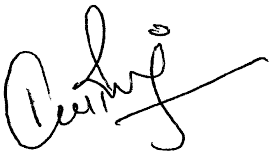
Verification and certification report form for CDM programme of activities

(version 02.0)

Complete this form in accordance with the instructions attached at the end of this form.

BASIC INFORMATION		
Title and UNFCCC reference number of the programme of activities (PoA)	9176: Improved Cookstoves Program in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento"	
Version number(s) of the PoA-DD(s) to which this report applies	Version 05 dated 16/01/2015	
Version number of the verification and certification report	Version 02	
Completion date of the verification and certification report	13/09/2018	
Monitoring period number and duration of this morning period	Monitoring Period Number: 02 Monitoring Period Duration: 15/06/2016 to 14/06/2017	
Number and version number of the monitoring report to which this report applies	Monitoring Report Number: 1 Monitoring Report Version: 4.0	
Coordinating/managing entity (CME)	Envirofit International Ltd.	
Host Parties	Host Parties of the PoA	Is this a host Party to a CPA covered in this report? (yes/no)
	Honduras	Yes
Applied methodologies and standardized baselines	AMS-II.G. ver. 6 - Energy efficiency measures in thermal applications of non-renewable biomass	
Mandatory sectoral scopes linked to the applied methodologies	03: Energy demand (as per EB88 Annex 4)	
Conditional sectoral scopes linked to the applied methodologies, if applicable	Not applicable (as per EB88 Annex 4)	
Estimated amount of GHG emission reductions or GHG removals for this monitoring period in the included CPAs covered in this report	119,724 tCO_2e	
Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included CPAs covered in this report	110,413 tCO_2e	
Name and UNFCCC reference number of the DOE	E-0066: Earthood Services Private Limited (Earthood)	

Name, position and signature of the approver of the verification and certification report	 Dr. Kaviraj Singh Managing Director

SECTION A. Executive summary

The Programme of Activities (PoA) under verification involves distribution of improved cook stoves (ICS) in Honduras. The ICS distributed are firewood-based griddle stoves which replace the inefficient baseline stoves. The ICSs applied in this PoA have been designed to match the traditional utensils and cooking habits of the target consumers in host country and are more efficient in transferring heat from the fuel to the pot when compared to the stoves typically being used in the baseline.

The coordinating and managing entity (CME) of the PoA is Envirofit International Ltd (Envirofit). The Distributing Organization (DO) for the implementation of component project activities (CPAs) is Fundación para el Desarrollo Integral de Honduras(FUNDEIH) for ICS distribution.

The households where the PoA implementation has taken place used inefficient traditional stoves in the baseline. The PoA replaced the baseline stoves with efficient ICS. The ICS combust the fuel (woodfuel) far more efficiently resulting in emission of much lesser GHG and particulate matter. Additionally, it enhances the flow of thermal energy to cooking pots reducing the fuel usage. Thus, the PoA reduced GHG emissions and improved livelihood prospects due to reduced consumption and expenses on fuel respectively.

PoA under verification covers 06 CPAs viz., 9176-0001 to 9176-0006 and amounts to emission reduction of 110,413 tCO_2e achieved during the current monitoring period.

Scope of verification:

The verification is an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the DOE. The verification includes the implementation and operation of the PoA as set out in the registered PoA-DD & CPA-DDs (9176-0001 to 9176-0006) in the current monitoring period.

The verification tests the data and assertions set out in the monitoring report prepared for this monitoring period by the CMEs and is based on the following:

1. The approved methodology AMS II.G. version 06 “Energy efficiency measures in thermal applications of non-renewable biomass”
2. The registered PoA-DD & CPA-DD and monitoring plan
3. UNFCCC criteria referred to in the Kyoto Protocol criteria and the CDM modalities and procedures as agreed in the Bonn Agreement and the Marrakech Accords
4. The CDM Validation and Verification Standard (VVS)
5. The CDM Project Standard (PS) and Project Cycle Procedure (PCP)
6. Relevant decisions, guidance and clarifications of the CMP and CDM Executive Board and any other information and references relevant to the project activity’s reported emission reductions

The verification has considered both quantitative and qualitative aspects on stated/reported emission reductions. The monitoring report (all versions) and corresponding supporting documentation was assessed in accordance with the rules defined by UNFCCC, as appropriate to the PoA. The verification is not meant to provide any consulting or recommendations to the CME/others. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

Verification Process:
The verification process is conducted as per internal CDM Quality Manual, which includes the following steps;

1. Contract with Envirofit International Ltd (Envirofit) and appointment of verification team and technical review team
2. Completeness check of Monitoring Report
3. Publication of Monitoring Report at UNFCCC website
4. Desk review of Monitoring Report and corresponding ER sheet by verification team and planning of onsite audit
5. On site audit (physical implementation and interview with relevant stakeholders) by verification team consisting of Team Leader and all Technical Experts, as a minimum

6. Follow up activities e.g., interviews
7. Reporting and closure of findings (CARs/CLs/FARs) and preparation of verification report
8. Independent technical review of the verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and evidences)
9. Reporting and closure of TR comments/findings (CARs/CLs/FARs) and final approval for the decision made
10. Issuance of final verification report to contracted CME (or authorized representatives) and submission of request for issuance, as appropriate.

Verification Conclusion:
Based on the outcome of the verification process of the registered PoA "Improved Cookstoves Program in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento"" and included CPAs (9176-0001 to 9176-0006) for the monitoring period 15/06/2016 – 14/06/2017 (including both dates) it is confirmed that the implementation of referenced registered PoA and the CPAs is complying with applicable CDM rules and regulations as stated in the Monitoring Report (final) 4.0 dated 18/05/2018. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology AMS II.G Version 06 and the monitoring plan contained in the registered PoA-DD and CPA DDs.

Earthood Services Private Limited certifies that the emission reductions from the registered CDM PoA UN#9176 "Improved Cookstoves Program in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento"" in Honduras and CPAs 9176-0001 to 9176-0006 during the period 15/06/2016 – 14/06/2017 (including both days) amount to 110,413 tCO_2e. Therefore, this is being submitted for issuance request, as per UNFCCC procedures.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team members

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader*	IR	Mahala	Deepika	Central Office	Y	N	N	Y
2.	Verifier*	IR	Mahala	Deepika	Central Office	Y	N	N	Y
3.	Methodological Expert*	IR	Mahala	Deepika	Central Office	Y	N	N	Y
4.	Technical Expert* (TA3.1)	IR	Mahala	Deepika	Central Office	Y	N	N	Y
5.	Team Leader	IR	Gautam	Ashok Kumar	Central Office	Y	Y	Y	Y
6.	Methodological Expert	IR	Gautam	Ashok Kumar	Central Office	Y	Y	Y	Y
7.	Technical Expert (TA3.1)	IR	Gautam	Ashok Kumar	Central Office	Y	Y	Y	Y
8.	Local Expert	EI	Valladares	Katherine	Central Office	Y	Y	Y	Y

*The site visit was conducted by the Ashok Kumar Gautam and Katherine Valladares. Deepika Mahala has taken all roles of Ashok Kumar Gautam for this project with effect from 11 May 2018.

B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Garg	Shreya	Central Office
2.	Technical Expert (TA3.1)	IR	Garg	Shreya	Central Office
3.	Approver	IR	Singh	Kaviraj	Central Office

SECTION C. Application of materiality in conducting the verification

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Observational error by monitoring survey staff of CME/CPA implementer while recording the responses of users in relation to survey parameters	High	05 CPAs are being verified for the for the first time and there may be lack of experience. The survey is conducted for representative samples of population, which may impact the population significantly. Considering the survey is conducted on 104 samples, surveyors may be unsupervised at the site.	Verification team randomly selected the samples from CME surveyed households. The recorded survey forms by CME were checked with DOE field observations.
2.	Transfer of recorded data into ER spreadsheets	Med	The process in manual and therefore there is potential risk of errors / omissions/misstatements.	All 104 recorded data (monitoring survey and thermal efficiency) were checked with ER sheet/9/ for consistency of information.
3.	Calculation Errors	Med	The process in manual and therefore there is potential risk of errors / omissions/misstatements.	All calculations were checked by verification team with respect to applicable requirements under various documents viz., methodology, registered PoA DD/1/, CPA DDs/3/ etc.

C.2. Consideration of materiality in conducting the verification

In accordance with CDM PoA VVS Version 1 para 307/11/ the prescribed thresholds for materiality for CDM PoAs is as under;

Emission Reductions (tCO2e)/year	500,000 or more	300,001 to 499,999	300,000 or less	Small Scale CDM PoAs	Micro Scale CDM PoAs
Materiality Threshold	0.5%	1.0%	2.0%	5.0%	10.0%

The applicable materiality threshold is 5% as all the CPAs being verified under PoA are comprised of only small-scale.

Particulars / Monitoring Report	MR Version (Public)	MR Version (Revised/Final)

Emission Reductions Achieved (tCO2e) in this monitoring period	113,928 tCO2e	110,413 tCO2e
Applicable Threshold (%) as per para 307(d) of CDM VVS Version 1 for PoAs	5%	5%

The verification team has identified the impact of errors observed and those have been corrected by CME during verification for all monitoring parameter at individual and aggregate level.

Monitored Parameter (Symbol / Description)/ formula	**Reporting Frequency**	**Number of Discrete Data (Total)** **Data (%)**	**Sample selected for verification** **Data (%)**	**Type of error identified**	**Impact on ERs**	
					ERs impacted (Sample)*	**ERs impacted (Population based on extrapolation)**
Number of project devices of type *i* and age *a* that are operating in year y	Annual for operational usage	104 (100%)	18 (17.3%)	isolated material errors	2,249 tCO2e have reduced after correction (1.97% of total CERs)	2,249 tCO2e have reduced after correction (1.97% of total CERs)
Efficiency of the device of type *i* and age *a* being deployed as part of the project activity	Annual	18 (100%)	18 (100%)	isolated material errors	3,425 tCO2e have increased after correction (3.06% of total CERs) No discrepancy in record observed, However, typographical errors in transferring data were identified.	3,425 tCO2e have increased after correction (3.06% of total CERs)
Number of days of utilization of the project device during the year ‘y ’	Annual	104 (100%)	18 (17.3%)	isolated material errors	3,074 tCO2e have reduced after correction (2.69% of total CERs).	3,074 tCO2e have reduced after correction (2.69% of total CERs)
Formulas applied for By, saving	-	-	-	-	-	1,617 tCO2e have reduced after correction (1.41% of total CERs)

All Parameters	-	-	-	-	Aggregate negative impact of errors listed above	3515 tCO2* have reduced (3.08%)

*There was only one discrepancy identified, which is acceptable as per the sampling plan stated under section D.4. of this report. After considering it as non-operational, the value of all the parameters were found to be correct when checked with their evidences. The error identified during the site visit is categorised as an isolated error by the assessment team and not a systematic or systemic error. The ERs from only discrepant observation has been conservatively deducted by the PP in the emission reduction calculations. The deduction being an isolated error impacts the total ERs (110,413 tCO_2e). Therefore, extrapolation of the impact is not deemed appropriate. However, incorrect factors and typographical errors applied in ER sheet lead to a lower value of achieved emission reductions. After DoE identified these error, CL#04, CL#07, CAR 08, CAR#09 and CAR 11 were raised. Response to these CAR, with revised calculation, has reduced the emission reductions as compared to the public monitoring report

Based on the above table it can be confirmed that the actual individual and aggregated material error is determined for the registered PoA as per CDM VVS for PoA/11/. The applicable threshold for materiality in accordance with CDM PoA VVS Version 1 para 307(d)/11/ is 5%.

SECTION D. Means of verification

D.1. Desk/document review

The desk review involves:

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan, the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- A review of calculations and assumptions made in determining the GHG data and emission reductions;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions;

The list of documents reviewed during the verification is provided under Appendix 3 of this report.

