

PERRY JOHNSON REGISTRARS



Carbon Emissions Services, Inc.

CDM-PROGRAMME OF ACTIVITY VALIDATION REPORT

CAMINO SABIO AZUL S. DE R.L. DE C.V. (CAMBIO
AZUL)

MEXICO WATER, ENERGY, & EMISSIONS
EFFICIENCY RESIDENTIAL PROGRAM

REPORT No. C-1-B-03-S-0221_PoA-VA

REVISION No: 5.1



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Date of first issue:	Project No:
16 March 2012	C-1-B-03-S-0221_PoA
Approved by and date:	Organizational unit:
Bilal Anwar (29 January 2013)	Perry Johnson Registrars Carbon Emissions Services, Inc
Client:	Client ref.:
Camino Sabio Azul S. de R.L. de C.V. (Cambio Azul)	George T. Maher

PoA Name : Mexico Water, Energy, & Emissions Efficiency Residential Program

Country : Mexico

Methodology : AMS ILM “Demand-side energy efficiency activities for installation of low-flow hot water savings devices”

Version : 01.0

Sectoral Scope : 3 - Energy Demand

Project Type and Technology : The Small-Scale Programme of Activities of Cambio Azul PoA, titled ‘*Mexico Water, Energy, & Emissions Efficiency Residential Program*’ (hereafter referred as POA) is aimed to support local communities by improving the efficiency of hot water utilization through free distribution and installation of water saving devices in social housing urban households in Mexico. The PoA is based on the premise of increasing urban population in Mexico and in result increasing water consumption by inefficient devices and hot water needs are pre-dominantly fulfilled by use of fossil fuels (liquefied petroleum gas & natural gas). This inefficient use of hot water devices and use of fossil fuels in domestic water heaters result into greenhouse gas emissions.

The technology or measures to be employed by a typical small scale CDM project activity (SSC-CPA) comprises the direct installation of water saving devices that reduce the amount of water dispensed in baseline water fixtures in residential applications. The project devices, which contain integral non-removable flow regulators, typically include one efficient showerhead and two other additional flow regulators per household. The flow regulators will be installed in two points of use: 1) a



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bathroom faucet and 2) a kitchen faucet.. All SSC-CPAs under the Cambio Azul PoA will consist of a group of existing households.

Size

- ☐ Large Scale
☒ Small Scale

Validation Status

- ☐ Corrective Actions Requested
☐ Clarifications Requested
☒ Full Approval and submission for registration
☐ Rejected

In summary, it is PJRCES's opinion that the Mexico Water, Energy, & Emissions Efficiency Residential Program POA-DD in Mexico, as described in the CDM-SSC-PoA-DD (version 2.4 of 29 January 2013), and CDM-SSC-CPA-DD-generic (version 2.4) of 29 January 2013, meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria and correctly applies the baseline and monitoring methodology AMS ILM version 01. PJRCES thus requests the registration of the project as a CDM programme of activity.

Report No.:	Date of this revision:	Rev. No.	Key words:
C-1-B-03-S-0221_PoA-VA	29 JANUARY 2013	05.1	
Report title:			
Mexico Water, Energy, & Emissions Efficiency Residential Program in Mexico			
Work carried out by:			
Team Leader	:	Mr. Juan Alberto Gracia	
Team Member	:		
Financial Expert	:		
Technical Expert	:	Mr. Ricardo Díaz	
Work verified by:			
Bilal Anwar (Independent Technical Reviewer)			

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ABBREVIATIONS

BAU	Business as usual
BM	Building Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CL	Clarification request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CM	Combined Margin
CME	Coordinating and Managing Entity
CPA	Component Project Activity
DNA	Designated National Authority
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
EB	Executive Board
EIA	Environmental Impact Assessment
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of Approval
MP	Monitoring Plan
NGO	Non-governmental Organisation
ODA	Official Development Assistance
OM	Operating Margin
PJRCS	Perry Johnson Registrars Carbon Emission Services, INC
PoA	Programme of Activities
CDM-CPA-DD	CPA Design Document
QMS	Quality Management System
CRE	Comisión Reguladora de Energía (Regulatory commission of Energy Agency of Mexico)
CICC	Comisión Intersecretarial de Cambio Climático(CICC) (Mexican DNA Authority)
SENER	Secretaría de Energía de Mexico (Energy Secretariat of Mexico – Official Energy Entity)
CONAGUA	Comisión Nacional del Agua de Mexico (Mexican National Water Comission)
SEMARNAT	Secretaría de Medio Ambiente y Recursos Naturales (Environmental Authority)
Cambio Azul	Cambio Azul - Mexico Water, Energy, & Emissions Efficiency Residential



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PoA	Program of Activities
UNFCCC	United Nations Framework Convention on Climate Change



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1 INTRODUCTION

Camino Sabio Azul S. de R.L. de C.V. (Cambio Azul) has commissioned Perry Johnson Registrars Carbon Emission Services, INC (PJRCES) to perform a validation of the small-scale CDM Programme of Activities (PoA) “Mexico Water, Energy, & Emissions Efficiency Residential Program in Mexico” (hereafter called “the PoA”). This report summarises the findings of the validation of the CDM-SSC-PoA and the generic CDM-SSC-PoA-Design Document (CDM-SSC-PoA-DD) with generic information relevant to all CDM programme activities (CPAs) to be included in this PoA. The validation was performed on the basis of UNFCCC criteria for PoAs under the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures, the simplified modalities and procedures for small-scale CDM project activities, the procedures for registration of a programme of activities and the subsequent decisions by the CDM Executive Board /5//12/.

1.1 OBJECTIVE

The purpose of a validation is to have an independent third party assessment of the small-scale PoA design document (CDM-SSC-PoA-DD), and the CPA generic CDM-SSC-CPA-DD with generic information relevant to all CPAs to be included in this PoA. In particular, the eligibility criteria for inclusion and demonstration of additionality of CPAs, the programme’s baseline determination, monitoring plan, and the programme’s compliance with relevant UNFCCC and host Party criteria are validated in order to confirm that the programme design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all CDM PoAs and is necessary to provide assurance to stakeholders of the quality of the programme and its intended generation of certified emission reductions (CERs).

1.2 SCOPE

The validation scope is defined as an independent and objective review of the CDM-SSC-PoA-DD and the CDM-SSC-CPA-DD /1//3/ with generic information relevant to all CPAs to be included in this PoA.

The scope of the validation is defined as below:

- The Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM /12/
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords) /26/
- Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)



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- Decisions and specific guidance by the EB published under <http://cdm.unfccc.int>
- Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities, version 01, EB 65 Annex 03
- CDM validation and verification manual (CDM-VVM) version 01.2/7/
- Baselines and monitoring methodology: AMS II.M version 1.0 /4/
- Management systems and auditing methods
- Environmental issues relevant to the sectoral scope applied for
- Applicable environmental and social impacts and aspects of CDM project activity
- Sector specific technologies and their applications
- Current technical and operational knowledge of the specific sectoral scope and information on best practice
- Background and supporting documentation, as referred in the document reference list of this report.

The information included in the CDM-SSC-PoA-DD and the CDM-SSC-CPA-DD-generic and the supporting documents have been reviewed against the requirements and criteria mentioned above and the quality management system (QMS) of PJRCES. The validation team, based on the recommendations in the Validation and Verification Manual/7/, has employed a risk-based approach, focusing on the identification of significant risks for programme implementation and the generation of CERs.

The validation is not meant to provide any consultation to the organization(s). However, stated requests for clarifications and/or corrective actions may provide input for improvements of the project design.

2 VALIDATION TEAM AND QUALITY CONTROL

The validation of the project activity has been carried out by qualified personnel in line with the procedures defined in PJRCES's quality manual for validation and team definition. The validation report has undergone an independent technical review before requesting registration of the project activity. The technical review was performed by an independent technical reviewer.

Validation team:

Name	Qualification	Competency	Task Performed



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		Meth Expert ¹	Technical Area	Host Country Exp.	DR	SV	RP	Approval
Mr. Juan Alberto Gracia	Team Leader	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mr. Ricardo Díaz	Technical Expert	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bilal Anwar	Technical Reviewer							<input checked="" type="checkbox"/>
Bilal Anwar	Approver							<input checked="" type="checkbox"/>

Note:

- 1) VT – Validator trainee, LV – Lead Validator, TL – Team Leader, FE – Financial Expert, TE – Technical Expert, ITR – Independent Technical Reviewer
- 2) DR – Desk review of PDD and documents, SV – Site Visit, RP – Final Report Preparation.
- 3) Technical Expert involved has the required Host country knowledge

3 METHODOLOGY OF VALIDATION

The validation consisted of the following three phases:

- Desk review of the CDM-SSC-PoA-DD and CDM-SSC-CPA-DD-generic with generic information relevant to all CPAs to be included in this PoA;
- Follow up interviews (site visits) with the relevant stakeholders;
- Resolution of the identified corrective action requests (CARs), clarification requests (CL) and forward action requests (FARs) if any, followed by the issuance of the final validation opinion and final validation report.

3.1 DESK REVIEW

The desktop review includes:

- A review of the CDM-SSC-PoA-DD and CDM-SSC-CPA-DD-generic (including annexes) and the relevant supporting documents /1//3/. The detailed list of documents reviewed throughout the validation process, are included in the section 6, under references;
- Preparation of project specific validation protocol in line with the requirements of the validation and verification Manual;
- Background investigation and follow-up interviews with personnel of the project proponent, the consultant, legal and governmental authorities and other stakeholders;
- Review of the emission reduction calculation spreadsheets specifically prepared for the first real case CPA under the PoA, based on the data gathered by AIMEX under the pilot program /13/;

¹ This is based on experience of minimum five projects including CDM consulting



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- Revision and evaluation of Mexican Water Environment Legislation/35//37/;
- Interministerial Commission on Climate Change (Mexican DNA): Letter of Approval, dated 15 December 2011 /8/;
- Revision of the simple cost analysis of POA and CPA /16/;
- Revision of the Management Manual for the Mexico Residential Water, Energy, & Emissions Efficiency Program of Activities /24/;
- Revision of the technical descriptions of the water saving devices - /18/;
- Evaluation of the data capturing procedure established in Management Manual for the Mexico Residential Water, Energy, & Emissions Efficiency Program of Activities /24/; and
- Reporting of validation findings taking into account the public comments received on UNFCCC website.

In order to ensure consideration of all relevant assessment criteria, a validation protocol was used. The protocol shows, in a transparent manner, criteria and requirements, means of validation and the results from pre-validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements that a CDM program is expected to meet;
- It ensures a transparent validation process where the independent entity will document how a particular requirement has been validated and the result of the determination

The validation protocol consists of three tables: Table 1 (Mandatory Requirements); Table 2 (Requirement checklist); and Table 3 (Resolution of Corrective Action and Clarification Requests) as described below.

The completed validation protocol is enclosed in Appendix A to this report identifying Corrective Action Requests and Clarification Requests.

Validation Protocol Table 1: Mandatory Requirements for CDM Programme of Activities		
Requirement	Reference	Conclusion
<i>The requirements the project must meet.</i>	<i>Gives reference to the legislation or agreement where the requirement is found.</i>	<i>This is either acceptable based on evidence provided (OK), a Corrective Action Request (CAR) of risk or non-compliance with stated requirements or a request for Clarification (CL) where further clarifications are needed.</i>



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Validation Protocol Table 2: Requirement checklist

CDM PoA Validation requirement	Checklist Question / check point	Remarks / comments	Evidence	Draft and Final Conclusion
The various requirements as per para 37 of the CDM modalities and procedures, in line with the validation and verification manual	The various requirements in Table 2 are linked to checklist questions the project should meet.	The section is used to elaborate and discuss the checklist questions and/or the conformance to the question. It is further used to explain the conclusions reached.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable	<p>OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM requirements.</p> <p>A corrective action request (CAR) is raised when project participants have made mistakes, the CDM requirements have not been met or there is a risk that emission reductions cannot be monitored or calculated. A</p> <p>Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.</p> <p>A forward action request (FAR) during validation is raised to highlight issues related to project implementation that require review during the first verification of the project activity.</p>

Validation Protocol Table 3: Resolution of issues identified in Table 2

Draft report clarifications, corrective action requests and forward action requests	Ref. to checklist question in table 2	Summary of project owner response	Validation conclusion
If the conclusions from the draft Validation are either a CAR, FAR or a CL, these should be listed in this section.	Reference to the checklist question number in Table 2 where the CAR, FAR or CL is explained.	The responses given by the project participants during the communications with the validation team should be summarised in this section.	This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".



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Validation Protocol Table 4: Forward Action Requests			
Forward action request	Ref. to checklist question in table 2	Summary of project owner response	Validation conclusion
<i>The FARs raised in Table 2 are repeated here.</i>	<i>Reference to the checklist question number in Table 2 where the CAR, FAR or CL is explained.</i>	<i>The responses given by the project participants during the communications with the validation team should be summarised in this section.</i>	<i>This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".</i>

3.2 FOLLOW-UP INTERVIEWS

The documentary validation, cross-verification of evidences and follow-up interviews with the project proponents were performed by PJRCES validation team with Mr. Juan Alberto Gracia and Mr. Ricardo Díaz on 27 to 29 February 2012 at Camino Sabio Azul S. de R.L. de C.V. office, targeting to confirm selected information and to resolve issues identified at the desk review stage. The interviewees included the representatives from the program owner, the CDM consultant, representative of Government authorities (as CONAGUA and CICC (SEMARNAT)) and community members.

The main topics of the interviews are summarised in the table below.

	Date	Name	Organization	Topics Discussed
/1/	27-29 Feb 2012	George Maher	Project Director / Camino Sabio Azul S. de R.L. de C.V. (Cambio Azul)	- Environmental requirements of the project - Legal requirements of the project - Environmental Impact Assessment - Sustainability of the project.
/2/	27-29 Feb 2012	Thomas Looney	Operational Director/ Camino Sabio Azul S. de R.L. de C.V. (Cambio Azul)	- Technical design of the project activity - Technical studies. - Pilot developer
/3/	27-29 Feb 2012	Martin Betancourt	Financial Director / Camino Sabio Azul S. de R.L. de C.V.	- Responsibilities and functions of the project - Financial analysis



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			(Cambio Azul)	
/4/	27-29 Feb 2012	Fernando Villasana	Consultant /Carbonding	<ul style="list-style-type: none"> - Issues related to the additionality - Applicability of the methodology - Financial analysis
/5/	27-29 Feb 2012	Alberto Carrillo	Consultant /Carbonding	<ul style="list-style-type: none"> - Issues related to the additionality - Applicability of the methodology - Financial analysis
/6/	27-29 Feb 2012	Paloma Sarria	Consultant / Myclimate	<ul style="list-style-type: none"> - Issues related to the additionality - Applicability of the methodology - GS requirements
/7/	27 Feb 2012	Adma Faraon	Owner and Managing Director / Adelmar International (technology supplier)	<ul style="list-style-type: none"> - Technical design of the applicable technology for the project - Technical studies.
/8/	28 Feb 2012	Elizabeth Hernández	Community member and home owner committee member (first CPA)	Social benefits of the project activity
/9/	28 Feb 2012	Cristina Guerra	Lady Plumber / Camino Sabio Azul S. de R.L. de C.V. (Cambio Azul)	<ul style="list-style-type: none"> - Operational activities - Monitoring activities - Training
/10/	29 March 2012	María Lucrecia Martín	Comission Interministerial of Climate Change (SERMANAT –DNA Mexico)	- LoA for the PoA
/11/	9 May 2012	Vicente Chávez	Head of Development Tools Users Services/ General Sub-Direction	<ul style="list-style-type: none"> -Rates of drinking water - Coverage of drinking



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of Potable water and
Basic sanitary services /
CONAGUA

water in Mexico
- Consumption statistics by
type of population served
drinking water

3.3 RESOLUTION OF CLARIFICATION AND CORRECTIVE ACTION REQUESTS

The objective of this phase of the validation was to resolve any outstanding issues which needed to be clarified prior to PJRCES's positive conclusion on the project design. In order to ensure transparency, a validation protocol is customised for the project. The protocol shows in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria.

The validation protocol consists of three tables. The different columns in these tables are described in the figure below. The completed validation protocol for the CDM-SSC-PoA-DD titled "Mexico Water, Energy, & Emissions Efficiency Residential Program (version 2.3 of 05 September 2012) is enclosed in Appendix A to this report.

Findings established during the validation can either be seen as a non-fulfilment of CDM criteria or where a risk to the fulfilment of project objectives is identified.

Corrective action requests (**CAR**) are issued, where:

- i) Mistakes have been made with a direct influence on project results;
- ii) CDM and/or methodology specific requirements have not been met; or
- iii) There is a risk that the project would not be accepted as a CDM project or that emission reductions will not be certified.

A request for clarification (**CL**) may be used where additional information is needed to fully clarify an issue.

Additionally, a forward action request (**FAR**) may be raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. The FARs so identified however, shall not relate to the CDM requirements for registration.

Main changes between the PoA-DD made available for the global stakeholder process and its final version /1/ are as follows:

- Program description further elaborated and clarified by providing more details;



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- Information related to the unique identification of each household involved in the POA has been included;
- The unique identification of water saving devices has been included;
- Costs associated with implementing the PoA have been further clarified;
- Additionality section further improved by applying the “*guidelines on the demonstration of additionality of small-scale project activity*”, version 09.0 /40/,, approved at EB 68; and
- Elaboration of data capture system to ensure reliability of the information collected for monitoring purposes.

4 VALIDATION FINDINGS

The details of the assessment and the main results have been described below in accordance with the VVM (version 1.2), "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities - version 01.0" EB 65, Annex 3, Simplified procedures and modalities for small scale CDM project activities, and applied baseline and monitoring methodology AMS-II.M “*Demand-side energy efficiency activities for installation of low-flow hot water savings devices, version 1.0*”, reporting requirements. The validation criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A /4/6/7/.

4.1 PARTICIPATION REQUIREMENTS

4.1.1 LETTER OF APPROVAL:

The PoA participant is Camino Sabio Azul S. de R.L. de C.V. (Cambio Azul) which is also designated as the coordinating managing entity (CME) authorized to participate in the PoA by the DNA of Mexico. The letter of approval (LoA) was issued on 15 December 2011 by the DNA of Mexico/8/. No Annex I Party has been identified by the time of finalization of this validation report.

The LoA was received directly from the CME. The authenticity of the LoA from the host Party Mexico has been cross-checked through an e-mail request to the Interministerial Commission on Climate Change as DNA representative (CICC), on 29 March 2012 /41/. The LoA has been confirmed that:

- Host Party Mexico has ratified the Kyoto Protocol;
- The Interministerial Commission on Climate Change (CICC) is its established DNA;



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- Cambio Azul is approved as a project participant and CME by the host Party to voluntarily participate and carry out the POA ;
- The POA will contribute to the host Party's sustainable development.

