Project Title	**Proyecto Mirador Enhanced Distribution of Improved Cookstoves in Latin America**
Gold Standard reference	GS1988
ERM CVS Project Reference	2786.v1
Client Name	Proyecto Mirador, LLC
Client Address	919 Sir Francis Drake Blvd. Suite 201 Kentfield, CA 94904 USA

GS Validation Report: PoA Renewal

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Version Control	Date
Version 1.0	30 October 2015 (draft report)
Version 2.0	31 December 2015 (final report)
Version 2.1	30 March 2016 (final report after GS review period)

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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CH_4	Methane
CL	Clarification request
CME	Coordinating and Managing Entity
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
COP	Conference of the Parties
DNA	Designated National Authority
DOE	Designated Operational Entity
EIA	Environmental Impact Assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse Gas
GS	Gold Standard
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
NCV	Net Calorific Value
NGO	Non-Governmental Organisation
ODA	Official Development Assistance
PoA-DD	Programme of Activities Design Document
UNFCCC	United Nations Framework Convention on Climate Change
VPA	Voluntary Programme Activity
VVS	CDM Validation and Verification Standard

Project/Party specific abbreviations

ICS	Improved Cook stove
KPT	Kitchen Performance Test
NCV	Net Calorific Value
NRB	Non-Renewable Biomass

1 Project Information

1.1 Key project information

PoA Title	**Proyecto Mirador Enhanced Distribution of Improved Cookstoves in Latin America**
PoA Location(s)	Honduras, Nicaragua, Guatemala, El Salvador and Mexico
Host Party	Honduras, Nicaragua, Guatemala, El Salvador and Mexico
Other Party(ies)	n/a
Project participants	Proyecto Mirador LLC, Proyecto Mirador Foundation

Methodology(ies) used	Technologies and Practices to Displace Decentralized Thermal Energy Consumption, Version 2.0
Methodological tool(s) used	n/a
Sectoral Scope(s) (as per http://cdm.unfccc.int/DOE/scopes.html)	Sectoral scope 3: Energy Demand

PoA Design Document submitted to DOE for validation of PoA renewal	Date: 01 October 2015 Version Number: 02	**PoA Design Document Final Version submitted to Gold Standard for PoA renewal**	Date: 25 March 2016 Version Number: 06

Estimated annual average emission reductions	426,606 tCO_2e

2 Summary and Validation Opinion

PoA Title	Proyecto Mirador Enhanced Distribution of Improved Cookstoves in Latin America
Name of Client	Proyecto Mirador, LLC

Basis of validation	ERM CVS based its validation work on: • Gold Standard approved monitoring methodology Technologies and Practices to Displace Decentralized Thermal Energy Consumption, Version 2.0 • Gold Standard Rules v.2.1 and associated toolkit and guidance • CDM Validation and Verification Standard (version 09.0) • ERM CVS's internal validation methodologies and templates
Responsibilities of ERM CVS	ERM CVS is responsible to provide a thorough independent third party assessment of the renewed PoA to ensure that the programme of activities meets all the identified and applicable criteria for PoA renewal
Responsibilities of Project participants	The Project Participants are responsible for revising the PoA-DD and providing supporting documentation to support the information included in the PoA-DD.
Activities performed	ERM CVS conducted its activities in accordance with the CDM Validation and Verification Standard. The validation consisted of a review of project documentation, interviews with relevant personnel, cross checking information through other reliable sources and reporting. Validation work was based on a validation report template that sets out the relevant Gold Standard requirements for renewal of crediting period. Where necessary, Clarification Requests and Corrective Action Requests were raised and closed out with the Project participants. The validation work was subject to detailed Technical Review and assessment prior to submission. ERM CVS also undertook validation of the renewal of the crediting period for the first and so far only VPA included in this PoA, which is reported in a separate validation report. No component of the project activity was excluded from the validation.
ERM CVS Conclusion	ERM Certification and Verification Services (ERM CVS) has performed the validation of the request for PoA renewal as set out by the Gold Standard in its Annex F. The validation employed standard auditing techniques, and addressed the requirements of the CDM Validation and Verification Standard. ERM CVS reassessed the validity of the original baseline and whether the emission reductions are in line with the latest applicable methodology. Based on the work performed, it is ERM CVS's opinion that the PPs have correctly updated the sections of the PoA-DD relating to the baseline, emission reductions and monitoring plan, that the project activity meets the applicability criteria of the methodology, and that the methodology is correctly applied for the determination of the continued validity of the baseline and estimation of emission reductions. Therefore ERM CVS concludes that the PoA as described in the POA Document Version 06 dated 25 March 2016, meets all necessary criteria and requirements for the POA renewal. ERM CVS therefore requests the renewal of the PoA.
Signed on behalf of ERM CVS	
Name:	Melanie Eddis
Date:	30 March 2016

3 Introduction

3.1 Validation Objectives

The objective of this validation is to provide a thorough independent third party assessment to determine whether the Project participants have correctly updated the PoA-DD and whether the PoA meets the requirements for its renewal, according to the latest guidance from the Gold Standard, as set out in the GS Requirements, Toolkit, and other relevant guidance. In particular, to reassess the validity of the original baseline or its update if baseline is set at the POA level, and to assess the correctness of the application of an approved methodology. The validation will result in a conclusion as to whether the request for PoA renewal should be submitted to the Gold Standard. The final decision on whether to renew the PoA rests with the Gold Standard Foundation.

3.1.1.1 Validation Criteria

ERM CVS applies the following principles in performing its validation:

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

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

3.2 Scope

The validation scope is defined as an independent and objective review of the updated PoA Design Document (PoA-PDD) and associated documentation against requirements for the PoA renewal, according to the latest guidance from the Gold Standard. The validation scope also included an assessment of completeness and accuracy of documentation, evaluation of evidences, information and assumptions made in the PoA-DD and supporting documentation.

3.3 Contract Review

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

3.4 Validation Personnel

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

Personnel who were involved in the validation of this project activity were:

Validation Team

Name	Role	CDM and GS Requirements	Technical area	Participated in site visit?
Neringa Pumputyte	Lead Validator	Yes	Fully competent	N/A

DOE Head Office

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

3.5 Summary of CVs of the validation personnel

Neringa Pumputyte is a lead assessor and technical reviewer at ERM CVS, where she works on validations and verifications of CDM and Gold Standard projects and Programmes of Activities (PoAs), as well as assurance assignments. She has over 6 years of experience in climate change and GHG emission reductions, having worked as a consultant and project developer prior to joining ERM CVS. Neringa has successfully completed 7 validations of PoAs in the sectors of renewable energy, energy demand, and manufacturing; 5 Gold Standard verifications in the sector of energy demand; and worked on project validations in the sectors of landfill gas and fugitive emissions (oil and gas), as well as corporate GHG assurances. She has led development of the Gold Standard programme in ERM CVS. Before joining ERM CVS, Neringa worked on hydro, cook stove and animal waste handling projects as a project developer. Neringa has completed the ERM CVS CDM training, Gold Standard training, and GHGMI renewable energy training. Neringa also has a BSc and MSc in Geography, and an MSc in Environmental Change and Management from the University of Oxford.

Jonathan Avis is CDM Business Manager for ERM CVS, and a GHG Assessor and Technical Reviewer with over 10 years of experience in the CDM, Gold Standard and VCS. Since joining ERM CVS Jonathan has worked as a Technical Reviewer or GHG Assessor on more than 50 CDM validations in Renewable Energy (scope 1), more than 10 CDM validations in Manufacturing Industries (scope 04), 10 CDM validations in Mining (scope 8), and 10 CDM validations in Waste Handling and Disposal (scope 13). Jonathan's previous work experience involved screening and due diligence of carbon projects, Project Design Document (POA-DD & CPA-DD) development, quality assurance and technical review of CDM and GS project documentation, the development of carbon monitoring plans, and management of carbon projects through the validation, registration and verification stages. Jonathan has completed the ERM CVS CDM training as well as the GHGMI Renewable Energy training and Gold Standard training. Jonathan holds a BA in Geography and an MSc in Environmental Change and Management from the University of Oxford.

