 8</del></p> <p><del>CAR 9</del></p> <p><del>CAR 6</del></p> <p><del>CL 2</del></p>	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		<ul style="list-style-type: none"> <li>- The revised PoA-DD now includes purified water quality testing requirements, and the Lifestraw-specific prescriptions have been removed. This is in line with the PoA description and the applied methodology. CAR 9 was closed.</li> <li>- Leakage sources have been defined and justified in revised PoA-DD. A default net to gross adjustment factor will be used instead of ex-post monitoring surveys to account for potential leakage. CAR 6 was closed.</li> <li>- The PoA-DD was revised to make it clear that technologies with project emissions are not eligible under this PoA. CL 2 was closed.</li> </ul>		

**Conclusion** The monitored parameters included in the monitoring are complete and appropriate for monitoring of the generic CPA. In ERM CVS's opinion, the PPs are able to implement the monitoring plan.

### Compliance of monitoring

For each parameter, ERM CVS has validated whether it has been addressed in accordance with the baseline and monitoring methodology.

Monitored Parameters	QPW <sub>y</sub> (QPW <sub>ppd,y</sub> )	Operational check (FRAC <sub>OC</sub> )	Check for a SDW public distribution network (FRAC <sub>PDN</sub> )	Water quality	N(Case 2 CPA population)	Leakage
Parameter Description correct?	Yes	Yes	Yes	Yes	Yes	Yes
Description in line with methodology?	Yes	Yes	Yes	Yes	Yes	Yes
Data unit correctly expressed?	Yes	Yes	Yes	Yes	Yes	Yes
Measurement method correctly described?	Yes	Yes	Yes	Yes	Yes	Yes
Measurement and recording frequency correctly described?	Yes	Yes	Yes	Yes	Yes	Yes
Correct reference to standards?	n/a	n/a	n/a	Yes	n/a	n/a
Indication of accuracy provided?	Yes	Yes	Yes	Yes	Yes	Yes
QA/QC procedures described?	Yes	Yes	Yes	Yes	Yes	Yes
QA/QC procedures appropriate?	Yes	Yes	Yes	Yes	Yes	Yes

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
11.1.2	Are all required parameters appropriately monitored in accordance with the methodology (including	The required parameters were not fully explained, not consistent with other parts of the GSP PoA-DD and the monitoring and measurement of these parameters was not fully in accordance with the methodology:	<del>CAR 10</del> <del>CAR 9</del>	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
	applicable tools)?	<ul style="list-style-type: none"> <li>- Frequency of monitoring is not clear or not in line with what was explained on site</li> <li>- Data unit for Leakage is not correct</li> <li>- It is not clear how existence of public distribution system of drinking water will be assessed</li> <li>- It is not clear how operational check will assessed if monitoring is done almost continuously</li> <li>- The section is not consistent with the sampling plan</li> <li>- Accuracy requirements are not clearly described for all parameters</li> <li>- QA/QC procedures are not sufficient and for some parameters not described</li> <li>- Parameter names for quantity of electricity and amount of fuel consumed in the project activity are not in compliance with the Tool to calculate project or leakage CO2 emissions from fossil fuel combustion and Tool to calculate project or leakage CO2 emissions from fossil fuel combustion</li> </ul> <p><b>CAR 10</b> was raised.</p> <p>ERM CVS reviewed Section B.7.2 of part II of the revised PoA-DD to reassess the consistency and clarity of the Monitoring Plan:</p> <ul style="list-style-type: none"> <li>a) Monitoring frequency has been sufficiently clarified for all the monitoring variables, and is in accordance with what was explained to the site team.</li> <li>b) Data unit for Leakage has been corrected in the revised PoA-DD.</li> <li>c) Fraction of total population serviced by the project equipments that still do not have access to supply of SDW by public distribution network will be measured by the CPA implementer. Section B.3 of Part 1 in the PoA-DD, as well as Appendix 3, provide clarification as to what constitutes a public distribution network.</li> <li>d) Revised PoA-DD states that operational check will be assessed by biennial household survey. The revised PoA-DD also includes requirements for the CPA implementer to define an “operational” unit in an actual CPA-DD.</li> <li>e) Sampling plan is now incorporated into the section B.7.2 of the revised PoA-DD</li> <li>f) Measurement and accuracy requirements have been specified in the revised PoA-DD and have been made consistent throughout the PoA-DD</li> <li>g) The QA/QC procedures in the revised PoA-DD have been sufficiently described, including an amendment to the measurement of leakage which will now be done using the default adjustment value of 0.95, as per AMS-I.E.</li> <li>h) Parameters for quantity of electricity and amount of fuel consumed in the project activity have been removed from the revised PoA-DD after the PoA-DD was revised to not include technologies with project emissions</li> </ul>	<p><del>CAR 8</del></p> <p><del>CAR 6</del></p>	

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		<p>CAR 10 was therefore closed</p> <p>Please also refer to CAR 8 on QPW, CAR 9 on water quality, and CAR 6 on leakage.</p> <p>CAR 8, CAR 9 and CAR 6 have been closed – please see questions above for further explanation.</p> <p>In the revised PoA-DD, all the required parameters are appropriately monitored and in accordance with the methodology</p>		

## **Conclusion**

The means of monitoring all relevant monitored parameters for a generic CPA complies with the requirements of the methodology, including applicable tools.

### **11.2 Implementation of the monitoring plan**

ERM CVS evaluated the feasibility and sufficiency of the monitoring plan for a generic CPA. The key components of the monitoring plan are as follows.

The CME is responsible for training any contractors used during distribution, education and monitoring activities. The CME will ensure training of all on-site staff with respect to adherence to the Monitoring Plan of the project activity. Records of the training will be kept. At the time of validation, the POA training and capacity development activities have not yet commenced.

Below is the description of the operational and management arrangements established by the coordinating /managing entity for the implementation of the PoA:

The monitoring Plan will not vary between Case 1 or Case 2 situation since all the monitoring parameters are same in both situations. FRACWB i.e Fraction of total population serviced by the project equipments for which the practice of water purification would have been water boiling will be established ex ante and is periodical monitoring is not required. Case 1 CPA will use a default value of 1 for FRACWB.

A project database will be maintained recording the distribution of each initial water purification system distributed/installed, subsequent replacements, as well as detailed data on the representative sample surveyed for monitoring purposes. The database will be accessible to the project proponent, appropriate partners, and the verification DOE. The database will include at minimum the following:

- Technology Type
- Unique identification number (UID) of each water purification systems(WPS)
- CPA id numbers uniquely identified by range/list of UID of WPS
- Distribution/Installation date
- Name, address, and contact information of the end-user
- Records of replacement or repair of water purification systems
- Monitored parameters as required by the methodology AMSIII AV (refer to B.7.1)

The database will be available to select a random, representative sample from for monitoring and verification purposes. This sample set will be integrated into the database to include additional monitoring parameters as required or as appropriate.

Each distribution will be logged, a sample will be spot-checked, and after the initial distribution a representative sample will be periodically checked, while on-going education, operation, maintenance and replacement activities occur.

According to the definition of operational unit and indicator of when to repair/replace a WPS specified in CPA-DD section A.5, the repair/ replacement services will be provided by the CME. Each time a water purification system is replaced/repared, the record is updated in the database to reflect the new date of issue to the particular recipient.

The parameter QPWlppd,y is determined by conducting a survey on a representative sample of households. A representative sample is drawn from the database and the survey is completed.

The amount of treated water consumed only for drinking purpose will be considered for determination of QPWlppd,y which will be average liter per person per day for the household capped at 5.5 liter per person per day. QPWy will be calculated using Equation 3 of Section B.6.1

## **Equipment:**

In the GSP version of the monitoring plan, no monitoring equipment is included in the monitoring plan. As the PoA includes only technologies that do not have project emissions, all monitoring is to be done using surveys.

## **Quality Assurance and Quality Control (QA/QC) of equipment and data:**

Spot checks of the database are conducted during the distribution. Supervisors verify a minimum of 1% sample of the household records by comparing the records with a visit to the households.

Distributors and Education and awareness campaign team are responsible for approximately 100 household distributions and education activities per day during the initial deployment campaign under each CPA.

Supervisors are responsible for approximately 8 distributors and 14 Education and Awareness building campaign staff. During the campaign, supervisors will spot-check approximately 20% of the distributions conducted, verifying that the water purification units is in place, and that the recipient can show proper operation of the unit. The results of this spot check are recorded electronically and compared against the initial distribution logs.

Operations Management Plan contains a section on Monitoring Plan and include as a minimum provisions to guarantee appropriate accuracy of data and data management systems, cross-check routines as well as sufficient training by relevant staff.