It has been confirmed that the title of the project activity in the LoA is the same as the initial and final versions of the PoA-DD /1//8/. PJRCES, hence, confirms that the LoA from the host Party Mexico is in accordance with paragraphs 45-48 of VVM version 01.2.

The CDM-SSC-PoA does not involve any public funding. From the review of project financial analysis, it has been confirmed that the POA and its associated CPAs will be implemented by the project proponents with their own financial arrangements/16/. Furthermore, validation did not reveal any information that indicates that the project can be seen as a diversion of official development assistance (ODA) funding towards Mexico.

4.1.2 PROJECT PARTICIPANTS AND CME

The PoA CME is Camino Sabio Azul S. de R.L. de C.V. (Cambio Azul), which is also the Project Participant. The host party Mexico DNA has authorized that Cambio Azul act as the CME for the program /8/. Information regarding project participants and the CME is confirmed to be consistent in the CDM-SSC-PoA-DD/1/ and real case CDM-SSC-CPA-DD/2/.

The CME has established the Management Manual for the Mexico Residential Water, Energy, & Emissions Efficiency Program of Activities /24/ which comprehensively covers the scope of its functions as a CME. A review of the management manual and further confirmed through the interviews with the project proponents demonstrated that Cambio Azul has the necessary competencies to act as a CME for the POA. The management manual includes the procedures and details for:

- Checking the features of potential CPAs and ensuring that each CPA meets all requirements and eligibility criteria before inclusion in the registered PoA;
- A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies;
- Procedures for technical review of inclusion of CPAs;
- Arrangements for training and capacity development for personnel
- A procedure to avoid double counting;
- Records and documentation control process for each CPA under the PoA;
- Measures for continuous improvements of the PoA management system.



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Furthermore, the CME has specifically developed a database for the management and operations of the program. The database includes the fields for capturing the relevant data and information for households where the PoA will be implemented and facilitate its functions as a CME. PJRCES, during the site visit, reviewed the design of the database and confirms its suitability for the management of the program.

Based on the review of the above and also further confirmed from the validation of the first real case specific CPA, PJRCES is able to confirm that Cambio Azul has the competencies to act as a CME and also an appropriate management system (CDM management manual /24/) for the purpose has been designed.

4.2 PROGRAMME DESIGN

The POA design involves support to urban neighbourhoods by improving the efficiency of hot water utilization through free distribution and installation of water saving devices. The program water saving devices includes low-flow showerheads and faucet regulators, which effectively reduce hot water dispensed from water fixtures /1//2//3/ in accordance with applicable quality standards/43/. The program devices contain integral non-removable flow restrictions and include one efficient showerhead and several faucet regulators per household/18/. Faucet regulators will be installed in two points of use: (1) a bathroom faucet and (2) a kitchen faucet. The program design is based on a pilot study undertaken on behalf of Cambio Azul by an independent entity, in December 2009, in Mexico City/13/. The study verified the parameters, such as water flow, water utilization time, water temperatures, type of water heaters and volumetric emissions from water heaters in the baseline scenario. PJRCES was able to verify the results of pilot study and confirm their appropriateness with the POA and CPA design. For eligibility assessment and inclusion of subsequent CPAs under the POA, the PP has established the 'Management Manual for the Mexico Residential Water, Energy, & Emissions Efficiency Program of Activities'/24/ which comprehensively includes the specifications and procedures for various aspects of program operations.

Under the program, eligible households include any existing residential buildings, such as, individual homes, apartment complexes, inter alia, where water is heated using fossil fuel-fired (natural gas and LPG) and/or electric water heaters. The eligibility of households to be included in the program under a CPA will be checked and confirmed before the distribution and installation of devices. Procedures for checking are elaborated



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in the management manual/24/ and a complete record of the installation and inventory record of the replaced devices will be maintained by the CME. During the site visit the validation team reviewed the procedures and arrangements established for the purpose.

The program will rely exclusively on CDM revenues to distribute and install these devices at no cost to household owners, thus attaining significant environmental benefits and promoting improved livelihood for local residents and achieving sustainable development for the host Country. In addition to the environmental and socio-economic benefits, a key feature of the program is supporting the gender equality by providing work opportunities to women through lady plumbers program (Mujeres Plomeras)/20/.

Based on the above design features, the SSC-PoA will achieve significant carbon emission reductions from avoided fossil fuel (typically natural gas and liquefied petroleum gas) combustion in water heaters and related to electric water heaters, and reduce domestic water footprint in urban areas vulnerable to water shortages/10//13/. The PoA is aimed to increase efficiency in the use of hot water and have significant energy savings.

PJRCES confirms that the CDM-SSC-PoA-Design Document, version 2.4 (29 January 2013) and the generic CDM-SSC-CPA-DD for the proposed Programme has been prepared using the F-SSC-PoA-PDD Form, version 01 and F-CDM-SSC-CPA-DD form and applicable guidelines have been complied/22/.

The PoA has an expected operational lifetime of 28 years. PJR CES considers the project description to be complete and accurate.

4.3 BASELINE AND MONITORING METHODOLOGY

4.3.1 APPLICABILITY OF THE SELECTED METHODOLOGY(S)

The POA is an energy efficient program involving efficiency improvement of hot water utilization through free distribution and installation of water saving devices for local residents. It applies the approved baseline and monitoring methodology AMS IIM “Demand-side energy efficiency activities for installation of low-flow hot water savings devices”, version 01 /4/, which falls in the type II Energy Efficiency, sectoral scope 3 Energy Demand.



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PJRCES could validate that CDM-SSC-PoA-DD correctly applied the approved methodology. Furthermore, as referred in the applied methodology/4/, general guidelines for sampling and surveys for SSC projects /29/ have also been applied:

The applied methodology AMS ILM version 01 is applicable to the POA and a generic SSC-CPA and the validation of the compliance of applicability conditions are validated as follows:

Requirement	Validation	Evidence(s)
1. Direct installation of low-flow hot water savings devices that are used in residential buildings. These devices may include low-flow devices used for personal bathing (i.e. low-flow showerheads), kitchen faucets, and/or bathroom faucets and are collectively referred to in this methodology as low-flow devices. Such low-flow devices are to permanently replace baseline faucets.	<p>The POA and a typical CPA involves the installation of water saving devices in residential buildings. It has been confirmed that water devices are directly installed by the project operators and replacement and scrapping procedures ensures that devices are replaced permanently.</p> <p>During the site visit PJRCES could also verify that the devices met Mexican Quality Standards for similar kind of devices and also met laboratory tests to verify the water savings.</p>	<ul style="list-style-type: none"> • Water saving device specifications and diagrams and identification system – April 2011 /18/. • Mexican quality standards for water saving devices (NOM-008-CONAGUA-1998) /43/ • Laboratory test results for water saving devices /44/
2. The low-flow devices must contain integral, non-removable flow restrictions. Removable, flow restriction inserts are not included as an allowable technology under this methodology.	<p>From the design specifications and also during the site visit, PJRCES could verify that the devices are of exclusive design by the manufacture with special technology. The design ensures non-removable flow restrictions. The devices also attended laboratory tests to verify the water savings of them.</p>	<ul style="list-style-type: none"> • Water saving device specifications and diagrams and identification system – April 2011 /18/. • Mexican quality standards for water saving devices (NOM-008-CONAGUA-1998) /43/ • Laboratory test



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Requirement	Validation	Evidence(s)
		results for water saving devices /44/
3. Only retrofit projects are allowable, new construction (Greenfield) projects are not included under this methodology. The baseline is the continued use of existing showerheads and faucets.	<p>The POA design and eligibility criteria clearly established that only existing households are eligible under the POA. The pilot program as well as specific CPA included also demonstrated that only existing residential households are being targeted.</p> <p>Furthermore, a program database of households has been established for this purpose. The information in the database contains the specific geographical coordinates and unique identification for each household where the low-flow devices are installed.</p> <p>Based on the above PJRCES could verify that PoA and its associated CPAs will be implemented for the existing households. It has also been confirmed that households were using inefficient water devices and that fossil fuel water heaters are widely used. Taking into consideration the procedures established to confirm the eligibility of households under the program it is confirmed that continued used of shower heads and faucets is a reasonable baseline.</p>	<ul style="list-style-type: none"> • Cambio Azul Program database of households for program implementation /42/ • Records of the geographic coordinates • Pilot program undertaken by Cambio Azul with installation monitoring by AIMEX (2009) /13/ • CONAGUA's report 2011: "Current status of subsector potable water, sewerage and sanitation in Mexico" /47/
4. The aggregate energy savings by a single project may not exceed the equivalent of 60 GWh per year for electrical	A clear criteria for the size of each CPA has been established which ensures that the CPA size will not exceed the SSC threshold. It has	<ul style="list-style-type: none"> • Spreadsheet with sample calculation /14/. • Pilot program



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Requirement	Validation	Evidence(s)
end use energy efficiency technologies. For fossil fuel end use energy efficient technologies, the limit is 180 GWh thermal per year in fuel input.	been verified that PP will establish this during the ex-ante calculation of the thermal energy savings for the fossil fuel consumption from each CPA.	<ul style="list-style-type: none"> undertaken by Cambio Azul with installation monitoring by AIMEX. CPA inclusion procedures in the CDM management manual /24/.
5. Project low-flow devices shall have a minimum of a one-year warranty.	The devices are confirmed to have ten year warranty. This was verified during the interview with the manufacture company. PJRCES could validate that under the warranty of one year the manufacturer shall replace or repair of any failed low-flow devices with equivalent devices at no cost.	<ul style="list-style-type: none"> Manufacture warranty /45/.
<p>6. The project proponent shall ensure that the project low-flow devices:</p> <p>a) Qualify as a water saving device through reference to applicable standards (see example standards in annex 1);</p> <p>b) Provide an equivalent level of service to baseline devices. For low-flow showerheads equivalent level of service is defined as same functional comfort and cleaning performance;</p> <p>c) Are used to control the flow of heated water;</p> <p>d) Are directly installed and tested to be functional at the</p>	<p>The requirements are validated as follows:</p> <p>a) The showerheads are assessed against the applicable national standards for ecological showerheads and confirmed to meet the requirements of this standard. Certificate of compliance has been provided by the technology supplier. There is currently no national standard for low-flow devices to be installed in bathroom and faucet fixtures. However, an independent study has been conducted by the Government of Mexico City and the technologies to be used within the PoA are found to be in compliance with the water-saving requirements established by</p>	<ul style="list-style-type: none"> Water saving device specifications and diagrams and identification system – April 2011 /18/. Mexican quality standards for saving devices (NOM-008-CONAGUA-1998) /43/ Laboratory test results for water saving devices /44/ Management Manual for the Mexico Residential Water, Energy, &



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Requirement	Validation	Evidence(s)
time of installation; and e) Are marked for clear unique identification for the project activity.	<p>the government as confirmed by PJR CES.</p> <p>b) The design specifications and on-site observations confirmed that service level of devices is equivalent or better than baseline installed devices. The functional requirements remain same whereas the comfort of using the devices is better than previously installed devices, as confirmed from their compliance with standards and meeting the laboratory tests.</p> <p>c) The design specifications of devices, their compliance with standards laboratory tests confirms that devices are specifically designed and used to control the flow of heated water..</p> <p>d) As per the 'manual for installation and monitoring of Cambio Azul Ecological Kit' the devices are directly installed by lady plumbers exclusively trained for the POA and CPA installation purposes. Under the established procedures it is ensued that each device is functional at the time of installation and also periodic re-visits are undertaken to check their continuous operations. A complete record of each installation through household data capture form and the database, will be maintained by the CME..</p> <p>e) PJRCES verified the project device design mark in order to establish the unique identification</p>	<p>Emissions Efficiency Program of Activities'/24/</p> <ul style="list-style-type: none"> Project devices design mark for identification /18/



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Requirement	Validation	Evidence(s)
	<p>and established that the installation team members are required to fill out field data sheets with QA/QC remarks on the functioning parameters of the device.</p> <p>Additionally, field supervisors will also conduct QA/QC checks to ensure devices are being correctly installed and operated.</p>	
<p>7.The Project Design Document (PDD) shall explain the proposed method of direct installation of low-flow devices. The PDD shall also explain the method for collection, destruction and/or recycling of baseline devices, which shall allow for verification. An example method is collections of baseline devices, storage in decentralised or centralised locations, and destruction by third-party recycling facility with certificate of disposal of all salvaged and scrap materials. With recorded documentation of baseline device destruction, the destruction can precede verification.</p>	<p>PJRCES could establish that Cambio Azul will deploy trained teams to directly install project devices and field supervisors will conduct QA/QC checks to ensure devices are being correctly installed.</p> <p>Cambio Azul will seek a report or certificate of destruction/disposal of the baseline fixtures from the third party recycling company.</p> <p>Procedures have been established to maintain a complete record of all the installations, periodic checks and operational details of devices.</p>	<ul style="list-style-type: none"> Management Manual for the Mexico Residential Water, Energy, & Emissions Efficiency Program of Activities' /24/
<p>8. At all locations where low-flow devices are installed, water shall be heated exclusively by electricity or fossil fuels prior to the project start and for the duration of the</p>	<p>PJRCES could verify that the existing households were selected based on the sectoral reports of the Mexican authorities and through physical inspection at the time of</p>	<ul style="list-style-type: none"> Cambio Azul Program database of households for program implementation /42/



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Requirement	Validation	Evidence(s)
crediting period. Locations where renewable energy sources (e.g. biomass, solar, geothermal) or non-renewable biomass are used for water heating purposes are not eligible.	<p>the distribution and installation. The program has laid out clear criteria for selection of locations and household meeting the requirements which will be verified by the installation records.</p> <p>Procedures for selection of households and a specific database relating to the household locations along with the key parameters of the program have been established. The database was reviewed and validated to confirm that information related to each household where devices will be installed is captured and maintained.</p> <p>It is also established that if a location is found to switch to renewable energy sources or non-renewable biomass for water heating purposes, such location will be excluded from the CPA.</p>	<ul style="list-style-type: none"> Records of the geographic coordinates (program Database)/42/ Pilot program undertaken by Cambio Azul with installation monitoring by AIMEX CONAGUA's report 2011: "Current status of subsector potable water, sewerage and sanitation in Mexico" /47/ Management Manual for the Mexico Residential Water, Energy, & Emissions Efficiency Program of Activities' /24/
9. The PDD shall also explain how the proposed procedures eliminate double counting of emission reductions, for example due to manufacturers, wholesale providers or others possibly claiming credit for emission reductions for the project devices.	<p>PJRCS could validate that households that are not part of other registered CDM project activities and that have been uniquely identified as follows:</p> <p>(1) Physically through a program logo sticker to be placed in a visible location outside of the house;</p> <p>(2) Electronically through a unique identification serial number assigned automatically through the electronic database created and managed by the CME for this purpose. The database has been reviewed and validated to capture and record the required data and</p>	<ul style="list-style-type: none"> Management Manual for the Mexico Residential Water, Energy, & Emissions Efficiency /24 Project devices design mark for identification /18/



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Requirement	Validation	Evidence(s)
	<p>information in a structured manner.</p> <p>3) The CME will ensure that each CPA is clearly identified through the use of geographic coordinates and mapping tools.</p> <p>4) PJRCES could establish that PP will not implement any CPA that is located within 1 km from any other registered CDM project activity targetting the same type of project activity.</p> <p>Additionally, any risk of double counting is avoided by collecting individual address information of each household within a CPA, which will be assessed against other registered SSC-PoAs or CDM project activities.</p>	

Based on the above analysis, PJRCES is able to confirm that the project demonstrates compliance with applicability conditions and the applied approved methodology AMS ILM version 01 /4/ is applicable to the project activity. The compliance with the applicability conditions is elaborated in a transparent manner in the final CDM-SSC-POA-PDD/1/.

6. BASELINE IDENTIFICATION

Under the PoA a typical CPA involves the installation of water saving devices in residential buildings, thus replacing and scrapping old inefficient devices. The applied methodology (AMS-ILM version 01) /4/ prescribes the baseline as “the continued use of existing showerheads and faucets.” Based on the verification of POA and CPA details/1//2//3//4/, PJRCES could establish that continued use of inefficient water fixtures that lead to excessive usage of hot water, resulting into GHG emissions from water heaters, is a reasonable baseline scenario in the pre-project scenario. In order to ascertain the validity of the baseline, PPs have undertaken an analysis of baseline alternatives which have been identified and discussed as below:

a) *The proposed project not undertaken as a CDM project activity*



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For the proposed PoA not to be undertaken as a CDM project activity, the project shall have to be financed through other means, such as, transferring the cost to the residents or based on the government and/or national or international donor funding.

As demonstrated in other identified alternatives, all of these scenarios are not realistic, in particular, taking into consideration the scale of the project and socio-economic context of local residents and also economic priorities of Mexican Government. Hence, implementation of the project activity (distribution and installation of water saving devices at zero cost to the residents) could not have been implemented in the absence of CDM since carbon credits are the only revenue stream available to the project proponents /16/. In the absence of any economic incentives or availability of donor funding the implementation of the project activity is unrealistic.

b) Installation of water saving devices by household residents at their expense

This scenario has been evaluated to be highly unrealistic under the scope/1/, socio-economic context/36//33/ and developmental objectives/1//8/ of the PoA. The PoA has been designed to specifically target older, high-density housing apartment complexes (locally known as “unidades habitacionales”) residents of social housing complexes located in urban areas. The higher population density of housing complexes favours installation and monitoring of given the economies of scale but another aspect of these residential communities is that both water and energy is heavily subsidised by the government/32/. Based on an independent study by the World Bank /46/ and an economic survey conducted by the Organisation for Economic Cooperation and Development study /33/, in some parts of Mexico city, water is subsidised up to 91% and similarly cost of energy is also heavily subsidised for low-income population. Hence, there is no incentive or motivation for the targeted residents to purchase and install efficient devices for their hot daily water use /32/33/34/. Hence, elimination of this alternative as not being realistic by PPs deem reasonable.

c) Project activity carried out by the Mexican government;

It has been noted that the POA is aimed to be implemented at the national level targeting the residents living in social housing complexes located in urban areas. In the Mexican context the distribution of water saving devices on a national level by the government is not realistic mainly due to: 1) the lack of funds to implement such a program and 2) the institutional complexity involved in undertaking a countrywide water-saving programme considering the high level of fragmentation of water management in the country which causes misalignment of incentives and challenges for managing program of such scale and nature. Based on the local and sectoral expertise, it has been evaluated that in Mexico, National Water Commission (CONGUA) is the only national level institution in-charge of policy formulation for sustainable water use /35/ and to date no such policy has



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been designed and implemented in collaboration with local municipalities which are locally responsible for these services. Furthermore, it has also been evaluated that the program design entails both water and energy efficiencies and an implementation of such a program in Mexico would require multi-institutional collaborative set-up which to date has not been realised. Hence, elimination of this alternative as not being realistic by PPs deem reasonable.

d) Continuation of the current practice: use of inefficient water fixtures that lead to GHG emissions from water heaters (baseline scenario).