4 Validation Approach

In carrying out its validation work, ERM CVS has:

(a) Determined whether the renewed PoA complies with the Gold Standard requirements for PoA renewal;

(b) Assessed the claims and assumptions made in the updated PoA design document (PoA-DD) related to the validity of the baseline, emission reductions and monitoring plan. The evidence used in this assessment has not been limited to that provided by the project participants.

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

- Review of documentation including updated PoA-DD, methodology and key supporting documents and references
- Interviews with personnel with project design and implementation knowledge
- Development of a draft validation report, identifying non-compliances including Corrective Action Requests (CARs) and Clarification Requests (CLs)
- Resolution of outstanding issues (CARs and CLs) and development of a final validation report and validation opinion
- Independent technical review and report approval

4.1 Document Review

A detailed document review of the PoA-DD, methodology and all other associated documentation and references took place. The document review includes:

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

A list of all documents reviewed or referred to in the course of this validation is included in Appendix A.

4.2 Interviews

Interviews provide additional and background to the project as well as cross checks with project documentation. Telephone Interviews were undertaken with the project owner.

4.3 Preparation of Draft Validation Report

Based on the findings of the desk review, ERM CVS prepared a draft validation report including a list of CARs and CLs, and provided this to the PPs. Where issues are identified that need to be further elaborated, researched or added to in order to confirm that the project activity meets the Gold Standard requirements for the POA renewal, ERM CVS identified these issues in the DVR so that they could be discussed with the PPs and concluded upon in the final validation report (FVR).

Remediation requests

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

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

Corrective Action Request (CAR): where:

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

Forward Action Requests (FAR): where it was necessary to highlight issues related to project implementation that require review during the subsequent verification of the project activity.

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

4.4 Final Validation Report and Validation Opinion

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

4.5 Internal Quality Control

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

5 Validation findings – PoA-DD

5.1 PoA Design Document (PoA-DD)

The PoA renewal requires the PoA-DD to be updated, therefore ERM CVS reviewed the revised PoA-DD to determine whether it has been prepared in accordance with the latest PoA-DD form (template) and guidance.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/CAR/ CL	Final OK/ NOT OK
5.1.1	Has the PP updated the sections of the PDD related to the baseline, estimated GHG emission reductions, and the monitoring plan?	The PoA-DD has been updated with reference to sections related to the baseline, methodological choices, estimated GHG emission reductions, and monitoring plan. In addition: The POA description was updated: the information remains materially the same, only was re-arranged, and redundant information relating to the conversion of a stand-alone project to the 1st VPA was removed. The sources and gases included in the boundary were revised: N2O emissions in the baseline and project were added, which is in line with the applied methodology.	OK	OK
5.1.2	Is the updated PDD prepared in accordance with the latest forms and guidance?	The PoA-DD submitted to the DOE for validation of the CP renewal was presented in the version 03 of the PoA-DD template which is not the latest applicable version at the time when the PoA-DD was submitted to the DOE. Some sections are not completed in line with the Instructions for filling out the programme design document form for CDM programmes of activities (attachment to the PoA-DD form), for example, the methodological choices section does not present equations and all methodological choices. CAR 1 was raised. The CAR 1 was closed when the PP revised the PoA-DD to use the latest version of the PoA-DD template (version 05.0), and the PoA-DD was confirmed to be completed in line with the instructions.	CAR 1	OK

Conclusion

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

5.2 Project Description

Description of the PoA

The general purpose of the POA is to provide improved cookstoves to rural populations in Central America where currently inefficient cookstoves are used. At the time of the POA renewal the POA includes only one VPA, which is implemented in Honduras and involves distribution and installation of Dos por tres stoves that replace traditional fogon stoves. Based on an interview with the CME, at the time of the PoA registration there was a plan to expand the PoA to other countries in Central America but this has not yet happened due to the market situation, so the PoA remains with the single VPA.

Although the first VPA involves distribution of Dos por tres cookstoves, the PoA is open to various models of cookstoves. In general terms the baseline of the PoA is continuous use of inefficient stoves, however in more exact terms and for emission reduction calculations, the types of baseline technologies and fuelwood use in the baseline are proven at the VPA level.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
5.2.1	Is there a clear description of the baseline scenario in the revised PDD?	The baseline at the PoA level is defined only in general terms, as a continuous use of inefficient stoves. This is acceptable at the PoA level, considering that more exact baseline specific to the VPA geographical boundary will be provided at the VPA level. To confirm that the PoA is a voluntary action, ERM CVS reviewed the energy strategies and regulatory framework in the countries covered by the PoA /10-15/. In some countries, e.g. Guatemala, there are strategic objectives to increase the use of wood-saving stoves, by means of providing technical assistance, microcredit programmes, or offering certification schemes for the stoves. Whilst in the medium to longer term these programmes can increase the use of efficient stoves in the country, there are no legal requirements that would make the programme of this PoA to be not a voluntary course of action. The baseline in more exact terms is defined at a VPA level and that's when more details about the use of various stoves is needed. The baseline for the 1st VPA is validated at the VPA validation report.	OK	OK

Conclusion

The PoA-DD contains a clear description of the baseline scenario.

6 Validation findings –Methodology

ERM CVS has evaluated the baseline and monitoring methodology applied by the PPs in the updated PoA-DD to confirm its applicability, and whether or not it has been appropriately applied for the calculation of emission reductions and in the monitoring plan.

6.1 Validity of selected methodology and methodological tools

As per the Gold Standard annex Z the latest approved version of a baseline and monitoring methodology applied in the original PDD of the registered GS project shall be used, i.e. the version that is valid at the time of submission of the revised PDD for the renewal of the crediting period.

The PPs have applied the following methodology for the renewal of the crediting period:

Baseline methodology applied	Technologies and Practices to Displace Decentralized Thermal Energy Consumption, Version 2.0
Methodological tools applied as required by the methodology	n/a

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
6.1.1	Are the number, title and version of the approved methodology clearly and correctly stated? Is the latest version of the methodology valid at the time of submission of the revised PDD for the renewal of the crediting period used? Is the methodology within its period of validity?	ERM CVS checked the PoA-DD submitted for validation against the latest version of the methodology applied in the original registered PoA-DD by comparing with the actual text of the applicable version of the methodology available on the Gold Standard website, and can confirm that the updated PoA-DD for renewal of the crediting period correctly quotes the latest version of the methodology applied by the PoA. The methodology is valid from 24 April 2015 onwards and is within the period of validity.	OK	OK
	Are all the required tools applied and fully referenced in the PDD? Are the version numbers applicable at the time of validation?	The methodology does not refer to any methodological tools.	OK	OK

Conclusion

The applied methodology and associated methodological tools have been correctly described and are approved by the Gold Standard. All versions are currently valid.

6.2 Applicability of the selected methodology to the project activity

ERM CVS evaluated whether the selected baseline and monitoring methodology applied is applicable to the project activity. This evaluation was based on a review of the PoA-DD and associated documentation. ERM CVS has validated that the applicability conditions of the methodology (and tools, where relevant) are met and that the project activity is not expected to result in emissions other than those allowed by the methodology.