D.2. On-site inspection

Duration of on-site inspection: 16/01/2018 to 20/01/2018				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member***
1.	Implementation and operation of PoA and CPAs (project boundary, technology, project equipment, monitoring and metering equipment) as per registered/accepted PoA DD / CPA DDs	Honduras	20/01/2018	Ashok Gautam
2.	Monitoring procedures, QA/ QC procedures	Honduras	19/01/2018	Ashok Gautam
3.	Management and operational system (Documentation, allocation of responsibilities, qualification and training, data recording, archiving, internal audit and management review)	Honduras	19/01/2018	Ashok Gautam Katherine Valladares
4.	Physical inspection of randomly selected household visits part of CME's monitoring survey and non samples	Honduras	16/01/2018 to 19/01/2018	Ashok Gautam Katherine Valladares
5.	Compliance of monitoring procedures followed on site with registered PoA DD / CPA DDs and monitoring methodology	Honduras	20/01/2018	Ashok Gautam
6.	Review of monitored data, records, ER calculations, Sampling approach	Honduras	20/01/2018	Ashok Gautam Katherine Valladares

*****The site visit was conducted by the previous team leader and technical expert-Ashok K Gautam

D.3. Interviews

No.	**Interviewee**			**Date**	**Subject**	**Team member***
	Last name	**First name**	**Affiliation**			
1.	Gomez	Karen	ICS User	16/01/2018	On-site inspection	Ashok, Katherine
2.	Garcia	Glenda	ICS User	16/01/2018	On-site inspection	Ashok, Katherine
3.	Dora	Nemecia	ICS User	16/01/2018	On-site inspection	Ashok, Katherine
4.	Sarmiento	Rosalia	ICS User	17/01/2018	On-site inspection	Ashok, Katherine
5.	Almendarez	Paula	ICS User	17/01/2018	On-site inspection	Ashok, Katherine
6.	Mejia	Jose	ICS User	17/01/2018	On-site inspection	Ashok, Katherine
7.	Rocha	Soila	ICS User	17/01/2018	On-site inspection	Ashok, Katherine
8.	Rodriguez	Santos	ICS User	18/01/2018	On-site inspection	Ashok, Katherine
9.	Guifarro	Idiana	ICS User	18/01/2018	On-site inspection	Ashok, Katherine
10.	Baca	Santos	ICS User	18/01/2018	On-site inspection	Ashok, Katherine
11.	Perez	Jose	ICS User	18/01/2018	On-site inspection	Ashok, Katherine
12.	Gonzalez	Karla	ICS User	19/01/2018	On-site inspection	Ashok, Katherine
13.	Zelaya	Irma	ICS User	19/01/2018	On-site inspection	Ashok, Katherine
14.	Salinas	Martina	ICS User	19/01/2018	On-site inspection	Ashok, Katherine
15.	Pavon	Juana	ICS User	19/01/2018	On-site inspection	Ashok, Katherine
16.	Silva	Nelly	ICS User	19/01/2018	On-site inspection	Ashok, Katherine

17.	Castillo	Clara	ICS User	19/01/2018	On-site inspection	Ashok, Katherine
18.	Moncada	Ramona	ICS User	19/01/2018	On-site inspection	Ashok, Katherine
19.	Pineda	Corina	ICS User	17/01/2018	Additional Sample	Ashok, Katherine
20.	Larios	Paola	Envirofit	16/01/2018 to 20/01/2018	WBT, Monitoring Survey, Records, Management, Monitoring Equipment, QA/QC	Ashok, Katherine
21.	Mouna	Josue	Envirofit	16/01/2018 to 20/01/2018	Implementation, Sales/Distribution, Training	Ashok, Katherine

*****The site visit was conducted by the previous team leader and technical expert-Ashok K Gautam

D.4. Sampling approach

As per "Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 7"/14/ the DOE selected sample size of 18 with following assumptions

CME's sample size	104		
Stove Model	A random mix of HM4000 and HM5000		
AQL	1%	***Producer Risk***	10%
UQL	20%	***Consumer Risk***	10%
Sample Size (n)	18	***Acceptance Number***	1

Considering the above input values, a sample size of 18 was required as per Table 1 in the referred Standard for each monitoring session. Accordingly, Acceptance number (c) thus determined for the sample size was 1.

Accordingly, the verification team has verified 18 randomly selected samples of ICS across the CPAs to verify the monitoring parameters. In addition, 07 non-samples (ICS from database falling within the vicinity of identified samples) were also visited to verify the consistency of PoA implementation and review the baseline stoves for the appropriateness of 10% default efficiency etc.

However, in order to account some potential non-responses due to non-availability of user household, logistic issues/constraints and prevailing security issues etc., the selected minimum required number (18) was chosen from randomly generated 32 samples (using website www.randomizer.org) out of total of 104 CME's monitored samples (as part of monitoring survey). In order to provide further flexibility and to successfully conduct DOE field survey 03 such independent sets of 32 samples were generated and communicated to CME in advance of DOE's site visit. Thereafter, CME was asked to pick any one set (out of three independent sets) of 32 random samples and then make a selection of 18 samples (out of 32 households) for on-site verification. The oversampling was done to avoid any shortfall due to non-responses or accessibility constraints (due to political unrest at the time of physical on-site audit) with an intent to meet the minimum DoE sample size requirement (of visiting 18 households).

Site visit observations, justification and evidences submitted to the verification team evinced one discrepant record which has been regarded as a non-user by the CME, as a corrective action. As per the table above, the acceptability sampling allows one discrepancy (after conservatively corrected), thus the sample results were accepted by the verification team. For thermal efficiency of project ICS, all the actual records of thermal efficiency were reviewed by the verification team.

D.5. Clarification requests, corrective action requests and forward action requests raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
General	-	-	-
Compliance of the monitoring report with the monitoring report form	-	CAR#12	-
Remaining forward action requests from validation and/or previous verification	-	-	FAR#01 FAR#02 FAR#03

CPA(s) considered for verification and covered in this report	-	-	-
Programme of activities	-	-	-
Compliance of the programme implementation with the registered PoA-DD	CL#04	-	-
Implementation and operation of the management system	CL#04	-	-
Post-registration changes	-	-	-
• Temporary deviations from the registered monitoring plan, applied methodology or applied standardized baseline	-	-	-
• Corrections	-	-	-
• Inclusion of a monitoring plan	-	-	-
• Permanent changes to the registered monitoring plan or permanent deviation of monitoring from the applied methodology, standardized baseline or other applied standards or tools	-	-	-
• Changes to the programme design or project design	-	-	-
• Change of coordinating/managing entity	-	-	-
• Changes specific to afforestation and reforestation activities	-	-	-
Component project activities		-	-
Compliance of the CPA implementation with the included CPA design document	CL#04	-	-
Post-registration changes	-	-	-
• Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline	-	-	-
• Corrections	-	CAR#10	-
• Changes to the start date of the crediting period of component project activities	-	-	-
• Inclusion of a monitoring plan	-	-	-
• Permanent changes to the registered monitoring plan or permanent deviation of monitoring from the applied methodology, standardized baseline or other applied standards or tools	-	-	-
• Changes to the programme design of project design	-	-	-
• Changes specific to afforestation and reforestation component project activities	-	-	-
Compliance of the registered monitoring plan with the methodology including applicable tool(s) and standardized baseline	-	CAR#08	-
Compliance of monitoring activities with the registered monitoring plan	-	-	-
• Data and parameters fixed ex ante or at renewal of crediting period	-	CAR#08	-
• Data and parameters monitored	CL#06 CL#07	CAR#09 CAR#11	-
• Implementation of sampling plan	CL#05	-	-

Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of emission reductions or net removals	-	-	-
• Calculation of baseline GHG emissions or baseline net GHG removals by sinks	-	-	-
• Calculation of project GHG emissions or actual net GHG removals by sinks	-	-	-
• Calculation of leakage GHG emissions	-	-	-
• Summary of calculation of GHG emission reductions or net GHG removals by sinks	-	-	-
• Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included CPA	-	-	-
• Remarks on difference from estimated value in included CPA	-	-	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Others (please specify)	-	-	-
Total	04	05	03

SECTION E. Verification findings

E.1. General

E.1.1. Compliance of the monitoring report with the monitoring report form

Means of verification	The monitoring report form used is CDM-PoA-MR-FORM version 2.0/16/. The form used was appropriate and latest available. All the details were filled as per the MR filling guidelines of the CDM-PoA-MR-FORM/16/.
Findings	CAR#12 was raised and resolved.
Conclusion	The verification team confirms the compliance of the monitoring report with the valid version of the CDM-PoA-MR-FORM/16/ and the instructions therein for filling out the CDM-PoA-MR-FORM/16/.

E.1.2. Remaining forward action requests from validation and/or previous verifications

There were 3 FARs from the PoA validation /2/ and inclusion of CPA 9176-0001 /4/ which needed to be closed during the current monitoring period. The FARs were applicable to CPA 02, CPA03, CPA04, CPA05 and CPA06 as they are getting verified for the first time. There were no FARs from previous verification for CPA 01 /41/. Please refer to appendix 4 for detailed assessment of the FARs raised.

E.1.3. CPAs considered for verification and covered in this report

Title and UNFCCC reference number of the CPA included in the PoA as of the end of this monitoring period	Is the CPA considered for this verification? (yes/no)	The date when the CPA was included	Version of the PoA-DD	Confirmation that a request for issuance including the CPA has been published for the previous monitoring period (Y/N)
9176-0001: Improved Cookstoves Project Activity in Honduras "Vida Mejor con	Yes	15/06/2015	Version 5 dated 16/01/2015	Yes

Ecofogones de Alto Rendimiento" – CPA No 001				
9176-0002: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 002	Yes	30/01/2017	Version 5 dated 16/01/2015	Not applicable (This is first verification for the referenced CPA)
9176-0003: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 003	Yes	30/01/2017	Version 5 dated 16/01/2015	Not applicable (This is first verification for the referenced CPA)
9176-0004: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 004	Yes	30/01/2017	Version 5 dated 16/01/2015	Not applicable (This is first verification for the referenced CPA)
9176-0005: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 005	Yes	30/01/2017	Version 5 dated 16/01/2015	Not applicable (This is first verification for the referenced CPA)
9176-0006: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 006	Yes	30/01/2017	Version 5 dated 16/01/2015	Not applicable (This is first verification for the referenced CPA)
9176-0007: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 007	No	30/01/2017	Version 5 dated 16/01/2015	Not included in this verification
9176-0008: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 008	No	30/01/2017	Version 5 dated 16/01/2015	Not included in this verification
9176-0009: Improved Cookstoves Project	No	30/01/2017	Version 5 dated 16/01/2015	Not included in this verification

Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 009				

E.2. Programme of activities

E.2.1. Compliance of the programme implementation with the registered programme design document

Means of verification

The registered PoA involves the promotion, distribution of improved cook stoves (ICS) using woodfuel in Honduras. The implementation of the CPAs (included in this request) is within the geographical boundary of the PoA DD i.e. Honduras. There were 09 CPAs included under the registered PoA at the end date of current monitoring period as checked from project web page at UNFCCC/42/. The current verification though is for 06 CPAs viz., 9176-0001 to 9176-0006 as indicated under Section E.1.3. During the SV and interviews, it was confirmed that CME contracted FUNDIEH for the dissemination of cook stoves under the CPA. FUNDEIH is the distribution organization (CPA implementer / DO) for the CPAs. The overall responsibility of implementation and operation of the PoA is with CME, which was also evident during the site visit. This was found to be consistent with PoA-DD /01/.

The types of ICS distributed under the CPAs were HM4000 and HM5000 (woodfuel) which fulfils the design considerations mentioned in the registered PoA-DD /01/ and CPA-DDs /3/.

The verification team has confirmed that reported aggregate annual thermal energy savings from the number of ICS deployed under each CPA remains under the threshold of 180 GWh/year. The annual thermal energy saving achieved in the current monitoring period for each CPA ranges from 151 to 171 GWh, which is also clearly depicted in the ER sheet /9/ by the CME. The following table details the implementation status of the CPA along with technology involved:

CPA #	Type	ICS Models	Total number of ICS installed
9176-0001	Wood fuel	HM5000	29,488
9176-0002	Wood fuel	HM4000, HM5000	27,500
9176-0003	Wood fuel	HM4000, HM5000	27,500
9176-0004	Wood fuel	HM4000, HM5000	27,500
9176-0005	Wood fuel	HM4000, HM5000	27,500
9176-0006	Wood fuel	HM4000, HM5000	27,274
Total			166,762

The verification team confirms that the quantity, specification and target group of the ICS is consistent with the PoA DD /1/ and respective CPA DDs /3/. Further, based on the review of ICS distribution database in ER sheet/9/, physical observations and interview conducted during the site visit, the verification team found that:

- The CPAs are implemented within the boundary (Honduras) of the PoA as described in the PoA-DD/1/.
- The CME is same as that mentioned in the PoA-DD/1/
- The implementation and operation of the project activity has been conducted in accordance with the description contained in the PoA-DD/1/ and CPA-DDs/3/ (subject to closure of findings).
- All physical features of the CPAs proposed in the included CPA-DDs/3/ are in place

	• The FUNDEIH (distribution organization/CPA implementer) has disseminated the cook stoves under the CPAs/3/. The verification team physically visited the households during site visit. It was observed that each ICS was assigned a unique identification number / label, which ensures that no double counting happens. The unique identification number on each ICS (of samples), personal information of ICS owners and sales date of ICS were cross checked with the Sales database in ER sheet /9/. The operation of the ICS was confirmed through interviews of owners/representatives (of ICS) and visual observation of stove condition during the site visit. As a response to FAR#03, it was demonstrated by the CME that the CPAs are not included in any other PoA, CDM project activity or voluntary project activity. The verification team independently checked with other projects in the host Party with various GHG programmes and found nothing contradictory in this regard The emission reductions being claimed during this monitoring period are lower than the estimated emission reductions in the included CPA-DDs/3/. The aggregated estimated CERs were 119,724 tCO_2e whereas achieved/claimed ERs are 110,413 tCO_2e.
Findings	CL#04 and FAR#03 were raised and resolved.
Conclusion	• The verification team confirms that the physical features (technology/type of ICS) of the implementation were in accordance with the PoA DD/1/. • The actual operation is in line to CPA DDs/3/. • The installations in the CPA for the type of ICS were in compliance with the CPAs/3/. • The actual CERs for CPA were lower for comparable monitoring period. No information with regard to data and variables was identified that may surpass the estimated quantity of ERs in the respective CPA DDs/3/.