Based on the above analysis of different scenarios, it has been reasonably established by the PP that most likely situation in the absence of the project activity is the continuation of the current practice which is use of use of inefficient water fixtures that lead to GHG emissions from water heaters. Hence, this reasonably represents the baseline scenario for the project activity.

The validation team confirmed that:

- a) All the assumptions and data used by the project participants are listed in the CDM-SSC-POA-DD and CDM-SSC-CPA-DD, including their references and sources;
- b) All the documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the CDM-SSC-POA-DD and CDM-SSC-CPA-DD;
- c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- d) Relevant national and/or sectoral policies and circumstances are considered and listed in the CDM-SSC-POA-DD and CDM-SSC-CPA-DD;
- e) The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonable represents what would occur in the absence of the CDM project activity.

PJRCES considers the list of realistic and credible alternatives to be complete and the application of the baseline methodology is transparent and conservative.

7. ELIGIBILITY CRITERIA FOR CPA INCLUSION

PJRCES validated that the CDM-SSC-PoA-DD (version 2.3 of 05 September 2012) established clear eligibility criteria for inclusion of each CPA under the PoA under “Standard for demonstration of additionally, development of eligibility criteria and



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application of multiple methodologies for programme of activities” version 01 EB 65, requiring for PoA:

Reference Paragraph	POA Requirements	Eligibility Criteria	PJRCS opinion
14 (a)	The geographical boundary of the CPA including any time-induced boundary consistent with the geographical boundary set in the PoA;	The boundary for the CDM-SSC-PoA is a Federal Constitutional Republic of Mexico located in North America.	OK. The records of the geographic coordinates and maps of each CPA as well as detailed address information of project households will be kept by the CME. Detailed procedures in the MANAGEMENT MANUAL for the Mexico Residential Water, Energy, & Emissions Efficiency Program of Activities /24/ has been established for the purpose and validated to be appropriate.
14(b)	Conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations (e.g. programme logo);	The CME has defined three ways for avoid the double counting: a) Be located at least one kilometre away from other registered CDM project activities that target the same type of activity (i.e. “Demand-side energy efficiency activities for	OK These three conditions can be verified by the Maps and geographic coordinates available with CME of the project. And through



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		<p>installation of low-flow hot water savings devices”) and that are not part of this SSC-CDM-PoA.</p> <p>b) Consist of households that are not part of other registered CDM project activities and that have been uniquely identified (1) physically through a program logo sticker to be placed in a visible location outside of the house and (2) electronically through a unique identification serial number assigned automatically through the electronic database created and managed by the CME for this purpose.</p> <p>c) Only install low-flow devices that are distinctly marked with the program logo through a high adherence sticker.</p>	<p>government agencies such as the National information system on quantity, quality, utilization and conservation of water (SINA). Detailed procedures in the MANAGEMENT MANUAL for the Mexico Residential Water, Energy, & Emissions Efficiency Program of Activities /24/ has been established for the purpose and validated to be appropriate.</p>
14(c)	The specifications of technology/measure including the level and type of service, performance specifications including compliance with testing/certifications;	<p>Qualify as a water saving device through reference to applicable standards</p> <p>Provide a level of service equivalent to baseline devices. For low-flow showerheads equivalent level of service is defined as same functional comfort and cleaning performance;</p>	<p>OK</p> <p>Samplings of saving devices by the laboratory against the Mexican quality standards /43/ are found to be applicable.</p>
14 (d)	Conditions to check the start date of the CPA through documentary	The starting date of the	<p>OK</p> <p>Installation</p>



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	evidence;	CPA is when the first water saving devices of the proposed CPA is installed. And the records for this activity will be the evidence to prove it.	records showing signature from head of household acknowledging receipt of the devices at zero cost. Detailed procedures are elaborated in the Management Manual for the Mexico Residential Water, Energy, & Emissions Efficiency Program of Activities /24/
14(e)	Conditions that ensure compliance with applicability and other requirements of single or multiple methodologies applied by CPAs;	<p>Installation records showing signature from head of household acknowledging receipt of the devices at zero cost.</p> <p>Consist of a group of existing residential buildings located in the host country of Mexico where low-flow devices are directly installed permanently replacing or retrofitting baseline faucets.</p>	<p>OK</p> <ul style="list-style-type: none"> - Cambio Azul Program Data base of existing households in Mexico city and others Mexican states - Records of the geographic coordinates - AIMEX Pilot program (2009) - CONAGUA's report 2011: "Current status of subsector potable water, sewerage and sanitation in Mexico"
14(f)	The conditions that ensure that CPAs meet the requirements	As per section A.4.3 of the CDM-SSC-PoA-	OK Installation



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	<p>pertaining to the demonstration of additionality as specified in Section A above;</p>	<p>DD, the additionality of the CDM-SSC CPA is demonstrated following the simplified procedures for small scale project activities. It has been noted that all water saving devices distributed through this SSC-CPA are provided and installed free of charge to the end-user.</p>	<p>records showing signature from head of household acknowledging receipt of the devices at zero cost. Detailed procedures has been established in the Management Manual for the Mexico Residential Water, Energy, & Emissions Efficiency Program of Activities /24/</p>
14(g)	<p>The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis;</p>	<p>Given that the program is highly homogeneous, and the division across PoA is only made for CDM purposes, comments have been invited at the PoA level. Two local stakeholder meetings were conducted in 2010. The meetings took place in Mexico City given that the Mexico City metropolitan region is home to the majority of the population expected to be covered under the PoA and to all of the relevant government institutions.</p> <p>An environmental impact assessment is</p>	<p>OK Records of Local stakeholder's consultations and comments and responses. Detailed procedures in the Management manual for the Mexico Residential Water, Energy, & Emissions Efficiency Program of Activities /24/</p>



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		not required by the Secretary of Environment and Natural Resources (SEMARNAT) for the installation of water saving devices.	
14(h)	Conditions to provide an affirmation that funding from Annex I parties, if any, does not result in a diversion of official development assistance;	The CPA proponent will affirm in the corresponding SSC-CPA-DD that funding from Annex I parties, if any, do not result in a diversion of official development assistance.	OK A statement from the CPA proponent affirming that the CPA does not result in a diversion of official development assistance has been included as an eligibility condition. This will be verifiable directly from the corresponding SSC-CPA-DD
14(i)	Where applicable, target group (e.g. domestic/commercial/industrial, rural/urban, grid connected/ off-grid) and distribution mechanisms (e.g. direct installation);	Information on each household included in the SSC CPA will be compiled, ensuring that each household is uniquely identified. Furthermore, the CME will conduct cross-checks with the CDM project registry to prevent the inclusion of any CPA that has the same physical location as other CDM project activity with the same scope.	OK Cambio Azul Program database of households for program implementation /42/.
14(j)	Where applicable, the conditions related to sampling requirements for a PoA in accordance with the approved guidelines/standard from	A simple random sample approach will be followed making sure that a 95%	OK Sampling applicable



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	the Board pertaining to sampling and surveys;	<p>confidence interval and a 5% margin error requirements are met. The simple random sample approach is considered appropriate given the fact that the homogeneity of the population within the sampling frame of a given CPA is expected to be sufficiently high.</p> <p>To ensure a random selection, random number generators will be used. Each household in the target population is uniquely identifiable by its given ID number. Each household can thus be allocated a Sample Selection Number in each monitoring period, starting at 1 and increasing up to the total number of households in the Database for that pre-defined sampling frame. Applying the random number generators, the households can then be randomly chosen from the defined population up to the required sample size as calculated by the CME.</p>	according with “Standard for sampling and surveys for CDM project activities and programme of activities” version 2.0/29/.
14(k)	Where applicable, the conditions that ensure that every CPA in aggregate meets the small-scale or micro scale threshold criteria and	As per EB guidance (EB 54, Annex 3), if each of the independent	OK Ex-ante calculation of emission



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	remains within those thresholds throughout the crediting period of the CPA;	subsystems/ measures included in the CPA of a PoA is no greater than 1% of the small-scale thresholds defined by the methodology applied, then that CPA of a PoA is exempted from performing de-bundling check. Since the cumulative thermal energy savings achieved through water saving devices installed at a single household represent less than 1% of the threshold set in the approved CDM methodology, the Cambio Azul SSC CPA is exempted from performing de-bundling check, i.e. the SSC-CPA is considered as being not a de-bundled component of a large scale activity.	reductions for the CPA/14/.
14(1)	Where applicable, the requirements for the debundling check, in case CPAs belong to small-scale (SSC) or micro scale project categories.	As per EB guidance (EB 54, Annex 3), if each of the independent subsystems / measures included in the CPA of a PoA is no greater than 1% of the small-scale thresholds defined by the methodology applied, then that CPA of a PoA is exempted from performing de-bundling check. Since the cumulative thermal	OK Ex-ante calculation of emission reductions for the CPA/14/..



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		energy savings achieved through water saving devices installed at a single household represent less than 1% of the threshold set in the approved CDM methodology, the Cambio Azul SSC CPA is exempted from performing de-bundling check, i.e. the SSC-CPA is considered as being not a de-bundled component of a large scale activity.	
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4.4 OPERATIONAL, MANAGEMENT AND VERIFICATION PLAN

PJRCES could establish that the Coordinating and Managing Entity (CME) is Camino Sabio Azul S. de R.L. de C.V. (Cambio Azul). As such, Cambio Azul is responsible for the development of this project operationally and administratively, including a wide range of decision-making functions and responsibilities, to assure the optimal implementation and monitoring of the programme. Moreover, this CME will be responsible for identification and inclusion of additional CPAs throughout the CDM project cycle from the early stages until the end of the determined crediting period.

Cambio Azul (CME) will perform the following tasks related to monitoring and sampling:

- Determine the SSC CPA boundary to ensure that emission reductions are less than SSC thresholds.
- Confirm that household details are correctly entered into the database with their unique identification number.
- Select random, statistically valid sample of households.
- Execute the sampling plan.

Cambio Azul, as a CME, will utilize specialized document processing services that will help streamline project monitoring processes so as to collect and capture data on almost “real time” basis. The installation teams will complete data sheets that will be digitally



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received, reviewed, and captured into a data base system updated daily. The process for data capturing will be performed via specialized imaging services (or equivalent services by a reputable third party specialized in data managing) which consist of data mining from a census structured format (Cambio Azul's Field Data Sheet), using recognition technologies of characters and marks. The CME will ensure that each CPA is clearly identified through the use of geographic coordinates and mapping tools.

Cambio Azul, as a CME, will be responsible for calculation of GHG emission reductions from each CDM-SSC-CPA under this national PoA through the use of a database management system/42/ based on the applied approved methodology AMS-II.M. The monitoring supervisor will conduct crosschecks to ensure accuracy and completeness of data captured by periodically comparing field sampling sheets with information entered into the database. Cambio Azul (CME) will ensure that information and training material is available to personnel involved in the monitoring process as required by the PoA, including eventual SSC-CPA developers.

All the operational and management functions of the CME will be undertaken based on the Mexico Residential Water, Energy, & Emissions Efficiency Program of Activities Manual /24/. The manual is confirmed to comprehensively cover all the areas of the scope of functions of the CME.

The manual is well organized and provides:

- A detailed organizational plan including clear and specific definitions of personnel roles and responsibilities and review supervision.
- CPA inclusion review assignments and processes.
- Personnel training procedures, including arrangements for technical training by third-party professionals.
- A procedure to avoid double counting.
- Record and database control process for the CME and each CPA under the PoA
- A number of measures to effect PoA management continual improvement.

It is PJRCES opinion that the established procedures in the manual are comprehensive and shows compliance with the requirements for the proposed POA operations, such as set forth in EB65 Annex 3 paragraph 17. It is further confirmed that Cambio Azul has demonstrated to be capable of undertaking the functions as a CME for the POA operations.

4.5 PROJECT BOUNDARY

4.5.1 POA BOUNDARY



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PJRCES could establish during site visit and desk review that the boundary for the Cambio Azul PoA is the country of Mexico, a federal constitutional republic located in North America. It borders to the North with the United States; to the South and West by the Pacific Ocean; to the Southeast by Guatemala, Belize, and the Caribbean Sea; and to the East by the Gulf of Mexico.

	<i>GHGs involved</i>	<i>Description</i>
<i>Baseline emissions</i>	<p><i>CO₂</i></p> <p><i>CH₄</i> <i>N₂O</i></p>	<p>Carbon dioxide emissions is the main emission source for this project from direct combustion of fossil fuel/ electricity generation in fossil fuel fired power plants used for heating water in the baseline scenario.</p> <p>Both CH₄ & N₂O are excluded for simplification as minor emission source. This is in accordance with the requirements of the approved baseline methodology.</p>
<i>Project emissions</i>	<p><i>CO₂</i></p> <p><i>CH₄</i> <i>N₂O</i></p>	<p>A carbon dioxide emission is main emission source for this project from direct combustion of fossil fuel / electricity generation in fossil fuel fired power plants used for heating water in base line scenario..</p> <p>Both CH₄ & N₂O are excluded for simplification as minor emission source. This is in accordance with the requirements of the</p>



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		approved baseline methodology.
<i>Leakage</i>	<i>NA</i>	The project will not have leakage of Greenhouse Gases.

The identified project boundary and selected sources and gases for emission sources are justified for the programme of activities.

It is confirmed that there are no sources of GHG emissions within the program boundary that are material (i.e. contribute with more than 1% of the expected emission reductions) and which have not been taken into account in the CDM-SSC-PoA and CDM-SSC-CPA-generic through the applied methodology. Furthermore, on the basis of the on-site assessment, PJRCES hereby also verifies that project boundary, as a result of the implementation of the project is in the location of each installed low-flow device and associated water heating system.

4.5.2 CPA BOUNDARY

PJRCES also verifies that as per selected methodology, the CPA boundary, as a result of the implementation of the project is in the location of each installed low-flow device and associated water heating system.

4.6 CREDITING PERIOD AND POA DURATION

PJRCES has validated that the crediting period start date will be when the CDM-SSC-POA-DD get registered which is expected to be 30 November 2012. The crediting period start date of the CDM-SSC-CPA-DD is defined the day of the registration or the date when the first water saving device will be installed and connected in a household that is included within the first CPA, whichever is later.

The CDM-SSC-PoA has an expected operational lifetime 28 years.

4.7 ADDITIONALITY ASSESSMENT

4.7.1 ADDITIONALITY OF PROGRAMME OF ACTIVITY

The additionality of the proposed POA is demonstrated by applying the “*Guidelines on the demonstration of additionality of small-scale project activities*”/40/. As per the guidelines the small scale project activities are deemed automatically additional where project activities that are solely composed of isolated units where the users of the



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technology/measure are households and where the size of each unit is no larger than 5% of the small-scale thresholds.

It has been validated that the proposed PoA is targeted at:

- Energy savings at individual households, as validated and elaborated in the program design /1//2//13/, and
- The aggregate energy savings at the household level are expected in the range of 3.15 MWh thermal (well below 5% of the applicable SSC threshold equivalent to 3,000 MWh or 9,000 MWh thermal per year), as verified from the ex-ante calculation of energy savings at the household level /13/.

Hence, it can be confirmed that the proposed POA is additional as per the EB 68 guidelines.

However, PPs have further strengthened the additionality demonstration of the program by identifying the investment barrier, as per general guidelines to SSC CDM methodologies, information on additionality (attachment A to Appendix B) /6/. As per the guidelines and the identified investment barrier, the project would not have implemented under normal business environment since the devices are distributed and installed at zero cost to the residents and program does not include any other economic incentives. The more viable alternative to the project activity is the continuation of the current practice which clearly leads to higher level of emissions.

PP have identified following alternatives to the proposed program:

- a) *The proposed project not undertaken as a CDM project activity;*
- b) *Installation of water saving devices by household residents at their expense;*
- c) *Project activity carried out by the Mexican government.*

As demonstrated above that the project activity without being a CDM project would not be implemented given that there are no economic and financial incentives involved. And the water devices are distributed and installed at zero cost to the residents. Installation of the water saving devices by households at their own expense it also not realistic since both water and energy cost is heavily subsidised in Mexico and there is no incentives for the local residents to opt for efficient devices. Similarly, in accordance with the Mexican legislation the National Water Commission (CONAGUA) /47/ is the only institution with a countrywide scope and is also the institution responsible for designing and implementing policies at the federal level that promote the sustainable use of water. PJRCES, after the interview with the member of CONAGUA, could establish that the retail distribution of water at the household level, the collection of water fees, and the design and implementation of subsidies is in charge of local and municipal water utilities and not in charge of CONAGUA. Hence, the benefits of avoiding subsidies (which would



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represent the main reason to implement a countrywide water saving program) would not be realized directly by CONAGUA thus increasing the difficulty in collecting the economic benefits of implementing a nationwide program. Hence implementation of the proposed POA at the national level by the Mexican Government is also not a realistic option.

Hence, it can be concluded that implementation of the project activity without CDM revenues would not be possible. From the above discussion and cross verification of the information with the references it can be concluded that the all the alternatives faces investment barrier but the continuation of current practice does not face any barriers.

PJRCES could further confirm that there are no financial or economic benefits to the project proponent other than carbon related revenues. This was confirmed from the program design documentation and will be further confirmed through device distribution records (forms) which will be signed off by the head of the household showing the free provision and installation of the water saving devices.

Based on "*Guidelines on the demonstration of additionality of small-scale project activities*" /40/ and also taking into consideration the barrier associated with the project activity, it is demonstrated that the project activity is not a likely baseline scenario and that the emission reductions due to the project activity are thus, additional.

4.7.2 APPROACH FOR DEMONSTRATING ADDITIONALITY OF CPAS

PJRCES, based on the eligibility criteria of inclusion of each CPA in the POA, could validate that for each CDM-SSC-CPA the CME shall ensure its additionality through:

- Demonstrating that the CPA targets individual households only;
- Demonstrating (through the ex-ante estimation of emission reductions) that a typical low-flow device will reduce no more than 9,000 MWh thermal per year or 3,000 MWh electrical.

PJRCES could also validate that based on the eligibility criteria of each CPA it is highly likely that any typical CPA would face the similar kind of identified investment barriers and would not be implemented without CDM benefits. Hence, approach for demonstrating of additionality of each CPA is confirmed.

4.8 MONITORING PLAN



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The monitoring plan (MP) has been designed as per the requirements of the approved monitoring methodology AMS II M “Demand-side energy efficiency activities for installation of low-flow hot water savings devices”, version 1.0/4/.

Since under the program and for each CPA, a large number of small devices shall be distributed, therefore, in accordance with the requirements of the methodology, a sampling method will be applied. The sampling plan is confirmed to follow the requirements of the methodology and 95/5 confidence/precision will be achieved /29/. PJRCES could validate that the process for data capturing will be performed via specialized Imaging Services (or equivalent services by a reputable third party specialized in data managing) which consist of data mining from a census structured format (Cambio Azul’s Field Data Sheet), using recognition technologies of characters and marks:

- (a) Optical Mark Recognition (OMR) – interpreting structured marks and;
- (b) Intelligent Character Recognition (ICR) – interpreting handwriting

PJRCES could establish that given that OMR and ICR have different confidence levels, the data services provider will undertake a manual quality assurance/quality control process in order to assess the accuracy of the “non-mark” parameters. This manual review will increase the confidence level of ICR up to 95% (similar to the confidence level achieved through the use of OCR technologies). Therefore, the entirety of data captured from the field data sheet will be captured with a confidence level of 95% for ICR or 100% for OMR.