ERM CVS has assured the compliance of the project activity with each of the applicability conditions of the selected methodology and tools:

	Applicability Conditions in methodology and/or tools	**Is this condition discussed in the PDD? (yes/no)**	**Does the project meet this condition?** (Yes/No, or state that this condition is not relevant for the project)	**Validation findings (including justification and substantiation of information, data and evidence).**	**Draft OK/ CAR/CL**	**Final OK/ Not OK**
6.2.1	This methodology is applicable to programmes or activities introducing technologies and/or practices that reduce or displace greenhouse gas (GHG) emissions from the thermal energy consumption of households and non-domestic premises	Yes	Yes	The technologies included in the POA – improved cookstoves – are among the examples of technologies to which this methodology is applicable.	OK	OK
	Shifts in technology may occur in a gradual manner and adoption can increase over the project period. The project activity is implemented by a project proponent and can include additional project participants. The individual households and institutions do not act as PPs	Yes	Yes	The POA is not restricted to one model of efficient cookstove. The ejecutores and beneficiary households do not act as PPs.	OK	OK
	The project boundary needs to be clearly identified, and the technologies counted in the project are not included in any other voluntary market or CDM project activity. In some cases there may be another similar activity within the same target area. Project proponents must therefore have a survey mechanism in place together with appropriate mitigation measures so as to prevent any possibility of double counting	Yes	Yes	The project boundary is clearly defined in the section A.5 of the PoA-DD, and eligibility criterion 1 is included to check that this condition is complied with by future VPAs. It is also discussed in section on application of methodology for a generic VPA.	OK	OK
	The technologies each have continuous useful energy outputs of less than 150kW per unit (defined as the total useful energy delivered from start to end of operation of a unit divided by time of operation).	Yes	Yes	Eligibility criterion 3 is included in the PoA-DD to check that technologies covered by VPAs comply with this methodology applicability condition. It is also discussed in section on application of methodology for a generic VPA.	OK	OK

	Applicability Conditions in methodology and/or tools	Is this condition discussed in the PDD? (yes/no)	Does the project meet this condition? (Yes/No, or state that this condition is not relevant for the project)	Validation findings (including justification and substantiation of information, data and evidence).	Draft OK/ CAR/CL	Final OK/ Not OK
	Using the baseline technology as a backup of auxiliary technology in parallel with the improved technology introduced by the project activity is permitted as long as a mechanism is put into place to encourage the removal of the old technology and the definitive discontinuity of its use. The project documentation must provide a clear description of the approach chosen and the monitoring plan must allow for a good understanding of the extent to which the baseline technology is still in use after the introduction of the improved technology. The success of the mechanism put into place must therefore be monitored, and the approach must be adjusted if proven unsuccessful.	Yes	Yes	The PoA-DD describes that as a precondition for the installation of ICS, beneficiaries shall be required to remove the traditional stove that is being replaced – they will be made aware of the requirement to remove the traditional cookstove at the time they sign up to receive the stove. Also, during Mirador's training exercises, VPA shall instruct Stove Technicians to require the beneficiary to remove the traditional stove. However it is not clear from the monitoring plan if effectiveness of this approach will be monitored. e.g. could it happen that a household re-installs a traditional stove? CL 1 was closed after confirming, based on review of the leakage and monitoring survey questionnaire /06/ and the latest verification report for this PoA /07/, that the survey includes appropriate questions which allow monitoring the effectiveness of the efforts made during the installation to ensure removal of traditional stoves. Please see Appendix B for further details.	CL 1	OK
	The project proponent must clearly communicate to all project participants the entity that is claiming ownership rights of and selling the emission reductions resulting from the project activity	Yes	Yes	Eligibility criterion 10 is included in the PoA-DD to ensure ER ownership rights are clearly communicated in all VPAs included into the PoA-DD. It is also discussed in section on application of methodology for a generic VPA.	OK	OK
	Project activities making use of a new biomass feedstock in the project situation […]	n/a	n/a	Not applicable as the feedstock in the project and baseline situations is the same (woody biomass).	OK	OK

Conclusion

The applied methodology and associated tools are fully applicable to the project activity and is correctly applied in the PoA-DD.

6.3 Project Boundary

As per VVS section 7.12.5, ERM CVS reviewed the description of the project boundary in the PoA-DD, to determine whether all main GHG emission sources, the physical delineation of the proposed project activity and other relevant project and baseline emission sources covered in the methodology are included within the project boundary for the purpose of calculating project and baseline emissions for the proposed activity.

According to the applied methodology, the project boundary is the physical, geographical sites of the project technologies. This boundary could also host the baseline and project fuel collection and production (e.g. charcoal, plant oil) and solid waste and effluents disposal or treatment facilities associated with fuel processing.

Emission sources

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

	Source	**Gas**	**Is this source included within the project boundary in the PDD?**	**Is inclusion / exclusion from the project boundary justified in the PDD?**	**How has this been validated?**
Baseline emissions	Heat delivery, production of fuel, and transport of fuel	CO_2	Yes	Yes	As per methodology - this is important source of emissions
		CH_4	Yes	Yes	As per methodology – this is important source of emissions
		N_2O	Yes	Yes	As per methodology – this can be significant for some fuels
Project emissions	Heat delivery, production of fuel, and transport of fuel	CO_2	Yes	Yes	As per methodology - this is important source of emissions
		CH_4	Yes	Yes	As per methodology – this is important source of emissions
		N_2O	Yes	Yes	As per methodology – this can be significant for some fuels

	Question	**Validation findings (including justification and substantiation of information, data and evidence)**	**Draft OK/ CAR/CL**	**Final OK/ Not OK**
6.3.1	Has the PoA-DD justified the inclusion/exclusion of all potential sources of GHG emissions as set out in the applied baseline methodology	Based on review of the PoA-DD against the methodology, the sources and GHGs included within the project boundary in the PoA-DD are in line with the applied methodology.	OK	OK

Conclusion

The identified boundary and the selected sources and gases included in the final PoA-DD are appropriately described and justified for the project activity, in accordance with the applied methodology. The information is correctly described in the section B.3 of the PoA-DD.

Physical delineation of the project

ERM CVS evaluated whether the PoA-DD correctly describes the physical delineation of the project activity, including which installations/processes are included within the geographical boundary of the project activity.

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
6.3.2	Does the PDD correctly describe the project boundary, including the physical delineation of the proposed project activity included within the project boundary?	The project boundary covers the geographical boundaries of VPAs. As can be confirmed based on review of the 1st VPA, stoves are implemented in households throughout its geographical boundary, i.e. in Honduras, and the fuel collection area also mirrors the boundary of the VPA.	OK	OK
	Were any emission sources identified that will be affected by the project activity and are not addressed by the selected approved methodology? If so, was clarification of, revision to or deviation from the methodology approved in accordance with required procedures.	No emissions sources other than those addressed by the methodology were identified.	OK	OK

Conclusion

The PoA-DD correctly describes the project boundary, including the physical delineation of the project activity, in compliance with the requirements of the selected baseline methodology, and this is consistent with documentation provided. All sources and GHGs required by the methodology have been included within the project boundary. Where the methodology allows PPs to choose whether a source or gas is to be included within the project boundary, the PPs have sufficiently justified that choice. The project boundary is justified for the project activity, based on ERM CVS's local and sectoral knowledge.

7 Validation findings – Baseline and emission reductions

As per VVS section 7.12.6, ERM CVS reviewed the PoA-DD to assess whether it correctly identifies the baseline for the project activity, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed project activity. In line with the Gold Standard Toolkit Annex at the time of the crediting period renewal, the validity of the original baseline has to be assessed and baseline updated by carrying out an assessment as per the latest version of the "Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period".

7.1 Assessment of the validity of the original/current baseline

The validity of the baseline and the parameters determined ex-ante shall be assessed in accordance with the 'Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period'. As the baseline at PoA level is defined only in general terms as continued use of inefficient stoves and the detailed assessment is performed at VPA level, the application of the Tool is assessed in the validation report for the renewal of the first VPA's crediting period.