## **Feasibility of the monitoring plan:**

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
11.2.1	Are the arrangements described in the plan feasible and practical? Please consider:  (a) operational and management structure, including responsibilities  (b) Plans for maintenance and calibration of equipment  (c) Plans for QA/QC of equipment and data  (d) Installation of	The monitoring plan in PoA-DD provided at the draft report stage was not sufficiently clear:  <ul style="list-style-type: none"> <li>The description did not clearly distinguish between procedures for recording distribution data, and regular monitoring of parameters for ER calculations</li> <li>List of information to be recorded for every household listed in the PoA-DD was not consistent with information provided during interviews. E.g. it referred to recording unique CPA identification number and not unique unit number; it was not clear if baseline stove type and cooking fuel will be recorded, and whether GPS coordinates will be recorded</li> <li>It was not sufficiently clear and not consistent with other parts of the PoA-DD how monitoring will differ between Case 1 and Case 2 CPAs, and how it will be conducted.</li> </ul> <b>CL 20</b> was raised	CL 20	OK

	monitoring equipment (whether in place, or planned)	<p>ERM CVS reviewed the Monitoring Plan of the revised PoA-DD:</p> <ol style="list-style-type: none"> <li>It is now clear that the distribution data and regular monitoring data will be collected separately.</li> <li>List of information to be recorded for every household has been clarified in the revised PoA and it is now clear that the main information recorded for each unit is the unique ID number, as well as name and contact information of end-users.</li> <li>The revised PoA-DD is now clearer as to how monitoring will differ between Case 1 and Case 2 CPAs, and how it will be conducted. The only difference is that for case 2 CPAs, the quantity of purified water will be adjusted for the fraction of the population serviced by the project equipment at households/buildings for which it can be demonstrated through documentation or survey that the practice of water purification would have been boiling. The fraction is determined ex-ante and monitoring does not differ between case 1 and case 2 CPAs.</li> </ol> <p>CL 20 was closed.</p> <p>Please also refer to CAR 7 on sampling plan.</p> <p>The revised PoA-DD includes a revised sampling plan. CAR 7 was closed – please refer to Question 10.2.1 for a full explanation.</p>		
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## Conclusion

Based on the validation activities performed, ERM CVS concludes that:

- The monitoring plan for a generic CPA is fully in compliance with the requirements of the methodology;
- The monitoring arrangements described in the monitoring plan are feasible within the design of a generic CPA;
- The means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the generic CPA can be reported ex post and verified.

The assessment conducted by ERM CVS is by means of review of the documented procedures, interviews with relevant personnel, and a visit to the site of the first real case CPA.

## 12 Validation Findings – Sustainable Development, Local Stakeholder Consultation and Environmental Impact

### 12.1 Sustainable Development

As per VVS section 7.8, ERM CVS evaluated whether the letter of approval by the DNA of the host Party confirms the contribution of the proposed CDM PoA to the sustainable development of the host Party.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
12.1.1	Does the LOA from the Host Party confirm that the PoA contributes to the sustainable development of that country?	<p>The host country LoA was not provided during DVR stage. Please refer to CAR 1.</p> <p>The LoA has been subsequently been provided to the DOE /2/, and CAR 1 is closed. In the LoA, the Host Party does confirm that the PoA contributes to the sustainable development of Bangladesh.</p>	CAR 1	OK

### Conclusion

The LOA from the Host Party, Bangladesh, confirms that the PoA contributes to the sustainable development of that country.

### 12.2 Local Stakeholder Consultation

As per VVS sections 7.14 and 8.4.13, ERM CVS evaluated whether local stakeholders had been invited to comment on the proposed PoA prior to the publication of the PoA-DD on the UNFCCC website as follows:

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
12.2.1	Have comments from local stakeholders that can reasonably be considered relevant been invited prior to the publication of the PoA-DD on the UNFCCC website?	<p>ERM CVS interviewed representatives of the CME, the Department of Public Health Engineering, BRAC Wash, and representatives from the rural villages, and confirmed that comments from local stakeholders had been considered. A meeting was conducted on the 12 August 2012, prior to the publication of the PoA-DD on the UNFCCC website, and this was confirmed by reviewing the participant register /25/.</p> <p>The potential stakeholders that can reasonable be considered relevant have been identified by the CME and invited to a stakeholder consultation meeting, which was held prior to publication of the PoA-DD on the UNFCCC website.</p> <p>The interviews and document review confirmed that in most cases formal invitation letter was sent to the participants and received copies were obtained. In some cases, where stakeholders had email addresses, invitations were sent via email. Many participants were also invited by phone and personal visits.</p>	OK	OK
	Is the summary of comments received as provided in the PoA-DD complete?	Yes, the summary of comments received as provided in the PoA-DD is complete, based on interviews with the CME and review of the stakeholder meeting report /24/.	OK	OK
	Has due account been taken of any stakeholder comments received and is this adequately and clearly described in the PoA-DD?	Yes, it is clear that the CME has considered all of the comments received as provided in the PoA-DD, and responded adequately. No changes to the POA design had to be made due to stakeholder comments. The comments were primarily questions or concerns about poor quality or arsenic contamination of water sources, and were welcoming the PoA /24/. The stakeholders did not identify any serious concerns or significant negative impacts from the	OK	OK



	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		construction of the project		

## Conclusion

Based on the document reviews undertaken and interviews with local stakeholders, ERM CVS concludes that relevant local stakeholders were invited to comment on the project prior to publication of the PDD on the UNFCCC website, and that the consultation undertaken is adequate in the context of the project. The stakeholders did not identify any serious concerns or significant negative impacts from the construction of the project.

ERM CVS has therefore validated that the local stakeholder consultation is adequate.

## 12.3 Environmental Impacts

As per VVS sections 7.13 and 8.4.12, ERM CVS evaluated whether an analysis of the environmental impacts of the PoA had been conducted in accordance with paragraph 37(c) of the CDM modalities and procedures.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
12.3.1	Has the PP conducted an environmental impact assessment if required to do so by the host Party, in accordance with the Party's procedures, and is this described adequately in the PoA-DD?	<p>The PoA-DD provided at the draft report stage did not describe why conducting environmental analysis at PoA level is suitable (in Section E.1) – <b>CL 21</b> was raised.</p> <p>ERM CVS reviewed the revised PoA-DD and found it has been amended to require an environmental analysis at the CPA level instead of the PoA level. The CPA must demonstrate that the CPA is in line with the host Party environmental laws/regulations, and this requires an environmental analysis of the WPS technology used, unless the technology has already been used in the PoA, then that analysis can be used.</p> <p>ERM CVS confirmed that legislation in Bangladesh prescribe that an Environmental Impact Assessment is not required for this CDM Programme of Activities. The projects for which an Environmental Impact Assessment is mandatory are listed in the Bangladesh Environment Conservation Rule, 1997 and can be accessed online:</p> <p><a href="http://www.moef.gov.bd/html/laws/env_law/178-189.pdf">http://www.moef.gov.bd/html/laws/env_law/178-189.pdf</a></p> <p>As EIA does not need to be undertaken for the PoA, and technologies used in future CPAs may be different than currently planned Lifestraw® units, ERM CVS therefore concludes that environmental analysis at the CPA level is suitable and the requirements are clearly stated. CL 21 is closed.</p>	<del>CL 21</del>	OK
	Does the PoA include transboundary impacts, and if so are these impacts considered significant by the PPs or Host Party?	Based on ERM CVS sector knowledge and the site visit, there is no reason to expect any transboundary impacts of this PoA	OK	OK

## Conclusion

ERM CVS reviewed the revised PoA-DD and found it has been amended to require an environmental analysis at the CPA level instead of the PoA level. The CPA must demonstrate that the CPA is in line with the host Party environmental laws/regulations, and this requires an environmental analysis of the WPS technology used, unless the technology has already been used in the PoA, then that analysis can be used.

## 12.4 Public funding

ERM CVS also evaluated whether the information relating to public funding in the PoA-DD Annex 2 has been correctly presented.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
12.4.1	If the PoA involves public funding from an Annex 1 country, have the Annex 1 parties involved provided an affirmation that such funding does not result in a diversion of official development assistance?	N/a The PoA states that no public funding is currently planned. At the CPA level, any public funding use and non-diversion of the ODA if applicable, will be assessed at the time of CPA inclusion as part of the eligibility criteria.	OK	OK
	Is the information provided on public funding (PoA-DD, Appendix 2) provided in compliance with the actual situation or planning?	ERM CVS interviewed the CEO of the CME on site, and reviewed the Memorandum and Articles of Association of the CME /4.e/ and confirmed that no public funding is currently planned. At the CPA level, any public funding use and non-diversion of the ODA if applicable, will be assessed at the time of CPA inclusion as part of the eligibility criteria.	OK	OK