E.2.2. Implementation and operation of the management system

Means of verification	The CME representatives, monitoring team and ICS users were interviewed by the verification team during the site visit. It was confirmed that the CME has organized an appropriate management and operational system for implementation, monitoring and reporting functions. Contracted distribution organization (FUNDEIH) is being assigned task to collect and archive data of ICS customers by the CME. CPA records maintained by the DO and CME were checked during the site visit to confirm that the management system is in place. Distribution database/33/ maintained by the CME was also checked to ensure that each stove has unique ID allotted and double counting is avoided. The products disseminated were having Unique stove ID punched/labelled on it which was found consistent with the information in the distribution database. For data survey, a monitoring team has been organized by the CME consisting of trained monitoring staff, who conducted the surveys and WBTs. The monitoring manager at the CME is responsible for QA/QC of the data, analysis and reporting into the monitoring report. QA/QC procedures were found being followed during the site visit. Scanned copies of carbon transfer forms/30/ and completed monitoring survey forms/19/ and WBT test reports/18/ were made available to the verification team for verification of the information of users inserted in the database sheets.
Findings	CL#04 was raised and resolved.
Conclusion	The verification team assessed the management systems in place to implement the monitoring of the PoA. This included the roles and responsibilities, data collection, transfer and aggregation procedures, data storage and archiving for the monitoring system. The roles and responsibilities data collection transfer and aggregation procedures, data storage and archiving for the monitoring system have been provided in the MR/7/. The verification team confirms that the

	monitoring management system of the PoA is in place with the responsibilities properly identified and established.

E.2.3. Post-registration changes

E.2.3.1. Temporary deviations from the registered monitoring plan, applied methodology or applied standardized baseline

Not applicable

E.2.3.2. Corrections

Not applicable

E.2.3.3. Inclusion of a monitoring plan

Not applicable

E.2.3.4. Permanent changes to the registered monitoring plan or permanent deviation of monitoring from the applied methodology, standardized baseline or other applied standards or tools

Not applicable

E.2.3.5. Changes to the programme design or project design

Not applicable

E.2.3.6. Change of coordination/managing entity

Not applicable

E.2.3.7. Changes specific to afforestation and reforestation activities

Not applicable

E.3. Component project activities

E.3.1. Compliance of the CPA implementation with the included CPA design document

Means of verification

Envirofit International Ltd. is the Coordinating and Managing Entity (CME) for the implementation of CPA. The CME coordinates and manages distribution organization i.e. FUNDEIH that is responsible for implementing the CPA.
CPAs included in this monitoring period targets the promotion, distribution and sale of ICS (Improved Cook Stoves) i.e., HM4000 and HM5000.

Details	9176-0001	9176-0002 to 0006	Conclusion
Inclusion date	15/06/2015	30/01/2017	Consistent with project web page/42/.
Start date of crediting period	15/06/2015	01/02/2017	Consistent with project web page/42/.
ICS Model	HM5000	HM4000, HM5000	Consistent with on-site observation during site visit and sales database/33/.
Geographical Location	Honduras	Honduras	Consistent with on-site observation
CPA Implementer / DO	FUNDEIH	FUNDEIH	Consistent with CPA DDs/3/ based on interview during SV
ICS distribution start date	As in MR	As in MR	Consistent with installation date given in the sales database /33/ and sampled installation records

	checked during site visit.
	CPA-DD /3/ limits the number of operational ICS each year (however, this limit is subject to the CPA remaining below the methodology threshold of 180GWh$_{th}$ thermal energy savings per annum, page 17, footnote 9 of the CPA-DD 9176-0001 as an example). Therefore, the actual ICSs distributed may be higher than the one indicated in the CPA DDs/3/ but the annual thermal energy saved was found to be within 180 GWh$_{th}$ limit for each CPA as demonstrated in the ER sheet/9/. Review of distribution database/33/ and monitoring results in the ER sheet/9/ confirm that the applicable threshold has not been breached. The calculation provided in the ER sheet/9/ has been checked by the verification team to confirm that each CPA is below the threshold of 180 GWh/year (thermal).
Findings	CL#04 was raised and resolved.
Conclusion	• The verification team is of the opinion that physical features of the CPA have been implemented in accordance with the CPA-DDs/3/. • No specific monitoring equipment had to be installed according to the registered monitoring plan but equipment was used for WBT (thermal efficiency of ICSs). • It is also confirmed, through the physical site visit and review of the supporting documentation, that physical features of the CPAs have been implemented in accordance with the CPA-DDs/3/. • The CPAs was also found to be completely operational in line with the CPA-DDs/3/. • The information provided in the relevant sections of the monitoring report appropriately describe the implementation and operational status of the PoA.

E.3.2. Post-registration changes

E.3.2.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline

Not applicable

E.3.2.2. Corrections

The CME had proposed few corrections to the registered CPA DD 9176-0001 /3/. The corrections are briefed below:

- Fundación para el Desarrollo Integral de Honduras (FUNDEIH) has been listed as the DO/distribution entity in the revised CPA DD version 5.1. The organization is responsible entity of the implementation of the CPA.
- Operational and management plan have also been updated to include FUNDEIH as the CPA Implementer (DO).
- Some minor editorial changes have been made to the revised CPA DD.

These corrections were proposed in the previous verification and were approved by CDM EB as part of request for issuance.

CAR#10 was raised and resolved.

E.3.2.3. Changes to the start date of the crediting period of component project activities

Not applicable

E.3.2.4. Inclusion of a monitoring plan

Not applicable

E.3.2.5. Permanent changes to the registered monitoring plan or permanent deviation of monitoring from the applied methodology, standardized baseline, or other applied standards or tools

Not applicable

E.3.2.6. Changes to the programme design or project design

Not applicable

E.3.2.7. Changes specific to afforestation and reforestation component project activities

Not applicable

E.3.3. Compliance of the registered monitoring plan with the methodology including applicable tool(s) and standardized baseline

Means of verification	The monitoring plan as contained in the CPA DDs/3/ were reviewed against the monitoring requirements of the applied methodology /5/ as well as PoA DD /1/ with reference to the technology involved. Based on this review it was found that the monitoring plan contained in the CPA DDs/3/ includes all the required parameters to be monitored in the context of the CPA design and description and allows proper determination of emission reductions in accordance with PoA DD/1/ and applied methodology /5/.
Findings	CAR#08 was raised and resolved.
Conclusion	The monitoring plan is in accordance with the approved methodology/5/ that is included in the CPA DDs/3/ and PoA DD/1/.

E.3.4. Compliance of monitoring activities with the registered monitoring plan

E.3.4.1. Data and parameters fixed ex ante or at renewal of crediting period

Quantity of woody biomass that would be used in the absence of the project activity for Residential users, $B_{old,I,}$ tonnes / year / project device

Means of verification

CPA Ref. No.	Value Applied	Checked from	Assessment & Justification
9176-0001	3.10	CPA DD /3/	The value is based on historical data given in "Energy Efficiency in Central America: Progress and Action towards the fulfilment of Goals of the Central America Sustainable Energy Strategy" by Victor Hugo ventura and Ryan Carvalho, published by UN-CEPAL, 2014 report/45/. Thus, the value is consistent with source. It was verified from page 24 of the PoA DD/1/, that the value of the parameter from the first CPA can be used for the subsequent CPAs. The approach of applying the same value to CPA0002-0006 was found in line with the PoA DD/1/ and thus, it was accepted by the verification team.
9176-0002	3.10	CPA DD /3/	
9176-0003	3.10	CPA DD /3/	
9176-0004	3.10	CPA DD /3/	
9176-0005	3.10	CPA DD /3/	
9176-0006	3.10	CPA DD /3/	

Findings	CAR#13 was raised and resolved.
Conclusion	The applied values were correct and justified when compared with CPA DDs /3/, PoA DD/1/, applied methodology/5/.

Efficiency of the system being replaced as part of the SSC-CPA, η_{old}, Percentage

Means of verification				
	CPA Ref. No.	**Value Applied**	**Checked from**	**Assessment & Justification**
	9176-0001	10%	CPA DD /3/	The value is sourced from the applied methodology AMS II.G. version 6.0/5/.
	9176-0002	10%	CPA DD /3/	
	9176-0003	10%	CPA DD /3/	
	9176-0004	10%	CPA DD /3/	
	9176-0005	10%	CPA DD /3/	
	9176-0006	10%	CPA DD /3/	
Findings	CAR#08 was raised and resolved.			
Conclusion	The applied values were correct and justified when compared with CPA DDs /3/, PoA DD/1/, applied methodology/5/.			

Net calorific value for biomass, $NCV_{biomass}$, TJ/tonne

Means of verification				
	CPA Ref. No.	**Value Applied**	**Verified from**	**Assessment & Justification**
	9176-0001	0.015	CPA DD /3/	The value is sourced from the applied methodology AMS II.G. version 6.0/5/.
	9176-0002	0.015	CPA DD /3/	
	9176-0003	0.015	CPA DD /3/	
	9176-0004	0.015	CPA DD /3/	
	9176-0005	0.015	CPA DD /3/	
	9176-0006	0.015	CPA DD /3/	
Findings	No finding was raised.			
Conclusion	The applied values were correct and justified when compared with CPA DDs /3/, PoA DD/1/, applied methodology/5/.			

Emission factor for the substitution of non-renewable woody biomass by similar consumers, $EF_{projected\_fossil\_fuel}$, tCO_2/TJ

Means of verification				
	CPA Ref. No.	**Value Applied**	**Verified from**	**Assessment & Justification**
	9176-0001	81.6	CPA DD /3/	The value is sourced from the applied methodology AMS II.G. version 6.0/5/.
	9176-0002	81.6	CPA DD /3/	
	9176-0003	81.6	CPA DD /3/	
	9176-0004	81.6	CPA DD /3/	
	9176-0005	81.6	CPA DD /3/	
	9176-0006	81.6	CPA DD /3/	
Findings	No finding was raised.			
Conclusion	The applied values were correct and justified when compared with CPA DDs /3/, PoA DD/1/, applied methodology/5/.			

Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable, $f_{NRB,y}$, Fraction

Means of verification				
	CPA Ref. No.	**Value Applied**	**Source**	**Assessment & Justification**
	9176-0001	0.8382	CPA DD /3/	The value was sourced from a literature study carried out by CME - Envirofit International Ltd: NRB Study Honduras/46/ and the value was fixed at the PoA level
	9176-0002	0.8382	CPA DD /3/	
	9176-0003	0.8382	CPA DD /3/	
	9176-0004	0.8382	CPA DD /3/	
	9176-0005	0.8382	CPA DD /3/	
	9176-0006	0.8382	CPA DD /3/	
Findings	No finding was raised.			
Conclusion	The applied values were correct and justified when compared with CPA DDs /3/, PoA DD/1/, applied methodology/5/.			

Leakage, tCO_2e, LE_y

Means of verification	

CPA Ref. No.	Value Applied	Verified from	Assessment & Justification
9176-0001	0	CPA DD /3/	The value of the parameter has been considered 0 as a default correction factor of 0.95 has already been applied to the value of B_{old} as per the registered PoA DD/1/ and CPA DD/3/.
9176-0002	0	CPA DD /3/	
9176-0003	0	CPA DD /3/	
9176-0004	0	CPA DD /3/	
9176-0005	0	CPA DD /3/	
9176-0006	0	CPA DD /3/	

Findings	No finding was raised.
Conclusion	The applied values were correct and justified when compared with CPA DDs /3/, PoA DD/1/, applied methodology/5/.