7.2 Data and Parameters set Ex-ante

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

ERM CVS verified the justification given in the PoA-DD for the choice of data and parameters used in the equations. ERM CVS assessed that all data sources and assumptions are appropriate and calculations are correct, applicable to the proposed project activity and will result in a conservative estimate of the emission reductions. Each parameter required by the methodology and tools for this project is listed and validated in detail as follows:

Parameter required as per meth / tools	**Description of parameter** (as per meth/ tools)	**Included in revised PDD?**	**Title & description in revised PDD in line with meth/ tools?**	**Data unit correctly expressed in revised PDD?**	**Value needs to be re-assessed ?**	**Value in revised PDD correct & provides for conservative estimate of Emission Reductions?** **How was this validated?**	**Measurement method correctly described in revised PDD** (if applicable)
$NCV_{b,fuel}$	Net calorific value of the fuel that is substituted or reduced (IPCC default for wood fuel, 0.015 TJ/ton)	Yes	Yes (just without 'b' indicating baseline scenario, as there is just one baseline scenario)	Yes	Yes	The value was not provided in the PoA-DD although reference was provided to a publication from 1980, which is not in line with the methodology – CL 2 was raised. The CL 2 was closed after further justification and evidence was provided – please see Appendix B for details.	N/a
$EF_{b,fuel,CO2}$	CO_2 emission factor of the fuel that is substituted or reduced. 112 tCO_2/TJ for wood/wood waste, or the IPCC default value of other relevant fuel	Yes	Yes (just without 'b' indicating baseline scenario, as there is just one baseline scenario)	Yes	Yes	The value was not provided in the initial version of the PoA-DD, and it was not clear why considering it is a default value – see CL 2. The CL 2 was closed when the value was provided and confirmed to be in accordance with the methodology.	n/a
$EF_{b,fuel,non-CO2}$	Non-CO_2 emission factor of the fuel that	Included as two separate	Approximately – the parameter is	Yes	Yes	The values are in line with the IPCC Guidelines for National Greenhouse Gas	n/a

Parameter required as per meth / tools	Description of parameter (as per meth/ tools)	Included in revised PDD?	Title & description in revised PDD in line with meth/ tools?	Data unit correctly expressed in revised PDD?	Value needs to be re-assessed ?	Value in revised PDD correct & provides for conservative estimate of Emission Reductions? How was this validated?	Measurement method correctly described in revised PDD (if applicable)
	is reduced	parameters one for CH_4 and one for N_2O	split into two separate ones			Inventories /08/.	

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
7.2	Have the parameters required by the methodology / tools been correctly described in the PDD? Have the values been reassessed, where appropriate, and are the reassessed values valid and applicable?	The ex-ante parameters specified by the methodology have been included, but the emission factor for non-CO_2 emissions was split into two separate parameters for CH_4 and N_2O, which is slightly inconsistent with the section containing formula for calculating emission reductions. The values were not provided – CL 2 was raised to clarify whether the values of all ex-ante parameters are to be determined at the VPA level. Please also clarify why a reference to a publication from 1980 is included as a source for the value of NCV when the methodology specifies the IPCC default value for wood. The CL 2 was closed after the values of the parameters were included in the PoA-DD and validated against the IPCC Guidelines for GHG Inventories /08/ and the latest version (4.2.4) of the spreadsheet for the Water Boiling Test protocol, available on the website for the Global Alliance for Clean Cookstoves /09/. The PoA-DD also: • Includes fuel use per household in the baseline as a fixed ex-ante parameter, which is not in line with the methodology. The methodology specifies that baseline KPT data and project KPT data have to be statistically analysed in combination to check against the 90/30 rule and estimate mean fuel savings, implying that only one resulting parameter is determined. Application of the 90/30 (or 90/10) rules is not allowed to estimate baseline and project fuel use separately. • Includes the NRB fraction as an ex-ante parameter although the methodology suggests it should be included in the monitoring plan to ensure it is updated if needed. CAR 2 was raised to correct this. This was closed after the PoA-DD was revised. The NRB fraction is now correctly included as a monitoring parameter, and instead of two separate fuel use parameters for baseline and project scenarios, there is now just one fuelwood use savings parameter, which is monitored. This is in line with the applied methodology.	CL 2 CAR 2	OK

7.3 Equations and calculations used to calculate emission reductions

ERM CVS validated that the updated parameters were correctly applied to recalculate the project emissions, baseline emissions, leakage and emission reductions for the project activity, and that the calculation steps required by the new version of the methodology and any applied tools have been followed correctly. The following steps are applied in the PoA-DD to determine emission reductions, in accordance with the methodology and tools applied:

Emission reductions

The PoA covers replacement of traditional wood fuel-burning stoves with efficient wood fuel-burning stoves, i.e. the project and baseline fuel stays the same. Therefore in line with the methodology, when the baseline fuel and the project fuel is the same (woody biomass) the baseline emission factor and the project emission factor are considered the same, the emission reductions are calculated as follows:

$$ER_y = \sum_{b,p} (N_{p,y} * U_{p,y} * P_{p,b,y} * NCV_{b,fuel} * (f_{NRB,b,y} * EF_{fuel,CO2} + EF_{fuel,nonCO2})) - \sum LE_{p,y}$$

Where:

$\sum_{b,p}$	=	Sum over all relevant (baseline b/project p) couples
$N_{p,y}$	=	Cumulative number of project technology-days included in the project database for project scenario p against baseline scenario b in year y
$U_{p,y}$	=	Cumulative usage rate for technologies in project scenario p in year y, based on cumulative adoption rate and drop off rate revealed by usage surveys (fraction)
$P_{p,b,y}$	=	Specific fuel savings for an individual technology of project p against an individual technology of baseline b in year y, in tons/day, as derived from the statistical analysis of the data collected from the field tests
$f_{NRB,b,y}$	=	Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass
$NCV_{b,fuel}$	=	Net calorific value of the fuel that is substituted or reduced (IPCC default for wood fuel, 0.015 TJ/ton)
$EF_{b,fuel,co2}$	=	CO2 emission factor of the fuel that is substituted or reduced. 112 tCO2/TJ for wood/wood waste, or the IPCC default value of other relevant fuel
$EF_{b,fuel,non-co2}$	=	Non-CO2 emission factor of the fuel that is reduced.
$LE_{p,y}$	=	Leakage for project scenario p in year y (tCO2e/yr)

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
7.3	Has the PP correctly applied all relevant calculations as required by the methodology and associated tools? Does the PDD transparently explain how the procedures provided in the Methodology and applicable Tools are applied by the proposed project activity? *(i.e. are the required steps clearly followed?)*	The equations to be used for calculation of emission reductions and an explanation of the parameters used is provided, but other aspects of the methodology were not clearly explained in the initial version of the PoA-DD. Furthermore, the description of the processes, studies, adjustments etc that was provided in the initial PoA-DD appeared to be a mixture between the old and new methodologies. For example, the following provisions and choices from the methodology were not clear: • Baseline studies to be conducted in each VPA • Project studies to be conducted in each VPA • Leakage sources that need to be investigated (although this is briefly mentioned in the parameter table, not everything is aligned with the methodology) • Approaches taken to conduct performance tests, and which option from the methodology is to be used for the statistical analysis CL 3 was therefore raised. CL 3 was closed after the description of methodological choices and surveys and tests to be undertaken was revised in the PoA-DD. The description now clearly describes the choices from the methodology. Project studies as well as leakage sources are described in the monitoring plan section and are validated below. The PP will use the 90/30 rule for the statistical analysis with respect to fuel	CL 3	OK