PJRCES could determine that in relation with the localization of the existing household the CME will ensure that each CPA is clearly identified through the use of geographic coordinates and mapping tools. And any risk of double counting will be avoided by collecting individual address information of each household within a CPA, which will be assessed against other registered SSC-PoAs or CDM project activities. Only households that are not listed in other CDM or voluntary water saving project activities will be included within a CPA under this program.

The parameters related to the physical address of each household will be pre-defined by Cambio Azul by having Field Data Sheets pre-printed with the individual information for households in those areas that qualify as a CPA.

PJRCES validated that a simple random sample approach will be followed making sure that a 95% confidence interval and a 5% margin error requirements are met as per the “Standard for sampling and surveys for CDM project activities and programme of activities” Version 2.0/29/. The simple random sample approach is considered appropriate given the fact that the homogeneity of the population within the sampling



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frame of a given CDM-SSC-CPA is expected to be sufficiently high. In cases where more than one CDM-SSC-CPA gets implemented within the same bioclimatic region, the CME may use a cross-CDM-SSC-CPA sampling approach for a group of CDM-SSC-CPAs that cover households located in the same bioclimatic region.

The responsibilities and authorities for project management, procedures for monitoring and reporting, and QA/QC procedures have been systematically established and formalized in the management manual and are feasible within the project design/24/. The monitoring plan is in line with the approved applied monitoring methodology and it is confirmed that the monitoring plan will give opportunity for real measurements of emission reductions that will be accrued.

4.8.1 METHODOLOGICAL CHOICES AND EQUATIONS TO BE USED FOR CALCULATION OF EMISSION REDUCTIONS OF A CPA

PJRCES could establish that the methodology requires measurements of a statistically valid sample of baseline devices and project water saving devices to calculate annual energy savings per device.

(a) *Calculation of energy savings*

The following equations are used to determine energy savings per water saving device. These equations are used for each type of device (e.g., showerhead, bathroom faucet, and kitchen faucets)

$$ES_y = \Delta W_y * \Delta T * Cp \quad (1)$$

$$\Delta T = T_{out, measured} - T_{in, measured} \quad (2)$$

$$\Delta W_y = \frac{W_{BL, calculated} - W_{P, measured}}{Days_{monitoring}} * 365 \quad (3)$$

$$W_{BL, calculated} = FR_{BL, measured} * \frac{W_{p, measured}}{FR_{p, measured}} \quad (4)$$

(b) *Emission reductions for electric or fossil fuel water heater scenarios*



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Emission reductions are calculated with equation (5) or (6) below for water heated with electricity or for water heated with fossil fuel, respectively.

$$ER(e)_y = N_y * ES_y * EF_{CO2,ELEC,y} / (1 - l_Y) \quad (5)$$

$$ER(ff)_y = N_y * ES_y * 3,600,000 \frac{kJ}{MWh} * EF_{CO2,FF} / EFF_{Default} \quad (6)$$

The measurements will be undertaken using calibrated instrumentation of flow rate of existing (baseline) device to be replaced by project low-flow device/1//18//24/. Parameter shall be determined once and remain fixed during the crediting period.

In relation with the cold water PJRCES could establish that once the parameter has been determined, it will remain fixed during the entire crediting period. The method for the measurement will be followed for the determination of the parameter will be defined according with methodology requirement and specified at the CPA level. A simple random sample approach will be followed making sure that a 95% confidence interval and a 5% margin error requirements are met as per the “General guidelines for sampling and surveys for SSC project activities”.

PJRCES could establish that the formulas used for calculations of baseline emission reduction are consistent with the applied baseline and monitoring methodology AMS II.M version 01/4/. The data to be captured at the household level is considered to be typical of the data gathered during the AIMEX pilot program which establishes the conditions similar to those obtaining in real situations /13/.

4.8.2 PARAMETERS DETERMINED EX-ANTE

PJRCES could validate that the following parameters have been available during the validation process:

- Efficiency of the fossil fuel-based water heater ($EFF_{Default}$) (data default specified in AMS II.M version 01). 75% /4/
- Average annual technical grid losses (transmission and distribution) during year y for the grid serving the locations where the devices are installed, expressed as a fraction (ly) (data default specified in AMS II.M version 01). 10% /4/



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- Emission factor for liquefied petroleum gas (LPG) (EFCO₂,LPG)(IPCC of 2006)(63x10⁻⁹) /28/
- Emission factor for natural gas (EFCO₂,ng) (IPCCC 2006) (56x10⁻⁹) /28/

PJRCES could determine that the measurement will be making using calibrated instrumentation, of flow rate (baseline device and project device) device to be replaced by project low-flow device. Parameter shall be determined once and remain fixed during the crediting period.

In relation with the cold water PJRCES could establish that once the parameter has been determined, it will remain fixed during the crediting period. The method to measurement is followed for the determination of the parameter will be defined according with methodology requirement and specified at the CPA level.

4.8.3 PARAMETERS DETERMINED EX-POST

PJRCES could validate that each CDM-SSC-CPA is clearly identified through the use of geographic coordinates and mapping tools. Only households that are not listed in other CDM or voluntary water saving project activities will be included within a CDM-SSC-CPA under the Cambio Azul PoA.

The baseline of the project activity will be calculated ex-post when installing the new water-saving devices in each of the households.

And the following parameter has to include as an ex-post monitoring parameters for CDM-SSC-PoA (baseline) and CDM-SSC-CPA:

Parameters	Unit	Measurement
$FR_{BL,measured}$ Measured flow rate of project device	litres/minute	Measurement, using calibrated instrumentation, of flow rate of existing (baseline) device to be replaced by project low-flow device. Measurements taken with water control valve(s) in full open position(s). At least three measurements taken and average of three measurements is used. Measurements taken at the time of project installation.
$FR_{P,measured}$ Measured flow rate of project device	litres/minute	Measurement, using calibrated instrumentation, of flow rate of installed low-



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		flow device. Measurements will be taken with water control valves in full open positions. Measurements will be taken at time of project installation
$W_{P,measured}$ Measured amount of water used by project device during the number of days equal to $Days_{monitoring}$	Litres	For a statistically valid sample of the project water saving devices that will be installed, measurement of water flowing through project low-flow device over a period of time equal to at least 60 days. Measurements will be taken for at least 30 days during summer season and 30 days during winter season and totalled for determining WP measured. Measurements will be taken with calibrated totalizing flow meter installed inline to the water saving device supply line
$T_{out,measured}$ Temperature of hot water	Degree Celsius	Measurement will be taking using calibrated instrumentation of the temperature of the water exiting the project low-flow device. Measurements taken with water control valves in full open positions. At least three measurements will be taken and average of three measurements will be used.
$T_{in,measured}$ Temperature of cold water	Degree Celsius	For a statistically valid sample of the project water saving devices that will be installed, measurement will be done according to one of the three methods described in the methodology. The



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		<p>three methods are:</p> <p>a) Measurement of temperature of cold water during different time periods during the year of project installation to ensure that seasonal and weather factors are included in the temperature data points obtained. Average value for year shall be calculated;</p> <p>b) Measurement of temperature of cold water during a time period when the water temperature is expected to be at an annual high temperature, such as during a hot season. This data point will be used as the annual value;</p> <p>c) Use of a scientifically validated study for the temperature of incoming cold water in residential systems in the project activity location.</p>
Number of days during which the value of WP _{measured} , is determined	Days	A simple random sample approach will be followed making sure that a 95% confidence interval and a 5% margin error requirements are met as per the "General guidelines for sampling and surveys for SSC project activities".
Number of low-flow devices installed and operating in year y	Number	The number of water saving devices installed at each household will be registered in individual installation records. During monitoring



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		phase a statistically valid sample of the households will be surveyed to verify installation.
In year y, proportion of low-flow water-saving devices of each type that remain operational in households where fossil fuels or electricity continue to be used as the only energy source for water-heating.		For a statistically representative sample, a site visit will be conducted in order to determine whether the low-flow water-saving devices remain operational during the monitoring period y. The CME will follow a sampling and monitoring framework in order to achieve a 95% confidence interval and 5% margin for determining the proportion of devices for which emission reductions can be claimed as per the requirements of the methodology.
$EF_{CO_2 ELEC y}$ Emission factor in year y for the grid serving the locations where the devices are installed	tCO ₂ /MWh	<p>The grid emission factor for specific CPAs, where applicable, will be calculated on an ex-post basis at time of SSC-CPA inclusion. The calculation will be undertaken as per the requirements of AMS-I.D (version 17) or AMS-I.F (version 2), which specifies the use of the “<i>Tool to calculate the Emission Factor for an electricity system.</i>”</p> <p>It has been confirmed by PJRCES that calculation of this parameter at SSC-CPA inclusion stage benefits accuracy, as the timing and locations for CPAs will be determined in the future, and resource mix may change and SSC-CPAs may be located in different grids. Therefore, while the stepwise approach is</p>



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		established, the calculations are performed ex-post at CPA inclusion.
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PJRCES could validate that monitoring parameters included in section E.7.1 of the CDM-SSC-PoA-DD version 2.4, are in accordance with the applicable methodology.

4.8.4 MANAGEMENT SYSTEM AND QUALITY ASSURANCE FOR MONITORING AND REPORTING

PJRCES could validated that all details of the data to be collected, the frequency of data recording and its format, responsibilities and authorities for project management, procedures for monitoring and reporting, QA/QC procedures, procedures for calibration of metering equipment and procedures for training and maintenance have been elaborated in the monitoring plan submitted in the last version of CDM-SSC-PoA-DD version 2.4, and CDM-SSC-CPA-DD-generic. Cambio Azul program developed an exclusive PoA Management Manual in order to establish the procedures for the CME to manage the data, responsibilities, training, calculations and verification & monitoring results.

Adequate training will be provided to relevant personnel before the commencement of the project. Relevant project management procedures will also be established and implemented before the commencement of the project.

A simple random sample approach will be followed making sure that a 95% confidence interval and a 5% margin error requirements are met as per the “Standard for sampling and surveys for CDM project activities and programme of activities” Version 2.0. The simple random sample approach is considered appropriate given the fact that the homogeneity of the population within the sampling frame of a given CPA is expected to be sufficiently high /29/.

PJRCES validated that contractors were selected for data processing and measurements are companies that demonstrate the experience and expertise necessary to conduct monitoring of the parameters of program activities.

All data will be archived electronically and with paper backup, and be kept at least for 2 years after the end of the last crediting period. All these shall also be further verified during verification.

PJRCES validated that the PP will utilize specialized document processing services that will help streamline project monitoring processes so as to collect and capture data on almost “real time” basis. Installation activities will be accompanied by a quality control



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and monitoring program to ensure that baseline parameters are adequately recorded and to verify correct performance of the project devices.

As per paragraph 11 of the “Standard for sampling and surveys for CDM project activities and programme of activities”, the sample size will be estimated using appropriate online software (such as <http://www.surveysystem.com/sscalc.htm>) for a 95% confidence level and 5% margin of error. More households will be selected for sampling than is required by the sample size, to ensure that if there are any households that are unable to be reached the required accuracy is still achieved. The size of the buffer will be driven by the required sample size but is expected to range between 10 and 20% above the estimated sample size. The CME will stop monitoring a particular parameter once the required level of confidence/precision has been reached, as long as the calculated minimum number of samples has been achieved /29/.

4.9 ENVIRONMENTAL IMPACTS

PJRCES could validate that according with the Mexican legislation an environmental impact assessment is not required by the Secretary of Environment and Natural Resources (SEMARNAT) for the installation of water saving devices. Since the project technology is installed inside individual households, Cambio Azul must obtain written consent of each household owner, thus guaranteeing that access for installation and monitoring is allowed and that project devices are accepted voluntarily.

4.10 COMMENTS BY LOCAL STAKEHOLDERS

PJRCES could establish that the project description in the first stakeholder meeting, co-organized by the government of Mexico City, took place on July, 15, 2010/27/. Invitations were sent by the CME and Mexico City’s government officials. During the meeting, in which 44 attendees including NGO and government officials participated, the general concept of the program was presented along with a demonstration of the technology originally selected for the programme /15/.

A second stakeholder meeting took place on 29 October 2010 having a participation of over 160 attendees, most of them home owners and committee members from several housing complexes/27/. The consultation followed the same procedure described in the previous paragraph. A total of 161 inputs were received, analyzed and taken into account. The validation team verified the minutes of meeting to note that no negative comments were received and were cross-checked with the information obtained during follow up interviews with stakeholders during the site visit. The validation team is of the opinion that the local stakeholder’s consultation process was adequate giving fair opportunity for



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the participation by local stakeholders. The project has not received any adverse comments.

PJRCES considers the local stakeholder consultation carried out as adequate and follows the local practices.

4.11 COMMENTS BY PARTIES, GLOBAL STAKEHOLDERS AND NGOS

The PoA-DD of Mexico Water, Energy, & Emissions Efficiency Residential Program was made publicly available on UNFCCC's website on 28/01/12 (<http://cdm.unfccc.int/Projects/Validation/DB/G2LRM7BL4AL3P28WCOPOHMBM35AIL6/view.html>) and Parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 28 January 2012 to 26 February 2012.

No negative comments were received and there was no action taken.

Comment by:

☐ Accredited NGO

☐ Party

☐ Stakeholder

Inserted on:

Subject:

Comment:

How DOE has considered the comments received in its validation:

NA.



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5 VALIDATION OPINION

Perry Johnson Registrar Carbon Emissions Services, Inc (PJRCES) has performed a validation of the CDM-SSC-PoA-DD titled “Mexico Water, Energy, & Emissions Efficiency Residential Program”, and CDM-SSC-CPA-DD-generic title “Mexico Water, Energy, & Emissions Efficiency Residential Program” with information relevant to all CDM-SSC-CPAs to be included in this CDM-SSC-PoA.

The validation was performed on the basis of UNFCCC criteria for the Clean Development Mechanism and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the CDM-SSC-POA-DD version 2.4 (29 January 2013), and CDM-SSC-CPA-DD-generic and the subsequent follow-up interviews have provided DOE with sufficient evidence to determine the fulfilment of stated criteria.

The host country is Mexico. The country fulfils the participation criteria and has approved the project and authorized the project participants. The DNA from Mexico confirmed that the project assists in achieving sustainable development.

The Programme of Activities correctly applies AMS II.M “Demand-side energy efficiency activities for installation of low-flow hot water savings devices”, version 01.

Adequate training and monitoring procedures have been implemented.

In summary, it is PJRCES’s opinion that the CDM-SSC-PoA-DD titled “Mexico Water, Energy, & Emissions Efficiency Residential Program” (version 2.4 of 29 January 2013) in Mexico, and CDM-SSC-CPA-generic “Mexico Water, Energy, & Emissions Efficiency Residential Program – CPA.[Insert state name abbreviation].[Insert CPA number in that state] meet all relevant UNFCCC requirements for the CDM and all relevant host country criteria and correctly applies the baseline and monitoring methodology AMS II.M (version 01). DOE thus requests the registration of the project as a CDM-SSC-POA-DD, and CDM-SSC-CPA-generic.



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6 REFERENCES

/1/	CDM-SSC-PoA-DD – initial and final version 02.4, 29 January 2013
/2/	CDM-SSC-CPA-DD specific, version 02.4, 18 December 2012
/3/	CDM-SSC-CPA-DD generic, version 02.4, 29 January 2013
/4/	An AMS II.M version 01 “Demand-side energy efficiency activities for installation of low-flow hot water savings devices”, which falls in the type II Energy Efficiency, sectoral scope 3 Energy Demand.
/5/	Simplify procedures and modalities for small scale CDM project activities
/6/	"Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities - version 01.0", EB 65, Annex 3
/7/	Validation and Verification Manual version 1.2, UNFCCC-EB.
/8/	Letter of Approval 281-2011 of 15 December 2011
/9/	No objection Letter 230-2011 of 12 October 2011
/10/	Rates of drinking water (2011)
/11/	Consumption statistics by type of population served drinking water (2011)
/12/	The Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM. 2005
/13/	AIMEX Pilot programme records – December 2009
/14/	Spreadsheet Emission reduction calculations – CPA – December 2011
/15/	Local stakeholders consultation – records – 29 / 10 / 2010
/16/	Simple cost analysis – April 2012
/17/	Xerox data capturing proposal – 9/06/2011
/18/	Water saving device: Specifications and diagrams and identification system – April 2012
/19/	Contract agreement Carbonding consultancy and Cambio Azul – 05/09/2011
/20/	Lady Plumbers Team Solutions – 20/05/2010
/21/	F-SCC-PoA-PDD Form, version 01 and filled in line with the Guidelines for completing the Programme Design Document for Small Scale CDM Programmes of Activities (PoA-SCC-PDD) version 01.0.
/22/	Component Project Activity Design Document form (version 01.0)
/23/	“Tool for the demonstration and assessment of additionality” version 06.0.0
/24/	Camino Azul Management Manual. 21 June 2012
/25/	PIN Cambio Azul Water & Energy saving program of activities – 03/10/2011



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/26/	Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
/27/	Records of attendance (Opening meeting and closing meeting)
/28/	IPCC Guidelines for National Greenhouse Gas Inventories Volume 2, 2006 Energy. Chapter 2, Table 2.2 Default emission factors for stationary combustion in the energy industries
/29/	“Standard for sampling and surveys for CDM project activities and programme of activities” Version 2.0
/30/	Approval of methodology revision by the Gold Standard TAC team (26/08/2010)
/31/	Clarification request on AMS II.C “Demand-side energy efficiency activities for specific technologies” is sent to the CDM Small Scale Working Group. (22/09/2010)
/32/	http://www.finanzas.df.gob.mx/codigo/LIBRO_PRIMERO_2012.pdf
/33/	http://www.oecd.org/economy/economicsurveysandcountrysurveillance/47875549.pdf
/34/	http://www.gas.pemex.com/PGPB/Productos+y+servicios/Gas+licuado/Mercado+gas+LP/
/35/	http://www.sener.gob.mx/webSener/portal/Default.aspx?id=1530
/36/	http://siteresources.worldbank.org/INTOGMC/Resources/Unedited_LPG_report_Dec_2011.pdf
/37/	http://rumbodemexico.mx/index.php/diariodf/falla-milpa-alta-en-su-meta-de-repartir-lamparas-ahorradoras-21810.html
/38/	http://ciudadanosenred.com.mx/delegacion/desdena-milpa-alta-lamparas-gratuitas
/39/	Pilot program calculations by Repowering & Retrofitting Solutions Group S.A. de C.V. (2009)
/40/	Guidelines on the demonstration of additionality of small-scale project activities, version 09.0, approved at EB68
/41/	E-mail confirmation from the DNA of Mexico confirming the authenticity of LOA
/42/	Database of existing households in Mexico city and others Mexican states
/43/	Mexican quality standards for water saving devices (NOM-008-CONAGUA-1998)