## Conclusion

ERM CVS has confirmed that there is no public funding from Annex 1 countries

## Appendix A: Documents and Interviewees

### A.1 DOCUMENT LIST

Reference number	Date	Document Title and version number (if applicable)
01	14 August 2012 20 May 2013	<b>PoA Design Document</b> for the proposed PoA  Version 01 (for GSP)  Version 06 (final).
02	01 January 2013	<b>Host Country Letter of approval</b> for the proposed PoA issued by Ministry of Environment and Forestry in Bangladesh
03	08 October 2012	<b>Modalities of Communication</b> for the proposed PoA.
04	18 June 2012 28 September 2012 August 2012 29 July 2012 19 June 2012	<b>BRAC Impact Ventures Limited (BIVL) company documents:</b>  a) Incorporation Certificate of BIVL  b) Trade Licence of BIVL  c) VAT Registration Certificate of BIVL  d) Income Tax certificate of BIVL  e) Memorandum of Association & Articles of Association of BIVL
05	01 July 2012	Consultancy service agreement between BIVL and BRAC EPL Investments Limited (BEIL)
06		Memorandum of Understanding (Extracts of 1 <sup>st</sup> Board meeting Minutes of BIVL)
07	2011	WHO standard "Evaluating household water treatment options: Health based targets and microbiological performance specifications"
08	1997	The Environment Conservation Rules, 1997. Schedule-3 Standards for Water (Bangladesh national standard)
09	25 September 2007	Winrock International (2007) "Bangladesh: Addressing Indoor air pollution. Inception report"
10	15 June 2008	Winrock International and Village Education Research Centre (2008) "Bangladesh: Addressing Indoor Air Pollution. A detailed review of WatSan projects"
11	July 2008	WASH Programme of BRAC "Towards attaining the MDG targets: Baseline findings"
12	30 January 1999	Bangladesh National Water Policy
13	2004	National-Policy-for-Arsenic-Mitigation-2004
14	15 December 2006	Ahmed M.F et al. "Ensuring safe drinking water in Bangladesh". Published in Science 314, 1687 (2006)
15	2009	Local Government (Union Parishads) Act
16		Lifestraw® manufacturer specifications

Reference number	Date	Document Title and version number (if applicable)
17	08 April 2013	Operations Management Plan for “Energy Efficiency Program in Rural Bangladesh”
18	2012	Hassan K. et al (2012) “An Analysis of Cross-sectional Variation in Energy Consumption Pattern at the Household Level in Disregarded Rural Bangladesh”: Journal of Basic and Applied Scientific Research, 2(4)3949-3963, 2012
19	January 2013	Rural household energy consumption pattern for boiling water prior to drinking in Bangladesh. Study prepared by Impact Investments, BRAC EPL Investments Limited with assistance from BRAC’s Water, Sanitation, & Hygiene (WASH) program
20	April 2012	Global Alliance for Clean Cookstoves. Bangladesh Market Assessment. Intervention Options. Report prepared by Accenture Development Partnerships
21	June 2010	Barnes D., Khandker S., Samad H. (2010) “Energy Access, Efficiency, and Poverty. How Many Households Are Energy Poor in Bangladesh?” The World Bank Development Research Group, Policy Research Working Paper 5332
22	March 2009	Demographic and Health Survey 2007 by National Institute of Population Research and Training, Bangladesh
23	June 2010	Bangladesh. Monitoring the Situation of Women and Children. Multiple Indicator Cluster Survey 2009
24	14 August 2012	Stakeholder Consultation Report_CFW_BIVL_August 13
25	12 August 2012	Stakeholder consultation meeting’s participant register
26	-	Bangladesh: Draft Market Assessment Executive Summary, Accenture & Global Alliance of Clean Cook stoves
27	2011	Asia-Pacific Forestry Sector Outlook Study II Bangladesh Forestry Outlook Study by Junaid K. Choudhury and Md. Abdullah Abraham Hossain
28	2010  2000  2010	Forestry Department: Food and Agriculture Organization of the United Nations  a) Global Forest Resources Assessment 2010  b) Table 14. Distribution of total forest area by ecological zone: Global Forest Resources Assessment 2000  c) Global Forest Resources Assessment 2010: Country Reports - Bangladesh
29	30 March 2012	PoA – Improved Cooking Stoves in Bangladesh: 1st Monitoring report
30	July 2011	Population and Housing Census 2011 – Preliminary Results, Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Government of the People’s Republic of Bangladesh
31	2010	Sustainable Forest Management for Poverty Reduction Through Agroforestry Options: Lesson from the Remote Uplands of Eastern Bangladesh
32	September 2004	Nishorgo Support Project - Site-Level Field Appraisal for Protected Area Co-Management: Chhunati Wildlife Sanctuary – IRG & USAID
33	13 February 2013	Protect Chhunati Wildlife Sanctuary – By Abdullah Al Mamun, Institute of Forestry and Environmental Sciences, University of Chittagong
34	July 2004	An Overview Of The Issues Affecting The Nishorgo Project Areas: Based On The Findings Of Pra June-July 2004 By USAID
35	2006	Comparing the Impacts of Local People and Rohingya Refugees on Teknaf Game Reserve by

Reference number	Date	Document Title and version number (if applicable)
		Mohammed Salim Uddin & Mohammed Abu Sayed Arfin Khan
36	2010	Integrated Protected Area Co-Management (IPAC) State Of Bangladesh's Forest Protected Areas 2010 by USAID and IPAC
37	17 April 2011	Reserve Forests Disappearing: Elephants left to starve by Pinaki Roy
38	June 2004	Modhupur Forest. Demise Is Imminent", June 2004, Philip Gain, Society for Environment and Human Development (SEHD), E-mail: sehd@citechco.net , <a href="http://www.sehd.org">http://www.sehd.org</a>
39	23 March 2011	Impact of Banana Based Agroforestry on Degraded Sal Forest (Shorea robusta C.F. Gaertn) of Bangladesh: a Study from Madhupur National Park - Journal of Biodiversity and Ecological Sciences, No.2, Issue1 – By B.Roy, Md. H.Rahman, and M. J.Fardusi
40	2012	Prospects and Constraints of Madhupur National Park Management by M. Y. Mia, M. U. Hossain and S. Farzana, J. Environ. Sci. & Natural Resources, 5(1): 151 - 158, 2012
41	2007	Sharif Ahmed, Mukul. Bridging Livelihoods and Forest Conservation in Protected Areas: Exploring the Role and Scope of Non-timber Forest Products. Rep. N.p.: Department of Forestry School of Agriculture and Mineral Sciences Shahjalal University of Science and Technology, n.d. Print
42	March 2011	Rural Livelihoods and Protected Landscapes – by USAIDeds
43	April 2001	Islam M.S. et al (2001) Microbiological Analysis of Tube-Well Water in a Rural Area of Bangladesh: Applied and Environmental Microbiology, July 2001, p. 3328-3330
44	2012	Urban Partnerships for Poverty Reduction Project. Annual Progress Report 2011

## A.2 INTERVIEWS

Reference	Name	Title & Organisation	Main topics discussed
IV1	Javed Bin Karim	CEO BIVL	PoA design, operational and management plan, monitoring plan
IV2	Shaymal Barman	CDM Consultant, BEIL	Application of methodology, sampling plan
IV3	Mominul Haque	Senior Executive, BEIL	PoA design, implementation
IV4	Tara Lundy	Vestergaard Frandsen	Water filter technology, monitoring plan
IV5		Programme Director, BRAC WASH	Baseline, monitoring plan
IV6		Department of Public Health Engineering	Baseline

## Appendix B: Remediation Form

### Corrective Action Requests (CARs), Clarification Requests (CLs) and Forward Action Requests (FARs)

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
CAR 1. Please provide the Host Party Letter of Approval (LoA) and authorisation of the CME.	5.1.1	In the 7 <sup>th</sup> meeting of the National CDM Board held on 4 <sup>th</sup> November 2012, the PoA was approved. Letter of Approval and CME Authorization is received from DNA Bangladesh, and is submitted for Validation.	The LoA has been received and it includes authorisation of the CME/PPs /2/.  CAR 1 is closed.
CAR 2. Section A.3 states incorrect name of the CME. Please correct.	5.2.1	The CME name is corrected.	ERM CVS reviewed the revised PoA-DD and confirms that the CME name has been correctly amended. The CME is now consistently described as BRAC Impact Ventures Limited (BIVL) throughout the PoA-DD.  CAR 2 is closed.
CAR 3. The eligibility criteria in the PoA-DD do not cover provisions of Paragraph 16(i) of the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities, despite it being applicable to this PoA. I.e. eligibility criteria have not been defined regarding the target group and distribution mechanisms. Please correct.	7.1.8	The Eligibility Criteria for CPA inclusion is revised accordingly.  Target group is included as Eligibility Criteria number 10. As per methodology the criteria is defined as follows:  Water purification systems to be deployed under each CPA shall be for residential or institutional applications such as systems installed at a school or a community center.  Distribution mechanism is included as Eligibility Criteria number 9 which is CPA Development, Management and Distribution of WPSs.  The condition to be met is BIVL manages and/or contracts the distribution of zero GHG Emitting water purification systems (WPSs).	ERM CVS reviewed the eligibility criteria in the revised PoA-DD and confirms that the provisions of Paragraph 16(i) of the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities have been met. Requirements regarding the distribution mechanisms and target group have been defined in the criteria 9 i) and 10.  CAR 3 is closed.
CAR 4. The discussion of some of methodology applicability conditions in	8.2.1	Different types of water purification technology will be deployed in different CPAs of the PoA. Refer to revised section A.6 of	ERM CVS reviewed the revised PoA-DD and can confirm that discussion is no longer specified to Lifestraw and it is