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
		savings per unit, i.e. the PP will aim to have sample size for KPTs large enough to get the endpoints of the 90% confidence interval to be within +/-- - 30% of the estimated mean; if this rule is satisfied the PP can use the mean value of fuelwood savings for emission reduction calculations. If the 90/30 rule is not met the 90% confidence rule will be used instead, i.e. the lower bound value of the one-sided 90% confidence interval will be used for ER calculations.		
	Where the methodology provides for selection between different options for equations; is every choice of options for calculating project emissions, baseline emissions and leakage offered by the methodology correctly justified in the context of the project activity and baseline scenario?	The methodology includes different variations of emission reduction calculations depending on whether the baseline and project fuel is the same or not, and in case a single sample test is used. Based on the review of the PoA-DD, the first VPA, and an interview with the CME, so far it is envisioned that the POA would cover technologies that use woody biomass as fuel, so baseline and project fuels would be the same.	OK	OK
	Are the formulae required for the determination of project emissions, baseline emissions and leakage correctly presented in a complete and transparent manner, enabling a complete identification of parameters to be used and / or monitored?	The formula for the case when baseline and project fuel is the same, and baseline and project emission factors can be considered the same, is presented correctly. There are some small inconsistencies between the parameters in the equation and the parameters presented in the ex-ante and monitoring parameter tables, for example: • The fuel consumption in the baseline is set as an ex-ante parameter (as allowed by the old methodology), whilst the new methodology makes it clear that it is fuel savings per household that have to be determined, and statistical tests have to be applied to the savings rather than separately to baseline and project fuel use. Please see CAR 2 • Parameter $N_{p,y}$ is included in the equation but is not defined further in the POA-DD – see CL 4. The fuel consumption parameters were corrected: the PoA-DD now correctly includes a single parameter on fuelwood savings per household instead of two separate fuelwood use parameters in the baseline and project scenarios. This is in line with the methodology and CAR 2 was closed. CL 4 was closed when the parameter which was previously called 'number of stoves' was revised to refer to the $N_{p,y}$ (number of project technology days) and explanation was provided and validated as to how the accounting will consider the start of operations for stoves and the end of their lifetime. Please see Appendix B for further details	CAR 2 CL 4	OK
	Are detailed calculations provided in a traceable spreadsheet showing relevant information? Is the table of emission reductions in the PDD (section B.6.4) consistent with the calculations?	The calculations are not performed at the POA level, only at the VPA level. Please refer to the validation report for the VPA's crediting period renewal.	OK	OK
	Can the calculation of emission reductions be replicated using the data and parameters supplied in the PDD?	The calculations are not performed at the POA level, only at the VPA level. Please refer to the validation report for the VPA's crediting period renewal.	OK	OK

Conclusion

ERM CVS confirms that, based on the information reviewed and calculations reproduced by the validation team:

(a) All assumptions and data used by the PPs are listed in the PoA-DD, including their references and sources;

(b) All documentation used by PPs as the basis for assumptions and the sources of data are correctly quoted and interpreted in the PoA-DD;

(c) All values used in the PoA-DD are considered reasonable in the context of the proposed project activity where they are defined at the POA level;

(d) The baseline methodology has been applied correctly in the description how VPAs have to calculate project emissions, baseline emissions, leakage and emission reductions;

(e) The 'Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period' has been correctly applied to update the values, where relevant.

8 Validation Findings–- Monitoring Plan

To support a request for renewal of the crediting period of a registered PoA, project participants are required to update the sections of the PoA relating to the monitoring plan. Therefore ERM CVS evaluated the monitoring plan for the PoA to ensure that it is based on the approved monitoring methodology that has been applied.

8.1 Compliance of the monitoring plan with the approved methodology

ERM CVS evaluated the updated PoA-DD to ensure that the monitoring plan in the PoA-DD includes all parameters necessary for monitoring of this type of project in accordance with the approved methodology that has been applied for this project, the parameters are clearly described, and the means of monitoring described in the plan complies with the requirements of the methodology.

Completeness of monitoring parameters

The monitoring parameter(s) required by the methodology and applicable tools for this type of project is/are:

Parameter Name	Parameter Description	Is the parameter appropriately included in the Monitoring Plan? (including justification and substantiation of information, data and evidence and explanation if any are excluded from the monitoring plan)
$f_{NRB,b,y}$	Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass	This parameter was not included as a monitored parameter in the initial version of the PoA-DD but instead was included as an ex-ante parameter – see CAR 2. The parameter was subsequently moved to the monitoring parameters section and this part of CAR 2 was closed.
$P_{b,p,y}$	Specific fuel savings for an individual technology of project p against an individual technology of baseline b in year y, in tons/day, as derived from the statistical analysis of the data collected from the field tests	The initial version of the PoA-DD split this parameter into separate parameters for project and baseline fuel use. This is not in line with methodology requirement for cases where baseline fuel and project fuel are the same: whilst baseline fuel consumption and project fuel consumption are determined from different tests the data have to be analysed to apply the 90/30 rule in conjunction, to determine a single parameter per technology - mean fuel savings per household. See CAR 2. The CAR 2 was closed when the PoA-DD was revised to have a single fuelwood savings parameter, in line with the applied methodology.
$U_{p,y}$	Cumulative usage rate for technologies in project scenario p in year y, based on cumulative adoption rate and drop off rate revealed by usage surveys (fraction)	Yes, included as per the methodology. Although the description is altered in the parameter table the meaning is essentially the same
$N_{p,y}$	Cumulative number of project technology-days included in the project database for project scenario p against baseline scenario b in year y	In the initial version of the PoA-DD this was not included as such although there was a parameter 'stove sales' which covered monitoring of the number of stoves installed, just did not explain how the stoves sold would be adjusted to account for newly sold stoves which do not operate for the whole monitoring period – see CL 4. The CL 4 was closed when the parameter which was previously called 'number of stoves' was revised to refer to the $N_{p,y}$ (number of project technology days) and explanation was provided and validated how the accounting will consider the start of operations for stoves and the end of their lifetime. Please see Appendix B for further details
$LE_{p,y}$	Leakage for project scenario p in year y (tCO2e/yr)	Included in the monitoring plan

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.1.1	Are all required parameters (according to the methodology and tools) included in the monitoring plan?	Please see CAR 2 about the fuel savings parameter not being in line with the methodology, and $f_{NRB,b,y}$ being set as an ex-ante parameter. CAR 2 was closed when the PoA-DD was revised to move the parameter fNRB to the monitoring parameter section, and instead of separate fuel consumption parameters for baseline and project scenarios, there is now one fuel savings parameter in the monitoring plan. This is in line with the methodology version applied. CL4 was raised to clarify how the parameter Np,y (technology-days) will be monitored. Whilst the monitoring plan includes stove sales it does not describe how stove installation data will be adjusted for their operational length, e.g. for stoves installed during the monitoring period. CL 4 was closed when the parameter which was previously called 'number of stoves' was revised to refer to the parameter $N_{p,y}$ (number of project technology days) and explanation was provided and validated as to how the accounting will consider the start of operations for stoves and the end of their lifetime. Please see Appendix B for further details. Following the closure of CAR 2 and CL 4, ERM CVS can confirm that all parameters required by the methodology are included in the monitoring plan.	CAR 2 CL 4	OK

Conclusion

The monitored parameters included in the monitoring are complete and appropriate for monitoring of this project activity

Compliance of monitoring

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

Monitored Parameters	Parameter Names				
	$f_{NRB,b,y}$	$P_{b,p,y}$	$U_{p,y}$	$N_{p,y}$	$LE_{p,y}$
Parameter Title correct?	Yes	Yes	Yes	Yes	Yes
Description in line with methodology/tool?	Yes	Yes	Yes	Yes	Yes
Data unit correctly expressed?	Yes	Yes	Yes	Yes	Yes
Source clearly referenced?	Yes – third party studies	Yes – KPTs	Yes – survey	Yes – installation database	Yes – survey
Correct value provided for ex ante estimation?	N/a – values are set at VPA level	N/a – values are set at VPA level	N/a – values are set at VPA level	N/a – values are set at VPA level	N/a – values are set at VPA level
How has this value been verified?	N/a	N/a	N/a	N/a	N/a
Measurement method correctly described?	N/a	Yes	Yes	N/a	N/a

