




**Verification and certification report form for  
CDM programme of activities  
(Version 03.0)**

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

**BASIC INFORMATION**

<b>Title and UNFCCC reference number of the programme of activities (PoA)</b>	8142: MicroEnergy Credits - Microfinance for Clean Energy Product Lines – Mongolia	
<b>Version number(s) of the PoA-DD(s) to which this report applies</b>	2.2	
<b>Version number of the verification and certification report</b>	2.0	
<b>Completion date of the verification and certification report</b>	20/12/2019	
<b>Monitoring period number and duration of this monitoring period</b>	Monitoring period number: 5 <sup>th</sup> Duration: 01/05/2018 - 30/04/2019 (Both Days Included)	
<b>Number and version number of the monitoring report to which this report applies</b>	Monitoring report number: 1 <sup>st</sup> Monitoring report version: 2.3	
<b>Coordinating/managing entity (CME)</b>	MicroEnergy Credits	
<b>Host Parties</b>	<b>Host Parties of the PoA</b>	<b>Is this a host Party to a CPA covered in this report? (yes/no)</b>
	Mongolia	Yes
<b>Applied methodologies and standardized baselines</b>	Applied Methodology: AMS-II.E. - Energy efficiency and fuel switching measures for buildings, version 10 Applied Standardized baselines: N/A	
<b>Mandatory sectoral scopes</b>	3: Energy demand	
<b>Conditional sectoral scopes, if applicable</b>	NA	
<b>Estimated amount of GHG emission reductions or GHG removals for this monitoring period in the included CPAs covered in this report</b>	50,133 tCO <sub>2</sub>	
<b>Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included CPAs covered in this report</b>	44,214 tCO <sub>2</sub>	
<b>Name and UNFCCC reference number of the DOE</b>	Earthood Services Private Limited UNFCCC No : E0066	
<b>Name, position and signature of the approver of the verification and certification report</b>		

	Ashok Kumar Gautam Director
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## SECTION A. Executive summary

The PoA under verification involves the disbursement of Clean Energy Products (CEPs). Micro Energy Credits Corporation Private Limited (MEC) is the CME for the PoA. The CEP distributed are the efficient cooking and heating stoves and home insulation products. The PoA participates in the installation and maintenance of the CEP.

This distribution takes place with the help of Partner Organisations (PO) and the project participant – XacBank LLC Mongolia. The CEP's distribution results in reduction of GHG emission that would have been generated in the absence of implementation of this PoA.

The PoA implementation has taken place in those area which uses the inefficient stoves for cooking and heating and inefficient home insulation systems. It has been replaced with the CEPs which reduce the consumption of fossil fuel resulting in generation of much lesser GHG and particulate matter.

For CPA being verified under this batch issuance, MicroEnergy Credits works with the POs listed below-

S.no	CPA Ref No.	Partner Organizations/CPA Implementer
1.	8142-P1-0001-CP1	XacBank LLC Mongolia

XacBank LLC has signed the standard contractual agreement with the CME (MEC) to participate in the PoA, which cedes the sole rights of the emission reduction generated through PoA to the CME (MEC).

### 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 PoA-DD/1/ & CPA DD/6/ in the monitoring period for the CPA included in this batch issuance i.e., 8142-P1-0001-CP1. The verification tests the data and assertions set out in the monitoring report based on the following:

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.E. – “Energy efficiency and fuel switching measures for buildings”, (version 10)/3/, applied in the POA-DD/1/ & CPA-DD/6/
2. The registered PoA DD/1/ & CPA-DD/6/ 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 for PoA Version 02/14/
5. The CDM Project Standard for PoA Version 02/15/ and Project Cycle Procedure for PoA Version 02/16/
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 MicroEnergy Credits Corporation Private Limited and appointment of verification team and technical review team (refer Section B.1 and B.2 of this report)
2. Completeness check of Monitoring Report
3. Publication of Monitoring Report at UNFCCC website
4. Desk review (refer Section D.1 of this report) of Monitoring Report and corresponding ER sheet by verification team and planning of onsite audit (including sampling approach (refer Section D.4 of this report) to be applied)
5. On site audit (refer Section D.2 of this report) (physical implementation and interview with relevant stakeholders) by verification team consistent of Team Leader and all Technical Experts, as a minimum
6. Follow up activities e.g., interviews (refer Section D.3 of this report)