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/44/	Laboratory test results for water saving devices
/45/	Manufacturing warranty
/46/	The role of Liquified Petroleum Gas in Reducing Energy Poverty http://siteresources.worldbank.org/INTOGMC/Resources/Unedited_LPG_report_Dec_2011.pdf
/47/	CONAGUA's report 2011: "Current status of subsector potable water, sewerage and sanitation in Mexico"



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APPENDIX A

PoA VALIDATION PROTOCOL



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Table 1 Mandatory Requirements for Clean Development Mechanism (CDM) Programme of Activities

Requirement	Reference	Conclusion
About Parties		
1. The programme shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3.	Kyoto Protocol Art.12.2	OK
2. The programme shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC.	Kyoto Protocol Art.12.2.	OK
3. The programme shall have the written approval of voluntary participation from the designated national authority of each Party involved.	Kyoto Protocol Art. 12.5a, CDM Modalities and Procedures §40a	OK
4. The programme shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof.	Kyoto Protocol Art. 12.2, CDM Modalities and Procedures §40a	OK
5. In case public funding from Parties included in Annex I is used for the programme, these Parties shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of these Parties.	Decision 17/CP.7, CDM Modalities and Procedures Appendix B, §2	OK
6. Parties participating in the CDM shall designate a national authority for the CDM.	CDM Modalities and Procedures §29	OK
7. The host Party and the participating Annex I Party shall be a Party to the Kyoto Protocol.	CDM Modalities §30/31a	OK
8. The participating Annex I Party's assigned amount shall have been calculated and recorded.	CDM Modalities and Procedures §31b	OK
9. The participating Annex I Party shall have in place a national system for estimating GHG	CDM Modalities and	OK



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Requirement	Reference	Conclusion
emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7.	Procedures §31b	
About Design of programme		
10. The CDM-POA-DD sets a framework for the implementation of the PoA and defines unambiguously a CPA under the PoA.	PoA Standard EB 65 Report Annex 3, Paragraph 14	OK
11. The coordinating/managing entity shall be identified.	PoA Standard EB 65 Report Annex 3, Paragraph 13	OK
12. The boundary for the PoA 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 is defined.	PoA Standard EB 65 Report Annex 3, Paragraph 14(a)	OK
13. Eligibility criteria are defined for inclusion of a project activity as a CPA under the PoA, which shall include criteria for demonstration of additionality, 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.	PoA Standard EB 65 Report Annex 3, Paragraph 14(d),(e),(f)	OK
14. The length of the PoA is not exceeding 28 years.	PoA Standard EB 65 Paragraph 6 (h) of Procedures for Registration of a Programme of Activities as a single CDM Project Activity and Issuance of Certified Emission Reductions for a Programme of Activities	OK
15. The operational and management arrangements established by the coordinating/managing	PoA Standard EB 65	OK



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Requirement	Reference	Conclusion
entity for the implementation of the PoA is described, including a description of a record keeping system for each CPA under the PoA, a system/procedure to avoid double accounting e.g. to avoid the case of including a new CPA that has been already registered either as CDM project activity or as a CPA of another PoA, the provisions to ensure that those operating the CPA are aware and have agreed that their activity is being subscribed to the PoA.	Report Annex 3, Paragraph 14(g)	
16. The proposed statistically sound sampling method/procedure to be used by DOEs for verification of the amount of emission reductions achieved by CPAs under the PoA is described. In case the coordinating/managing entity opts for a verification method that does not use sampling but verifies each CPA there is a transparent system defined and described that ensures that no double accounting occurs and that the status of verification can be determined anytime for each CPA.	PoA Standard EB 65 Report Annex 3, Paragraph 14(J) & Paragraph 27	OK
For large-scale projects only		
17. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out.	CDM Modalities and Procedures §37c	NA
About small-scale project activities (if applicable)		
18. The PoA shall define meet the eligibility criteria for small scale CDM project activities set out in § 6 (c) of the Marrakech Accords and shall not be a debundled component of a larger project activity.	Simplified Modalities and Procedures for Small Scale CDM Project Activities §12a,c	OK
About Additionality		
19. Additionality of the programme as a whole is demonstrated because in the absence of the CDM i) The proposed voluntary measure would not be implemented, or ii) The mandatory policy/regulation would be systematically not enforced and that	Kyoto Protocol Art. 12.5c, CDM Modalities and Procedures §43 PoA Procedures EB 55 ,	OK



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Requirement	Reference	Conclusion
noncompliance with those requirements is widespread in the country/region, or iii) The PoA will lead to a greater level of enforcement of the existing mandatory policy regulation.	Annex 38, Paragraph 2 (e)	
20. Additionality of a typical CPA is demonstrated by using the procedure provided in the baseline and monitoring methodology applied.	PoA Procedures EB 55 , Annex 38, Paragraph 2 (f)	OK
About stakeholder involvement		
21. Comments by local stakeholders shall be invited, a summary of these provided and how due account was taken of any comments received.	CDM Modalities and Procedures §37b	OK
22. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days, and the project design document and comments have been made publicly available.	CDM Modalities and Procedures §40	OK
About application of baseline and monitoring methodology		
23. The baseline and monitoring methodology shall be previously approved by the CDM Executive Board.	CDM Modalities and Procedures §37e	OK
24. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies & circumstances.	CDM Modalities and Procedures §45c,d	OK
25. The baseline methodology shall exclude to earn CERs for decreases in activity levels outside the project activity or due to force majeure.	CDM Modalities and Procedures §47	OK
26. The project design document shall be in conformance with the UNFCCC CDM-PoA-DD format.	CDM Modalities and Procedures Appendix B, EB Decision	OK
27. Provisions for monitoring, verification and reporting shall be in accordance with the modalities described in the Marrakech Accords and relevant decisions of the COP/MOP.	CDM Modalities and Procedures §37f	OK
About forecast of emission reductions		
28. The emission reductions shall be real, measurable and give long-term benefits related to the	Kyoto Protocol Art.	OK



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PoA VALIDATION REPORT

Requirement	Reference	Conclusion
mitigation of climate change.	12.5b	
About environmental impacts		
Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out.	CDM Modalities and Procedures §37c	OK



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Table 2: Requirements Checklist

CDM PoA Validation Requirement	Remarks	Evidence	Draft Conclusion	Final Conclusion
A. General description of small-scale programme of activities (PoA)				
A.1 Title of the small-scale programme of activities (PoA):				
A1.1. Are title, current version number and the date of document completion given in section A.1 of the PoA-DD?	Yes, they are. These are: “Mexico Water, Energy, & Emissions Efficiency Residential Program version 2.3 Date: 05 September 2012”	CDM-SSC-PoA-DD (Version 2.3)	OK	OK
A.2 Description of the small-scale programme of activities (PoA):				
A.2.1 Does the PoA-DD sufficiently cover all the relevant elements of the following: i) General operating and implementing framework of PoA. ii) Policy/measure or stated goal of the PoA iii) Confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity.	Project water saving devices will include low-flow showerheads and faucet regulators, which effectively reduce hot water dispensed from targeted water fixtures (shower, bathroom and kitchen sinks) without reducing the level of service to the users. The Cambio Azul PoA will utilize CDM revenue to distribute and install these devices at zero cost to household residents, thus attaining significant environmental benefits and promoting sustainable development. Camino Sabio Azul S. de R.L. de C.V. (Cambio Azul) is a private company incorporated under	CDM-SSC-PoA-DD (Version 2.3)	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	Mexican laws, Cambio Azul is developing this PoA on a voluntary basis. There are currently no laws or regulations that mandate the installation of water saving devices by the CME, government agencies or individual households in Mexico.			
A.2.2 Does the PoA-DD include following information? i) Coordinating or managing entity of the PoA as the entity which communicates with the Executive Board. ii) Project participants being registered in relation to the PoA. Project participants may or may not be involved in one of the CPAs related to the PoA.	The Coordinating and Managing Entity (CME) is Camino Sabio Azul S. de R.L. de C.V. (Cambio Azul). This is the contact entity with EB. All CPAs will be managed by Cambio Azul.	CDM-SSC-PoA-DD (version 2.3) CDM-SSC-CPA-DD-generic (version 2.3)	OK	OK
A.2.3 What category does the project activity fall under: i) Large scale CDM PoA ii) Small Scale CDM PoA	This is a small scale CDM PoA.	CDM-SSC-PoA-DD (version 2.3)	OK	OK
A.3 Coordinating/managing entity and participants of SSC-POA:				
A.3.1 Does the following information shall be included in PoA-DD: i) Which Parties and project participants are participating in the	The host party is Mexico and the PP is Camino Sabio Azul S. de RL (Cambio Azul). The Coordinating and Managing Entity (CME) is	CDM-SSC-PoA-DD (version 2.3) LoA by DNA	OK	OK



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PoA VALIDATION REPORT

<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
<p>programme?</p> <p>ii) Has the coordinating/managing entity of the programme been identified?</p> <p>iii) Is it evident that the coordinating or managing entity of the PoA is the entity which communicates with the Executive Board (EB)?</p> <p>iv) Have all involved Parties provided a valid and complete letter of approval (LoA) and have all private/public programme participants been authorized by an involved Party?</p> <p>v) Does the LoA confirm the following:</p> <ul style="list-style-type: none"> - Ratification of the Kyoto Protocol - Voluntary participation - The CDM project activity contributes to Host country's sustainable development - Title of the programme of activity is same as the PoA-DD sent for registration. <p>vi) Is the LoA conditional to a specific</p>	<p>Camino Sabio Azul S. de R.L. de C.V. (Cambio Azul). This is the contact entity with EB.</p> <p>The Letter of Approval (LoA) from Host Party (DNA Mexico (Comission Interministerial of Climate Change)) has issued on 15 December 2011.</p> <p>The authenticity of LoA from host Party Mexico has been cross-checked and verified through the request to Comission Interministerial Climate Change as DNA Mexico representative (SERMANAT) by email (29 March 2012). This document include:</p> <ul style="list-style-type: none"> - Ratification status of the Kyoto Protocol - Voluntary participation by the PP - That the CDM project activity contributes to Host country's sustainable development - That the title of the project activity is same as the PDD sent for registration <p>The project does not involve public funding, and the validation did not reveal any information that indicates that the project can be seen as a</p>	Mexico		



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PoA VALIDATION REPORT

<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
<p>version of PoA-DD or the validation report?</p> <p>vii) Has it been checked that if there is public funding for the programme from Parties in Annex I, this funding shall not be a diversion of official development assistance?</p> <p>viii) Has the host Party confirmed that the programme assists it in achieving sustainable development?</p>	diversion of official development assistance (ODA) funding towards Mexico.			
<i>A.4 Technical description of the small-scale programme of activities:</i>				
<i>A.4.1 Location of the programme of activities:</i>				
<p>i) Does the information provided on the location of the programme allow for a clear definition identification of the boundary for the PoA in terms of a geographical area?</p> <p>ii) Is the consideration of all applicable national and/or sectoral policies and regulations of each host country within the boundary evident and substantiated?</p> <p>iii) Is/are the Host Party(ies) stated?</p>	<p>Yes, they do.</p> <p>The boundary for the Cambio Azul PoA is the country of Mexico, a federal constitutional republic located in North America. It borders to the North with the United States; to the South and West by the Pacific Ocean; to the Southeast by Guatemala, Belize, and the Caribbean Sea; and to the East by the Gulf of Mexico.</p> <p>The proposed emissions reduction project is not mandated by any enforced law, statute, or other</p>	CDM-SSC-PoA-DD (version 2.3) AMS-II.M (version 1.0)	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	regulatory framework applicable in the host country of Mexico.			
A.4.2 Description of a typical small-scale CDM programme activity (CPA):				
A.4.2.1 Technology or measures to be employed by the SSC-CPA:				
<i>i)</i> Does the PoA-DD, transparently discuss the technology to be used by a typical SSC-CPA? <i>ii)</i> Is it unambiguously stated which technology or measures are to be employed by the SSC-CPA? <i>iii)</i> Does the implementation of the project activity require any technology transfer from Annex-I-countries to the host country (ies)? <i>iv)</i> Is the technology implemented by the project activity environmentally safe? <i>v)</i> Does the programme make provisions for meeting training and maintenance needs?	<p>The technology or measures to be employed by a typical SSC-CPA comprises the direct installation of water saving devices that reduce the amount of water dispensed in baseline water fixtures in residential applications. The project devices, which contain integral non-removable flow restrictions, include one efficient showerhead and several faucet regulators per household. Faucet regulators will be installed in two points of use: (1) a bathroom faucet and (2) a kitchen faucet. These devices must comply with applicable standards for water efficiency as well as the other requirements listed in AMS II.M.</p> <p>Provide adequate disposal and scrapping of removed water fixtures. The scrapping of the replaced equipment must be monitored and documented by an independent party.</p>	CDM-SSC-PoA-DD (version 2.3) AMS-II.M (version 1.0)	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	<p>Cambio Azul will deploy trained teams to directly install project devices. Team members are required to fill out field data sheets with QA/QC remarks on the functioning parameters of the device. Field supervisors will also conduct QA/QC checks to ensure devices are being correctly installed.</p> <p>Cambio Azul will ensure that information and training material is available to personnel involved in the monitoring process as required by the PoA, including eventual SSC CPA developers other than the CME if required.</p> <p>Trained team members will record the type of water heaters at each household in the field data sheets during installation. Households where water is heated via renewable energy sources will not be included in the CPA</p>			
A.4.2.2 Eligibility criteria for inclusion of a SSC-CPA in the PoA, Para 14(a)-(l) of EB65, Annex3.:				
1. The geographical boundary of the CPA including any time-induced boundary consistent with the geographical	<p>Yes, it does.</p> <p>The boundary for the Cambio Azul PoA is the country of Mexico, a federal constitutional</p>	CDM-SSC-PoA-DD (version 2.3)	OK	OK



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PoA VALIDATION REPORT

<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
boundary set in the PoA	republic located in North America. It borders to the North with the United States; to the South and West by the Pacific Ocean; to the Southeast by Guatemala, Belize, and the Caribbean Sea; and to the East by the Gulf of Mexico.	AMS-II.M (version 1.0)		
2. Conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations (e.g. programme logo);	<p>PJRCES could validate that the process for data capturing will be performed via specialized Imaging Services (or equivalent services by a reputable third party specialized in data managing) which consist of data mining from a census structured format (Cambio Azul's Field Data Sheet), using recognition technologies of characters and marks:</p> <p>(a) Optical Mark Recognition (OMR) – interpreting structured marks and;</p> <p>(b) Intelligent Character Recognition (ICR) – interpreting handwriting</p> <p>The baseline of the project activity will be calculated ex-post when installing the new water-saving devices in each of the households.</p> <p>Only households that are not listed in other CDM or voluntary water saving project activities will be included within CDM-SSC-CPAs under the</p>	<p>CDM-SSC-PoA-DD (version 2.3)</p> <p>AMS-II.M (version 1.0)</p>	CAR 02 CAR 03	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	Cambio Azul PoA.			
3. The specifications of technology/measure including the level and type of service, performance specifications including compliance with testing/certifications;	<p>PJRCES could establish that this PoA has complied with the following conditions:</p> <ul style="list-style-type: none"> a. Contain integral non-removable flow restrictors; b. Qualify as a water saving device through reference to applicable standards; c. Provide a level of service equivalent to baseline devices. For low-flow showerheads equivalent level of service is defined as same functional comfort and cleaning performance; d. Are used to control the flow of heated water; e. Are directly installed and tested to be functional at the time of installation; and f. Are marked for clear unique identification for the project activity. <p>PJRCES validated that in accordance with</p>	<p>CDM-SSC-PoA-DD (version 2.3)</p> <p>AMS-IIM (version 1.0)</p>	<p>CAR 02</p> <p>CAR 03</p>	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	<p>paragraph 15 of the applied methodology AMS-II.M Ver. 1.0, the parameters shall be determined once and remain fixed during the crediting period are:</p> <ul style="list-style-type: none"> - Measured flow rate of baseline device (litres/minute) - Measured flow rate of project device (litres/minute) - Measured amount of water used by project device during the number of days equal to Daysmonitoring (litres) - Temperature of hot water - Temperature of cold water - Emission factor for fossil fuels (tCO₂/kJ) <p>All but three of the parameters shall be determined by a complete census of the households where baseline devices are replaced with project low-flow devices. The parameter</p>			



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	“Emission factor for fossil fuels (tCO ₂ /kJ)” shall be determined at CDM-SSC-CPA inclusion by reliable local or national data if available, or IPCC default values. Only the parameters “Measured amount of water used by project device during the number of days equal to Days _{monitoring} ” and “Temperature of cold water” shall be determined on a sampling basis.			
4. Conditions to check the start date of the CPA through documentary evidence;	The starting date of the crediting period is whenever the CDM-SSC-CPA is added to the registered CDM-SSC-PoA-DD or when the first water saving devices of the proposed SSC-CPA is installed, whichever is later. SSC-CPA is added to the registered CDM-SSC-PoA-DD or when the first water saving devices of the proposed SSC-CPA is installed, whichever is later.	CDM-SSC-PoA-DD (version 2.3) AMS-ILM (version 1.0)	OK	OK
5. Conditions that ensure compliance with applicability and other requirements of single or multiple methodologies applied by CPAs;	The project activity (distribution and installation of water saving devices at zero cost) could not be implemented in the absence of CDM since carbon credits are the only revenue stream available to the project proponent. Thus, the only plausible alternative scenarios for the proposed project activity consist of the continuation of the baseline	CDM-SSC-PoA-DD (version 2.3) AMS-ILM (version 1.0)	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	<p>scenario.</p> <p>The baseline of the project activity will be calculated ex-post when installing the new water-saving devices in each of the households.</p>			
6. The conditions that ensure that CPAs meet the requirements pertaining to the demonstration of additionality as specified in sub-section A under Section “III. Requirements” of EB65, Annex3;	PJRCES has validated that distribution of water saving devices on a national level by the government is also unrealistic due to lack of financing and the complex and centralized water management institutions in Mexico. The project activity (distribution and installation of water saving devices at zero cost) could not be implemented in the absence of CDM since carbon credits are the only revenue stream available to the project proponent. Thus, the only plausible alternative scenarios for the proposed project activity consist of the continuation of the baseline scenario.	CDM-SSC-PoA-DD (version 2.3) AMS-II.M (version 1.0)	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
7. The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis;	<p>All the relevant stakeholders have identified for this project activity.</p> <p>Two local stakeholder meetings were conducted in 2010. The meetings took place in Mexico City given that the Mexico City metropolitan region is home to the majority of the population expected to be covered under the PoA and to all of the relevant government institutions.</p> <p>There are no expected negative environmental impacts during distribution and installation of the project devices. During the operation phase, the project will generate multiple environmental and social benefits at household and regional levels.</p>	<p>CDM-SSC-PoA-DD (version 2.3)</p> <p>AMS-II.M (version 1.0)</p> <p>Record Local stakeholders consultation</p>	OK	OK
8. Conditions to provide an affirmation that funding from Annex I parties, if any, does not result in a diversion of official development assistance;	<p>The project does not involve public funding, and the validation did not reveal any information that indicates that the project can be seen as a diversion of official development assistance (ODA) funding towards Mexico.</p>	<p>CDM-SSC-PoA-DD (version 2.3)</p> <p>AMS-II.M (version 1.0)</p>	OK	OK
9. Where applicable, target group (e.g. domestic/commercial/industrial, rural/urban, grid connected/ off-grid) and distribution mechanisms (e.g. direct installation);	<p>Only include locations where water is heated exclusively by electricity or fossil fuels prior to the project start and for the duration of the crediting period. Locations where renewable energy sources (e.g., biomass, solar, geothermal)</p>	<p>CDM-SSC-PoA-DD (version 2.3)</p> <p>Standard for sampling and</p>	OK	OK