E.3.4.2. Data and parameters monitored

Number of project devices of type i and age a that are operating in year y, $N_{y,i,a,}$ Number

Means of verification	The monitoring frequency is done on sampling basis as per information given in the MR across CPAs. The prescribed monitoring frequency is once in two years and actual monitoring frequency is annual. The parameter is a calculated parameter which is determined using following formula The results from monitoring were used to calculate $N_{y,i,a}$ as follows $N_{y,i,a} = (n_{y,i,a,operational} / n_{y,i,a,total}) * N_{y,i,a,installed}$ Where: N = number of stoves n = number of samples The CPA distribution record/33/, which is also included in the ER sheet corresponding to MR was checked by verification team on sample basis was reviewed to confirm the total number of stoves. The operational fraction is based on sample survey and survey forms/19,34/ were checked by the verification team and found correct. The sampling results of the PP was found to be acceptable. The age of the stove is determined based on the installation date, which is recorded at the time of installation. Thus, the stove belonging to age is a function of excel and was found correctly applied. The installation database was also checked from the carbon transfer forms/30/ of the end users. The CME supervises the activities of contracted DO (distribution entity/CPA implementer), training of staff, guidelines and templates to facilitate accurate record keeping in their CPA database/33/. During the site visit the sale process and record keeping were reviewed and were found reliable. QA/QC procedures were found to be appropriate and reliable. Sampling details for each parameter is sufficiency explained in MR and corresponding ER sheet along with brief assessment summary in Section E.3.4.3 of this report. The actual number of operational devices and age are listed below;

9176-	0001	0002	0003	0004	0005	0006
$N_{y,i=HM5000,a=1}$	0	0	303	7074	563	144
$N_{y,i=HM5000,a=2}$	7871	1173	47	0	0	0
$N_{y,i=HM5000,a=3}$	11247	0	0	0	0	0
$N_{y,i=HM5000,a=4}$	3560	0	0	0	0	0
$N_{y,i=HM4000,a=1}$	0	0	17442	17047	23582	23803
$N_{y,i=HM4000,a=2}$	0	21119	5874	0	0	0

Findings	CL#07 and CAR#13 were raised and resolved.
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.

Efficiency of the device of type i and age a being deployed as part of the project activity, $\eta_{new,i,a,}$ %

Means of verification

The monitoring is done on sampling basis as per information given in the MR across CPAs stratified for Stove Model and distributed across vintage. actual monitoring frequency is annual.

Data Ex Post	Value	Source
$\eta_{new,i=HM5000,a=0}$	29.15%	Estimated from average of 29.4%(a value from CPA-DD 01, page 28/3/) and 28.9%(a value from CPA-DD 02-06, page 26/3/)
$\eta_{new,i=HM5000,a=1}$	28.10%	Calculated
$\eta_{new,i=HM5000,a=2}$	27.32%	Calculated
$\eta_{new,i=HM5000,a=3}$	26.38%	Calculated
$\eta_{new,i=HM5000,a=4}$	25.81%	Calculated
$\eta_{new,i=HM4000,a=0}$	28.00%	Estimated in CPA-DD
$\eta_{new,i=HM4000,a=1}$	27.51%	Calculated
$\eta_{new,i=HM4000,a=2}$	26.73%	Calculated

The parameter was measured by conducting WBT tests/18/. During the tests thermometer, weighing scale and moisture meters were used as monitoring equipment. The details of meters are as follows:

Equipment	Brand	Model	Serial Number
Thermometer	Omega	Omagette HH308 Type K	170503964
Mass Balance	LW Measurement	MCT- 33	MC1506041
Moisture Meter	Lignomat	Mini Ligno DX	N/A

WBTs were conducted in line with the guidance provided by the CME and according to a methodology supported by PCIA. Documentation can be found on PCIA website http://www.pciaonline.org/testing.

The team performing WBTs was trained by testing experts from Colorado State University Biomass Lab as confirmed during the interview with CME representative. No calibration frequency has been set for the equipment used during the validation and no requirement in this regard were found in the applied methodology. However, it was confirmed that PP has used auto-calibrated /new equipment to conduct the tests. Please refer to section E.7. for details of equipment used. The verification team has checked all the stove efficiency test (WBT) results/18/ and found out the efficiency of the ICS were consistent with the MR/7/ and corresponding ER spreadsheet/08/.

Findings	CL#06 and CAR#09 were raised and resolved.
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology/5/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/1,3/.

Number of days of utilization of the project device during the year 'y', $\mu_{y,i}$, Days

Means of verification	The actual monitoring frequency is annual and is based on sampling survey. The use of baseline stoves was checked during the monitoring surveys conducted. Values reported in the MR /7/ and ER sheet /9/ have been verified from monitoring survey records maintained by the CME and the verified value of the parameter is 309 and 326 days for HM5000 and HM4000 respectively in the current monitoring period as per ER sheet/9/. However, these results are presented as fraction in the MR (i.e. 0.85 for HM5000 and 0.89 for HM4000). For samples, who have reported using only the project stove and not using the baseline stove, their utilization factor has been taken as 1.0 and for the days when only traditional stoves have been reported to be used, the factor has been taken as 0. For samples who have reported using both project stove and baseline stove, the utilization factor, 0.5 value has been applied as a default which is in line with applied methodology/5/ and SSC_711/43/.
Findings	CAR#11 and CAR#13 were raised and resolved.
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology/5/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/1/.

E.3.4.3. Implementation of sampling plan

Means of verification	CME applied representative sampling across CPAs (9176-0001 to 0006) as per Sampling Plan. The sampling plan consisted of monitoring the following parameters; **Parameter** / **Description of parameter** $N_{y,i,a}$ — Number of project devices of type *i* and age *a* that are operating in year y $\eta_{new,i,a}$ — Efficiency of the device of type *i* and age *a* being deployed as part of the project activity $\mu_{y,i}$ — number of days of utilization of the project device during the year 'y' Based on the registered CPA-DDs/3/ and PoA DD/1/, 95/10 reliability level was selected for PoA level sampling for the parameters mentioned above. The initial target population were the stoves distributed and recorded under CPA 9176-0001 to CPA 9176-0006. As per page 31 of the CPA-DD, *"the ICS shall be stratified by region, target user group, stove category (fuel) and ICS model combination (model and age)"*. However, only stove model and age-based stratification was applied as other criteria were appropriately not found relevant/applicable because as checked from the site visit of the sampled households and through review of database/33/ all the stoves have been disseminated in same region (Honduras), uses same type of fuel (i.e, woodfuel) and targets only domestic households. Only the stove type and age varies. Stratified Random Sampling approach (the population was divided into strata based on stove model and age) was applied to determine the sample size for the parameters $N_{y,i,a}$ and $\eta_{new,i,a}$. For parameter $\mu_{y,i}$, the population was considered into two strata only as the methodology does not require determination of this parameter based on different ages. As included under Section E.3 of MR and corresponding ER calculator worksheet 'MP#2 Sample Size Cal and Results' in details on calculation of sample size for each parameter the sampling approach applied by CME was found meeting the requirements of registered PoA DD and applicable Guideline: Sampling and surveys for CDM project activities and programmes of activities, Version 04.0/15/ and Sampling Standard/14/.
Findings	CL#05 and CAR#13 were raised and resolved.
Conclusion	CME applied a sampling approach for the determination of data and parameters monitored, the CME has provided a complete and transparent description of the sampling activities and how the sampling efforts and surveys comply with the

	validated sampling plan in accordance with applicable verification requirements related to the compliance of monitoring activities with the registered monitoring plan in the VVS/11/.

E.3.4.4. Compliance with the calibration frequency requirements for measuring instruments

Means of verification

The monitoring plan (included in CPA DDs/3/ and registered PoA DD/1/) does not state the calibration requirements for any of the parameter. However, the verification team has checked if the monitoring equipment used during WBT test (mass balance, moisture meter and thermometer) were duly calibrated as per manufacturer's specifications/22,25,28/. As a result, following information was verified;

Equipment	Brand	Model	Serial Number	Accuracy
Thermometer	Omega	Omagette HH308 Type K	170503964	+/- 0.3% reading + 1^0C
Mass Balance	LW Measurement	MCT- 33	MC1506041	+/-2 division, +/- 0.002lbs
Moisture Meter	Lignomat	Mini Ligno DX	N/A	+/- 1.0%

One of equipment was newly purchased equipment (Thermometer) or two were with auto-calibration (Mass Balance or Moisture Meter) functionality as per the manufacturer's specifications/22,25,28/.

Findings

No finding was raised.

Conclusion

The verification team confirm that CME applied good practices (as per manufacturer recommendation) while using the monitoring equipment and these were either newly purchased or were having auto calibration functionality. There is no specific requirement prescribed in this regard in the registered monitoring plan of monitoring methodology. Therefore, the approach presented by CME was accepted.

E.3.5. Assessment of data and calculation of emission reductions or net removals

E.3.5.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification

The equations listed below were used to determine the baseline emissions as provided in the monitoring report /7/ and applied in the corresponding ER calculations sheets /9/.

Total ER reductions achieved for each CPA is calculated by using the following equation:

$$ER_{y,i} = \sum_{a=1}^{a=y} B_{y,savings,i,a} \times N_{y,i,a} \times \frac{\mu_{y,i}}{365} \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossilfuel} - LE_y$$

where,

$ER_{y,i}$	Emission reductions during year y in tCO2e
$B_{y,savings,i,a}$	Quantity of woody biomass
a	Indices for the age (in years)
f_{NRB}	Fraction of woody biomass saved by the project activity
$NCV_{biomass}$	Net calorific value of the non-renewable woody biomass (IPCC default for wood fuel, 0.015 TJ/tonne based on the gross weight of the wood that is air-dried) (TJ/tonnes)

	$EF_{projected\_fossilfuel}$ — Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass by similar consumers. Use a value of 81.6 tCO_2/TJ
	$N_{y,i,a}$ — Number of project devices of type i and age a operating in year y
	$\mu_{y,i}$ — Number of days of utilization of the project device during the year, y. Its value may be considered as 365 where it can be demonstrated that the pre-project device has been decommissioned and is no longer used.
	LE_y — Leakage emissions in the year y, to be taken as 0 as leakage correction factor of 0.95 shall be directly applied to $B_{y,savings,i,a}$

Calculation of $B_{y,savings,i,a}$ has been done by using the following equation:

$$B_{y,savings,i,a} = B_{old,i} \times \left(1 - \frac{\eta_{old}}{\eta_{new,i,a=1} \times \Delta\eta_{y,i,a}}\right)$$

Where,

η_{old}	Efficiency of the pre-project device (fraction)
$\eta_{new,i,a}$	Thermal efficiency of the device of type i being deployed as part of the project activity (fraction)
$\Delta\eta_{y,i,a}$	Factor to consider the efficiency loss of the project device type i due to its aging at the year y

The assessment each parameter listed above have been assessed under section E.3.4.1 and E.3.4.2. of this report.

As the efficiency, may generally decrease over a period of time the age of ICS, therefore in order to discount that in the baseline emissions the total quantity of stoves as per relevant vintage was required. It has been verified that the corresponding ER calculations sheet /9/ to the Monitoring Report /7/ has considered the number of stoves as per the vintage and accordingly the efficiency of such stoves in the ER calculation for the CPA. The value of baseline emission obtained by applying the equations provided in the registered PoA DD is 110,413 tCO_2e.

The expressions used were found consistent with the registered PoA DD/1/, CPA DDs /3/ and the applied methodologies AMS-II.G., version 06 /5/.

Findings	No finding was raised.
Conclusion	The verification team confirms that • The complete data was available and is duly reported; • As indicated above, the description with regard to cross-check of reported data is included under respective parameter (refer Section E.3.4.2 of this report); • Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals were followed; • Appropriate emission factors, IPCC default factors and other reference values were correctly applied. • There is no pro-rate approach was applied in the current monitoring period as entire monitoring period falls into period that is after the end of first commitment period of Kyoto Protocol.

E.3.5.2. Calculation of project GHG emissions or actual net GHG removals by sinks

Means of verification	There is no prescribed method mentioned in the registered PoA DD/1/, CPA DDs/3/ and applied monitoring methodology/5/ for calculation of project emissions.

	The onsite visit and project design also did not reveal any potential source to be considered in this regard.
Findings	No finding was raised.
Conclusion	No project emissions were required to be calculated.

E.3.5.3. Calculation of leakage GHG emissions

Means of verification	Leakage emissions has been taken as zero as per the methodology and a correction factor of 0.95 has been applied to the $B_{y,savings,i,a}$ and B_{old} directly. The Leakage adjustment factor has been duly accounted in the calculation of baseline emissions. The onsite visit and project design also did not reveal any potential source to be considered in this regard.
Findings	No finding was raised.
Conclusion	No additional leakage emissions (other than leakage adjustment factor applied to baseline calculations) were required as per methodology AMS-II.G., version 06/5/.