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
section B.2 of part II of the PoA-DD provides details of Lifestraw technology and how it meets the applicability conditions. However, based on interviews with the CME ERM CVS understands that this will not be the sole technology used in this PoA, therefore this information is not applicable to all CPAs. Please correct.		<p>part I of the POA-DD</p> <p>The section B.2 of part II of the PoA-DD is revised to reflect the above assumption.</p> <p>Revised section B.2 of part II of the PoA-DD provides details of how each CPA meets the methodology applicability conditions</p>	<p>clear that different technologies would be accepted.</p> <p>CAR 4 is closed.</p>
CAR 5. The PoA-DD does not include explanation and justification on sources and gases in the project scenario. This is not in accordance with the methodology and Guidelines for completing the programme design document form for small-scale CDM programmes of activities. Please correct.	8.3.1	<p>Explanation and justification on sources and gases in the project scenario is included in the PoA-DD section B.3 of part II</p> <p>Sources and gases in the project scenario for CPAs without project emission are shown.</p>	<p>ERM CVS reviewed the revised PoA-DD and found that the explanation and justification of sources and gases is sufficiently clear. Only zero greenhouse gas purification technologies are possible under this PoA, therefore the PoA-DD includes only one sources and gases table, for CPAs without project emissions.</p> <p>CAR 5 is closed.</p>
<p>CAR 6. The PoA-DD does not sufficiently explain or justify relevant leakage sources and or provide formulae as to how leakage will be determined:</p> <p>(a) Section B.6.1 of part II of the PoA-DD states that leakage related to NRB use outside the project boundary is not relevant for this PoA but justification for this is not provided.</p> <p>(b) Potential leakage source related to baseline equipment transfer is not discussed.</p> <p>(c) PoA-DD lacks description how leakage related to use/diversion of non-renewable woody biomass will be assessed</p>	8.5.2	<p>Section B.6.1 of part II of the PoA-DD is revised to reflect the following regarding Leakage emission</p> <p>(a) The statement was not correct and hence deleted During revision</p> <p>(b) Potential leakage source related to baseline equipment transfer is discussed. There is no incentive for the end users to sell their water boiling systems since they will continue to use them for cooking purposes. Thus, leakage from baseline equipment transfers does not apply</p> <p>Leakage related to use/diversion of non-renewable woody biomass shall be assessed as per the relevant procedures of AMS-I.E. In accordance with that methodology, option (a), ERY is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required.</p>	<p>ERM CVS reviewed Section B.6.1 of part II of the revised PoA-DD:</p> <p>(a) The statement that NRB use outside the project boundary is not relevant for this PoA has been removed. It is clear that fractional increases in NRB usage by households outside of project boundary will be considered in the PoA as leakage. This is in accordance with the applied methodology.</p> <p>(b) Justification has been provided why leakage related to equipment transfer is not applicable to this POA, and justification is reasonable based on ERM CVS' sector knowledge.</p> <p>(c) The Leakage parameter in section B.7.1 of the revised PoA-DD has been amended. In accordance with AMS-I.E. (paragraph 10.a), ERY will be multiplied by a net gross adjustment</p>

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
			<p>factor of 0.95 to account for leakage. The methodology states that ex post surveys of users is not necessary if this option is selected.</p> <p>CAR 6 is closed.</p>
<p>CAR 7. The sampling requirements include inconsistencies and are not fully in line with the Standard for sampling and surveys, and it is not clear in the eligibility criteria how these requirements will be met:</p> <ul style="list-style-type: none"> <li>a) The list of parameters to be determined using sampling method is not clear or consistent with the sections B.6.2 and B.7.1 of Part II of the PoA-DD</li> <li>b) Estimated parameter values and their variances are not included</li> <li>c) Some elements of the sampling plan (target population, reliability requirements and sample size) are not appropriate for some of parameters to be determined using sampling</li> <li>d) Features of target population are not described</li> <li>e) The provision to use lower bound value of confidence interval if minimum sample size requirements are not met, is not in line with the <i>Standard for sampling and surveys for CDM project activities and programme of activities</i></li> <li>f) Justification is not provided on how</li> </ul>	10.2.1	<p>General description of the Sampling Plan is provide in section B.2 of part I of the PoA-DD and detail Sampling Plan is provided in section B.7.2 of part II of the PoA-DD. The section is revised to incorporate the following</p> <ul style="list-style-type: none"> <li>a) Revision is made to provide consistency. Sampling Plan for all monitored parameters is provided. Confidence/precision requirements are made consistent throughout the PoA-DD.</li> <li>b) Estimated parameter values and their variances for all monitored parameters, to be obtained by sampling, are included in the sampling plan in section B.7.2 of part II of the PoA-DD. For the calculation, estimated parameter values and expert opinion from BRAC Water Hygiene and Sanitation Program (BRAC WASH) were used.</li> <li>c) Correction is made regarding elements of the sampling plan (target population, reliability requirements and sample size) in section B.7.2 of part II of the PoA-DD.</li> </ul> <p>In water quality sampling, all WPS distributed and in operation are the target population whereas all households received WPS are the target population for all other parameters. A combined survey will include all monitoring parameters except water quality monitoring. The sample size of the combined survey will be the largest sample size amongst the sample size determined in Section B.7.2 of part II of the PoA-DD for all parameters excluding the water quality sample size. The water quality sampling will be done separately. i.e. the sample size for water quality testing will be 80 and sample size for all other parameters will be 228 as per section B.7.2 of part II of the PoA-DD</p>	<p>ERM CVS reviewed the sampling requirements in the revised PoA-DD section B.7.2:</p> <ul style="list-style-type: none"> <li>(a) The list of monitored parameters has been revised in B.7.1 and B.7.2 to be consistent. The sampling plan has been expanded to include the sampling procedure for all the parameters that are determined through sampling, and parameters in the sampling plan are consistent with the parameters in section B.7.2. The parameters determined through sampling include <math>n</math> (number of persons supplied with purified water from each of the water purification systems), Water Quality, <math>FRAC_{PDN}</math> (proportion of total population serviced by the project equipments that still do not have access to supply of SDW by public distribution network during the crediting period), and <math>FRAC_{OC}</math> (proportion of water purification systems that are operational during the crediting period). In addition, ERM CVS confirms that the confidence/precision requirements are consistent throughout the PoA-DD.</li> <li>(b) It is clear from the sampling plan that examples of estimated parameter values have been provided by BRAC WASH.</li> <li>(c) The sampling plan now includes more specifications including reliability requirements and calculations of the sample size, specified for each of the parameter monitored by means of sampling. The revised PoA-DD makes it clear that</li> </ul>



Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
<p>sampling approach prescribed is suitable</p> <p>g) Implementation/field activities are not described</p> <p>h) Provisions for quality assurance are not sufficient</p>		<p>d) Target population is defined in the Sampling Plan described in section B.7.2 of part II of the PoA-DD. Features of target population are identified in each CPA-DD section B.5 Eligibility criteria 10.</p> <p>e) Section B.3 of part I of the PoA-DD is revised to incorporate the following</p> <p>If the required level of accuracy (confidence/precision) is not achieved, the sample size can be expanded. When sampling is undertaken the sample mean (or proportion) value shall be used for the emissions reduction calculation, not the lower or upper bound of the confidence interval.</p> <p>f) Justification of the suitability of the selected sampling approach is provided in Section B.3 of part I of the revised PoA-DD (General description of the Sampling Plan).</p> <p>In Section B.7.2 of part II detail sampling plan is provided, however the justification of selection of sampling approach is referred to Section B.3 of part I of the revised PoA-DD</p> <p>Sample within strata (district) will be drawn randomly. Refer to PoA-DD section B.3</p> <p>g) Implementation/field activities are described in Section B.7.2 of part II of the revised PoA-DD (Sampling Plan)</p> <p>h) Provisions for quality assurance is revised in Section B.7.2 of part II of the revised PoA-DD (Sampling Plan). For further details please see section 2.5 Quality Assurance and Quality control of the Operations and Management Plan (OMP)</p>	<p>one combined survey will be undertaken, where the largest available sample size (as outlined for each parameter) will be used. This excludes the water quality parameter, which will be sampled separately.</p> <p>(d) Target population is now defined in the Sampling Plan described in section B.7.2 of part II of the PoA-DD. This is consistent with a criterion for inclusion of a CPA under the PoA (Eligibility criteria 10).</p> <p>(e) The sampling plan has been amended to state that in case confidence/precision requirements of the sampled data are not reached the sample size will be increased. This is in line with the <i>Standard for sampling and surveys for CDM project activities and programme of activities</i></p> <p>(f) Justification of the suitability of the selected sampling approach has been clarified on the rationale of sampling per strata (district). The revised PoA-DD clarifies that CPAs will first be grouped according to the technology type, and then within each group, stratified sampling will be undertaken where different districts are considered as different strata, and sampling within strata (district) will be drawn randomly.</p> <p>(g) Implementation/field activities have been provided in the revised PoA-DD, with further specification in the Operations Management Plan (OMP) /17/.</p> <p>(h) Provisions for quality assurance is revised in Section B.7.2 of part II of the revised PoA-DD (Sampling Plan).</p> <p>CAR 7 is closed.</p>