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	or non-renewable biomass are used for water heating purposes are not eligible. If during the crediting period, a location is found to switch to renewable energy sources or non-renewable biomass for water heating purposes, such location will be excluded from the CPA.	surveys for CDM project activities and programme of activities (version 2.0)		
10. 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;	More households will be selected for sampling than is required by the sample size, to ensure that if any households are unable to be reached the required accuracy is still achieved. The size of the buffer will be driven by the required sample size but is expected to range between 10 and 20% above the estimated sample size. The CME will stop monitoring a particular parameter once the required level of confidence/precision has been reached, as long as the calculated minimum number of samples has been achieved.	CDM-SSC-PoA-DD (version 2.3) Standard for sampling and surveys for CDM project activities and programme of activities (version 2.0)	OK	OK
11. Where applicable, the conditions that ensure that every CPA in aggregate meets the small-scale or micro scale	PJRCES could establish that the project activity (distribution and installation of water saving devices at zero cost) could not be implemented in	CDM-SSC-PoA-DD (version 2.3)	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
threshold criteria and remains within those thresholds throughout the crediting period of the CPA;	<p>the absence of CDM since carbon credits are the only revenue stream available to the project proponent. Thus, the only plausible alternative scenarios for the proposed project activity consist of the continuation of the baseline scenario.</p> <p>Each SSC CPA included in the Cambio Azul PoA must document that water saving devices are distributed and installed at zero cost to the household residents. For each SSC CPA the CME will keep documentation of all costs incurred including, but not limited, to the following:</p> <ul style="list-style-type: none"> - Cost of water saving devices (efficient showerheads and flow aerators) - Warehousing and distribution - Installation (promotion campaign, salaries) - Management and supervision - Monitoring 	Standard for sampling and surveys for CDM project activities and programme of activities (version 2.0)		
12. Where applicable, the requirements for the debundling check, in case CPAs belong to small-scale (SSC) or micro scale project categories.	As per EB guidance (EB 54, Annex 3), if each of the independent subsystems/measures included in the CPA of a PoA is no greater than 1% of the small-scale thresholds defined by the	CDM-SSC-PoA-DD (version 2.3) AMS-II.M (version 1.0)	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	methodology applied, then that CPA of a PoA is exempted from performing de-bundling check. Since the cumulative thermal energy savings achieved through water saving devices installed at a single household represent less than 1% of the threshold set in the approved CDM methodology, a typical Cambio Azul CPA is considered as being not a de-bundled component of a large- scale activity.			
13. Other Criteria defined by SSC-PoA-DD	During the pilot program Cambio Azul created a data base management system based on the expected algorithms applicable under the Gold Standard and CDM applicable methodologies. By integrating smart data capture with an automatic database and methodology calculations the overall quality control of data monitoring and emission reduction calculation is improved, non-sampling errors are reduced and the data is kept secured, well organized and thoroughly verifiable.	CDM-SSC-PoA-DD (version 2.3) AMS-II.M Ver. 1.0 Standard for sampling and surveys for CDM project activities and programme of activities	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
		(version 2.0)		
<i>A.4.3 Description of how the anthropogenic emissions of GHG by sources are reduced by a SSC-CPA below those that would have occurred in the absence of the registered PoA (assessment and demonstration of additionality of PoA):</i>				
i) Has it been demonstrated that the programme is a voluntary coordinated action that would not be implemented in the absence of CDM? ii) If the programme is implementing a mandatory policy/regulation, has it been demonstrated whether the policy/regulation is being enforced? iii) Does the PoA will lead to a greater level of enforcement of the existing mandatory policy /regulation? iv) Does the PoA-DD constitute the demonstration of additionality of the PoA as a whole? v) Are all assumptions stated in a transparent and conservative manner? vi) Is sufficient evidence provided to	<p>Each CDM-SSC-CPA-DD is clearly identified through the use of geographic coordinates and mapping tools. Only households that are not listed in other CDM or voluntary water saving project activities will be included within CDM-SSC-CPAs under the Cambio Azul PoA.</p> <p>The Cambio Azul Program is a private initiative and it is not implementing a mandatory policy/regulation.</p> <p>The baseline of the project activity will be calculated ex-post when installing the new water-saving devices in each of the households.</p> <p>Distribution of water saving devices on a national level by the government is also unrealistic due to</p>	<p>CDM-SSC-PoA-DD (version 2.3)</p> <p>AMS-II.M Ver. 1.0 Standard for sampling and surveys for CDM project activities and programme of activities (version 2.0)</p>	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
<p>support the relevance of the additionality arguments made?</p> <p>vii) If the starting date of the programme activity is before the date of validation, has sufficient evidence been provided that the incentive from the CDM was seriously considered in the decision to proceed with the programme?</p>	<p>lack of financing and the complex and centralized water management institutions in Mexico. The project activity (distribution and installation of water saving devices at zero cost) could not be implemented in the absence of CDM since carbon credits are the only revenue stream available to the project proponent. Thus, the only plausible alternative scenarios for the proposed project activity consist of the continuation of the baseline scenario.</p> <p>The idea started in 2009 and the project team has since pursued access to carbon finance in order to start implementation. Cambio Azul is a private company incorporated with the sole purpose of coordinating this PoA. In Mexico there are no obligations for private entities to execute these type of projects, therefore this is an entirely voluntary action.</p> <p>The starting date corresponds to the expected date of registration by the CDM Executive Board. (30 November 2011).</p>			
<i>A.4.4 Operational, management and monitoring plan for the programme of</i>				



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
activities (PoA):				
A.4.4.1 Operational and management plan:				
<i>i)</i> Is there a clear and transparent description of the operational and management arrangements established by the coordinating/managing entity? <i>ii)</i> Do the operational and management arrangements established by the coordinating entity include a record keeping system for each CPA under the programme? <i>iii)</i> Do the operational and management arrangements established by the coordinating entity include a system/procedure to avoid including CPAs that have already been registered either as CDM project activity or as a CPA of another PoA? <i>iv)</i> Do the operational and management arrangements established by the coordinating entity include provisions to ensure that CPA implementers are aware and have agreed that their activity is being subscribed to the	<p>The Coordinating and Managing Entity (CME) is Camino Sabio Azul S. de R.L. de C.V. (Cambio Azul). As such, Cambio Azul is responsible for the development of this project operationally and administratively, with wide range of decision-making functions and responsibilities, to assure the optimal implementation and monitoring of the programme. Moreover, the CME will be responsible for identification and inclusion of additional CPAs throughout the CDM project cycle from the early stages until the end of the crediting period.</p> <p>Distribution of water saving devices on a national level by the government is also unrealistic due to lack of financing and the complex and centralized water management institutions in Mexico. The project activity (distribution and installation of water saving devices at zero cost) could not be implemented in the absence of CDM since carbon credits are the only revenue stream available to the project proponent. Thus, the only plausible alternative scenarios for the proposed project</p>	<p>CDM-SSC-PoA-DD (version 2.3)</p> <p>AMS-IIM Ver. 1.0 Standard for sampling and surveys for CDM project activities and programme of activities (version 2.0)</p>	<p>CAR 01 CAR 02 CAR 03</p>	OK



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PoA VALIDATION REPORT

<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
<p>PoA?</p> <p>v) is there procedure defined to detect for PoA to avoid double counting of CERs?</p> <p>vi) Is there a system or procedure to detect whether a SSC-CPA to be included in the PoA is not a de-bundled component of another CPA or CDM project?</p> <p>vii) Are provisions in place to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA?</p> <p>viii) Is there a monitoring plan for the PoA, including a description of the proposed statistically sound sampling methods or procedures to be used by the DOE for the verification (please consider sampling among CPAs and within CPAs)?</p>	<p>activity consist of the continuation of the baseline scenario.</p> <p>The CME will ensure that each CPA is clearly identified through the use of geographic coordinates and mapping tools. Any risk of double counting is avoided by collecting individual address information of each household within a CPA, which will be assessed against other registered SSC-PoAs or CDM project activities. Only households that are not listed in other CDM or voluntary water saving project activities will be included within a CPA under the Cambio Azul PoA.</p> <p>As per EB guidance (EB 54, Annex 3), if each of the independent subsystems/measures included in the CPA of a PoA is no greater than 1% of the small-scale thresholds defined by the methodology applied, then that CPA of a PoA is exempted from performing de-bundling check. Since the cumulative thermal energy savings achieved through water saving devices installed at a single household represent less than 1% of the threshold set in the approved CDM methodology, a typical Cambio Azul CPA is considered as being not a de-bundled component</p>			



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	<p>of a large- scale activity.</p> <p>Due that OMR and ICR have different confidence levels, the data services provider will undertake a manual quality assurance / quality control process in order to assess the accuracy of the “non-mark” parameters. This manual review will increase the confidence level of ICR up to 95% (similar to the confidence level achieved through the use of OCR technologies). Therefore, the entirety of data captured from the field data sheet will be captured with a confidence level of at least 95% with a 5% margin of error.</p>			
A.4.4.2 Monitoring plan:				
<p>i) Does the monitoring plan include a description of a proposed statistically sound sampling method and procedure to be used by designated operational entities for verification of GHG emission reductions by CPAs under the programme? OR If the programme does not use verification method that applies a statistical method for sampling, has a</p>	<p>PJRCES validated that a simple random sample approach will be followed making sure that a 95% confidence interval and a 5% margin error requirements are met as per the “Standard for sampling and surveys for CDM project activities and programme of activities” Version 2.0. The simple random sample approach is considered appropriate given the fact that the homogeneity of the population within the sampling frame of a given CPA is expected to be sufficiently high. In cases where more than one CPA gets</p>	<p>CDM-SSC-PoA-DD (version 2.3)</p> <p>AMS-II.M Ver. 1.0</p> <p>Standard for sampling and surveys for CDM project</p>	CAR 01	OK



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system been defined to avoid double counting of CERs, and is the system transparent	<p>implemented within the same bioclimatic region, the CME may use a cross-CPA sampling approach for a group of CPAs that cover households located in the same bioclimatic region.</p> <p>To ensure a random selection, random number generators will be used. Each household in the target population is uniquely identifiable by its given ID number. Each household can thus be allocated a Sample Selection Number in each monitoring period, starting at 1 and increasing up to the total number of households in the Database for that pre-defined sampling frame. Applying the random number generators, the households can then be randomly chosen from the defined population up to the required sample size as calculated by the CME.</p>	activities and programme of activities (version 2.0)		
<i>A.4.5. Public funding of the programme of activities (PoA):</i>				
i) Is the information provided on public funding in compliance with the actual situation or planning as available by the project participants?	Yes, it is.	CDM-SSC-PoA-DD (version 2.3)	OK	OK
ii) Is all information provided consistent with the details given in remaining	The project does not involve public funding, and the validation did not reveal any information that indicates that the project can be seen as a diversion of official development assistance (ODA) funding towards Mexico.	AMS-IIM Ver. 1.0		



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chapters of the PoA-DD (in particular annex 2)?	Yes, it is. This will be cross verified for individual CPAs in respective CPA-PDDs. The Cambio Azul PoA is not a recipient of any public funding or Official Development Assistance (ODA).			
B. Duration of the programme of activities (PoA)				
B.1 Is the programme starting date and length of the programme clearly defined and evidenced?	<p>PJRCES could establish that the start date corresponds to the expected date of registration by the CDM Executive Board. (30 November 2011).</p> <p>The length of the programme is clearly defined as 28 years.</p>	<p>CDM-SSC-PoA-DD (version 2.3)</p> <p>AMS-II.M Ver. 1.0</p>	OK	OK
B.2 Does the PoA design documentation confirm that the length of the PoA does not exceed 28 years	PPs defined that each CPA will last 10 years by the limitation of technology and the same makes the PoA has limits to the number of CPAs to complete the coverage of the 28 years.	<p>CDM-SSC-PoA-DD (version 2.3)</p> <p>AMS-II.M Ver. 1.0</p>	OK	OK
C. Environmental Impacts				
C.1. Is it defined whether the environmental analysis takes place at PoA or CPA level?	An environmental impact assessment is not required by the Secretary of Environment and Natural Resources (SEMARNAT) for the	CDM-SSC-PoA-DD (version 2.3)	OK	OK



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	installation of water saving devices. Since the project technology is installed inside individual households, Cambio Azul must obtain written consent of each household resident, thus guaranteeing that access for installation and monitoring is allowed and that project devices are accepted voluntarily.	AMS-II.M Ver. 1.0		
C.2. Is the choice whether the environmental analysis takes place at PoA or CPA level justified?	Yes, it is. An environmental impact assessment is not required by the Secretary of Environment and Natural Resources (SEMARNAT) for the installation of water saving devices.	CDM-SSC-PoA-DD (version 2.3) AMS-II.M Ver. 1.0	OK	OK
C.3. Has an analysis of the environmental impacts of the programme been sufficiently described?	Yes, it does. An environmental impact assessment is not required by the Secretary of Environment and Natural Resources (SEMARNAT) for the installation of water saving devices.	CDM-SSC-PoA-DD (version 2.3) AMS-II.M Ver. 1.0	OK	OK
C.4. Have the project participants undertaken an analysis of environmental impacts under the host country regulations?	Yes, it does. An environmental impact assessment is not required by the Secretary of Environment and Natural Resources (SEMARNAT) for the installation of water saving devices.	CDM-SSC-PoA-DD (version 2.3) AMS-II.M Ver. 1.0	OK	OK



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C.5. If EIA is conducted at PoA level, will the programme create any adverse environmental effects?	There are no expected negative environmental impacts during distribution and installation of the project devices. During the operation phase, the project will generate multiple environmental and social benefits are household and regional levels.	CDM-SSC-PoA-DD (version 2.3) AMS-II.M Ver. 1.0	OK	OK
C.6. Are transboundary environmental impacts considered in the analysis?	There are no expected transboundary environmental impacts during distribution and installation of the project devices.	CDM-SSC-PoA-DD (version 2.3) AMS-II.M Ver. 1.0	OK	OK
C.7. Have identified environmental impacts been addressed in the programme design?	There are no expected negative environmental impacts during distribution and installation of the project devices. During the operation phase, the project will generate multiple environmental and social benefits are household and regional levels.	CDM-SSC-PoA-DD (version 2.3) AMS-II.M Ver. 1.0	OK	OK
C.8. Does the programme comply with environmental legislation in the host country?	Yes, it does	CDM-SSC-PoA-DD (version 2.3) AMS-II.M Ver. 1.0	OK	OK
<i>D. Stakeholder Comments</i>				



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D.1. Is there a clear statement whether the stakeholder comments will be invited at PoA or CPA level?	PJRCES could establish that given that the program is highly homogeneous, and the division across CPA is only made for CDM purposes, comments have been invited at the PoA level. A description of the local stakeholder consultation process is included in Section D.2 of this document.	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 Records of Local stakeholders consultation (2010)	OK	OK
D.2. Is the choice justified in a clear and reasonable manner?	Yes, it is. The first stakeholder meeting, co-organized by the government of Mexico City, took place on July 15, 2010. Invitations were sent by the CME and Mexico City's government officials. During the meeting, in which 44 attendees including NGO and government officials participated, the general concept of the program was presented along with a demonstration of the technology originally selected for the programme. Also, an exercise was conducted in order to identify the potential negative impacts and positive contributions of the program from the sustainability standpoint. Comments were invited	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 Records of Local stakeholders consultation (2010)	OK	OK



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	during the stakeholder meeting in oral and written form (through a survey) and after the meeting via email. All 28 inputs received from the participants were assessed and taken into account. A second stakeholder meeting took place on October 29, 2010 having a participation of over 160 attendees, most of them home residents and committee members from several housing complexes. The consultation followed the same procedure described in the previous paragraph. 161 inputs were received, analyzed and taken into account.			
D.3. If the stakeholder comments will be invited at PoA level, is there sufficient information provided, on how comments by local stakeholders were invited?	Electronic and hard copies of the invitations, list of participants and each of the inputs received was available for inspection by the DOE.	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 Records of Local stakeholders consultation (2010)	OK	OK
D.4. Have all relevant stakeholders been identified for the project activity?	Yes, they do	CDM-SSC-PoA-DD (version 2.3)	OK	OK



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		VVM version 1.2 Records of Local stakeholders consultation (2010)		
D.5. What means have been used for the inviting comments from the stakeholders?	Electronic and hard copies of the invitations, list of participants and each of the inputs received was available for inspection by the DOE. The first stakeholder meeting, co-organized by the government of Mexico City, took place on July 15, 2010. Invitations were sent by the CME and Mexico City's government officials. During the meeting, in which 44 attendees including NGO and government officials participated, the general concept of the program was presented along with a demonstration of the technology originally selected for the programme. Also, an exercise was conducted in order to identify the potential negative impacts and positive contributions of the program from the sustainability standpoint. Comments were invited during the stakeholder meeting in oral and written form (through a survey) and after the meeting via	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 Records of Local stakeholders consultation (2010)	OK	OK



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	email. All 28 inputs received from the participants were assessed and taken into account. A second stakeholder meeting took place on October 29, 2010 having a participation of over 160 attendees, most of them home residents and committee members from several housing complexes. The consultation followed the same procedure described in the previous paragraph. 161 inputs were received, analyzed and taken into account.			
D.6. Does the PoA-DD include a summary of the comments received from the stakeholders?	Yes, it does. The first stakeholder meeting, co-organized by the government of Mexico City, took place on July 15, 2010. Invitations were sent by the CME and Mexico City's government officials. During the meeting, in which 44 attendees including NGO and government officials participated, the general concept of the program was presented along with a demonstration of the technology originally selected for the programme. Also, an exercise was conducted in order to identify the potential negative impacts and positive contributions of the program from the sustainability standpoint. Comments were invited during the stakeholder meeting in oral and written	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 Records of Local stakeholders consultation (2010)	OK	OK