E.3.5.4. Summary of calculation of GHG emission reductions or net GHG removals by sinks

Means of verification	The value of baseline emission obtained by applying the equations provided in the registered PoA DD is 110,413 tCO_2e. The project emissions and leakages for the project activity are considered as zero. Therefore, the final claimed value of net GHG emission reductions obtained is 110,413 tCO_2e (CPA wise ERs achieved during the current monitoring period are written in the table below). The calculations presented in this regard in the monitoring report /7/ and corresponding ER calculations sheet /9/ were found appropriate and complying with the provisions prescribed in the registered monitoring plan of CPA DDs/3/, registered PoA-DD/1/ and applied methodology/5/. The verification team confirms that an audit trail that contains the evidence and records that validated the stated figures were checked and found acceptable
Findings	No finding was raised.
Conclusion	The verification team confirms that • The complete data was available and is duly reported; • As indicated above, the description with regard to cross-check of reported data is included under respective parameter; • Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals, project emissions and leakage emissions were followed; • Appropriate emission factors, IPCC default factors and other reference values were correctly applied. (subject to closure of findings) • There is no pro-rata approach was applied in the current monitoring period as entire monitoring period falls into period that is after the end of first commitment period of Kyoto Protocol. • The total number of ERs claimed during the current monitoring period is 110,413 tCO_2e.

Title and UNFCCC reference number of the CPA	Baseline emissions or baseline net GHG removals by sinks (tCO_2e)	Project emissions or actual net GHG removals by sinks (tCO_2e)	Leakage (tCO_2e)	GHG emission reductions or net GHG removals by sinks (tCO_2e)		
				Amount achieved before 1 January 2013	Amount achieved from 1 January 2013	Amount achieved in the entire monitoring period
9176-0001: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 001	36,196	-	-	-	36,196	36,196
9176-0002: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 002	13,831	-	-	-	13,831	13,831
9176-0003: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 003	14,916	-	-	-	14,916	14,916
9176-0004: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 004	15,096	-	-	-	15,096	15,096
9176-0005: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 005	15,277	-	-	-	15,277	15,277
9176-0006: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 006	15,097	-	-	-	15,097	15,097
Total	**110,413**	-	-	-	**110,413**	**110,413**

E.3.5.5. Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included CPA

Means of verification	After reviewing the ER calculations sheet, it can be concluded that the actual aggregated emission reductions claimed by the CPAs (9176-0001 to 0006) are

	less than the estimated emission reductions in the respective CPA-DDs for the comparable period.
Findings	No finding was raised.
Conclusion	The actual emission reductions claimed in the current monitoring period for CPA (9176-0001 to 0006) are lower than the emission reductions stated in the respective CPA-DDs. Therefore, it has been accepted by the verification team.

Title and UNFCCC reference number of the CPA	Value estimated in ex ante calculation in the included CPA-DD(s)	Actual values achieved* by the CPAs during this monitoring period
9176-0001: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 001	42,222 tCO2e	36196 tCO2e
9176-0002: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 002	15,500 tCO2e	13831 tCO2e
9176-0003: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 003	15,501 tCO2e	14916 tCO2e
9176-0004: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 004	15,500 tCO2e	15096 tCO2e
9176-0005: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 005	15,500 tCO2e	15277 tCO2e
9176-0006: Improved Cookstoves Project Activity in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento" – CPA No 006	15,501 tCO2e	15097 tCO2e
Total	119,724 tCO2e	**110,413** tCO2e

E.3.5.6. Remarks on difference from estimated value in included CPA

Means of verification	The achieved emission reductions were found to be less than the estimated emission reductions. Therefore, no further explanation has been sought by assessment team and thereby the difference has been accepted.
Findings	No finding was raised.
Conclusion	The achieved ERs are less than the estimated amount of emission reductions.

E.3.6. Assessment of reported sustainable development co-benefits

Means of verification	CME has not indicated monitoring results of the sustainable development indicators and therefore were out of scope of verification.
Findings	No finding was raised.
Conclusion	CME did neither include the monitoring results of sustainable development indicators nor it requested DOE to verify the same.

E.3.7. Global stakeholder consultation

Means of verification	This is the second monitoring period of the PoA and it was not subjected to global stakeholder consultation process.
Findings	No finding was raised.
Conclusion	No global stakeholder consultation process was carried out and the current verification is for the second monitoring period of the registered PoA.

SECTION F. Internal quality control

A verification report prepared by verification team is reviewed by an independent technical review team (one or more members) to confirm whether all the internal procedures established and implemented by ESPL were duly complied with and such opinion/conclusion were reached in an objective manner that complies with the applicable CDM rules/requirements. The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the verification team.

During the technical review process, additional findings may be identified, or the closed-out findings may be opened, which needs to be satisfactorily resolved before the request for issuance is submitted to UNFCCC. The independent technical reviewer may either approve the report as such or reject/return the same in such case providing the comments/findings/issues that needs to be resolved by the verification team. The decision taken by the Technical Reviewer is final and is authorized by the Managing Director on behalf of Earthood Services Private Limited.

SECTION G. Verification opinion

Earthood Services Private Limited (ESPL), contracted by Envirofit International Ltd. (the CME for the PoA), has performed an independent verification of monitoring report of the registered CDM PoA 9176 “Improved Cookstoves Program in Honduras “Vida Mejor con Ecofogones de Alto Rendimiento”” for CPAs 9176-0001 to 9176-0006 in Honduras for the second monitoring period 15/06/2016 – 14/06/2017 (both days included) as reported in the Monitoring Report (public) Version 1.1 dated 05/11/2017. CME is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

This verification report is for CPAs (9176-0001 to 9176-0006), all of which were found included under the PoA as per the UNFCCC webpage at the end of the current monitoring period. A single monitoring report has been prepared by the CME for the same in which implementation of the referred CPAs along with monitoring results is included.

ESPL confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements subject to satisfactory closure of findings. This verification report has been prepared using the latest available template specified by UNFCCC and complies with the instructions to follow as per applicable CDM Standards.

The verification activities were conducted in accordance with ESPL’s CDM Quality Manual System as per the steps indicated under Section A of this report. The verification process has resulted in conclusion that the included CPAs confirm to the registered PoA DD as well as comply with applicable CDM rules and regulations and in accordance with applied monitoring methodology, AMS II.G Version 06. There were 3 FARs raised during validation of PoA, which required further attention from the verification team and have been addressed during the current monitoring period.

As a result, it is confirmed that the emission reductions from the CDM PoA 9176 “Improved Cookstoves Program in Honduras “Vida Mejor con Ecofogones de Alto Rendimiento”” are correctly reported in the Monitoring Report (final) Version 4.0 dated 18/05/2018 and corresponding ER sheets for the monitoring period 15/06/2016 – 14/06/2017 (including both days) amount as 110,413 tCO_2e. Therefore, PoA is submitted as part of request for issuance as per applicable CDM procedures.

SECTION H. Certification statement

The verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. ESPL planned and performed the verification by obtaining evidence and other information and explanations that ESPL considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions reported for the PoA for the monitoring period 15/06/2016 – 14/06/2017 are fairly stated in the Monitoring Report (final) Version 4.0 dated 18/05/2018.

ESPL, based on outcome of verification activities, certify in writing that, during the monitoring period 15/06/2016 – 14/06/2017 (including both days), the registered CDM PoA “Improved Cookstoves Program in Honduras “Vida Mejor con Ecofogones de Alto Rendimiento”” and the included CDM CPAs (9176-0001 to 9176-0006) in the registered CDM PoA achieved the verified amount of 110,413 tCO2e reductions in

anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the CPAs. This section is to be completed after the resolution of all findings.

The verified amount of emission reductions is stated below as per the CPA and as per commitment period;

	Emission Reductions (Amount) in this monitoring period (in tCO2e)	
CPAs (included in this request)	**Up to 31/12/2012 (1st commitment period)**	**01/01/2013 onwards**
9176-0001	-	36,196 tCO2e
9176-0002	-	13,831 tCO2e
9176-0003	-	14,916 tCO2e
9176-0004	-	15,096 tCO2e
9176-0005	-	15,277 tCO2e
9176-0006	-	15,097 tCO2e
Total	-	**110,413** tCO2e

Appendix 1. Abbreviations

Abbreviations	Full texts
AQL	Acceptable Quality Level
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CME	Coordinating or Managing Entity
CPA	Component Project Activity
DD	Design Document
CP	Crediting Period
DOE	Designated Operational Entity
DO	Distribution Organization
DNA	Designated National Authority
EB	Executive Board
ER	Emission Reductions
ESPL	Earthood Services Private Limited
FUNDEIH	Fundacion para el Desarrollo Integral de Honduras
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
ICS	Improved Cook Stove
IPCC	Intergovernmental Panel on Climate Change
PCP	Project Cycle Procedure
PoA	Programme of Activities
PS	Project Standard
QA/QC	Quality Assurance and Quality control
TA	Technical Area (with in Sectoral Scope)
TR	Technical Reviewer
UNFCCC	United Nations Framework Convention on Climate Change
UQL	Unacceptable Quality Level
VVS	Validation and Verification Standard
WBT	Water Boiling Test

Appendix 2. Competence of team members and technical reviewers

Competence Statement	
Name	Ashok Gautam
Country	India
Education	M. Sc. (Environmental Sciences) M. Tech. (Energy & Environmental Management)
Experience	16 Years +
Field	Energy, Climate Change & Environment
Approved Roles	
Team Leader	YES
Validator	YES
Verifier	YES
Methodology Expert	AMS-I.D., AMS-I.A., AMS-I.C. AMS-II.D., AMS-II.G., AMS-III.E., AMS-III.H., AMS-III.Z., AMS-III.AV., AM0029, AM0025, AM0056, ACM0001, ACM0002, ACM0004, ACM0012, ACM0006, AM0018, ACM0009
Local expert	YES (India)

Financial Expert	YES		
Technical Reviewer	YES		
TA Expert	YES (TA 1.1, TA 1.2, TA 3.1, TA 13.1)		
Reviewed by	Abhishek Mahawar	**Date**	01/03/2018
Approved by	Kaviraj Singh	**Date**	01/03/2018

Competence Statement			
Name	Katherine Valladares		
Country	Honduras		
Education	University Degree (Environmental Engg.)		
Experience	3.5 yrs +		
Field	Environmental Science		
Approved Roles			
Team Leader	NO		
Validator	NO		
Verifier	NO		
Methodology Expert	NO		
Local expert	YES (Honduras)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert	NO		
Reviewed by	Abhishek Mahawar	**Date**	01/03/2018
Approved by	Ashok Kumar Gautam	**Date**	01/03/2018

Competence Statement			
Name	Deepika Mahala		
Country	India		
Education	M. Sc. (Environmental Mgmt), GGSIP University B.Sc. Honour (Chemistry), Sri Venkateshwar College, DU		
Experience	2 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	ACM0002, AMS.I.D., AMS.I.A, AMS.III.AV, AMS.II.G		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert	YES (TA 1.2 & TA 3.1)		
Reviewed by	Abhishek Mahawar	**Date**	01/03/2018
Approved by	Ashok Kumar Gautam	**Date**	01/03/2018

Competence Statement			
Name	Shreya Garg		
Country	India		
Education	M.Sc. (Climate Science & Policy), TERI University		
Experience	6 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS.I.A., AMS.I.C., AMS.I.D., AMS.I.F., AMS.II.D., AMS.II.G., AMS.II.J., AMS.III.AV., ACM0002, ACM0012		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (TA 1.2, TA 3.1)		
Reviewed by	Abhishek Mahawar	**Date**	01/03/2018
Approved by	Ashok Gautam	**Date**	01/03/2018

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	CME	PoA DD	Version 5.0, dated 16/01/2015	Others
2.	DNV	PoA Validation Report	Version 4.0, dated 11/06/2015	Others
3.	CME	CPA DDs (9176-0001 to 9176-0006)	Various	Others
4.	DNV Carbon Check	Inclusion Report 9176-0001 Inclusion Report 9176-0002-0006	Various	Others
5.	UNFCCC	Methodology AMS II G	Version 06	Others
6.	CME	Monitoring report (Publication)	Version 1.1, dated 05/11/2017	CME
7.	CME	Monitoring report (Final version)	Version 4.0, 18/05/2018	NA
8.	CME	ER calculation sheet (Initial)	Version 1, 20/10/2017	CME
9.	CME	ER calculation sheet (Final)	Version 3.0, 09/05/2018	NA
10.	IPCC	IPCC Defaults	2006	Others
11.	UNFCCC	CDM VVS PoA	Version 01	Others
12.	UNFCCC	CDM PS PoA	Version 01	Others
13.	UNFCCC	CDM PCP PoA	Version 01	Others
14.	UNFCCC	Standard: Sampling and surveys for CDM project activities and programme of activities	7.0	Others
15.	UNFCCC	Guideline: Sampling and surveys for CDM project activities and programme of activities	4.0	Others
16.	UNFCCC	CDM-PoA-MR-FORM	Version 2.0	Others