7. Reporting and closure of findings (CARs/CLs/FARs) and preparation of draft verification report (refer Section D.5 of this report)
8. Independent technical review (refer Section F of this report) of the draft verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and evidences)
9. Reporting and closure of TR comments/findings (refer Section D.5 of this report) (CARs/CLs/FARs) and final approval for the decision made (refer Section G and H of this report).
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 “MicroEnergy Credits – Microfinance for Clean Energy Product Lines – Mongolia” and its CPA (8142-P1-0001-CP1) for the monitoring period **01/05/2018 to 30/04/2019** (including both dates) we confirm that the implementation of referenced registered PoA/1/ and CPA/6/ is complying with applicable CDM rules and regulations. The GHG emission reductions were calculated correctly based on the applied methodologies and the monitoring plan contained in the PoA-DD.

Earthood Services Private Limited was able to certify that the emission reductions from the registered CDM PoA UN#8142 “MicroEnergy Credits – Microfinance for Clean Energy Product Lines – Mongolia” during the period **01/05/2018 to 30/04/2019** (including both days) amount to **44,214 tCO<sub>2</sub>e**. Therefore, this is being submitted for request for issuance, 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	Singh	Kaviraj	Central office	Y	Y	Y	Y
2.	Verifier	IR	Mahala	Deepika	Central office	Y	N	N	Y
3.	TA expert (TA 3.1)	IR	Singh	Kaviraj	Central office	Y	Y	Y	Y
4.	Meth expert	IR	Kumar	Sanjeev	Central office	Y	N	N	Y
5.	Local expert	IR	Tserevsuren	Chinbat	Central office	Y	Y	Y	Y
6.	Trainee (Verifier)	IR	Shresth	Gaurav	Central office	Y	N	N	Y

**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	Gautam	Ashok Kumar	Central office
2.	TA Expert to TR	IR	Gautam	Ashok Kumar	Central office
3.	Approver	IR	Gautam	Ashok Kumar	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.	Erroneous transfer of information from documented records to credit tracker platform	Low	POs contracted by CME enters the details in credit tracker platform at the time of installation. POs also conduct an internal check to verify the accuracy of data entry.	On a sampling basis, the records are checked with the information from credit tracker platform and substantiated by onsite observations. The familiarity of PO representatives with the tracker platform is also checked.
2.	Erroneous consideration of technical specifications of CEPs	Low	The technical specifications are provided by manufacturer	Technical specifications of each CEP model are checked against the document issued by manufacturer.
3.	Inconsistency between CME's result and DOE's observation during inspection.	Low	Considering DOE's observation are cross-check of CME's result, which were actually monitored by CME, there are usually less chances of error. However, if there are discrepancies, they are to be dealt as per acceptance sampling approach.	If the aggregated materiality threshold stays within the prescribed materiality threshold, no additional effort is required. However, if aggregated materiality threshold is above the prescribed threshold, additional samples are to be inspected. If additional sampling is not able to reduce the materiality threshold to reasonable level of assurance, the monitoring result by the CME for that parameter are to be discarded.

### C.2. Consideration of materiality in conducting the verification

In accordance with CDM VVS for PoAs, Version 02.0 the prescribed thresholds for materiality for CDM PoAs are as under;

Type of PoA	PoAs comprising large-scale CPAs			PoAs comprising only small-scale CPAs	PoAs comprising only micro-scale CPAs
Emission Reductions (tCO <sub>2</sub> e)/year	500,000 or more	300,001 to 499,999	300,000 or less		
Materiality Threshold	0.5%	1.0%	2.0%	5.0%	10.0%

The applicable materiality threshold is 5% as PoA comprises only small-scale CPAs.