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
CAR 8. For Case 1 CPAs, the monitoring of the parameter QPW does not consider the methodology requirement to check if purified water is consumed for drinking purposes. The procedure is not clear how this parameter will be monitored. Please correct the monitoring plan.	11.1.1	<p>As per AMS III AV version 03 EB 69, QPW is defined as the quantity of purified water is the total amount of water treated by the project activity.</p> <p>However the issue of checking if all purified water is consumed for drinking purposes is addressed in the pre designed survey question explained in the revised OMP.</p> <p>Section B.4 of part II of the revised PoA-DD clearly describes how the parameter will be monitored for Case-1 and Case-2 scenario.</p>	<p>The revised Operations Management Plan clarifies what likely survey questions will be used to determine quantity of purified water used for drinking purposes. Operational and management plan was checked by the verification team.</p> <p>CAR 8 is closed.</p>
CAR 9. - The PoA-DD effectively suggests not to monitor water quality, which is a deviation from the methodology requirements. Arguments for this deviation are specific to Lifestraw and are thus not in line with the POA description. Please justify and correct the monitoring plan.	11.1.1	<p>Section B.7.1 of part II of the PoA-DD is revised</p> <p>A representative sample of all systems included in the CPA, will be taken every two years and the samples of purified water will be analyzed in line with the microbiological requirements of the applicable national drinking water standard</p>	<p>The revised PoA-DD now includes purified water quality testing requirements, and the Lifestraw-specific prescriptions have been removed. This is in line with the PoA description and the applied methodology.</p> <p>CAR 9 is closed.</p>
<p>CAR 10. The required monitoring parameters are not fully explained, not consistent with other parts of the PoA-DD and the monitoring and measurement of these parameters is not fully in accordance with the methodology:</p> <ul style="list-style-type: none"> <li>a) Frequency of monitoring is not clear or not in line with what was explained on site</li> <li>b) Data unit for Leakage is not correct</li> <li>c) It is not clear how existence of public distribution system of drinking water will be assessed</li> </ul>	11.1.2	<p>Section B.7.2 of part II of the PoA-DD is revised to provide consistency of the Monitoring Plan in line with the methodology and as well as other parts of the PoA-DD</p> <ul style="list-style-type: none"> <li>a) Revision is made to provide clarity</li> <li>b) Data unit for Leakage is fraction as per revised PoA-DD</li> <li>c) Public distribution system of drinking water will be assessed by survey and sampling. Clarification/definition on what constitutes a public distribution system for the purpose of the POA is provided in Section B.3 of Part I and justification is provided in details in Appendix-3</li> </ul>	<p>ERM CVS reviewed Section B.7.2 of part II of the revised PoA-DD to reassess the consistency and clarity of the Monitoring Plan:</p> <ul style="list-style-type: none"> <li>a) Monitoring frequency has been sufficiently clarified for all the monitoring variables, and is in accordance with what was explained to the site team.</li> <li>b) Leakage will not be monitored as the PP has opted to applying a leakage adjustment factor to emission reductions .</li> <li>c) Fraction of total population serviced by the project equipments that still do not have access to supply of SDW by public distribution network</li> </ul>

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
<p>d) It is not clear how operational check will be assessed if monitoring is done almost continuously</p> <p>e) The section is not consistent with the sampling plan</p> <p>f) Measurement and accuracy requirements are not clearly described for all parameters</p> <p>g) QA/QC procedures are not sufficient and for some parameters not described</p> <p>- Parameter names for quantity of electricity and amount of fuel consumed in the project activity are not in compliance with the Tool to calculate project or leakage CO2 emissions from fossil fuel combustion and Tool to calculate project or leakage CO2 emissions from fossil fuel combustion</p>		<p>d) Operational check will be assessed by regular household survey. Refer to revised PoA-DD.</p> <p>Section A.1 of Part II: Generic component project activity is revised to prompt each CPA-DD to describe operational unit for the technology to be applied under that CPA.</p> <p>e) Revision is made to provide consistency with the sampling plan</p> <p>f) Measure and Accuracy requirements are clearly described for all parameters in revised PoA-DD and also they are made consistent throughout the PoA-DD</p> <p>g) Please see the QA/QC procedures in the Revised PoA-DD and relevant OMP section. Leakage will be no longer monitored rather a default value of 0.95 will be used as per relevant provision of AMS-I.E. The parameter is to be reported ex ante as per section B.6.2 of Part II of the revised PoA-DD</p> <p>Parameters for quantity of electricity and amount of fuel consumed in the project activity have been removed</p>	<p>will be assessed by the CPA implementer. Section B.3 of Part 1 in the PoA-DD, as well as Appendix 3, provide clarification as to what constitutes a public distribution network.</p> <p>d) Revised PoA-DD states that operational check will be assessed by biennial household survey. The revised PoA-DD also includes requirements for the CPA implementer to define an "operational" unit in an actual CPA-DD.</p> <p>e) Sampling plan is now incorporated into the section B.7.2 of the revised PoA-DD</p> <p>f) Measurement and accuracy requirements have been specified in the revised PoA-DD and have been made consistent throughout the PoA-DD</p> <p>g) The QA/QC procedures in the revised PoA-DD have been sufficiently described, including an amendment to the measurement of leakage which will now be done using the default adjustment value of 0.95, as per AMS-I.E.</p> <p>h) Parameters for quantity of electricity and amount of fuel consumed in the project activity are no longer included, as the PoA-DD was revised to clarify that CPAs will only involve technologies that do not have project emissions.</p> <p>CAR 10 is closed</p>

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
CL 1. Description on how the PoA contributes to sustainable development refers only to global data and does not provide information specific to Bangladesh. Please clarify in the PoA-DD how the PoA contributes to sustainable development of Bangladesh.	6.4.2(a)	<p>Data in the context of Bangladesh is incorporated instead of global data. Refer to section A.2 of part I of the PoA-DD.</p> <p>All mention of Bangladesh was inadvertently omitted. The PoA-DD section A.2 is revised and includes Bangladesh specific objective and goal of the PoA.</p>	<p>Description on how the PoA contributes to sustainable development has been amended to be more Bangladesh-specific.</p> <p>CL 1 is closed.</p>
<p>CL 2. The description of the PoA is not sufficient or clear:</p> <ul style="list-style-type: none"> <li>a) The description is not consistent whether only instant microbiological purifiers will be used, or other technologies will be included as well</li> <li>b) Whilst the CME clarified during the site visit that the PoA will be implemented in rural areas and will target poor households, this is not sufficiently clear in the PoA description</li> <li>c) it is not clear whether only technologies without project emissions will be included, or technologies with project emissions will also be eligible. In addition,</li> <li>d) the description refers to capacity limit of 18,000 litres, which is specific to Lifestraw technology to be used in the first CPA and it is unclear if this limit will be applied to all technologies</li> <li>e) it is not clear from the</li> </ul>	6.4.2(b)	<ul style="list-style-type: none"> <li>a) Different types of water purification technology will be deployed in different CPAs of the PoA. Refer to revised section A.6 of part I of the POA-DD. A typical CPA will deploy only one type of water purification technology. Refer to Section A.6 of Part I of the revised PoA-DD.</li> <li>b) The PoA will be implemented in rural areas.. An Eligibility Criteria of specifying Target group at each CPA level is set as Criteria 10. Each CPA can specify whether they will implement the CPA in rural areas and also in households or in institutions or in both.  Section A.1 of part II of the revised PoA-DD prompts each CPA-DD to provide description of target groups. CPAs will only be implemented in rural areas as per revised PoA-DD. Criteria 10 now includes the condition as follows:  Water purification systems to be deployed under each CPA shall be for residential or institutional applications such as systems installed at a school or a community center in rural areas.</li> <li>c) PoA will only include any zero greenhouse gas emitting safe drinking water production systems eligible under the methodology. Section A.1 of Part II: Generic component project activity has set the minimum amount of information needs to be provided at CPA level to provide a clear CPA description and includes generic equation for the CPAs.  Thus Part II of the PoA-DD can adequately provide a generic template for CPAs without project emissions.</li> </ul>	<p>ERM CVS reviewed the description of the revised PoA-DD:</p> <ul style="list-style-type: none"> <li>a) The revised PoA-DD includes multiple purification technologies, all of which have been clarified in the project description. The PoA-DD has been revised to ensure that only one type of water purification technology will be used per CPA, i.e. CPAs will be defined according to technology type.</li> <li>b) Criterion 10 has been amended in the revised PoA-DD to state that the CPAs will only be deployed in rural areas</li> <li>c) The PoA-DD was revised to make it clear that technologies with project emissions are not yet eligible under this PoA, only zero GHG emitting purification technologies.</li> <li>d) The Lifestraw-specific capacity limit has been removed from the revised PoA description. In addition, each CPA-DD section A.5. will describe the indicator of when to repair/replace a water purification system deployed in the specific CPA,</li> <li>e) Section A.2 of part I of the PoA-DD is revised to state the objective and goal of the PoA. Furthermore, the revised PoA-DD now clarifies that only rural areas in Bangladesh will be</li> </ul>