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	form (through a survey) and after the meeting via email. All 28 inputs received from the participants were assessed and taken into account. A second stakeholder meeting took place on October 29, 2010 having a participation of over 160 attendees, most of them home residents and committee members from several housing complexes. The consultation followed the same procedure described in the previous paragraph. 161 inputs were received, analyzed and taken into account.			
D.7. Has due account been taken of any stakeholder comments received?	<p>Yes, it does.</p> <p>189 inputs were received as examples:</p> <p>The project needs more publicity. / More information on the project needed in order to promote it.</p> <p>Response: The Mexico City Secretariat of the Environment, The Water Systems Department of Mexico City (SACM) and the Mexico City Social Services department (PROSOC) will design flyers and information sheets for distribution to the participating household residents. The project will be promoted on the Mexico City government's internet web sites & call-in shows, by the governments of the 15 participating</p>	<p>CDM-SSC-PoA-DD (version 2.3)</p> <p>VVM version 1.2</p> <p>Records of Local stakeholders consultation (2010)</p>	CL 02	OK



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	<p>"Delegaciones" (boroughs) and by the neighbourhood committees in the participating complexes. Additionally, the project will be promoted and advertised via the Lady Plumbers and supervisor company prior to the dates of the installations in the participating complexes</p> <p>Is this program only designed for Mexico City? Given that a program was originally designed for Mexico City, some of the participants expressed their concern regarding the geographical limitations of the program. Based on this input, a program has been designed that applies to a countrywide level.</p>			
<i>Application of a baseline and monitoring methodology</i>				
<i>E.1 Title and reference of the approved SSC baseline and monitoring methodology applied to a SSC-CPA included in the PoA:</i>				
i) Does the programme apply an approved methodology and the correct version? ii) Are the applicability criteria in the baseline methodology all fulfilled?	<p>Yes, it does AMS-II.M. "Demand-side energy efficiency activities for installation of low-flow hot water savings devices, version 1.0"</p> <p>Yes, it is. PP has applied correctly the baseline methodology.</p>	AMS-II.M. version 1.0 CDM-SSC-PoA-DD (version 2.3) VVM version 1.2	OK	OK



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E.2 Justification of the choice of the methodology and why it is applicable to a SSC-CPA:				
i) Is the applied methodology considered the most appropriate one? ii) Does the SSC methodology account for leakage in the context of a SSC-CPA? iii) Does each of applicability criteria have been checked?	<p>Yes, it is.</p> <p>The Cambio Azul PoA will install low-flow hot water saving devices in existing residential buildings within the country of Mexico. Water saving devices include low-flow showerheads and faucet regulators for the kitchen and bathroom faucets.</p> <p>None of the technologies distributed under this PoA will contain removable flow restrictions. Water saving devices installed by Cambio Azul are designed to prevent tampering and remain integral through the crediting period.</p> <p>The Cambio Azul PoA will only take place in existing, inhabited housing where inefficient fixtures are installed and operating. Project devices will directly replace these existing fixtures. No water saving devices will be installed in new housing.</p> <p>CPA size will be determined to not exceed the SSC threshold.</p> <p>Project devices will have a minimum one year-warranty that shall cover free replacement or repair of any failed low-flow devices with equivalent devices.</p>	AMS-II.M. version 1.0 CDM-SSC-PoA-DD (version 2.3) VVM version 1.2	OK	OK



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	<p>Project devices must have documentation demonstrating qualification through reference to applicable standards.</p> <p>Project devices will allow users to control the flow of hot water.</p> <p>Cambio Azul will deploy trained teams to directly install project devices. Team members are required to fill out field data sheets with QA/QC remarks on the functioning parameters of the device. Field supervisors will also conduct QA/QC checks to ensure devices are being correctly installed.</p> <p>Project devices will have a clear mark for identification.</p> <p>Trained team members will record the type of water heaters at each household in the field data sheets during installation. Households where water is heated via renewable energy sources will not be included in the CPA.</p>			
<i>E.3 Description of the sources and gases included in the SSC-CPA boundary</i>				
i) Does the SSC-CPA boundary include the physical and geographical location where the programme activities take place?	Yes, it does.	AMS-II.M. version 1.0	OK	OK
ii) Are all sources and gases within the	PJRCES could establish that as per selected methodology, the project boundary is the location	CDM-SSC-PoA-DD		



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boundary considered in a clear manner? iii) Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PoA-DD?	of each installed low-flow device and the associated water heating system. For the project activity, the boundary includes water saving devices installed within the country of Mexico.	(version 2.3) VVM version 1.2		
<i>E.4 Description of how the baseline scenario is identified and description of the identified</i>				
E.4.1.Does the applicable methodology define the baseline scenario?	Distribution of water saving devices on a national level by the government is also unrealistic due to lack of financing and the complex and centralized water management institutions in Mexico. The project activity (distribution and installation of water saving devices at zero cost) could not be implemented in the absence of CDM since carbon credits are the only revenue stream available to the project proponent. Thus, the only plausible alternative scenarios for the proposed project activity consist of the continuation of the baseline scenario. The CME will ensure that each CPA is clearly identified through the use of geographic coordinates and mapping tools. Any risk of double counting is avoided by collecting individual address information of each household within a CPA, which will be assessed against	AMS-II.M. version 1.0 CDM-SSC- PoA-DD (version 2.3) VVM version 1.2	OK	OK



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	other registered SSC-PoAs or CDM project activities. Only households that are not listed in other CDM or voluntary water saving project activities will be included within a CPA under the Cambio Azul PoA.			
E.4.2. Have all technically feasible baseline scenario alternatives to the CPA been identified and discussed by the PoA-DD? Why can this list be considered as being complete?	<p>PJRCES could validated that these scenarios include:</p> <ul style="list-style-type: none"> a. Continuation of the current practice: use of inefficient water fixtures that lead to GHG emissions from water heaters (baseline scenario). b. Installation of water saving devices by household residents at their expense. c. Project activity carried out by the Mexican government. d. The proposed project activity undertaken without being registered as a CDM project activity. <p>As per the selected CDM methodology, the baseline is the continued use of existing showerheads and faucets.</p> <p>Distribution of water saving devices on a national level by the government is also unrealistic due to lack of financing and the complex and centralized water management institutions in Mexico. The</p>	AMS-II.M. version 1.0 CDM-SSC-PoA-DD (version 2.3) VVM version 1.2	OK	OK



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	project activity (distribution and installation of water saving devices at zero cost) could not be implemented in the absence of CDM since carbon credits are the only revenue stream available to the project proponent. Thus, the only plausible alternative scenarios for the proposed project activity consist of the continuation of the baseline scenario.			
E.4.3. Is a complete list of barriers discussed that prevents the project activity to occur?	Purchase and installation of water saving devices by household residents is not realistic under the current socio-economic context of Mexico and in light of the highly subsidized cost of water which does not encourage the adoption of more efficient technologies. Distribution of water saving devices on a national level by the government is also unrealistic due to lack of financing and the complex and centralized water management institutions in Mexico. The project activity (distribution and installation of water saving devices at zero cost) could not be implemented in the absence of CDM since carbon credits are the only revenue stream available to the project proponent. Thus, the only plausible alternative scenarios for the proposed project activity consist of the continuation of the baseline scenario.	AMS-II.M. version 1.0 CDM-SSC-PoA-DD (version 2.3) VVM version 1.2	OK	OK



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E.4.4. What other alternative scenarios have been considered and why is the selected scenario the most likely one? Have the major risks to the baseline been identified?	Purchase and installation of water saving devices by household residents is not realistic under the current socio-economic context of Mexico and in light of the highly subsidized cost of water which does not encourage the adoption of more efficient technologies. Distribution of water saving devices on a national level by the government is also unrealistic due to lack of financing and the complex and centralized water management institutions in Mexico. The project activity (distribution and installation of water saving devices at zero cost) could not be implemented in the absence of CDM since carbon credits are the only revenue stream available to the project proponent. Thus, the only plausible alternative scenarios for the proposed project activity consist of the continuation of the baseline scenario.	AMS-II.M. version 1.0 CDM-SSC-PoA-DD (version 2.3) VVM version 1.2	OK	OK
E.4.5. Has the baseline scenario been determined according to the methodology?	Yes, it does. Distribution of water saving devices on a national level by the government is also unrealistic due to lack of financing and the complex and centralized water management institutions in Mexico. The project activity (distribution and installation of water saving devices at zero cost) could not be implemented in the absence of CDM since carbon	AMS-II.M. version 1.0 CDM-SSC-PoA-DD (version 2.3) VVM version 1.2	OK	OK



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	credits are the only revenue stream available to the project proponent. Thus, the only plausible alternative scenarios for the proposed project activity consist of the continuation of the baseline scenario.			
E.4.6.Has the baseline scenario been determined using conservative assumptions where possible?	Yes. It does. The project activity (distribution and installation of water saving devices at zero cost) could not be implemented in the absence of CDM since carbon credits are the only revenue stream available to the project proponent. Thus, the only plausible alternative scenarios for the proposed project activity consist of the continuation of the baseline scenario.	AMS-II.M. version 1.0 CDM-SSC-PoA-DD (version 2.3) VVM version 1.2	OK	OK
E.4.7.Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	Yes, it does. Distribution of water saving devices on a national level by the government is also unrealistic due to lack of financing and the complex and centralized water management institutions in Mexico.	AMS-II.M. version 1.0 CDM-SSC-PoA-DD (version 2.3) VVM version 1.2	OK	OK
E.4.8.Is the baseline scenario determination compatible with the available data and	Yes, It is.	AMS-II.M. version 1.0	OK	OK



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are all literature and sources clearly referenced?	Purchase and installation of water saving devices by household residents is not realistic under the current socio-economic context of Mexico and in light of the highly subsidized cost of water which does not encourage the adoption of more efficient technologies. Distribution of water saving devices on a national level by the government is also unrealistic due to lack of financing and the complex and centralized water management institutions in Mexico. The project activity (distribution and installation of water saving devices at zero cost) could not be implemented in the absence of CDM since carbon credits are the only revenue stream available to the project proponent. Thus, the only plausible alternative scenarios for the proposed project activity consist of the continuation of the baseline scenario.	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2		
<i>E.5 Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the SSC-CPA being included as registered PoA (Assessment and demonstration of additionality for SSC-CPA)</i>				
E.5.1. Are the key criteria and data for assessing additionality of a SSC-CPA that is to be included into the PoA clearly and unambiguously stated?	Yes, these are. As per "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities - version 01.0", EB 65,	"Standard for demonstration of additionality, development	OK	OK



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	<p>Annex 3, 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"</p> <p>The distribution and installation of water saving devices in households at zero cost to household residents is an entirely voluntary action which would not have been implemented in the absence of the PoA</p>	<p>of eligibility criteria and application of multiple methodologies for Programme of Activities - version 01.0", EB 65, Annex 3</p> <p>CDM-SSC-PoA-DD (version 2.3)</p> <p>VVM version 1.2</p> <p>AMS-II.M. version 1.0</p>		
E.5.2.Are the key criteria and data for assessing additionality of a SSC-CPA that is to be included into the PoA-DD based on the additionality assessment in section E.5.1 of the PoA-DD?	As per "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities - version 01.0", EB 65, Annex 3, PoAs that will include one or more small-scale projects as CPAs shall include	"Standard for demonstration of additionality, development of eligibility	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	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".	criteria and application of multiple methodologies for Programme of Activities - version 01.0", EB 65, Annex 3 CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0		
E.5.3. Is the choice of the criteria justified, based on the analysis in section E.5.1 of the PoA-DD?	Yes, it is. Each SSC CPA included in the Cambio Azul PoA must document that water saving devices are distributed and installed at zero cost to the household residents. For each SSC CPA the CME will keep documentation of all costs incurred	"Standard for demonstration of additionality, development of eligibility criteria and	OK	OK



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PoA VALIDATION REPORT

<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	including, but not limited, to the following: <ul style="list-style-type: none"> - Cost of water saving devices (efficient showerheads and flow aerators) - Warehousing and distribution - Installation (promotion campaign, salaries) - Management and supervision - Monitoring 	application of multiple methodologies for Programme of Activities - version 01.0", EB 65, Annex 3 CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 AMS-I.M. version 1.0		
E.5.4. Does it become evident how these criteria would be applied to assess the additionality of a typical CPA at the time of inclusion?	Water saving devices distributed through the Cambio Azul PoA will be provided and installed free of charge to household residents. Therefore there are no financial or economic benefits to the project proponent other than carbon related revenues. Costs of the project activity include: <ul style="list-style-type: none"> - Cost of water saving devices (efficient 	"Standard for demonstration of additionality, development of eligibility criteria and application of	CAR 06	OK



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PoA VALIDATION REPORT

<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	showerheads and faucet regulators) - Warehousing and distribution - Installation (promotion campaign, salaries) - Management and supervision - Monitoring If it can be concluded that the proposed CDM project activity is more costly than the remaining alternative scenario (scenario a), thus the project is considered additional. PJRCES could validate that PP documented the simple costs analysis associated with the CDM-SSC-PoA and the alternatives identified in Step 1 and demonstrate that there is at least one alternative which is less costly than the project activity due this each CDM-SSC-CPA included in the Cambio Azul PoA must document that water saving devices are distributed and installed at zero cost to the household residents.	multiple methodologies for Programme of Activities - version 01.0", EB 65, Annex 3 CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0		
E.5.5.Does the discussion sufficiently take into account relevant national and/or sectoral policies?	Yes, it does. Water saving devices distributed through the Cambio Azul PoA will be provided and installed free of charge to household residents. Therefore there are no financial or economic benefits to the	"Standard for demonstration of additionality, development	OK	OK



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PoA VALIDATION REPORT

<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	<p>project proponent other than carbon related revenues.</p> <p>Costs of the project activity include:</p> <ul style="list-style-type: none"> - Cost of water saving devices (efficient showerheads and faucet regulators) - Warehousing and distribution - Installation (promotion campaign, salaries) - Management and supervision - Monitoring <p>If it can be concluded that the proposed CDM project activity is more costly than the remaining alternative scenario (scenario a), thus the project is considered additional.</p>	<p>of eligibility criteria and application of multiple methodologies for Programme of Activities - version 01.0", EB 65, Annex 3</p> <p>CDM-SSC-PoA-DD (version 2.3)</p> <p>VVM version 1.2</p> <p>AMS-II.M. version 1.0</p>		
E.5.6. Is transparent and documented evidence provided on the existence and significance of these barriers?	<p>Yes, It is.</p> <p>Water saving devices distributed through the Cambio Azul PoA will be provided and installed free of charge to household residents. Therefore there are no financial or economic benefits to the project proponent other than carbon related</p>	"Standard for demonstration of additionality, development of eligibility	CAR 06	OK



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PoA VALIDATION REPORT

<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	<p>revenues.</p> <p>Costs of the project activity include:</p> <ul style="list-style-type: none"> - Cost of water saving devices (efficient showerheads and faucet regulators) - Warehousing and distribution - Installation (promotion campaign, salaries) - Management and supervision - Monitoring <p>If it can be concluded that the proposed CDM project activity is more costly than the remaining alternative scenario (scenario a), thus the project is considered additional.</p> <p>PJRCES could validate that PP documented the simple costs analysis associated with the CDM-SSC-PoA and the alternatives identified in Step 1 and demonstrate that there is at least one alternative which is less costly than the project activity due this each CDM-SSC-CPA included in the Cambio Azul PoA must document that water saving devices are distributed and installed at zero cost to the household residents.</p>	<p>criteria and application of multiple methodologies for Programme of Activities - version 01.0", EB 65, Annex 3</p> <p>CDM-SSC-PoA-DD (version 2.3)</p> <p>VVM version 1.2</p> <p>AMS-II.M. version 1.0</p>		
E.5.7. Is it appropriately explained how the approval of the project activity will	<p>Yes, it is.</p> <p>Water saving devices distributed through the</p>	"Standard for demonstration	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
help to overcome the identified barriers?	<p>Cambio Azul PoA will be provided and installed free of charge to household residents. Therefore there are no financial or economic benefits to the project proponent other than carbon related revenues.</p> <p>Costs of the project activity include:</p> <ul style="list-style-type: none"> - Cost of water saving devices (efficient showerheads and faucet regulators) - Warehousing and distribution - Installation (promotion campaign, salaries) - Management and supervision - Monitoring <p>If it can be concluded that the proposed CDM project activity is more costly than the remaining alternative scenario (scenario a), thus the project is considered additional.</p> <p>PJRCES could validate that PP documented the simple costs analysis associated with the CDM-SSC-PoA and the alternatives identified in Step 1 and demonstrate that there is at least one alternative which is less costly than the project activity due this each CDM-SSC-CPA included in the Cambio Azul PoA must document that</p>	<p>of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities - version 01.0", EB 65, Annex 3</p> <p>CDM-SSC-PoA-DD (version 2.3)</p> <p>VVM version 1.2</p> <p>AMS-II.M. version 1.0</p>		



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PoA VALIDATION REPORT

<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	water saving devices are distributed and installed at zero cost to the household residents.			
<i>E.6 Estimation of Emission reductions of a CPA</i>				
<i>Calculation of GHG Emission Reductions – Baseline Emissions</i>				
E.6.1.Has the procedure to calculate baseline emissions of an individual CPA been documented according to the approved methodology and in a complete and transparent manner?	Yes, it does. It is according with the applicable methodology. The baseline of the project activity will be calculated ex-post when installing the new water-saving devices in each of the households.	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0	OK	OK
E.6.2.Have conservative assumptions been used when determining the procedure to be used to calculate the baseline emissions?	Yes, it does. Emission reductions are calculated as the energy savings associated with a reduction in the amount of water that requires heating, which result from the project implementation, multiplied by an emission factor for the electricity or fossil fuel displaced. This methodology requires measurements of a statistically valid sample of baseline device and	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
	project water saving devices to calculate annual energy savings per device. This value for energy savings per device is multiplied by the emissions factor of the displaced electricity or fossil fuel and by the number of efficient devices installed as part of the project activity and demonstrated to be operating in each crediting period year.			
E.6.3.Are uncertainties in the baseline emission estimates properly addressed?	<p>Yes, these are.</p> <p>This methodology requires measurements of a statistically valid sample of baseline device and project water saving devices to calculate annual energy savings per device. This value for energy savings per device is multiplied by the emissions factor of the displaced electricity or fossil fuel and by the number of efficient devices installed as part of the project activity and demonstrated to be operating in each crediting period year.</p>	<p>CDM-SSC-PoA-DD (version 2.3)</p> <p>VVM version 1.2</p> <p>AMS-IIM. version 1.0</p>	OK	OK
Calculation of GHG Emission Reductions – Project Emissions				
E.6.4.Has the procedure to calculate project emissions of an individual CPA been documented according to the approved methodology and in a complete and	<p>Yes, it does.</p> <p>It is according with the applicable methodology.</p>	<p>CDM-SSC-PoA-DD (version 2.3)</p> <p>VVM version</p>	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
transparent manner?		1.2 AMS-II.M. version 1.0		
E.6.5. Have conservative assumptions been used when determining the procedure to be used to calculate the project emissions?	Yes, it does. It is according with the applicable methodology	CDM-SSC- PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0	OK	OK
E.6.6. Are uncertainties in the project emission calculation procedure properly addressed?	Yes, these are. It is according with the applicable methodology	CDM-SSC- PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0	OK	OK
<i>Calculation of GHG Emission Reductions – Leakage Emissions</i>				
E.6.7. Has the procedure to calculate leakage	There is not leakage in the CPA according with	CDM-SSC-	OK	OK