Particulars / Monitoring Report	MR Version (Public)	MR Version (Revised/Final)
Emission Reductions Achieved (tCO <sub>2</sub> e) in this monitoring period	49,846 tCO <sub>2</sub> e	44,214 tCO <sub>2</sub> e
Applicable Threshold (%) as per CDM VVS for PoAs Version 02.0	5.0%	5.0%

Monitored Parameter (Symbol / Description)	Reporting Frequency	Number of Discrete Data* (Total)  Total (100%)	Sample selected for verification Sample (100%)	Type of error identified	Impact on ERs	
					ERs impacted (Sample)	ERs impacted (Population based on extrapolation)

CPA 8142-P1-0001-CP1						
$N_{all}$ , Total number of CEPs disseminated.	Annual	19,908	19,908 The number of installations was cross-checked from output file of credit tracker platform.  18 samples were checked for their details in the database.	None	NA	NA
POF, Product Operation Fraction	Annual	501	18	None	NA	NA
$C_{y,new,CEP-i}$ , Quantity of coal used in the heating season in the project scenario for CEP-i installation	Annual	501	18	None	NA	NA
$C_{y,old,CEP-i}$ , Quantity of coal used in the baseline cluster	Annual	501	501*	None	NA	NA
$T_{y,s}$ household stoves and/or insulation, Mean temperature in Celsius for year y and season s (Autumn, Winter, Spring) for target groups in Ger Area homes	Annual	3	3	None	NA	NA
$WS_{y,s}$ household stoves and/or insulation, Mean wind speed in knots for year y and	Annual	3	3	None	NA	NA

season s (Autumn, Winter, Spring) for target groups in Ulaanbaat ar						
DW <sub>y,type</sub> , household stoves and/or insulation, Number of dwellings that are houses for target groups in Ger Area homes	Annual	501	18	None	NA	NA
Nnew %thermal efficiency	done in case new stoves are added	NA	NA	None	N/A	N/A

\*It is a calculated parameter. Calculation formula applied and the average values of Ty,s and WSy,s has been checked in the ER sheet.

The ERs under this monitoring report have reduced as compared to the published MR. This was because of erroneous reporting of emission reductions from ER calculation sheet in monitoring report and some calculation errors. These issues were identified by the team and the CME and resolved. No discrepancy was found in the sampled visit. Thus, no materiality issues were identified.

## 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: 29/09/2019 to 01/10/2019				
No.	Activity performed on-site	Site location	Date	Team member
1.	Physical site visit: Households visited (implementation of PoA)	Mongolia	29/09/2019 to 01/10/2019	Kaviraj Singh, Chinbat Tserevsuren
2.	Review of information flows for generating, aggregating and reporting the monitoring parameters	Mongolia	29/09/2019 to 01/10/2019	Kaviraj Singh, Chinbat Tserevsuren
3.	Cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources;	Mongolia	29/09/2019 to 01/10/2019	Kaviraj Singh, Chinbat Tserevsuren,
4.	A check of the monitoring equipment including calibration performance and observations of monitoring practices against the applicable requirements	Mongolia	29/09/2019 to 01/10/2019	Kaviraj Singh, Chinbat Tserevsuren
5.	Identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters	Mongolia	29/09/2019 to 01/10/2019	Kaviraj Singh, Chinbat Tserevsuren

**D.3. Interviews**

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Nugent	Nick	MEC	29/09/2019	Program overview and Organisational structure, implementation status, Sales and credit tracker database management	Kaviraj Singh
2.	Bansal	Abhishek	MEC	29/09/2019	Emission reduction calculation and data collection for MR and related documentation for CPA01 verification	Kaviraj Singh
3.	Nevalsky	Eric	Xac Bank	29/09/2019	System and procedure followed while conducting usage survey	Kaviraj Singh
4.	Zegas	Greg	Xac Bank	29/09/2019	Data recording & archiving	Kaviraj Singh
5.	Crpmurgar	M.	Xac Bank	29/09/2019	Data recording & archiving	Kaviraj Singh
6.	Enkhchhlaan	B.	Xac Bank	29/09/2019	Data recording & archiving	Kaviraj Singh
7.	Ochir	Nergui	End user	30/09/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren

8	Dorje	Damdin	End user	30/09/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
9	Zagd	Duma	End user	30/09/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
10	Myagmar	Dava	End user	30/09/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
11	Gombo-Ochir	Baljinyam	End user	30/09/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
12	Batsaikhan	Batjargal	End user	30/09/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
13	Büdsüren	Banzragh	End user	30/09/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
14	Ganjuurjav	Darima	End user	30/09/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
15	Gmbosüren	Bayalagma	End user	01/10/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
16	Perenlei	Batgerel	End user	01/10/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
17	Norjid	Dulamjav	End user	01/10/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
18	Oktyabri	Monkhjargal	End user	01/10/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
19	Doljinsüren	Batbayar	End user	01/10/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
20	Khandsüren	Jachvdorj	End user	01/10/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
21	Chojjamts	Chadrabal	End user	01/10/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
22	Baldorj	Amaglan	End user	01/10/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
23	Ölziitsetseg	Lkhagvasüren	End user	01/10/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren
24	Pürev	Battulga	End user	01/10/2019	CEP unique identification and use	Kaviraj Singh, Chinbat Tserevsuren

#### D.4. Sampling approach

##### CME's sampling approach:

For the purpose of sampling CME has followed the CDM guidelines for Sampling and surveys for CDM project activities and programmes of activities version 4.0/19/ which is inline to the PoA DD/1/.

The following parameters have been determined by survey using the sampling approach:

- POF – fraction of CEPs that were in use during monitoring period
- $C_{y,new\ CEPI}$  – project coal consumption

- $C_{y,old\ CEPI}$  – baseline coal consumption

The CME has applied simple random sampling approach at CPA level for different monitoring parameters as per validated PoA DD/1/ and CPA DD/6/. 90/10 confidence precision was mainly applied by CME in the sampling, which is appropriate since they are doing an annual survey. According to the applied methodology (AMS.II.E. version 10)/3/, registered PoA-DD/1/ and CPA-DD/6/, the parameters POF,  $C_{y,new,CEPI}$  and  $C_{y,old,CEPI}$  have to be monitored at least every 2 years(biennial), however CME has decided to conduct monitoring surveys and monitor these parameters on an annual basis and accordingly sample size has been determined by satisfying a 90/10 precision (90% confidence interval and 10% margin of error). This was accepted by assessment team since this does not lead to overestimation of CERs. The sampling approach undertaken by CME is duly explained under Section E.3 of monitoring report.

CME has taken into account 3 variables: stoves in house, stoves in ger and ger blanket while desining the sample frame. These 3 categories were further split into three districts namely Bayangol, Songinokhairkhan and other. Therefore, the survey was carried out in nine sampling frames as mentioned below;

- Frame 1: Stove in house dwelling type, located in Songinokhairkhan district
- Frame 2: Stove in house dwelling type, located in Bayangol district
- Frame 3: Stove in house dwelling type, located in other district
- Frame 4: Stove in ger dwelling type, located in Songinokhairkhan district
- Frame 5: Stove in ger dwelling type, located in Bayangol district
- Frame 6: Stove in ger dwelling type, located in other district
- Frame 7: Ger blanket in Songinokhairkhan district
- Frame 8: Ger blanket in Bayangol district
- Frame 9: Ger blanket in other district

#### DOE's sampling approach:

In order to meet the requirements of Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 7/18/, the verification team applied acceptance sampling in the verification (in accordance with para 28). The verification team selected random sample of CME's sampled records, checked the acceptability (or otherwise) of the data for each such record with CME's sample records, and then based on the number of records where there is agreement, determined if the CME's sample records meet the requirements.

The verification team determined the sample size for acceptance sampling by evaluating the following, using its own professional judgment and guidance in the Standard 'Sampling and surveys for CDM project activities and programme of activities' version 7.0/18/:

The proportion of discrepancies between the CME's data and verification team's (field or onsite inspection results) data that can be considered acceptable. This is referred to as the AQL (Acceptable Quality Level): 1.0% was considered in this verification.