Monitored Parameters	Parameter Names				
	$f_{NRB,b,y}$	$P_{b,p,y}$	$U_{p,y}$	$N_{p,y}$	$LE_{p,y}$
Measurement and recording frequency correctly described?	Yes	Yes	Yes	Yes	Yes
Correct reference to standards?	N/a	N/a	N/a	N/a	N/a
Indication of accuracy provided?	N/a	N/a	N/a	N/a	N/a
QA/QC procedures described?	N/a	Yes	Yes	In the monitoring plan section	Yes, more details in the monitoring section
QA/QC procedures appropriate/in line with methodology/tool?	N/a	Yes	Yes	Yes	N/a

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.1.2	Are all required parameters appropriately monitored in accordance with the methodology/tools?	Following closure of CAR 2 and CL 4 (see above and appendix B for details) ERM CVS can confirm that all required parameters are appropriately monitored in accordance with the applied methodology.	CAR 2 and CL 4	OK

Conclusion

The means of monitoring all relevant monitored parameters complies with the requirements of the methodology and applicable tools.

8.2 Implementation of the monitoring plan

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

Sales and installation record is kept by the CME to include all stoves sold and installed. The data is provided by field staff who install stoves (in the case of the first VPA that's Ejecutores who are enterpreneurs trained by Proyecto Mirador and organise and implement stove building) and is verified by supervisors during the follow-up visits.

Surveys and tests:

- Leakage and sustainability surveys– for monitoring household cooking practices, estimating leakage, and monitoring sustainability indicators
- Usage surveys – for obtaining drop-off (usage) rates in different age groups
- Project Field Tests – Kitchen performance tests for measuring fuelwood use on project stoves

Operational and management structure:

All VPAs will be tracked by the CME under the same system. The Director of Technology in Honduras provides supervision and direction to the office team and the field teams and is responsible for the maintaining the electronic monitoring database where all household information, usage, maintenance, leakage and sustainability monitoring data is kept, as well as for checking data integrity.

Sampling plan:

The sampling plan is described in line with the guidance and complies with the CDM Standard on sampling and surveys

Leakage and Sustainability Survey:

- The sampling frame is the sales database
- Sample size – minimum 300 households, in line with the methodology
- Sampling method: for new customers, systematic sampling method will be used: every n^{th} household will be surveyed that receives a visit from the supervisors. I.e. when supervisors do follow up visits (every new stove is visited in the first 1.5 years of operation) and enter basic data using a hand-held device, the device prompts to additionally complete a survey if the household is identified by the system as n^{th}. The lag n will be determined every year to get a sample size of at least 300 per year. For older stoves, simple random sampling will be used: households are selected at random from villages that are close to routes used to access villages in the above-referred follow-up visits. Since stoves are built in diverse areas throughout the project area on an ongoing basis, the routes cover various parts of the country and ensure wide coverage.
- Implementation: using a questionnaire in a hald-held device which automatically sends data to the electronic database

Usage survey:

- The sampling frame is the sales database
- Sample size – minimum 30 stoves in each age group, in line with the methodology. To total will now always be above 100
- Sampling method: multi-stage sampling: first the villages for each age group are selected from the complete list of all villages for each age group, using the project database, and comparing the list of villages with the routes for above-referred follow-up visits. The villages are selected so that they have geographical representation and are close to the routes planned for each of the supervisors. Then in the selected villages, households are selected randomly from the complete lists of stoves per village generated from the project database
- Implementation: using a questionnaire in a hald-held device which automatically sends data to the electronic database, combining with visual observation. All surveys are done in households face to face.

Kitchen Performance Tests:

- The sampling frame is the sales database
- Sample size – minimum 100 stoves in each age group, combining results of previous KPTs and adding new ones. Once the size of 100 stoves per each age group is achieved in the database of past KPTs, the following follow-up tests will be done to refresh part of the database:

KPTs							
Age Group *	0-1	1-2	2-3	3-4	4-5	5-6	Total
Number of Surveys	10	10	10	10	10	10	50 Surveys
Number of Villages	2	2	2	2	2	2	10 Villages
Surveys per Village **	5	5	5	5	5	5	
* "Age Group" refers to the age of the stove at the time the survey is collected.							
** As a guideline, try not to exceed 5 surveys in any single village.							

- Sampling method: same as for usage survey
- Implementation: in line with the KPT protocol

Quality Assurance and Quality Control (QA/QC):

Data integrity is checked on an ongoing basis. Throughout the process by which data is gathered and verified in the field, the office team, under the supervision of the Director of Technology, cross checks and reviews the data with various data de-duplication tools, checking the data for quality, eliminating duplicates if found, and making sure that the required data is being captured on all records. The electronic database is automatically backed up. If any data is modified or changed, a record history is tracked

Feasibility of the monitoring plan:

The monitoring plan is feasible based on ERM CVS sector knowledge

	Question	Validation findings (including justification and substantiation of information, data and evidence)	Draft OK/ CAR/CL	Final OK/ Not OK
8.2.1	Are the arrangements described in the plan feasible and practical within the project design? Please consider: (a) operational and management structure, including responsibilities (b) Plans for maintenance and calibration of equipment (c) Plans for QA/QC of equipment and data (d) Installation of monitoring equipment (whether in place, or planned)	The monitoring plan includes a clear description of how stove installation will be monitored and records managed (total sales record and project database), and training as quality control measure is clearly described and adequate. However, the description of ongoing monitoring surveys and usage surveys is scattered and difficult to follow for evaluation whether it is in line with all of the methodology requirements – CL 5 was raised to clarify the description. The CL 5 was closed after ERM CVS has reviewed the revised monitoring plan and can confirm that the description is now clear on what surveys and tests are to be undertaken and how. The description is in line with the methodology.	CL 5 CAR 1	OK
8.2.2	If applicable, is the sampling plan clearly described? Are reliability requirements clearly defined? Are the target population and sample frame clearly defined? Is the sampling method appropriate to ensure the sample is representative? Is the sample size defined/calculated appropriately? Is field implementation described? Are QA/QC procedures appropriate?	The sampling plan is not sufficiently clearly described considering that target population, sample size etc will differ between different monitoring parameters / surveys and tests. CL 6 was raised to clarify the sampling plan. The CL 6 was closed after the sampling plan was revised. The modified sampling plan is now clear on what surveys and tests will be done, what sampling method will be used, and what sample size requirements will apply. The plan was confirmed to be in line with the Standard on sampling and surveys: The sample sizes (as described above) for surveys and tests comply with the methodology requirements for respective surveys and tests. The sample size for kitchen tests will increase to enable the PP to reach sufficient sample size to apply the 90/30 rule, i.e. to have the end-points of the 90% confidence interval within the +/- 30% of the estimated mean value. The sampling methods are sufficient to ensure that samples are representative of the population. As the country is small, the project covers households with similar socio-economic characteristics and the baseline of fogon stove, the total population can be considered homogeneous, and values are expected to differ only for different age groups, and the sampling methods for usage and fuelwood savings take the age groups into account to ensure different age groups are sufficiently represented.	CL 6	OK

Conclusion

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

(a) The monitoring plan is fully in compliance with the requirements of the methodology;

(b) The monitoring arrangements described in the monitoring plan are feasible within the project design;

(c) For parameters obtained by sampling, the proposed sample size and sampling method is adequate to achieve the minimum confidence/precision requirements. ERM CVS was able to reproduce the sample size calculation. The proposed sampling plan is adequate for ensuring that samples are randomly selected and are representative of the population

(d) The means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified.