17.	Engines and Energy Conversion Lab, Colorado State University, Envirofit International and Philips	Stove Manufacturers Emissions & Performance Test Protocol by Morgan DeFoort,Christiam LÓrange and Cory Kreutzer, Nathan Lorenz and Wiecher Kampling and Jan Alders	-	CME
18.	Envirofit International Inc.	Monitoring data for WBT conducted during the current monitoring period with details of clients.	-	CME
19.	Envirofit International Inc.	Monitoring Survey Questionnaire (Record)	-	CME
20.	Envirofit International Inc	WBT Equipment Details	-	CME
21.	Envirofit International Inc.	Purchase Order for Weighing scale model MCT-33	-	CME
22.	LW Measurement LLC	Weighing scale operating manual for autocalibration	-	CME
23.	Envirofit International Inc	Purchase Order to Omega Engineering Inc. for HH308 Dual Input thermometer	-	CME
24.	Envirofit International Inc	Purchase Order to Omega Engineering Inc. for KHSS-116G-RSC-12 Utility Handle Probe W/RSC	-	CME
25.	OMEGAETTE	Specification of HH308 Thermometers	-	CME
26.	Envirofit	Mail communication between Envirofit and Omega (Calibration frequency as per the manufacturer)	02/11/2016	CME
27.	LIGNOMAT USA LTD	Invoice for Mini- LIGNO DX Meter	20/10/2015	CME
28.	LIGNOMAT USA LTD	Specification and autocalibration http://www.lignomatusa.com/meters/mini-ligno-dx-wood-moisture-meter/	22/12/2016	CME
29.	Envirofit	Mail communication between Envirofit a and Lignomat for Accuracy Class	21/11/2014	CME
30.	Envirofit & FUNDEIH	Carbon transfer agreements with the details of client	-	CME
31.	Energies & Energy Conversion Lab	WBT Training Presentation	-	CME
32.	Powerhouse Energy Campus, Colorado State University	Plancha Stove Testing Procedure	-	CME
33.	Envirofit & FUNDEIH	Distribution database	2013 onwards	CME
34.	Envirofit & FUNDEIH	Monitoring survey forms	-	CME
35.	UNFCCC	https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/MN1FPHAXIBV8SR9QWYOGU7K3C06L54/view	-	Others
36.	itouch	itouchmap.com-https://itouchmap.com/latlong.html	-	Others

37.	CEPAL	http://repositorio.cepal.org/handle/11362/37032	-	Others
38.	Envirofit	Revised CPA DD 9176-0001	Version 05.1, dated 11/01/2017	CME
39.	ESPL	PRC Validation Report http://cdm.unfccc.int/filestorage/S/D/V/SDVJWMEX6RU10GL7KOH9YBIZ4N25FT/9176-001_PRC%20Val%20Opinion%2017032017.pdf?t=ZlZ8cDhwcWlpfDBj8sWzU1D9KMmWI1RH1rQf	Version 2.0, dated 17/03/2017	Others
40.	Envirofit & FUNDEIH	Contractual agreement signed between Envirofit and the DO	-	CME
41.	ESPL	Verification Report (MP 01)	17/03/2017	Others
42.	UNFCCC	PoA 9176 UN webpage: http://cdm.unfccc.int/ProgrammeOfActivities/poa_db/MN1FPHAXIBV8SR9QWYOGU7K3C06L54/view	Last accessed on 15/05/2018	Others
43.	UNFCCC	Clarification on the requirement to monitor continued use of baseline stoves under AMS-II.G SSC_711 https://cdm.unfccc.int/filestorage/K/4/G/K4GAP31N2I96LOUDCXFJM7B08TSQEW/Final%20response.pdf?t=emx8cDhyaWpifDBbXphOtplM8RRfmEjnXzuh	Last accessed on 15/05/2018	Others
44.	Random.org	https://www.random.org/integers/	Last accessed on 19/05/2018	Other
45.	CEPAL	http://repositorio.cepal.org/handle/11362/37032	Last accessed on 19/05/2018	Others
46.	CME - Envirofit International Ltd	literature study: NRB Study Honduras-	version 03 22/07/2013	CME

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. Remaining FARs from validation and/or previous verification

FAR ID	01	**Section no.**	E.1.2	**Date :** 20/01/2018
Description of FAR				
At the time of verification, the DOE needs to verify that the improved cook stoves that are part of this PoA emission reduction calculation were only disseminated within the country of Honduras. (Validation Report page A-84) and The CME cross-checks and verifies the sales database against sales records. (Validation Report page A-28). The site visit observations confirm that the stoves were freely distributed and not sold to the identified users included in the respective CPAs. Please respond by clarifying and substantiating your response with supporting evidences considering CPA 2 to 6 are being verified for the first time.				
Project participant response				**Date :** 26/04/2018

The PoA involves three major parties (The Honduran Government, FUNDEIH and Envirofit). The Honduran Government has supported the programme on the basis that funds would be made available to FUNDEIH, a non-profit social enterprise, for the purchase of ICS (from Envirofit) and their installation amongst the poor members of Honduran society. Beneficiaries are identified by FUNDEIH ensuring that ICS reach those in society that have the most need for them at no cost to the beneficiaries. Hence the end users don't pay for the ICS (as it has been pre-paid by FUNDEIH).

At the time of ICS distribution, a distribution record is generated which is aggregated to form the project database. The project database lists all ICS units included in the CPAs (1-6) along with corresponding end user detail, substantiating the following:
1. The country of each ICS is Honduras
2. Each entry is unique and not repeated ensuring that a given ICS is included only once in a CPA and is not double counted in any CPA or amongst the CPAs.

Lastly, the FAR although issued in the PoA validation report, actually pertains to CPA 01 which was partially implemented at the time of PoA validation. The FAR has been already verified for CPA01 in first issuance. For CPA02-06, the CPAs were already implemented at the time of their inclusions and the FAR was validated by the including DoE (refer section A.4 and D.4 of the CPA validation report https://cdm.unfccc.int/filestorage/A/U/8/AU81TDWXC6OZNJFY02P7QIKBRS4HL5/CCIPL%20422A-%20FVR.pdf?t=ZXZ8cDU2N2M2fDBJoxZTUeCGpjmyeCJx8abc).

Documentation provided by project participant

CDM 9176 MP#2 ER calculator V2.0 26042018 (refer worksheet PoA installation database)

DOE assessment | **Date:** 03/05/2018

The verification team found that project ICS are being distributed at no cost to the beneficiary as per the mechanism described and installation database for all the stoves is maintained. However, evidences to support the implementation were found adequate to confirm that each project ICS has unique serial number and all of them are located in the host Party.
FAR#01 stands closed out.

FAR ID	02	**Section no.**	E.1.2	**Date :** 20/01/2018

Description of FAR

The unique id will be imprinted on the ICS that is distributed as part of this PoA. The stoves be distributed after the CPA inclusion and hence the unique id will have to be verified at the time of CPA verification. (Validation Report page A-84)

The ICS and sales receipt will be verified at the verification stage. (Validation Report page A-29)

Please respond by clarifying and substantiating your response with supporting evidences considering CPA 2 to 6 are being verified for the first time.

Project participant response | **Date :** 26/04/2018

Each ICS has a unique serial number which is imprinted on the body of the ICS. The Project database with Serial number of each ICS is included in the ER calculator (PoA Installation database).

Besides, the FAR although issued in the PoA validation report, actually pertains to CPA 01 which was partially implemented at the time of PoA validation. The FAR has been already verified for CPA01 in first issuance. For CPA02-06, the CPAs were already implemented at the time of their inclusions and the FAR was validated by the including DoE (refer the CPA validation report, section A.4 and D.4 https://cdm.unfccc.int/filestorage/A/U/8/AU81TDWXC6OZNJFY02P7QIKBRS4HL5/CCIPL%20422A-%20FVR.pdf?t=ZXZ8cDU2N2M2fDBJoxZTUeCGpjmyeCJx8abc).

Documentation provided by project participant

CDM 9176 MP#2 ER calculator V2.0 26042018 (refer worksheet PoA installation database)

DOE assessment | **Date:** 03/05/2018

The verification team confirmed during the site visit and based on the review of PoA installation database that each project ICS is uniquely numbered/ID (also referred as Serial Number) as part of CPA 1 to 6 that are covered under current monitoring period. Since, the stoves were freely distributed, the end user agreement filled at the time of installation has been used as an evidence to confirm the date of stove receipt.
FAR#02 stands closed out.

FAR ID	03	**Section no.**	E.1.2, E.2.1	**Date :** 20/01/2018

Description of FAR

The PP will cross-check the CPA with other CPAs in this PoA and with CPAs in any other PoA or in a CDM project activity operating in the country using the UNFCCC, the Gold Standard, and other relevant voluntary schemes to ensure that the CPA is not included in any other PoA, CDM project activity or voluntary project activity. All of this information will be summarized in a report and provided to the DOE upon verification. To ensure that the CME and CPA implementer are not double counting the CERs across PoAs or CPAs, the DOE needs to verify that the CME has conducted a cross check with other PoAs or CPAs. (Validation Report page A-84) Please respond by clarifying and substantiating your response with supporting evidences considering CPA 2 to 6 are being verified for the first time.
Project participant response **Date :** 26/04/2018
This has already been substantiated for CPA 02-06 at the time of their inclusion in the PoA. Please refer CPA validation report, CL 03, page 32 of the FVR available at https://cdm.unfccc.int/filestorage/A/U/8/AU81TDWXC6OZNJFY02P7QIKBRS4HL5/CCIPL%20422A-%20FVR.pdf?t=ZXZ8cDU2N2M2fDBJoxZTUeCGpjmyeCJx8abc
Documentation provided by project participant
DOE assessment **Date:** 03/05/2018
The response and additional information provided by CME was reviewed and found acceptable. The verification team independently checked with other projects in the host Party with various GHG programmes and found nothing contradictory in this regard. FAR#03 stands closed out.

Table 2. CLs from this verification

CL ID	04	**Section no.**	E.2.1, E.2.2, E.3.1	**Date :** 20/01/2018
Description of CL				
In order to confirm the implementation of PoA on ground following documents/information are required for assessment; 1) All 104 (CME's sample) recorded forms (as indicated in Section B.1 of MR bullet 2) and 2) How the project ICS are accounted/allocated to respective CPAs? 3) How it can be demonstrated that project ICS allocated to respective CPAs? 4) How CME calculates the ERs conservatively and in accordance with methodology for situations where multiple technologies and cooking devices exist the same household? (from system point of view)				
Project participant response				**Date :** 26/04/2018
1) Records for all 104 samples are being submitted 2) For each ICS, the unique serial number of the stove, its date of distribution and the user's address is recorded by FUNDEIH which provides for allocation of an ICS uniquely to a CPA. Further, the number of ICS that can be allocated to a CPA is known to CME (determined on the basis of expected thermal energy savings per stove and 180GWh$_{th}$ annual thermal energy saving limit mandated by the methodology). Thus, the allocation of an ICS into a CPA is undertaken by the CME based on ICS date of sale, the timing of receiving the information from FUNDEIH and the existing unutilized capacity of the CPA. As far as possible, the CME maintains a chronological order of distributions in the CPAs. 3) The PoA ICS installation data was transferred to excel sheet and then arranged chronologically. Thereafter, the ICS were allocated to CPAs by EF International Carbon Project Manager (considering chronology of installation and stove model eligibility with regards to a CPA). The allocated data was submitted to the EF International Director for further review and subsequent approval. Please refer the worksheet, 'PoA installation database'. The CPA to which an ICS has been uniquely allocated is listed therein. 4) The ERs are calculated conservatively and in accordance with the methodology and the monitoring plan in the registered PDDs with respect to assessing multiple cooking devices owing to the following: a. Paragraph 1 of the methodology describes a typical project as one which replaces existing biomass fired cook stoves with more efficient appliances. In the project activity, for each ICS distributed, information on the baseline fuel being replaced, is collected at the point of distribution (in the sale / distribution form). Using this data, the CME ensures that CPAs only include ICSs that replace existing biomass fired devices and any ICS replacing non-biomass fuel in the baseline is not included in the CPA. b. Other cooking technologies may be present in a project household, but these appliances are deemed outside the project boundary if it is reported in the carbon form that the project ICS has replaced a baseline biomass fired device(s).				

c. The baseline fuel consumption (3.10 tonnes of wood per annum) fixed ex-ante is sourced from the UNCEPAL 2014 report which calculates an average value of firewood consumption per capita per annum. This value was validated at the time of the PoA validation and CPA inclusion process. Therefore, even if other fuel technologies or devices are being used in the household, they are deemed outside the project boundary as the established baseline value corresponds only to the baseline biomass fuel usage in a household and excludes any non-biomass fuel usage in Honduran households (i.e. households with or without multiple technologies/cooking devices other than biomass).

d. Lastly, the registered monitoring plan or the monitoring methodology does not mandate assessment of non-biomass-based technology / devices during monitoring.

However, simultaneous use of more than one biomass-based cooking devices is covered under the monitoring plan and has been monitored. The survey collects information on presence of multiple project ICS in a project household and total ICS population gets discounted by the fraction of sampled users found using more than once project ICS device. Similarly, in case of simultaneous use of project ICS and baseline biomass ICS, their relative usage is identified and is being used for conservative calculation of ERs.