- The proportion of discrepancies between the CME's data and verification team's (field or onsite inspection results) data that would be considered unacceptable. This is the UQL (Unacceptable Quality Level): 20% was considered in this verification.
- The producer risk: 10% was considered.
- The consumer risk: 10% was considered

Considering the above input values, a sample size of 18 was required as per Table (Sample size and acceptance number based on AQL, UQL, and producer and consumer risks) in the referred Standard. Accordingly, acceptance number (c) thus determined for the sample size is 1. A sample size of 18 meets the criteria.

Accordingly, the verification team together has verified 18 samples during site visit and observed no discrepancy between the reported result by CME and sample conducted by the DOE. Therefore, it is concluded that the sampling survey results of the CME were consistent with DOE's field survey results.

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

<b>Areas of verification findings</b>	<b>No. of CL</b>	<b>No. of CAR</b>	<b>No. of FAR</b>
<b>General</b>	-	-	-
Compliance of the monitoring report with the monitoring report form	-	-	-
Remaining forward action requests from validation and/or previous verifications	-	-	-
CPAs considered for verification and covered in this report	-	-	-
<b>Programme of activities</b>	-	-	-
Compliance of the programme implementation with the registered PoA-DD	-	-	-
Implementation and operation of the management system	-	-	-
Post-registration changes	-	-	-
• Corrections	-	-	-
• Inclusion of a monitoring plan	-	-	-
• Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents <sup>1</sup>	-	-	-
• Changes to the programme design	-	-	-
• Addition of CPA inclusion template	-	-	-
• Change of coordinating/managing entity	-	-	-
• Changes specific to afforestation and reforestation activities	-	-	-
<b>Component project activities</b>	-	-	-
Compliance of the CPA implementation with the included CPA design document	-	-	-
Post-registration changes	-	-	-
• Temporary deviations from registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents	-	-	-
• Corrections	-	-	-
• Changes to the start date-of the crediting period	-	-	-
• Inclusion of a monitoring plan	-	-	-
• Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents	-	-	-
• Changes to the project design	-	-	-
• Changes specific to afforestation and reforestation activities	-	-	-
Compliance of the registered monitoring plan with applied methodologies and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	-	-
• Data and parameters fixed ex ante or at renewal of crediting period	-	-	-
• Data and parameters monitored	-	-CAR#02 CAR#03	-
• Implementation of sampling plan	-	-	-
Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of emission reductions	-	-	-

<sup>1</sup> Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

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	CL#01	-	-
• 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)	-	-	-
<b>Total</b>	<b>1</b>	<b>2</b>	<b>0</b>

## SECTION E. Verification findings

### E.1. General

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

<b>Means of verification</b>	The verification team has compared the final monitoring report /5/ with the applicable and latest monitoring report form, i.e. CDM-PoA-MR-FORM /10/ and found that the CME has used correct version of form and the final MR has been prepared following all the guidelines of the template.
<b>Findings</b>	No Findings
<b>Conclusion</b>	The final Monitoring Report was prepared using the correct template i.e. CDM-PoA-MR-FORM Version 03.0/10/. The verification team confirms that the monitoring report has been appropriately prepared using the applicable monitoring report form, and that all sections are completed inline to the guidelines.

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

This is the fifth verification (MP5 Batch 1) of PoA. There is no FAR from previous verification /20/ or validation/inclusion /2, 31/ that needs to be closed during this verification.

#### 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)
8142-P1-0001-CP1 MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia –CPA No.001:XacBank LLC	Yes	12/11/2012	Version Number: 2.2, dated 10/10/2012	Y

8142-P1-0002-CP1 MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia – CPA No.002: XacBank LLC	No	08/03/2016	Version Number: 2.2, dated 10/10/2012	NA
8142-P1-0003-CP1 MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia – CPA No.003: XacBank LLC	No	08/03/2016	Version Number: 2.2, dated 10/10/2012	NA

## E.2. Programme of activities

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

Means of verification

The PoA involves the marketing, distribution and financing of improved cooking and heating stoves and insulation products for low income households in Mongolia. CME has implemented the CPA through coordination with the partner organizations (POs). The overall responsibility of implementation and operation is with CME (MEC), which was also evident during the site visit. This is consistent with PoA DD /1/. This monitoring period for batch 1 includes the implementation and monitoring of CPA#01 as part of PoA. There are total 03 included CPAs (8142-P1-0001-CP1 to 8142-P1-0003-CP1) implemented at the end date of current monitoring period. However, the current verification considers only one CPA (8142-P1-0001-CP1) that was put by CME as part of fifth Monitoring Period and first Monitoring Report Number.