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<p>description, and information is not consistent elsewhere in the PoA-DD whether the PoA will focus on rural areas or will cover both urban and rural areas, and whether it will focus on households, or will also cover schools and community centres or other types of users</p> <p>f) It is not clear if the POA will involve technology transfer</p> <p>Please clarify and amend the PoA-DD.</p>		<p>d) No such limit will be applied to any technologies at PoA level. The statement is deleted from PoA-DD, Section A.1 of Part II of the CPA-DD prompt each CPA-DD to include minimum description of technology to be applied to a specific CPA . Each CPA-DD section A.5. will describe. indicator of when to repair/replace a water purification system deployed in the specific CPA,</p> <p>e) Section A.2 of part I of the PoA-DD is revised to clearly state the objective and goal of the PoA.</p> <p>The objective of the Program of Activities is to provide safe drinking water to the people living at the base of the pyramid in Rural Bangladesh .</p> <p>The stated goal of the PoA is to serve at least 1 million rural households in Bangladesh</p> <p>Each CPA, to satisfy Eligibility Criteria number 10, will clearly state the target group. it may include rural households or rural institutions etc. The CME wishes to state the target group at each CPA level. At the PoA level the target group is generalized as people living at the base of the pyramid in the rural Bangladesh. At present the scope of the PoA is only limited to rural areas.</p> <p>f) Currently the CME is planning to import water purification systems. No technology transfer is involved. The manufacturers or the suppliers will provide training on the trainers on how to use and conduct maintenance of the WPS.</p> <p>However, in future the CME may engage in local production of WPS to ensure the supply chain. But this is just a possibility and cannot be confirmed at present. In such case the technology transfer will be involved.</p>	<p>eligible.</p> <p>f) No technology transfer from Annex I countries is envisioned currently and this is in line with the interviews with the CME.</p> <p>CL 2 is closed.</p>

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
CL 3. Section A.1 of part II of the PoA-DD is not sufficiently clear on what minimum amount of information needs to be provided at CPA level to provide a clear CPA description. Please clarify.	6.4.3(a)	<p>Section A.1 of part II of the PoA-DD is revised to set the minimum amount of information needs to be provided at CPA level to provide a clear CPA description.</p> <p>The minimum description required includes the following:</p> <ul style="list-style-type: none"> <li>i. Type of purification technology,</li> <li>ii. Type of units,</li> <li>iii. Commercial name of the units,</li> <li>iv. Working principal,</li> <li>v. Short technical description,</li> <li>vi. Use and maintenance</li> <li>vii. Capacity or life time,</li> <li>viii. Definition of operational unit,</li> <li>ix. Indicator of when to replace/repair the water purification system,</li> <li>x. Performance and certification (if any)</li> <li>xi. Target Group</li> <li>xii. Type of Energy used</li> </ul>	<p>ERM CVS reviewed Section A.1 of part II of the revised PoA-DD and confirms that the generic CPA now includes an indication of the minimum amount of information required by each CPA. This would provide a clear and complete picture of actual CPAs.</p> <p>CL 3 is closed.</p>
CL 4. The eligibility criteria on avoiding double counting refers to identification numbers for CPAs and it is not clear from the PoA-DD if each unit distributed will also have unique identification numbers. Please clarify.	7.1.1	<p>The eligibility criteria on avoiding double counting (Criteria 11) is revised to state the following</p> <ul style="list-style-type: none"> <li>i) Each CPA shall be uniquely identified via unique Identification numbers of the purification systems assigned by the CME and via geographical coordinates for stationary installations.</li> <li>ii) A confirmation from the CPA implementer (if it is a different entity other than the CME) that the proposed CPA is neither registered as an individual CDM project activity nor included in another PoA and that no CERs will be claimed for the water purification systems other than those claimed by this PoA's CME</li> </ul>	<p>ERM CVS reviewed the revised PoA-DD and confirms that the eligibility criteria have been correctly amended, requiring unique identification of purifiers, geographical coordinates of purifiers, and confirmation from the CPA implementer that double counting has not occurred.</p> <p>CL 4 is closed.</p>
CL 5. The eligibility criteria are not consistent on which standard(s) will be used in evaluating whether technologies provide sufficient quality of water.	7.1.3	<p>Eligibility criteria 3 is revised, as per AMS III AV version 03, to state the following:</p> <p>The application of the project technology /equipment achieves</p>	<p>ERM CVS reviewed the revised PoA-DD. The PoA-DD provides two options (i or ii), and the PoA-DD makes it clear that compliance with either can be used if both are available. Both options are in line with the methodology,</p>



Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
		<p>compliance either with: (i) at a minimum the performance target as per "Evaluating household water treatment options: Health based targets and microbiological performance specifications" (WHO, 2011); or (ii) an applicable national standard or guideline</p> <p>That means compliance with anyone of the above two option will be eligible for inclusion.</p>	<p>as it allows a choice between the WHO performance target or applicable national standard or guidance.</p> <p>CL 5 is closed.</p>
CL 6. The criteria to check the CPA start date does not make it clear how the start date of a CPA will be determined	7.1.4	<p>The criteria (Criteria number 6) to check the CPA start date is revised as follows:</p> <p>The start date of the CPA will be specified in each CPA-DD.(Section A.8.1) and it will be ensured that the CPA start date is after the PoA validation start date , i.e after 22 August 2012</p> <p>The Start date will be confirmed by any documentary proof of purchase of WPS, e.g. letter of credit (LC) opening, wire transfer, purchase order etc.</p>	<p>ERM CVS reviewed the revised PoA-DD, and confirms that the eligibility criterion on the starting date of the CPA has been clarified. Furthermore, the revised PoA-DD includes a clear description of what will be regarded as a starting date of any CPA, that being documentary proof of WPS purchased. As this would be the earliest date of real action, this is in line with the definition of starting date in the CDM Glossary of Terms.</p> <p>CL 6 is closed.</p>
<p>CL 7. Some conditions for ensuring the CPAs meet methodology applicability conditions are not sufficiently clear:</p> <p>(a) It is not clear what evidence is required to determine whether a public distribution network of safe drinking water exists, and thus on what basis it will be assessed whether a CPA meets eligibility criterion. The means of proof refers to checking annually – but annual check would be done after CPA inclusion, therefore cannot form part of the</p>	7.1.5	<p>(a) The means of proof to meet Criteria number 2 to determine whether a public distribution network of safe drinking water exists is revised as per methodology. Any of the following proof will be sufficient</p> <p>i) A questionnaire/statement signed by a local government authority or local water authority or community owned water supply organization confirming the absence of a public distribution network of safe drinking water in the area(s) covered by a CPA/ system.</p> <p>ii) Using Official data such as publicly available statistical data from a government agency or an independently commissioned study by an international organization or a University.</p>	<p>ERM CVS reviewed the CPA methodology applicability conditions in the revised PoA-DD:</p> <p>(a) The means of proof to determine whether a public distribution network exists have been provided in the revised PoA-DD, and the PoA requires the CPA implementer to demonstrate that safe drinking water was not supplied in the CPA area prior to the implementation of the project activity.</p> <p>(b) Criterion 4 has been revised to require the actual CPA-DD to explain lifetime based on manufacturers specifications, indication when and how it can be recognised if a unit needs replacement, and measures that will have to be followed for each CPA</p>

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<p>check against eligibility criteria</p> <p>(b) The methodology requires that documented measures are in place to ensure end users have access to replacement purification systems of comparable quality. Suggested means of proof for this criterion describes the suggested measures/procedures but does not indicate whether/where these are/will be documented.</p> <p>Please clarify and amend the PoA-DD</p>		<p>(b) Means of proof for Criteria 4 is revised as follows:</p> <p>Section A.5 of the CPA-DD will specify lifetime of the equipment based on manufacturer's specification, define operational unit and indicator of when to replace/repair the water purification system.</p> <p>In cases where the life span of the water treatment technologies is shorter than the crediting period of the project activity, Section D.7.2 of the CPA-DD will specify evidence that documented measures that are in place to ensure that end users have access to replacement purification systems of comparable quality.</p>	<p>to ensure that end users have access to replacement purification systems. This is in line with the methodology.</p> <p>CL 7 is closed.</p>
<p>CL 8. - The eligibility criteria in the PoA-DD include a criterion for the Local Stakeholder Consultation (LSC) and Environmental Impact Assessment (EIA). However, in this criterion it states that the LSC and EIA will be determined at PoA level, so it is not clear why this is included as a criterion for CPA inclusion. Please clarify</p>	7.1.7	<p>The eligibility criteria in the PoA-DD regarding a criterion for the Local Stakeholder Consultation (LSC) is not included in the revised PoA-DD since LSC is considered at the PoA level. The justification of such deletion is provided in Section B2 of part I of the PoA-DD</p> <p>Eligibility Criteria no 16 is included in Section B.2 of Part I of the PoA-DD which requires each CPA to demonstrate that the CPA is in line with the host Party environmental laws/regulations.</p> <p>To ensure compliance with above condition, each CPA will provide an environmental impact analysis conducted by the CME for the technology employed under the CPA and the summary of which is included in section B.1 or an EIA exemption letter from relevant government authority.</p> <p>One Environmental Impact Analysis for one technology type will be deemed adequate in this regard. i.e Analysis will be required if the technology type is deployed for the first time under the PoA. Subsequent CPAs with same technology type will refer to the Analysis already submitted/undertaken.</p>	<p>ERM CVS reviewed the revised PoA-DD and confirms that the eligibility criterion for the Local Stakeholder Consultation (LSC) is no longer included, as the LSC was conducted at the PoA level, and this is clearly presented in the PoA-DD. Eligibility Criterion 16 in the revised PoA-DD requires conducting an analysis of environmental impacts for CPAs that use new technologies not yet included in the PoA, to demonstrate that the CPA is in line with Bangladesh environmental laws/regulations.</p> <p>CL 8 is closed.</p>



Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
CL 9. - Eligibility criteria on CPA development, management and distribution are not sufficiently clear and it is not clear on what basis eligibility can be assessed. Please clarify	7.1.7	The Criteria is revised under Criteria 9, eligibility can be assessed by a written approval/attestation from the CME (BIVL)	ERM CVS reviewed the revised PoA-DD, and found that the eligibility criteria have been amended to include requiring written approval from the CME for each CPA implementer.  CL 9 is closed.
CL 10. Eligibility criteria related to sampling requirements and suggested means of proof are not clear: sampling records cannot be used as means of proof as they will not be available at the time of CPA inclusion	7.1.9	Suggested means of proof of eligibility criteria related to sampling requirements (Criteria 14) requires that sampling plan has to be consistent with the PoA-DD and has to be confirmed in Section D.7.2 of the CPA-DD	ERM CVS reviewed the revised PoA-DD and found that the suggested means of proof is now sufficient. As this is a criterion for inclusion, sampling records will not be available. Therefore, written proof of the sampling plan in the CPA-DD, in line with that prescribed in the PoA-DD, is sufficient.  CL 10 is closed.
CL 11. According to the Guidelines on Assessment of Debundling for SSC Project Activities, this project is exempt from requiring a debundling check, so it is not clear why an eligibility criterion to check debundling is included. Please clarify	7.1.11	The criteria related to the Debundling check (Criteria 15) is revised as follows  Each CPA will demonstrate that it is exempted from a de-bundling check as each water purification system is no more than 1 per cent of the small-scale threshold	ERM CVS reviewed the revised PoA-DD and revised criterion is clear on what will have to be checked at CPA inclusion stage to confirm that a CPA is exempt from a de-bundling check.  CL 11 is closed.
CL 12. Please clarify what evidence CPA implementers would need to provide to demonstrate that the criterion on non-diversion of ODA is met.	7.1.12	Means of proof for Criteria 13 is as follows  Any of the following:  (i) Confirmation from CME and/or CPA implementer that no public funding is involved in the CPA. (ii) In case public funding is involved, confirmation from the public fund provider or the DNA of the Annex I party involved that no ODA is diverted for the Implementation of a CPA.	ERM CVS reviewed the revised PoA-DD and found it sufficiently clear what documentation is required to satisfy the criterion on non-diversion of the ODA.  CL 12 is closed.
CL 13. Please provide evidence to substantiate description provided in	8.2.1	Description of CPA applicability for Applicability condition 2 (a) under section B.2 of part II of the PoA-DD is revised as	ERM CVS reviewed the revised PoA-DD and confirms that evidence for the lack of provision of drinking water in

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
section B.2 of part II of the PoA-DD on lack of provision of drinking water in rural and urban areas of Bangladesh.		<p>follows:</p> <p>Each CPA will check and provide adequate proof that prior to the implementation of the project activity, a public distribution network supplying safe drinking water does not exist in the CPA area.</p> <p>Current Situation of existence of public distribution network supplying safe drinking water in Bangladesh is described in Annex 3.</p>	<p>Bangladesh has been provided in Annex 3. It is further validated in section 6 of the validation report.</p> <p>CL 13 is closed.</p>
CL 14. Please clarify and justify with evidence which fuel is used for boiling water in the baseline, and provide evidence that baseline stove is a 3-stone fire. Please also clarify whether the baseline varies between CPAs	8.3.1	<p>Justification and evidence has been provided in section B.4 of part II of the PoA-DD to confirm the following</p> <ol style="list-style-type: none"> <li>1. Rural households predominantly use Firewood as the primary fuel source for boiling water prior to drinking</li> <li>2. Fossil fuel is not available and/or not used for boiling prior to drinking in the rural areas of Bangladesh.</li> </ol> <p>For all CPAs under the PoA, to be implemented in rural areas, it is considered that in absence of the project activity, NRB would be utilized. Therefore the baseline scenario is the use of NRB to boil water.</p> <p>Justification and evidence has been provided in section B.4 to confirm that water boiling systems in Bangladesh for woody biomass is mainly 3 stone fire or traditional cook stoves lacking improved combustion air supply mechanism and flue gas ventilation system i.e. without a grate as well as a chimney, and a small proportion of improved stoves. Section B.4 of the PoA-DD has been revised to include information how weighted average efficiency of the baseline stove is calculated.</p> <p>Use of NRB to boil water and use of traditional cook stoves without a grate as well as a chimney and improved stoves is the baseline for entire rural Bangladesh and does not vary</p>	<p>ERM CVS reviewed the revised PoA-DD and confirms that further explanation has been provided regarding the fuel that is used for boiling water in the baseline, and regarding the stoves used in the baseline. There is a small use of fossil fuels in Bangladesh (LPG used by 0.5% of households), but the revised PoA-DD clarifies that this is not applicable in the rural areas targeted by the PoA. For the efficiency of the baseline stove, a weighted average efficiency is used – please refer to the section 8.4 of the validation report on how the baseline was validated.</p> <p>CL 14 is closed.</p>

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		<p>between CPAs.</p> <p>The methodology states that emissions are calculated based on the energy demand for boiling water. LPG use and/or demand for boiling water does not exist in rural Bangladesh, Hence substantially insignificant use of LPG (0.5%) only by some rich households for specific purposes other than boiling is not considered applicable to rural households as baseline energy use/demand under the PoA.</p>	
CL 15. Further justification is required for determining the fraction of non-renewable biomass	8.5.1	<p>Justification for country level the fraction of non-renewable biomass has been provided in Appendix 4</p> <p>All words as "Annex" are replaced with Appendix.</p>	<p>ERM CVS reviewed the revised PoA-DD and confirms that there is further justification provided for the fraction of non-renewable biomass. Please refer to section 8.5 for further details on how non-renewable biomass fraction was validated.</p> <p>CL 15 is closed.</p>
CL 16. The PoA-DD Section B.6 provides options for the efficiency of water boiling systems ( $\eta_{wb}$ ), but it is not clear how it will be determined which value to use for each CPA. Further, the parameter is not correctly denoted in the PoA-DD. Please clarify and amend the PoA-DD	8.5.1	<p>As per revised PoA-DD Section B.6</p> <p>All CPAs implemented in rural areas will choose option (2) above, Justification is provided in section B.4</p> <p>Correction has been made to properly denote the parameter for efficiency of water boiling systems.</p> <p>Justification that rural areas do not use fossil fuel for boiling is provided in section B.4 of part II of the PoA-DD</p>	<p>ERM CVS reviewed the revised PoA-DD and confirms that the parameter has been correctly denoted in the PoA-DD.</p> <p>Furthermore, the revised PoA-DD has been amended to be consistent on reference to rural areas, excluding the use of the term "slum" areas.</p> <p>CL 16 is closed.</p>
CL 17. The parameter FRACwb (for CPAs that fall under Case 2, the proportion of total population for which the common practice of water boiling is or would have been water boiling) is provided but it is not clear how this is used in the methodological choices/calculations.	8.5.1	<p>The PoA-DD is revised to include the parameter in the emission reduction calculation. Equation 4.b of section B.6.1 of part II of the PoA-DD</p>	<p>ERM CVS reviewed the methodological choices/calculations in the revised PoA-DD and confirms that it is now clear where the parameter FRACwb is to be used.</p> <p>CL 17 is closed.</p>