The assessment conducted by ERM CVS is by means of review of the documented procedures, interviews with relevant personnel and project plans. In ERM CVS's opinion, the PPs are able to implement the monitoring plan.

9 Validation Findings – Stakeholder consultation and Sustainability assessment

In line with the Gold Standard Annex Z, ERM CVS has:

- Evaluated the PP's decision whether to conduct a complementary stakeholder consultation for the renewal of the crediting period;
- Validated the updated Sustainable Development Assessment and evaluated whether a revision was needed in the scores of the sustainable development indicators or the level of risk associated with the safeguarding principles
- Evaluated the PP's decision on whether there is a need to prepare a revised sustainable development monitoring plan to accommodate any changes and/or comments from the local stakeholders.

	Question	**Validation findings (including justification and substantiation of information, data and evidence)**	**Draft OK/ CAR/CL**	**Final OK/ Not OK**
9.1.1	Has the PP sufficiently substantiated the argumentation whether and why there is or is not a need to conduct complementary stakeholder consultation for the renewal of the crediting period?	As the stakeholder consultation is conducted at the VPA level, this validated in the VPA's crediting period renewal validation report.	OK	OK
9.1.2	Has the Sustainable Development Assessment and Do-No-Harm Assessment been updated with respect to the updated baseline?	As the sustainability assessment is conducted at the VPA level, this validated in the VPA's crediting period renewal validation report.	OK	OK
9.1.3	Has the PP sufficiently substantiated the argumentation whether and why there is or is not a need to prepare a revised sustainable development monitoring plan?	As the sustainability monitoring is conducted at the VPA level, this validated in the VPA's crediting period renewal validation report.	OK	OK

Appendix A: References

A.1 DOCUMENT LIST

Reference number	Date	Document Title and version number (if applicable)
01	01 October 2015 25 March 2016	PoA-DD for the 'Proyecto Mirador Enhanced Distribution of Improved Cookstoves in Latin America' Version 02 Version 06
02	07 October 2013	DNV. PoA validation report 'Proyecto Mirador Enhanced Distribution of Improved Cookstoves in Latin America'. Report No. 2013-9490
03	09 May 2014	6-week registration review period under GS version 2.2. Proyecto Mirador PoA (GS1988)
04		Gold Standard methodology 'Technologies and Practices to Displace Decentralized Thermal Energy Consumption', version 02
05		GS v2.2 Annex Z. Gold Standard Procedures for the Renewal of the Crediting Period
06	13 November 2015	Questionnaire for the Leakage and Sustainability Survey
07	29 December 2014	Earthood. Gold Standard Verification report 'Proyecto Mirador Enhanced distribution of Improved Cookstoves in Latin America'. Monitoring Period: 01/12/2013 – 30/11/2014
08	2006	IPCC Guidelines for National Greenhouse Gas Inventories 2.1, Volume 2: Energy
09	March 2014	Water Boiling Test protocol on the Global Alliance for Clean Cookstoves' website (http://cleancookstoves.org/technology-and-fuels/testing/protocols.html accessed on 18 December 2015), file "WBT 4.2.4 Spreadsheet."
10	Undated	Consejo Nacional de Energía –CNE-. Política Energética Nacional. (El Salvador)
11	2003	Decreto Número 52-2003. Ley de Incentivos para el Desarrollo de Proyectos de Energía Renovable (Guatemala; Act on incentives to develop renewable energy projects)
12	13 April 2005	Ley para la Promoción de Generación Eléctrica con Fuentes Renovables. LEY No. 532 (Nicaragua; Law to promote renewable electricity generation)
13	02 June 2015	LEY N°. 901. Law amending the Law no. 532: http://legislacion.asamblea.gob.ni/Normaweb.nsf/b92aaea87dac762406257265005d21f7/9247a30524cd4ba206257e590063c638?OpenDocument
14	2015	Secretaría de Energía. Prospectivas del Sector Energético 2015-2029 (Mexico; Prospects for the Energy Sector 2015-2029)
15	Undates	Presidency of the Republic of Guatemala. Ministry of Energy and Mines. Energy Policy 2013-2027. Energy for Development

A.3 INTERVIEWS

Reference	Name	Title & Organisation	Main topics discussed
IV1	Esther Adams	Proyecto Mirador	PoA implementation, baseline, application of the methodology, monitoring plan
IV2	Rob Bailis	Stockholm Environmental Institute (formerly of the Yale School of Forestry and Environmental Sciences)	Kitchen performance tests, statistical analysis, sampling

Appendix B: Remediation Form

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

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion (explain why issue is closed and how this was validated)
CAR 1. The PoA-DD submitted to the DOE for validation of the CP renewal was presented in the version 03 of the PoA-DD template which is not the latest applicable version. Some sections are not completed in line with the Instructions for filling out the programme design document form for CDM programmes of activities (attachment to the PoA-DD form), for example, the methodological choices section does not present equations and all methodological choices. Please correct	5.1.2	The PoA-DD has been updated to template version 05. We have reviewed the instructions for same and modified the PoA-DD where applicable. The methodological choices section now presents the methodological options and justifies each choice selected.	ERM CVS reviewed the updated PoA-DD and compared it against the instructions for filling out the PoA-DD form, and can confirm that the PoA-DD is filled in using the latest version of the template and in line with the instructions. CAR 1 is closed.
CAR 2. The inclusion of parameters $P_{b,y}$ and f_{NRB} as ex-ante parameters is not in line with the methodology: • The methodology specifies that baseline KPT data and project KPT data have to be statistically analysed in combination to check against the 90/30 rule and estimate mean fuel savings, implying that only one resulting parameter – fuel savings - is determined if fuel is the same in the baseline and project scenarios. Application of 90/30	7.2, 8.1	The estimated mean fuel savings will be used to determine the variable Pp,b,y and the 90/30 rule will be applied to fuel savings. A statistical analysis of currently available fuelwood reduction data is provided in conjunction with CL4 of the VPA-DD. Parameter Pb,y was deleted from the ex ante section. Parameter Pp,y (in the monitored parameters section) was changed to Pp,b,y: "Specific fuel savings from an individual technology of project p against an individual technology of baseline b in year y." Parameter fNRB,b,y was moved to the Monitored Parameters section. Parameters in the PoA and VPA were renumbered continuously and VPA-DD was modified to reflect like parameters. ER Calculations	ERM CVS reviewed the updated PoA-DD and can confirm that the parameter f_{NRB} has been moved to the monitoring parameters section, and instead of separate fuel consumption parameters for baseline and project scenarios, there is now one fuel savings parameter in the monitoring plan. This is in line with the methodology version applied. CAR 2 is closed.

Corrective Action Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion (explain why issue is closed and how this was validated)
(or 90/10) rules is not allowed to estimated baseline fuel use and project fuel use separately. • the methodology suggests that the non-renewable biomass fraction should be included in the monitoring plan to ensure it is updated if needed		spreadsheet was updated accordingly. Based on the recommendations of Dr. Rob Bailis, mean fuel savings figures are adjusted according to fuel consumption per person-meal and adjusted for fuel moisture content in order to increase accuracy and minimize the volatility inherent in the KPT. Dr. Bailis is one of the original authors of the Kitchen Performance Test protocols and his recommendations for this adjustment have been consistently upheld in Gold Standard technical reviews. Please note that since first submission for Revalidation to the DOE, the results of our 2015 KPTs have come in and those have been added to the ER calculations. ER projections in the PDD have been modified accordingly. The updated ER Calculations spreadsheet is submitted as "08_ER Calcs REV 13-Nov-2015" and the updated KPT data is submitted as "11_KPT Results REV 13-Nov-2015.xlsx." (The ER Calculations also reflect the relocation of first-year baseline vs. project fuelwood consumption inputs to a separate sheet for clarity, at the DOE's suggestion. The sheet is titled "Fuel Consumption Year 1.")	