The implementation of CPA (included in this request), as referenced above, are within the geographical boundary of the PoA DD/1/, which constitutes the physical boundary as well.

The type of CEP (Clean Energy Product) models deployed under this CPA is verified by the following:

**CPA (8142-P1-0001-CP1):**

CEP Deployed	CEP model	PO/Implementer/PP
Efficient cooking and heating stoves (Stove)	<ul style="list-style-type: none"><li>• Silver Stove Mini (model 131)</li><li>• Silver Stove Turbo (model 26)</li><li>• Royal Stove Dul model (Royal Single model)</li><li>• Royal Stove Golomt model (Royal Double model)</li></ul>	XacBank LLC
<u>Insulation products:</u> Ger blankets	<ul style="list-style-type: none"><li>• 4-walled model</li><li>• 5-walled model</li></ul>	XacBank LLC

The efficient stove is designed to use less amount of fuel as well as it provides required amount of energy for cooking and heating during cold weather. Stoves are credited according to the dwelling type in which they are located, either a house or a ger.

A ger insulation blanket has a double layer of insulation inside and a waterproof layer outside which comes in six sections as stated in the CPA DD/6/. The six sections of ger helps to keep wind, water and dirt away and mainly insulating the inside area.

Technical specification of each type of CEP models are verified with the details provided by respective CEP suppliers/22/,and found to be consistent with the monitoring report.

The verification team was able to confirm that the quantity, specification and target group of the CEPs is consistent with the PoA DD /1/ and CPA DD/6/. Further, based on the review of Credit Tracker Platform /12/, physical observations and interview conducted during the site visit, the verification team found that:

- The CPA is implemented within the boundary 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 included CPA DD/6/.
- All physical features of the CPA proposed in the included CPA-DD is in place.
- The CPA implementer has operated the CPA as per the included CPA DD/6/.

The change in ERs between webhosted Monitoring Report/4/ and final version of Monitoring Report/5/ for submission are as follows:

CPA Ref No.	Monitoring Report (public)	Monitoring Report (final)
8142-P1-0001-CP1	49,846 tCO <sub>2</sub>	44,214 tCO <sub>2</sub>

The verification team has visited the 18 households during site visit. It was observed that each CEP was assigned a unique household identification number. The unique identification number on each CEP, personal information of CEP owners and commissioning date of CEP was cross checked with the MIS system of POs and further checked with Credit Tracker Platform available with the CME. The operation of the CEPs was confirmed through interviews of owners (of CEPs) during the site visit.

The emission reductions being claimed during this monitoring period are lesser than the estimated emission reductions in the CPA DD/6/, as given in the table below for comparable estimated CERs in the CPA DD for the corresponding period:

As in CPA DD	Estimated ERs (tCO <sub>2</sub> )
8142-P1-0001-CP1	50,133 tCO <sub>2</sub> e

The information (including data and variables) provided in the MR/5/ is found to be in line with the description provided in the PoA-DD/1/.

The verification team considers the programme description as contained in the PoA-DD/1/ is complete and accurate. The PoA-DD/1/ complies with the applied methodologies, tools, and forms. The monitoring report was compared and verified against the description provided in the PoA-DD/1/ and found to be correct.

<b>Findings</b>	No findings
<b>Conclusion</b>	<p>a) The verification team confirms that the physical features (technology/type of CEP) of the implementation were in accordance with the PoA DD/1/.</p> <p>b) The actual operation is in line to CPA DD/6/.</p> <p>c) SSC threshold limit has not been breached by the CPA.</p> <p>d) There is no information with regard to data and variables was identified that may surpass the estimated quantity of ERs in the CPA DD/6/.</p>