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CL 18. The PoA-DD states that additionality will be demonstrated using the Investment barrier, and states that the PoA is additional because using Lifestraw purifiers is more expensive than continuing to buy woodfuel. However, quantitative information is not provided on fuelwood costs over the lifetime of Lifestraw purifier. It is also not clear how this applies to other water purification technologies	9.2.1	<p>The PoA-DD is revised to make it generic for all type of technologies allowed by the methodology.</p> <p>Additionality argument is also revised and is based on satisfying Eligibility Criteria 8,10,15</p> <p>If a CPA included under the PoA satisfies criterion 8,10 and 15 and thereby meets the requirements of item c) under the positive list of the <i>Guideline on the Demonstration of Additionality of Small-Scale Project Activities Version 09 it becomes automatically additional.</i></p> <p>“Project activities solely composed of isolated units where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs) and where the size of each unit is no larger than 5 per cent of the small-scale CDM thresholds” is <i>automatically additional</i></p>	<p>ERM CVS reviewed the additionality-related eligibility criteria and revised criterion is clear on what will have to be checked at CPA inclusion stage to confirm that a CPA is automatically additional.</p> <p>CL 18 is closed.</p>
<p>CL 19. Description of the operational and management system is not sufficient in the PoA-DD</p> <p>(a) Operational and management system is shortly described in the PoA-DD but no separate document or internal procedures were provided which would clearly document the operational and management system for the implementation and management of the PoA</p> <p>(b) The roles and responsibilities described on site were not consistent with those described in the PoA-DD. Roles related to training, maintaining database and preparation of monitoring reports are not clear. Please</p>	10.1	<p>Section C of part I of the PoA-DD is revised to clarify as follows</p> <p>(a) Operational and management system is revised in the updated PoA-DD. Also separately a Operations Management Plan (OMP) is provided</p> <p>(b) Roles and responsibilities are clearly specified in the revised PoA-DD and in the OMP</p> <p>(c) CPA inclusion and technical review process are described in the revised PoA-DD</p> <p>(d) Each WPS will have unique identification. And each CPA will be uniquely identified by id numbers of WPS.</p> <p>(e) Description of documentation control process is clearly described in PoA-DD and more elaborately in the OMP</p>	<p>ERM CVS reviewed Section C of part I of the revised PoA-DD:</p> <p>(a) An Operations Management Plan (OMP) has now been provided with the revised PoA-DD and has been reviewed by ERM CVS.</p> <p>(b) Roles and responsibilities have been specified in the revised PoA-DD and in the OMP, and are consistent with what was determined during the site visit.</p> <p>(c) The technical review process for CPA inclusion are described in the revised PoA-DD and the OMP.</p> <p>(d) The revised PoA-DD has been amended to state that each CPA will have unique identification, and that each WPS within the CPA will also have unique identification.</p> <p>(e) The revised PoA-DD and OMP sufficiently describes the documentation control process.</p>

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<p>clarify</p> <p>(c) it is not clear how CPA inclusion will be technically reviewed given that CPA developer is the also the CME</p> <p>(d) The procedure on avoiding double counting refers to identification numbers for CPAs and it is not clear if units will have unique identification numbers</p> <p>(e) description of documentation control process to be vague and not sufficiently clear</p> <p>(f) The PoA-DD refers to quality policy, quality objectives, audits, corrective and management review. Please provide evidence of such policies and provisions</p>		<p>(f) The terms quality policy, quality objectives is deleted. Quality Assurance and quality control is revised and described in section B.7.2 of part II of the PoA-DD and also in section 2.5 of the OMP. Internal Audit process is described in section 2.7 of the OMP.</p>	<p>(f) The revised PoA-DD does not mention quality policy and quality objectives. Instead the quality assurance and quality control procedures have been revised and described in section B.7.2 of part II of the PoA-DD and in section 2.5 of the OMP. Internal Audit process is described in section 2.7 of the OMP.</p> <p>The revised OMP complies with the provisions of the Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities.</p> <p>CL 19 is closed.</p>
<p>CL 20. The monitoring plan is not sufficiently clear:</p> <p>a. The description does not clearly distinguish between procedures for recording distribution data, and regular monitoring of parameters for ER calculations</p> <p>b. List of information to be recorded for every household listed in the PoA-DD is not consistent with information provided during interviews. E.g. it refers to recording</p>	11.2.1	<p>Section B.7.2 Monitoring Plan of part II of the PoA-DD is revised to clarify the following</p> <p>a. Revision is made to include parameters and monitoring methods for ER calculations. Procedures for recording distribution data and regular monitoring of parameters are described in separate sections and in details in the OMP.</p> <p>b. Each CPA will be uniquely identified by range/list of unique identification number of each WPS.</p>	<p>ERM CVS reviewed the Monitoring Plan of the revised PoA-DD:</p> <p>a. It is now clear that the distribution data and regular monitoring data will be collected separately.</p> <p>b. List of information to be recorded for every household has been clarified in the revised PoA and it is now clear that the main information recorded for each unit is the unique ID number, as well as name and contact information of end-users.</p> <p>c. The revised PoA-DD is now clearer as to how</p>

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion
<p>unique CPA identification number and not unique unit number; it is not clear if baseline stove type and cooking fuel will be recorded, and whether GPS coordinates will be recorded</p> <p>c. It is not sufficiently clear and not consistent with other parts of the PoA-DD how monitoring will differ between Case 1 and Case 2 CPAs, and how it will be conducted.</p>		<p>Section B.7.2 of part II of the PoA-DD, monitoring plan for a generic CPA, describes minimum requirement for the project Database which includes among others</p> <ul style="list-style-type: none"> <li>• Unique identification number (UID) of each water purification systems(WPS)</li> <li>• CPA id numbers uniquely identified by range/list of UID of WPS</li> </ul> <p>Stationary installation means fixed or immovable installation of water purifications systems. The examples are, including but limited to, Water Treatment Plants, Desalinization plant, fixed installation of POE treatment system etc. Non Stationary means movable WPS. Refer to footnote 17 of the PoA-DD</p> <p>Baseline stove type and cooking fuel will not be recorded since it is not required by the methodology. GPS coordinate will also not be recorded. In fact the CME is not committing in the PoA to record GPS coordinates. However, depending on the cost effectiveness of using smart phones for recording GPS coordinates the CME may record it in later stages but it will be additional to what is committed in the Monitoring Plan of the PoA.</p> <p>c. The PoA-DD is revised as per AMS IIAV version 03 and monitoring for Case 1 and Case 2 CPAs does not differ.</p> <p>For Case-2 total project population needs to be adjusted for the fraction of the population serviced by the project equipment at households/buildings for which it can be demonstrated the common practice of water purification is or would have been water boiling. For Case-1 no adjustment is required</p> <p>. An ex ante survey is to be carried out. to make the parameter available during inclusion of Case-2 CPAs as and is not a monitoring parameter.</p>	<p>monitoring will differ between Case 1 and Case 2 CPAs, and how it will be conducted. The only difference is that for case 2 CPAs, the quantity of purified water will be adjusted for the fraction of the population serviced by the project equipment at households/buildings for which it can be demonstrated through documentation or survey that the practice of water purification would have been boiling. The fraction is determined ex-ante and monitoring does not differ between case 1 and case 2 CPAs.</p> <p>CL 20 is closed.</p>

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		<p>Number of persons supplied with purified water from each of the WPS will be monitored for both Case-1 and Case-2 and monitoring requirement does not differ.</p> <p>As per the revised PoA-DD section B.6.1 Equation (4) , The emission reduction calculation does not differ in Case-1 and Case-2 scenario.</p> <p>To determine <math>FRAC_{WB}</math></p> <ul style="list-style-type: none"> <li>• Default value of 1.0 is applied for Case 1 CPAs;</li> <li>• For Case 2 CPAs, value is established by an ex ante baseline surveys and will be made available during CPA inclusion stage under section B.6.2 of part II of the PoA-DD.</li> </ul>	
CL 21. The PoA-DD is not clear why conducting environmental analysis at PoA level is suitable (in Section E.1) – please clarify.	12.3.1	<p>Section E.1 is revised to state that Environmental Analysis is done at SSC-CPA level. Refer to response to CL 8</p> <p>Eligibility Criteria no 16 is included in Section B.2 of Part I of the PoA-DD which requires each CPA to demonstrate that the CPA is in line with the host Party environmental laws/regulations.</p> <p>To ensure compliance with above condition, each CPA will provide an Environmental Impact Analysis conducted by the CME for the technology employed under the CPA and the summary of which is included in section B.1 or an EIA exemption letter from relevant government authority.</p> <p>One Environmental Impact Analysis for one technology type will be deemed adequate in this regard. i.e Analysis will be required if the technology type is deployed for the first time under the PoA. Subsequent CPAs with same technology type will refer to the Analysis already submitted/undertaken.</p>	<p>ERM CVS reviewed the revised PoA-DD and found it has been amended to require an environmental analysis at the CPA level instead of the PoA level. The CPA must demonstrate that the CPA is in line with the host Party environmental laws/regulations, and this requires an environmental analysis of the WPS technology used, unless the technology has already been used in the PoA, then that analysis can be used.</p> <p>ERM CVS therefore concludes that environmental analysis at the CPA level is suitable and the requirements clearly stated.</p> <p>CL 21 is closed.</p>

In addition some editorial and minor changes to the PoA-DD were made by the PP that had no relevance on compliance with CDM requirements.

Forward Action Requests	Ref. to Section Number	Summary of PP's response	Final conclusion
NA	NA	NA	NA