Documentation provided by project participant

CDM 9176 MP#2 ER calculator V2.0 26042018 (refer worksheet PoA installation database)
Distribution data records

DOE assessment | **Date:** 07/05/2018

1)All the recorded forms were duly received; therefore, issue was closed out.
2)The explanation provided by CME was found clear and satisfactory, therefore issue was closed out.
3)The explanation provided by CME was found clear and satisfactory, therefore issue was resolved.
4) Considering that the applied methodology does not prescribe any monitoring for cooking devices other than the ones using biomass, such devices are not discussed under applicability conditions and project boundary. The definition of $B_{old,i}$ also defines it as the quantity of woody biomass that is used in the absence of project activity and registered monitoring plan does not include monitoring of other non-biomass cookstoves as additional monitoring parameter. For samples, who have reported using only the project stove and not using the baseline stove, their utilization factor has been taken as 1.0 and for the days when only traditional stoves have been reported to be used, the factor has been taken as 0. For samples who have reported using both project stove and baseline stove, the utilization factor, 0.5 value has been applied as a default which is in line with applied methodology/5/ and SSC_711/43. Hence, the exclusion of such devices was found compliant with the methodology. Therefore, the issue was closed out.

Thus, the CL stands closed.

CL ID	05	**Section no.**	E.3.4.3	**Date :** 20/01/2018

Description of CL

Implementation of sampling plan

a) How the stoves were randomly selected for each age for both the types (in all six frames, 18 samples) and for other parameters (108)? (para 19 of Sampling and surveys for CDM project activities and programmes of activities Version 7). Please demonstrate that stove belonging to each frame had possibility of getting selected? [in other words, how the random selection was made from all the CPA database which are part of current monitoring period]

b) Please include information in the MR with regards to the start and end date of monitoring survey to confirm whether the monitoring frequency (as indicated in registered monitoring plan) were complied with and also to determine the applicable monitoring period for such results.

Project participant response | **Date :** 26/04/2018

a) Please refer to the MR section, page 14. As stated there, the Project database was divided into 6 strata and ICS serial numbers were assigned with a reference number after arranging the data chronologically. Then, the desired volume of random numbers for each stratum were generated online and the corresponding reference numbered stoves were picked for sampling. Thus, ICS corresponding to the random numbers generated online were picked from each stratum for monitoring ensuring that ICS belonging to each frame had an equal possibility of getting selected.
b) The information has been included in the MR.

Documentation provided by project participant

Online random number generator snapshots for various strata
CDM 9176 MP#2 ER calculator V2.0 26042018 (refer worksheet PoA installation database stratified)

DOE assessment | **Date:** 07/05/2018

a) The information was found duly included in the MR therefore issue was closed out.
b) The evidences were checked and found satisfactory. Closed out.

CL ID	06	Section no.	E.3.4.2	Date : 20/01/2018

Description of CL

The thermal efficiency field datasheets provided by CME indicates that only Cold and Hot start tests were done. The CPA DD indicates (The CME will ensure that contractors are adequately trained for the tasks they are contracted for (eg. carrying out of WBTs in line with a methodology supported by an appropriate international body such as PCIA) and national or international standards). However, the MR also indicates that WBT were performed as per http://www.pciaonline.org/testing
However, it is not clear
a) which WBT protocol or international standard as per http://www.pciaonline.org/testing was followed for this monitoring survey,
b) whether the test conducted are/were completely in accordance with prescription/steps given in selected protocol version, (e.g., no simmer test was conducted)
c) which calculation spreadsheets were used (available at http://www.pciaonline.org/testing),
d) why the water was only heated upto 90 deg Celcius (and whether latent heat of evaporation was considered or not in calculations) as no information of location altitude was captured in the field data (to determine the local boiling point) and
e) whether the efficiency test conducted comply with foot note 7 of the applied methodology *(In all cases the testing protocol shall be the same for both the device being replaced and the device being deployed).*

Project participant response **Date :** 26/04/2018

a) As part of PCIA's integration with the Global Alliance for Clean Cookstoves, the contents on the website are no longer updated as of June 1, 2012. The protocol used is Emissions and Performance Test Protocol (EPTP) available at: http://cleancookstoves.org/technology-and-fuels/testing/protocols.html
b) As per the EPTP protocol, the thermal efficiency of the stove is a function of high power efficiency tests only (cold start and hot start). Please refer the formula for the same on page 4 of the protocol as well as the WBT training document which does not mandate simmer phase for determining thermal efficiency. The training was conducted by Colorado State University (author of the EPTP Protocol). The simmer phase is not required for measurement of thermal efficiency hence was deemed outside the purview of monitoring plan and were not conducted.
c) The calculation spreadsheet is being submitted. It is based on the page 21 of the EPTP protocol.
d) The testing procedure in EPTP requires the water to be heated till 90^{O} C only.
e) The devices being replaced (baseline traditional devices) were not tested for their thermal efficiency and are based on default value of efficiency given by methodology.

Documentation provided by project participant

Emissions and Performance Test Protocol
Thermal Efficiency calculation sheet

DOE assessment **Date:** 07/05/2018

a) The information provided was found acceptable. Closed.
b) The explanation provided to exclude the simmer test was found within the prescription of the applied protocol. Closed.
c) The efficiency calculation sheets were checked and found acceptable. Closed.
d) The heating of water upto 90 deg C was found to be compliant with the applied WBT protocol. Closed.
e) Considering, the default efficiency has been applied for baseline stoves, the application of same WBT protocol for both was found out of context. Closed.

Thus, the CAR stands closed.

CL ID	07	Section no.	E.3.4.2	Date : 20/01/2018

Description of CL

Household having project ICS viz., EP1M067870, EP1M067875, EPHN107558 and EP1M006398 amongst the CME representative samples responded that they use their project ICS regularly/daily, which was not coherent with the appearance of stove (rust inside combustion chamber/space), no soot in the chimney hoods, and a general scene.
Therefore, CME shall clarify how such responses are or were treated by CME monitoring staff with regard to usage fraction.

Project participant response **Date :** 26/04/2018

All of the above-mentioned stove users (except EP1M006398) reported using the ICS during the monitoring survey visits as well as during the DoE site visit, hence these ICS are deemed to be “in use” with regards to the stove usage fraction.

The presence of rust inside the combustion chamber is not an indicator of non-usage. On the contrary, the rust is an indicator of frequent cleaning of the combustion chamber with water, or spillage of liquid inside the chamber during cooking events. Please see the warranty pages of the Envirofit website:
"Note it is normal for the stove to rust over time and can still perform with the presence of rust." (http://envirofit.org/patents/#warranty).

Despite providing extensive training to householders during the distribution phase, ICS users can treat their stoves in a multitude of ways that are outside the control of the CME. The ICS may be cleaned, swept and used contrary to guidance provided, which can affect the visible appearance of the stove, and to the untrained eye may appear as if the stove is not in use. However, the CME's experience is that, during the survey, questions around usage patterns generally provide an accurate picture of stove usage.

Further, for EP1M067870, EP1M067875, pictures taken during the technician visits during monitoring surveys in 2017 indicate usage of stove substantiating that the surveys have captured the correct usage information.

For EPHN107558, The Envirofit Customer Care Service gave maintenance to this stove on December 12, 2017. The technician replaced 2 chimneys (fire pipes), the chimney hat and gave maintenance to the Plancha, because of which no soot was found in the chimney hoods. The picture taken by technician during maintenance is also being submitted as objective evidence.

The EP1M006398 although reported using the stove during survey, however indicated rare use (during special occasions like parties and gatherings only) at the time of DoE visit. Thus, this is being considered as a discrepant record and is being corrected to a non-user. The WBT results have also been revised as conservative measure to not include the WBT result from this stove sample.

Documentation provided by project participant

Stove images taken during the monitoring surveys for EP1M067870, EP1M067875 and maintenance pictures for EPHN107558

DOE assessment	**Date:** 07/05/2018

The justification provided by the CME was found satisfactory. Evidences (photos taken during technician visit and maintenance) supports the reasons stated by the CME. Furthermore, where CME has considered project ICS to be non-operational was found appropriate. The issue was closed out based on the responses provided by the household to verification team which was consistent with CME's result.
Additionally, for future surveys, the CME has added questions related to visual inspection of stove usage to ensure that usage is not merely dependent on the answer being given by the respondent.
Thus, the CL stands closed.

Table 3. CARs from this verification

CAR ID	08	**Section no.**	E.3.3. and E.3.4.1	**Date :** 20/01/2018

Description of CAR

Information given in CPA DD (page 36) for CPA 2 (as an example)

η_{old} = *Efficiency of the system being replaced. As described in AMS-II.G, this project will use a default value of 0.1 because the systems being replaced are either three stone fire stoves or conventional systems with* ***no*** *improved combustion air supply or* ***flue gas ventilation system****.*

Information given in applied methodology
η_{old} = Efficiency of the pre-project device (fraction), determined using one of the following options:
(a) Measured using representative sampling methods or based on literature reporting results of measurements relevant for the type of pre-project devices. Use weighted average values (taking the amount of woody biomass consumed by each device as the weighting factor) if more
than one type of device is being replaced;
(b) A default value of 0.10 may be optionally used if the preproject device is a three stone fire using firewood (not charcoal), or a conventional device **with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney**; for other types of devices, a default value of 0.2 may be optionally used. Use weighted average values (taking the amount of woody biomass consumed by each device as the weighting factor) if more than one type of device is being replaced.

Site visit observations: (based on 18 Samples visited by verification team from 104 of CME's representative samples)

Household having project ICS EP1M067875 (from CME sample) and EP1A038606 (non-sample but from database) confirmed that they never had traditional cookstove of any type but had an electric stove.

Household having project ICS viz., EPHN107558, EP1A029424, EPHN105642, EP1M006361, EP1M009748, EP1M006759 and EP1M006398 confirmed that they had/have traditional **cookstove with chimney.**

Therefore, CME is required to explain how the value applied as 0.1 for efficiency of the pre-project cookstove is in line to the methodology for the implemented CPAs in particular

a) whether option 'a' has been applied which prescribes either the representative sampling or literature research-based results or option 'b' which gives an option of applying default efficiency as 0.1 or 0.2 depending upon criteria prescribed therein;
b) for case where there was an electric stove in the baseline
c) for cases where there were all kind of cooking devices in the household (electric, LPG, traditional with chimney, project ICS and other improved ICS) (from CME samples EP1M006398 and from non-samples EP1A044738) (in the current monitoring period)

Project participant response | **Date :** 26/04/2018

The PP confirms that each of these points relate to the assessment of the project baseline and were raised by the DOEs during the validation of the PoA and the inclusion of the CPAs. They were satisfactorily resolved at the registration/inclusion stages:

a) The presence of the traditional stove with chimney was also identified during the initial validation of the PoA by the validating DoE (DNV). Please refer the PoA validation report page 16 and 17.

"Lastly, most available improved wood stoves in Honduras are planchas typically placed over inefficient open fires or rudimentary "improved" cookstoves which historically, have been distributed by NGOs or through other non-commercial programs. While these "improved" cookstoves can remove smoke from the kitchen via a chimney if they are properly installed and maintained, they can still have higher wood use and lower thermal efficiency than a three-stone fire. In 2008, Aprovecho Research group evaluated the wood use of a range of stoves, including several "improved" plancha stoves. The study found that three stone fires consumed approximately 1250g to complete the Water Boil Test (WBT) (refer CPA01-DD for reference), while all of the plancha/griddle stoves used 1400 to 2100 g for the same task. The results demonstrate that in all cases the plancha stove actually have higher wood consumption compared to a three stone fire. Separate and independent stove testing completed using the same WBT protocol at Zamorano University in Honduras also showed that all of the locally available stoves used more wood than an open fire. In light of aforesaid, it is substantiated that the used of traditional, inefficient conventional stoves is a prevailing practice in Honduras and the default value of 0.1 for baseline stove efficiency is deemed appropriate."

Thus, it has already been substantiated and validated by DNV that value of 0.1 as η_{old} for the CPA is appropriate in light of baseline wood-fuel stoves with chimneys having lower performance than three stone fires.

Lastly, the applicability of η_{old} to the subsequent CPAs has also been substantiated by Carbon Check (the DoE validating the inclusion of CPA02-06) as part of their on-site observations. As per page 23 and 52 of the CPA validation report (CPA02-06) the baseline stoves were observed as traditional stoves with usage of 3 stove firewood stove being prevalent in across Honduras.

b) Please refer response to CL ID 04 above. The Distribution record (carbon form) for ICS EP1M067875 and EP1A038606 both confirm that the users were using fuelwood in the baseline. These forms are duly signed by the corresponding users. During survey, the EP1M067875 user had confirmed not using any traditional stove, substantiating replacement of baseline wood-fuel stove with project ICS. Also, both these users confirmed that they have been using electric stove much before they bought EF stove and were using the electric stove along with the traditional wood-fuel stove. Thus, the electric stove although a part of pre-project scenario (but not the baseline which is the traditional biomass stove) is deemed outside the project boundary.

c) Please refer response to CL ID 04 and b) above. Similarly, the other improved cookstoves are deemed outside the project boundary as the project includes replacement of traditional biomass cookstove with project ICS. Other improved cookstove technologies (LPG, electric, kerosene etc) are additional to the baseline traditional woodstove and hence deemed independent of the baseline / project.
Sample EP1M006398 is a discrepant record and is a deemed a drop off sample. The ER have been revised accordingly.