Clarification Requests	Ref. to Question Number	Summary of PPs' response	Final conclusion (explain why issue is closed and how this was validated)
CL 1. The PoA-DD provides a description of the approach to ensure the baseline stove is removed when the project stove is installed, which is the approach used in the first VPA. However it is not clear from the monitoring plan if effectiveness of this	6.2.1	Every time a Supervisor performs a follow-up visit to a household post-installation, the Supervisor enters basic data related to stove condition and maintenance and verifies user information. That data is entered using a handheld device and is used by Mirador Supervisors and Ejecutores to schedule additional training or repairs, if needed, and to	ERM CVS reviewed a questionnaire used by the PP during the Leakage and Monitoring survey /06/ and can confirm that questions on the availability of the fogon stove and its use are included in the survey, which allows the PP to account for a possible use of the traditional stove as an auxiliary stove and adjust

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approach will be monitored, which is specified as one of the conditions for methodology's applicability. E.g. can it happen that a household re-installs a traditional stove?		streamline operations. Also during the visit, the Supervisor checks whether there is a traditional *fogon* in existence and records the result. If the *fogon* is still present, the Supervisor makes a note on the account to follow up in due course. The Leakage and Sustainability Survey is administered to the full range of stove ages for which ERs are claimed, with the sample size large enough to ensure statistical significance for each age group. The Leakage And Sustainability Survey includes a question to determine the presence or absence of auxiliary *fogon* cookstoves and, when a *fogon* is present, the extent to which it is used. Based on the results of the surveys given to the sample population, the value of LEp,y is adjusted to account for the percent of households that have a *fogon* in each age group, adjusted for the average rate of use of the *fogon* relative to the use of the Dos por Tres as per the results of the Leakage and Sustainability Survey. For newer stoves, survey participants are selected at random by having the electronic monitoring system prompt Mirador Supervisors to conduct a Leakage and Sustainability for every *n*th household that is visited in the regular course of stove monitoring. Thus, households are represented from throughout the project database and throughout the year. For older stoves, households are selected at random from villages that are close to routes used to access villages in the current follow-up visit schedule for stoves in their first 1.5 years of operation. Since stoves are built throughout the project area on an ongoing basis, the sample base will remain wide enough to provide a fully representative sampling for older stoves. The above explanation was added to Section B.7.2, *Description of the Monitoring Plan* (in two parts).	the ERs accordingly. Based on the review of the latest verification report for this PoA /07/, the use of fogon stoves was found in a very small number of households during the survey, indicating that the effort at the time of installation to ensure traditional stoves are removed is working quite effectively. CL 1 is closed.
CL 2. Please clarify whether values of all ex-ante parameters in the PoA are to be	7.2	The reference to Cheremisinoff's 1980 publication is justified under	The explanation provided is clear and reasonable considering that the VPA-DD specifies that KPT

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determined at the VPA level. Please also clarify why a reference to a publication from 1980 is included as a source for the value of NCV of wood when the methodology specifies IPCC default value for wood		CAR 1 of the VPA-DD.	results are adjusted for moisture content. ERM CVS checked the latest version (4.2.4) of the spreadsheet for Water Boiling Test protocol available on the website for the Global Alliance for Cookstoves /09/ and can confirm that the value in the VPA-DD and PoA-DD is in line with the reference source. The Protocol is widely used by cookstove projects globally and the reference is credible. CL 2 is closed
CL 3. The equation to be used for calculation of emission reductions and parameter explanation are provided (in a different section than should be – minor comment) but other aspects of the methodology are not clearly explained and the description of the processes, studies, adjustments etc that is provided in the PoA-DD appears to be a mixture between the old and new methodologies. For example, the following provisions and choices from the methodology are not clear: • Baseline studies to be conducted in each VPA • Project studies to be conducted in each VPA • Leakage sources that need to be investigated (although this is briefly mentioned in the	7.3	Section B.6.1 has been updated to include all methodological choices, including those provided for ER calculations and for statistical analysis. Section B.7.2 has also been updated to align clearly with TPDDTEC methodology. All tests and surveys employed in monitoring in the project scenario are now clearly described in Section B.7.2, and a specific sampling plan for each survey or test type is provided in detail (also in Section B.7.2). There are five leakage sources provided in the methodology (p. 12) and we have added an analysis of how each applies to Mirador as part of Section B.7.2 under "Leakage & Sustainability Survey." A summary of the data collected in this survey is provided to the DOE, in updated form, as "12_Leakage Sustainability Survey REV 13-Nov-2015.xlsx." The POA-DD now includes a transparent description of how the steps and choices provided in the Methodology are applied for this PoA. VPA-DD was also changed to reflect the revisions made to the Monitoring Plan in the PoA.	ERM CVS has reviewed the updated PoA-DD and can confirm that the description of methodological choices and surveys and tests to be undertaken, now clearly describes the choices from the methodology.

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parameter table not everything is aligned with the methodology) • Approaches taken to conduct performance tests and which option from the methodology is to be used for the statistical analysis Please provide a transparent description of how the steps and choices provided in the Methodology are applied for this PoA.			
CL 4. Please clarify how the parameter $N_{p,y}$ (technology-days) will be monitored. Whilst the monitoring plan includes stove sales it does not describe how stove installation data will be adjusted for their operational length, e.g. for stoves installed during the monitoring period	8.1.1	Project technologies are generally expected to last between 5-7 years. Emission reduction calculation spreadsheet clearly accounts for drop-off up to the 6th year. Until that point the monitored usage rates dictate how many of the project technologies are factored into the variable $N_{p,y}$. In order to clarify the calculations, stoves beyond their 6th year are categorically removed from consideration for emission reductions. However, it is possible in the future that Mirador will establish a comprehensive parts business to handle replacement of stove parts such as chimneys, planchas and parillas, which may extend the life of many stoves beyond that time frame. In that case the ER Calculations spreadsheet would be modified to accommodate older than 6th-year stoves and monitored drop-off rates will continue to be applied to all age groups for which ERs are claimed.	The accounting for the end of lifetime has been appropriately explained. The accounting for the start of the operation has not been explained in the PoA-DD but ERM CVS can confirm based on the review of the ER calculations spreadsheet for the 1st VPA that stoves start to be accounted for in the emission reduction calculations from the next month following the sale. I.e. if a stove is sold in January it will start crediting in February. This accounting is appropriate and CL 4 can be closed.
CL 5. The description of ongoing monitoring surveys and usage surveys is scattered and difficult to follow for evaluation whether it is in line with all of the methodology requirements – please clarify	8.2.1	The description of monitoring surveys has been consolidated into two sections under Section B.7.2. The first section describes (briefly) the purpose of each survey and the second section describes the sampling plan for each survey, which varies in each case.	ERM CVS has reviewed the revised monitoring plan and can confirm that the description is now clear on what surveys and tests are to be undertaken and how. The description is in line with the methodology. CL 5 is closed.

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CL 6. The sampling plan is not clear in respect to its application to different monitoring parameters / surveys and tests. Please clarify the sampling plan	8.2.2	As stated in CL5 a specific sampling plan has been clearly delineated for each survey type. Monitoring parameter numbers have been added to each the sampling plan for each survey to clarify its applicability.	The modified sampling plan is now clear what surveys and tests will be done, what sampling method will be used, and what sample size requirements will apply. The plan was confirmed to be in line with the Standard on sampling and surveys. CL 6 is closed.