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CDM PoA Validation Requirement	Remarks	Evidence	Draft Conclusion	Final Conclusion
emissions of an individual CPA been documented according to the approved methodology and in a complete and transparent manner?	the methodology.	PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0		
Emission Reductions				
E.6.8.Does the PoA-DD provide a clear and correct way of calculating the emission reductions from each CPA?	Yes, it does. Cambio Azul will be responsible for calculation GHG emission reductions from each SSC CPA under this national PoA through the use of a database management system which utilizes the equation from approved methodology AMS-II.M. The monitoring supervisor will conduct crosschecks to ensure accuracy and completeness of data captured by periodically comparing field sampling sheets with information entered into the database.	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0	OK	OK
Data and parameters that are to be reported in CDM-SSC-CPA-DD form:				
E.6.9.Is the list of parameters presented in chapter E.6.3 considered to be complete with regard to the requirements of the applied methodology?	Yes, it is. It is according with the applicable methodology. PP wrote a Camino Azul Manual for monitoring and maintenance of the PoA.	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 AMS-II.M.	OK	OK



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CDM PoA Validation Requirement	Remarks	Evidence	Draft Conclusion	Final Conclusion
		version 1.0		
E.7 Application of the monitoring methodology and description of the monitoring plan:				
E.7.1.Does the monitoring plan defined in the PoA-DD, contain all necessary parameters required for calculating 'baseline emissions' in line with the methodology?	Yes, it does. It is according with the applicable methodology. PP wrote a Camino Azul Manual for monitoring and maintenance of the PoA.	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0	OK	OK
E.7.2.Does the monitoring plan defined in the PoA-DD, contain all necessary parameters required for calculating 'project emissions' in line with the methodology?	Yes, it does. It is according with the applicable methodology. PP wrote a Camino Azul Manual for monitoring and maintenance of the PoA.	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0	OK	OK
E.7.3.Does the monitoring plan defined in the PoA-DD; contain all necessary parameters required for calculating 'leakage emissions' in line with the methodology?	There is not leakage in the CPA according with the methodology.	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0	OK	OK
E.7.4.Does the monitoring plan provide for the collection and archiving of all	Yes, it does. PP wrote a Camino Azul Manual for monitoring	CDM-SSC-PoA-DD	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
relevant data necessary for estimation or measuring the greenhouse gas emissions within the programme boundary during the crediting period?	and maintenance of the PoA.	(version 2.3) VVM version 1.2 AMS-II.M. version 1.0		
E.7.5.Has the feasibility of the monitoring arrangements within the project design been confirmed through interviews and physical visits to the site, where required?	Yes, it does. The infrastructure for the monitoring process was verified during the site visit.	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0 Cambio Azul Manual version 01	OK	OK
E.7.6.The implementation of the monitoring plan, quality assurance and quality control procedures are verifiable	Yes, these are. PP wrote a Camino Azul Manual for monitoring and maintenance of the PoA.	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0 Cambio Azul	OK	OK



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<i>CDM PoA Validation Requirement</i>	<i>Remarks</i>	<i>Evidence</i>	<i>Draft Conclusion</i>	<i>Final Conclusion</i>
		Manual version 01		
E.7.7. Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this programme,	Yes, it will be able according VVM and they include this in the Camino Azul Manual.	CDM-SSC-PoA-DD (version 2.3) VVM version 1.2 AMS-II.M. version 1.0 Cambio Azul Manual version 01	OK	OK



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TABLE 3: RESOLUTION OF ISSUES IDENTIFIED IN TABLE 2 OF THE VALIDATION PROTOCOL

<i>Draft report clarification requests, corrective action requests and forward action request</i>	<i>Ref. to the section of the table 2 above</i>	<i>Summary of project owner response</i>	<i>Validation team conclusion</i>
<p>CAR 01:</p> <p>The registry for the households where the devices would be installed would be made under the installer criteria, additional these records will feed the database through automatic Xerox system which holds a 55% of confidence for some data (i.e. Street, Building Name, all hand writing characters) and manual review after the automatic check which increase a confidence level up to 100%, done also by Xerox; therefore no official identification for the</p>	<p>Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities - version 01.0", paragraph 14</p>	<p>Cambio Azul wishes to clarify that the process for data capturing via Xerox's Imaging Services (or equivalent services by a reputable third party specialized in data managing) consists of data mining from a census structured format (Field Data Sheet), using recognition technologies of characters and marks:</p> <ul style="list-style-type: none"> (a) Optical Mark Recognition (OMR) – interpreting structured marks and; (b) Intelligent Character Recognition (ICR) – interpreting handwriting <p>The process involves scanning, recognition (OMR + ICR), indexation, transformation into compatible data file, quality control and release.</p>	<p>PJRCES Validation Team has reviewed the new version of the CDM-SSC-PoA-DD (Version 2.3), and CDM-SSC-CPA-DD-generic (Version 2.3) and PP in this documents are defined the pertinent data capturing process.</p> <p>CAR is Closed</p>

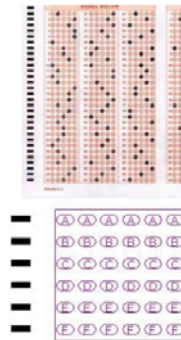


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household will be requested and used for unique identification.

*OMR = Optical Mark Recognition
(interpreting structured marks)*



*ICR = Intelligent Character Recognition
(interpreting handwriting)*



For ICR, the capturing procedure involves a second processing step through which the non-coincidences of data can be detected.

Moreover, given that OMR and ICR have different confidence levels, the data services provider will undertake a manual quality assurance / quality control process in order to assess the accuracy of the “non-mark” parameters. This manual review will increase the confidence level of ICR up to 95% (similar to the confidence level achieved through the use of OCR technologies). Therefore, the entirety of data captured from the field data sheet will be captured with a confidence level of 95% for ICR or 100% for OMR. The type of recognition technology



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employed and the confidence level for each parameter that will be captured has been defined in the Field Data Sheet, attached.

Parameters that require data capture in handwriting by the installers will be minimized. To a practical extent, parameters related to the physical address of each household will be pre-defined by Cambio Azul by having Field Data Sheets pre-printed with the individual information for households in those areas that qualify as a CPA. Manual capture of addresses will be used only in cases where pre-definition of the individual addresses (after checking with the records of neighborhood committees) are not deemed complete/reliable enough to identify households.

Finally, it is worth mentioning that the quality assurance / quality control for the data mining process will be implemented according to the Military Standard 105E which is homologous to the international standards ANSI/ASQC Z1.4, BS 6001, ISO 2859, and UNE 66020.

Section E.7.2 of the PoA DD has been updated according to the information presented in this response.

References:



PoA VALIDATION REPORT

- 1 .Field Data Sheet.xls
2. Xerox data capturing presentation.pdf
3. Xerox data capturing proposal.pdf
4. CAR01 - Detailed explanation data capturing.doc

CAR 02:

The project proponent is requested to support the unique identifications of end-user locations according to the “standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities”.

Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities - version 01.0", paragraph 14

As explained in the response to CAR 1, the use of pre-printed Field Data Sheets for housing complexes supported by a committee or association of local residents and the fact that installers perform individual visits to each household (as required to do monitoring and installation activities) ensure a unique identification of every single household defined in a CPA area.

Furthermore, the CME procedure for the installers requires that a household representative confirms the address details, the installation of the devices at zero cost and signs the Field Data Sheet stating that his/her voluntary participation in the Cambio Azul PoA. Thus, the address records (pre-printed or not) are confirmed at each location by the residents.

However, at the request of the DOE, the “conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations” will be complemented by requiring

PJRCES Validation Team has reviewed the new version of the CDM-SSC-PoA-DD (Version 2.3 and CDM-SSC-CPA-DD-generic (Version 2.3) and PP in this documents are defined the unique identification of the end-user location.

CAR is Closed



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installers to place a programme logo sticker at each household after the determination of baseline parameters and installation of low-flow devices have been successfully completed. The logo will uniquely identify each household where installation has taken place.

Cambio Azul clarifies that a representative sample of the households will be visited periodically in order to confirm the completeness and adequacy of the household records in the registry.

References:

1. Field Data Sheet.xls
5. End User Identification.pdf

CAR 03

The project proponent is requested to support the unique identifications of product according to the “standard for demonstration of additionality, development of eligibility criteria and application of multiple

Standard for demonstration of additionality, development of eligibility criteria and application of multiple

As explained to the validation team during the site visit to the manufacturer’s offices, a unique identification mark will be placed on each water saving device distributed under the programme. The marks will be placed on the devices through a high-adherence sticker.

It should be noted that a representative sample of the

PJRCES Validation Team has reviewed the new version of the CDM-SSC-PoA-DD (Version 2.3), and CDM-SSC-CPA-DD-generic (Version 2.3) and PP in this documents are defined the unique identification of product.



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methodologies for methodologies households will be visited during periodic CAR is Closed
programme of activities". for verifications which will confirm the installation of

Programme of
Activities -
version 01.0",
paragraph 14

the water saving devices at each location.

References:

1 .Field Data Sheet.xls

6. Manufacturer's diagrams for water saving
devices.pdf

7. Water saving devices - End User Identification.pdf

CAR 04

The project participant is
requested to define in the CDM-
SSC-PoA-DD who is
considered a "Low income"
urban household is.

CDM-SSC-PoA-
DD

While the term "low income" can be defined in
several ways, Cambio Azul clarifies that, as indicated
in the PoA-DD version 01, the PoA will consist of a
group of existing households (in general, eligible
households include any residential building such as
individual homes, apartment complexes, etc) located
within the host country of Mexico.

PJRCES Validation Team has
reviewed the new version of the
CDM-SSC-PoA-DD (Version 2.3),
and CDM-SSC-CPA-DD-generic
(Version 2.3) and PP in this
documents are defined the "Low
income".

The project proponent is
requested to support that
information.

Since a strict definition of "low-income" is likely to
limit the range of eligibility of CPAs and thus the
multiple environmental and social benefits associated
with water saving devices, Secion A.4.2 of the PoA-
DD has been amended to replace "lower-income

CAR is Closed



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housing ” to ”social housing” (in Spanish: vivienda de interes social). In this context, social housing encompasses any type of (existing) residential building which has been developed or purchased with funding from government housing institutions such as INFONAVIT, FOVI, FOVISSTE etc. Typically, social housing in Mexico lacks basic energy saving features as it faces significant cost-restraints during development to meet federal budget and mortgage limit requirements.

References:

1. Revised PoA-DD version 02.3
2. Revised CPA-DD version 02.3 (generic)
3. Revised CPA-DD version 02.3 (specific)

CAR 05

Information regarding the simple cost analysis has not been provided and supported to the DOE.

The project participant is requested to provide all the information regarding the cost

Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities - version 01.0”,

The PoA-DD version 02.3 has been updated to refer to the ”Tool for the demonstration and assessment of additionality” version 6.0.0.

As demonstrated in the PoA-DD, the alternative to the installation of the water saving devices is the continuation of the baseline scenario, which is less costly than the project activity.

Following paragraph 26 of the Additionality Tool, CAR is Closed

PJRCES Validation Team has reviewed the document ”Simple cost analysis” of the Programme of activities and this document has the cost of the principals activities of the programme.



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associated to the project. Based on the “Tool for the demonstration and assessment of additionality” version 06.0

paragraph 14

the costs expected in the Cambio Azul economic model for the first CPA (but which have not been incurred into yet) are outlined in the attached file titled « 120426_Simple_Cost_Analysis_acp .xls». This sensitive commercial information is deemed proprietary and confidential and it is shown only to the DOE.

References:

8. Simple Cost Analysis.xls (confidential information)

CAR 06

The project participant is requested to define for the PoA project existing houses as eligibility criteria.

Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for Programme of Activities - version 01.0",

The eligibility criteria (Section A.4.2.2) have been modified to include provisions that restrict eligibility to "existing housing" only as per the applicable methodology. Existing housing refers to any type of residence which has been occupied prior to the time of installation of water saving devices. Therefore, the installation of the project devices implies the retrofitting or replacement of baseline devices that were in use prior to the installation of the water-saving devices. As opposed to other methodologies (such as AMS-III.AE) that target new households (i.e. residences that have not been occupied prior to the implementation of energy-saving devices), AMS-II.M is only applicable to the implementation of

PJRCES Validation Team has reviewed the new version of the CDM-SSC-PoA-DD (Version 2.3) and CDM-SSC-CPA-DD-generic (Version 2.3) and PP in this documents are defined the "existing housing" in the appropriate and functional way for the programme of activities.

CAR is Closed



PoA VALIDATION REPORT

paragraph 14 water saving devices in existing housing, therefore involving the retrofitting or replacement of baseline technologies.

References:

1. Revised PoA-DD version 02.3
2. Revised CPA-DD version 02.3 (generic)
3. Revised CPA-DD version 02.3 (specific)

CAR 07

Regarding the water's temperature in the supply network can be influenced by ambient temperature; a detailed list of the municipalities should be included including the climate region it correspond.

CDM-SSC-PoA-DD
AMS-II-M
(version 1)

As per AMS-II.M (Version 1.0), cold water temperature is to be monitored according to one of the following methods:

1. Measurement of temperature of cold water during different time periods during the year of project installation to ensure that seasonal and weather factors are included in the temperature data points obtained. Average value for year shall be calculated;
2. Measurement of temperature of cold water during a time period when the water temperature is expected to be at an annual high temperature, such as during a hot season. This data point will be used as the annual value;
3. Use of a scientifically validated study for the

PJRCES Validation Team has reviewed the new version of the CDM-SSC-PoA-DD (Version 2.3), and CDM-SSC-CPA-DD-generic (Version 2.3) and PP in this documents are defined the protocol for monitoring the cold water during the verification process of the programme of activities.

CAR is closed



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temperature of incoming cold water in residential systems in the project activity location

The choice of method will be defined at the CPA level. Therefore, the provision of temperature information for the whole country is not considered relevant as per the chosen methodological approach.

References:

1. Revised PoA-DD version 02.3
2. Revised CPA-DD version 02.3 (generic)
3. Revised CPA-DD version 02.3 (specific)
4. AMS-ILM (Version 1.0)

CL 01:

The project participant is requested to use emission factors Natural Gas and LPG with the latest version of the IPCC.

CDM-SCC-
PoA-DD

References for carbon emission factor for Natural Gas and LPG were updated to refer to IPCC 2006. Moreover, in case reliable local or national data, or more recent IPCC values, are available by the inclusion of a CPA, those emission factors will be used for that CPA.

The following documents were amended accordingly:

PJRCES Validation Team has reviewed the new version of the CDM-SSC-PoA-DD (Version 2.3), and CDM-SSC-CPA-DD-generic (Version 2.3) and PP in this documents are updated the version of the IPCC of the Natural gas and LPG.

CL is closed



PoA VALIDATION REPORT

<p>CL 02:</p> <p>On the Section E.2 of the CDM-SSC-PoA-DD must be included the summary of the Local Stakeholder comment and its corresponding responses.</p>	<p>CDM-SSC-PoA-DD</p>	<ol style="list-style-type: none"> 1. Revised PoA-DD version 02.3 2. Revised CPA-DD version 02.3 (generic) 3. Revised CPA-DD version 02.3 (specific) <p>Section E.2 of PoA-DD version 02.3 has been revised to include a summary of the comments received during the local stakeholder consultation.</p> <p>References:</p> <ol style="list-style-type: none"> 1. Revised PoA-DD version 02.3 	<p>PJRCES Validation Team has reviewed the new version of the CDM-SSC-PoA-DD version 02.3 and PP included a summary of the comments of the stakeholders.</p> <p>CL is closed</p>
<p>CL 03</p> <p>The project participant is requested to keep in mind the CDM - SSC – PoA - DD compliance with applicable environmental legislation during the crediting period.</p>	<p>CDM-SSC-PoA-DD</p>	<p>PoA-DD version 02.3 has been amended to include a parameter to monitor changes in environmental legislation during the crediting period and used for adjustments in the project at CPA inclusion.</p> <p>References:</p> <ol style="list-style-type: none"> 1. Revised PoA-DD version 02.3 2. Revised CPA-DD version 02.3 (generic) 3. Revised CPA-DD version 02.3 (specific) 	<p>PJRCES Validation Team has reviewed the new version of the CDM-SSC-PoA-DD version 2.3 and PP included a parameter to monitor change in the environmental legislation during the crediting period.</p> <p>CL is closed</p>



APPENDIX B

VALIDATION TEAM DETAILS



Carbon Emissions Services, Inc.

PoA VALIDATION REPORT

<i>Team Member Name</i>	<i>Role</i>	<i>Experience</i>
Mr Juan Alberto Gracia	Team Leader	<p>Juan Alberto Gracia holds a Bachelor's Degree in Chemical Engineering and has done an Environmental Manager Degree. Having an overall experience of around 20 years. Prior he worked for ICONTEC during 18 years in Quality and Environmental Management Systems as a Team Leader Auditor. He was Responsible for development, operation, accreditation, project management of CDM Services in ICONTEC, as a DOE to UNFCCC.</p> <p>He has experience of around 10 years in CDM validation and verification services of 60 CDM projects.</p>
Mr. Ricardo Díaz	Technical Expert	<p>Ricardo Díaz holds a Bachelor's Degree in Mechanical Engineering and has done an Energy Savings Systems Master Degree and a Business Administration Master Degree. Having an overall experience of around 11 years. Prior to joining DNV having 9.5 years of experience in Power generation facilities (thermo power plants, wind and hydro power plants, energy efficiency process and energy demand). Responsible for operation, maintenance, project management and evaluation for energy facilities (fossil fuel and renewable sources) as well as energy efficiency improves in Mexican companies. In addition, experience with limited scope to operation and maintenance duty for hospitality facilities and water treatment process.</p> <p>He has experience of around 2.0 years in validation and verification of numerous CDM projects. His qualification, industrial experience and experience in CDM demonstrate him sufficient sectoral</p>



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		competence in: <ul style="list-style-type: none">- Thermal energy generation from fossil fuels as well as thermal electricity from solar- Energy Generation from renewable energy sources and- Energy demand.
Bilal Anwar	Technical reviewer	Bilal Anwar has over twelve years of experience in International Climate Change Policy and CDM. He gained over ten years of experience in the UNFCCC secretariat where he was involved in the CDM from its inception and was team leader for CDM Accreditation Unit. He also worked for two years on CDM and other GHG related projects in another DOE based in London.