Documentation provided by project participant	
Distribution record for ICS EP1M067875 and EP1A038606	
DOE assessment	**Date:** 14/05/2018

a) The validation reports and study report by *Aprovecho Research group* were checked. It confirmed that the value of pre-project stove efficiency has been validated by the validating DoE considering the cases such as traditional stove with chimney and it's efficiency. Thus, the value, 0.1, is deemed acceptable
b) The distribution form signed by the end users were checked to confirm their responses. The justification given by the CME was found to be satisfactory.
c) Considering that the applied methodology does not prescribe any monitoring for cooking devices other than the ones using biomass, such devices are not discussed under applicability conditions and project boundary. The definition of $B_{old,i}$ also defines it as the quantity of woody biomass that is used in the absence of project activity and registered monitoring plan does not include monitoring of other non-biomass cookstoves as additional monitoring parameter. Hence, the exclusion of such devices was found compliant with the methodology.

Thus, the CAR stands closed.

CAR ID	09	**Section no.**	E.2	**Date :** 20/01/2018
Description of CAR				
The WBT efficiency used for ID EP1A004935 and EP1A033803, sheet titled "WBT Summary"-ER sheet, the values of cold start efficiency and hot start efficiency are inconsistent with the WBT record sheets. The serial number for ID EPHN125771, (in the name of Yuri Melissa) in sheet titled "survey summary" is inconsistent with the monitoring survey records provided by CME.				
Project participant response				**Date :** 26/04/2018
The inconsistencies have been corrected in the revised MR and ER calculator				
Documentation provided by project participant				
CDM 9176 MP#2 MR v2.0 26042018 *CDM 9176 MP#2 ER calculator V2.0 26042018*				
DOE assessment				**Date:** 07/05/2018
The revised documentation was checked and found to be correct. Closed.				

CAR ID	10	**Section no.**	E.3.2	**Date :** 20/01/2018
Description of CAR				
Corrections were made in CPA DD1 version 5.1, 11/01/2017, appendix 6. As per PS for PoA, para 261, The coordinating/managing entity shall indicate whether there are any temporary deviations from the registered monitoring plan, applied methodologies or standardized baselines, or corrections or permanent changes to the PoA or to the included CPAs. However, there is no reference to previously approved corrections provided in the MR.				
Project participant response				**Date :** 26/04/2018
There are no corrections in the concerned monitoring period. The changes referred above were executed in the last monitoring period.				
Documentation provided by project participant				
DOE assessment				**Date:** 07/05/2018
Section C.3 of MR requires CME to state actual or proposed changes not limited to current monitoring period. In this case, the changes were approved by the Board in the past, please make reference to them. Open.				
Project participant response				**Date :** 09/05/2018
The MR has been revised accordingly				
Documentation provided by project participant				
CDM 9176 MP#2 MR v3.0 09052018				
DOE assessment				**Date:** 14/05/2018
The corrections made in the previous monitoring period (15/06/2015-14/06/2016) have been added to the revised MR. The corrections were checked with the corresponding verification report and PRC report, and found to have the same information. Thus, the CAR stands closed.				

CAR ID	11	Section no.	E.3.4.2	Date : 20/01/2018

Description of CAR

The applied methodology (AMS-II. G ver. 06 paras 22 and 23) requires that, if both pre-project devices and project devices are used together, measurement campaigns-based utilization hours for each device shall be used to attribute days each device is used.

Please clarify how the utilization factor has been determined in line with the methodology considering survey-based approach was applied by CME on meal basis, which was not found coherent with the applied methodology and also the responses by household users (few household reported that they use both the stoves daily and some reported that they project stove alternate days or every two days depending upon family size to boil beans and rice) during the DOE field survey.

Please also clarify how the current approach is consistent with previously verified monitoring period wherein default value of 0.5 was applied.

Project participant response — **Date :** 26/04/2018

The relative use of project device and baseline device has been determined based on the frequency of usage of project devices. For example, days on which only project device is used the utilization is considered as 1.0. The days on which only baseline device is used the utilization is considered as 0. The days on which both project device and baseline device is used, the utilization of project device is considered as 0.5. The MR and ER calculations have been revised to be consistent with this approach.

Documentation provided by project participant

CDM 9176 MP#2 MR v2.0 26042018
CDM 9176 MP#2 ER calculator V2.0 26042018

DOE assessment — **Date:** 07/05/2018

The surveyed sample sheet included various entries with different period of baseline and project stove to be in use. The filled survey forms were checked to confirm that the response of the end users received by the monitoring staff. Based on the response, appropriate value of utilization factor has been applied. The approach used for monitoring is in line with the small-scale clarification 711.
Thus, the CAR stands closed.

CAR ID	12	Section no.	E.1.1	Date : 20/01/2018

Description of CAR

Section A.1.1 of MR: The link given is not working/erroneous. The nomenclature of methodology is inconsistent with UN webpage
Section A.1.2 of MR: Title of CPA covered are identical for all CPAs.
Section D of MR: Information related to QA/QC procedures, training of monitoring staff followed in line with the PoA DD and CPA DD, which is not described.
Section E.1 of MR: Please fill the empty rows in some tables e.g., $EF_{projected\_fossil\_fuel}$
Section E.3 of MR: Please review the equations as some symbols are not clearly visible
Section F of MR: As per para 275, PS for PoA, For an included small-scale CPA, the coordinating/managing entity shall: (a) Demonstrate that the scale of the activities belonging to the same small-scale project type (Type I, II or III) remained under the limit of that type every year during the crediting period;

Project participant response — **Date :** 26/04/2018

The MR has been revised accordingly.

Documentation provided by project participant

CDM 9176 MP#2 MR v2.0 26042018
CDM 9176 MP#2 ER calculator V2.0 26042018

DOE assessment — **Date:** 07/05/2018

The revised MR was checked and found correct. Closed.

CAR ID	13	Section No.	E.3.4.1., E.3.4.2. E.3.4.3	Date: 31/08/2018

Description of CAR

1. Parameter Bold:
   A) Please clarify that how B_{old} applied for CPA0001 (included 15/06/15) is also applicable for CPAs 0002-0006 (included on 30/01/17) considering that B_{old} should be determined at CPA level,
   B) The CME shall address the inconsistency in B_{old} units (i.e. use of 3.10 tons/year/project device instead of 3.10 tons/year/household).

2. "Number of days of utilization of the project device during the year ($\mu_{y,i,a}$), the monitoring report (page 16) indicates that the surveys were conducted from 13th March to 04th April 2017. However,

the applicable methodology (AMS-II.G. ver. 06 paragraph 24) requires that measurement campaigns shall be conducted for at least 90 days, taking into account any seasonal variations of the device utilization. No information how the DOE verified the monitoring complies with the monitoring methodology requirement.

3. For the parameter "Number of days of utilization of the project device during the year ($\mu_{y,i,a}$)" (workbook "survey summary"), some of the surveyed households (Column "O") have no project stoves installed whereas the same households have been included in the total installed stoves (workbook "PoA Installation database) and considered for emission reduction calculation

CME response | **Date:** 12/09/2018

1. The registered PoA-DD, parameter table for $B_{old,i}$ on page 25, under the section Value applied clearly states the following:
   "To be determined at the first CPA involving the target consumer groups"
   Further in additional comment the following has been mentioned:
   "Assessments, information and results established in initial CPAs may be used in subsequent CPAs in lieu of conducting fresh assessments at each CPA level in absence of new data."
   CPA0001-0006 have the same target consumer group i.e. residential. Thus, value established in CPA0001 is deemed applicable to CPA0002-0006.
   The PoA-DD on page 25 mentions the data unit as tonnes/year/project device. This was based on an ex-ante assumption that there is only project stove in a household (thus establishing equivalence between tons/year/project device and tons/year/household). Further, ex-post, the monitoring includes an assessment of multiple operational project stoves in sampled households and the stove population is discounted accordingly, thereby claiming emission reduction for only one project device per household. This approach has also been stated in the registered PoA-DD on page 25, hence no adjustment is required.

2. Para 22 of the methodology states the following:
   "……Alternatively, surveys may be conducted if the use of data loggers to record the continued operation of baseline devices is not practical, for example when the baseline device is the three stone fire. The surveys should be better designed to capture cooking habits and stove usage of households in the region, including quantification of use of baseline devices, by formulating questions and/or collecting evidences to determine the frequency of usage of both the project devices and baseline devices."
   Para 23 recommends determination of utilization hours through measurement campaigns, to attribute days each device is used, this is applicable only in case data loggers are being used for monitoring $\mu_{y,i}$ as specified in the paragraph "when the data loggers are used……..". Thus, paragraph 23 is deemed not applicable in case of monitoring of $\mu_{y,i}$ through surveys.
   Para 24 mandating 90 days measurement campaign is deemed applicable only in case of use of data loggers as specified in para 23 of the methodology, for determining $\mu_{y,i.}$
   This is further substantiated by the Clarification SSC_711 available at https://cdm.unfccc.int/filestorage/K/4/G/K4GAP31N2I96LOUDCXFJM7B08TSQEW/Final%20response.pdf?t=aUp8b21qYnJjfDDc8S-dEINdT5ehJUwuZEkK

3. The stove population has already been discounted based on the % samples reporting no project stoves installed or un-operational project stoves. Please refer the ER calculator "MP#2 sample size calculations and result" E65:E70 where the drop off factor based on sample reporting ICS not present / un-operational has been determined for each stratum. The same has been used to calculate the discounted value $N_{y,i,a}$ in "MP#2 ER Calculations" C28:H33.
   The parameter $\mu_{y,i,a}$ accounts for utilization rate of ICS relative to that of baseline stove in case of simultaneous use of ICS and baseline stove and is not linked $N_{y,i,a}$

Documentation provided by the CME

DOE assessment	Date: 13/09/2018

1. For parameter Bold:
   A. It was verified from page 24 of the PoA DD, that the value of the parameter from the first CPA can be used for the subsequent CPAs. The approach of applying the same value to CPA0002-0006 was found in line with the PoA DD and thus, it was accepted by the verification team.
   B. Page 25 of the PoADD provides a modality, that at CPA level an assumption of each household owning only one stove can be applied if assessment of presence of multiple operational project stoves in a sampled household is also included in monitoring plan. The CME has applied assumption and monitored the presence of multiple stove. Application of the assumption removes the difference between tons/year/project device and tons/year/household. Thus, the unit was found to be equivalent and acceptable.
2. The CME has chosen the alternative method of conducting surveys as per para 22 of the applied methodology. Condition of measurement campaigns to be conducted for at least 90 days is applicable only for data loggers. Thus, it was not followed for the monitoring surveys for this PoA.
   SSC clarification 711, details the simplified accounting method that can be applied by the CME if surveys are used. For this PoA, the CME has applied the same.
3. Total number of disseminated stoves are adjusted for % samples that reported “no project stoves installed” or “un-operational project stoves”. The adjusted value of the parameter Ny,i,a was checked in “MP#2 ER Calculations” C28:H33 and found to be correctly calculated. The database (with total 166762 ICS) is mere presentation of the details of all the end users receiving stoves. For the purpose of GHG emission calculation, an adjusted value (140848-considering all the ages) is used as transparently shown in the ER sheet.
   Number of days of utilization of the project device during the year (µy,i,a)” has also been considered zero for the sampled houses reporting no Envirofit stove during the survey(column O and X, “survey summary”).

Thus, the CAR stands closed

Table 2. FARs from this verification

FAR ID	xx	Section No.		Date: DD/MM/YYYY
Description of FAR				
No FAR has been raised from this verification				
CME response				**Date:** DD/MM/YYYY
XX				
Documentation provided by the CME				
XX				
DOE assessment				**Date:** DD/MM/YYYY
XX				

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Document information

Version	*Date*	*Description*
02.0	29 December 2017	Revision to align with the requirements of the “CDM validation and verification standard for programme of activities” (version 01.0).
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Decision Class: Regulatory
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History of the document*						
Version	Date	Nature of Revision	Prepared by		Reviewed by	
			Name	Date	Name	Date
1.0	14/08/2017	Guidelines updated	Abhishek Mahawar	16/08/2017	Ashok K Gautam	16/08/2017
**This table is for ESPL internal document control purpose only*						