**E.2.2. Implementation and operation of the management system**

<b>Means of verification</b>	<p>Based on the interview of MEC representatives, representatives of Xacbank LLC (CPA implementers) and monitoring team during the site visit, it is confirmed that the CME has organized an appropriate management and operational system for monitoring and reporting.</p> <p>The CME co-ordinates with the PO to establish a marketing and lending program for CEPs. PO's staff, local distributors, technicians and other service providers involves in marketing of CEPs to concern households. The monitoring plan and procedures to identify each CEP sold has been followed by the PO.</p> <p>MEC (MicroEnergy Credits Corporation Private Limited) who is CME for the PoA and responsible for inclusion of CPAs in the PoA. The Carbon Operation Manager of MEC is responsible to complete inclusion process.</p> <p>The CME maintains the user manual that specifies the process of inclusion of CPA, referred to provide the training for individuals.</p> <p>In order to improve the quality of management, annual internal audits were also conducted which was confirmed by interviewing the CME and PO staff during the on-site visit. The Carbon Operation Manager, CME and PO involve in the CPA address the non-conformities identified during the audit. The information about the type of CEP installed under the CPA is stored in Credit Tracker Platform that is maintained by MEC (CME).</p> <p>The Credit Tracker Platform records the unique identification number(sysnum), HH name, passport no. of purchaser, mobile no., location, product type, product model, installation date, date of sale, dwelling type, district name, CPA assignment of each clean energy product (CEP) in the CPA, helps to identify, locate and verify any or all of the CEP installations in particular CPA. CME has provided the tracker output file/12/ that is used to ensure that unique identification of CEPs can be tracked. This file has been verified to also ensure that no household receives more than 1 CEP.</p> <p>The Carbon Operation Manager at the CME is responsible for QA/QC of the data, analysis and reporting into the monitoring report. For survey data, a monitoring team has been organized by the CME consisting of trained monitoring staff, who conducted the surveys. The staff was interviewed during the on-site visit and training records/30/ were checked to ensure that they were trained for conducting the surveys. The monitoring manager at the CME is responsible for QA/QC of the data, analysis and reporting into the monitoring report.</p> <p>Inline to the registered monitoring plan, CME conducts an annual survey to ascertain the status of equipment. This process is to initiate a repair/post sales service. All the products which were found to be damaged or inactive has been discounted from emission reduction calculation as verified from emission reduction spreadsheet/11/.</p> <p>CPA Implementer/PO field staff continually randomly select households included in the database and visit them to cross-check the information on the database with the factual evidence in the field, referred as spot check. Any inconsistencies found (e.g., change in the address of a user) are updated on the database.</p> <p>Original copies of sales receipts/13/ and completed survey forms/9/ are retained by the PO/CPA implementer. The organizational structure and roles and responsibilities for monitoring are in line with the situation on the ground as observed during the site visit, and the structure is considered appropriate.</p>
<b>Findings</b>	None
<b>Conclusion</b>	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 /5/. The verification team confirms that the monitoring management system of the PoA is in place with the responsibilities properly identified and established.
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**E.2.3. Post-registration changes****E.2.3.1. Corrections**

NA

**E.2.3.2. Inclusion of a monitoring plan**

NA

**E.2.3.3. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents**

NA

**E.2.3.4. Changes to the programme design**

NA

**E.2.3.5. Addition of CPA inclusion template**

NA

**E.2.3.6. Change of coordination/managing entity**

NA

**E.2.3.7. Changes specific to afforestation and reforestation activities**

NA

**E.3. Component project activities****E.3.1. Compliance of the CPA implementation with the included CPA design document**

<b>Means of verification</b>	<p>Section E.3 shall be dealing with distribution of CEPs and its compliance with registered PoA-DD/1/ and applicable standard.</p> <p>CPA (8142-P1-0001-CP1) described in this section targets the promotion, distribution and sale of improved cooking and heating stoves and insulation products for low income households in Mongolia.</p> <p>MicroEnergy Credits Corporation Private Limited is the Coordinating and Managing Entity (CME) for the implementation of CPA. The CME coordinates and manages the Partner Organization (PO)/CPA Implementer and assists them in implementing each element of the monitoring plan, which was confirmed to be the case by interviewing the CME and PO staff during on-site visit.</p> <p>The project activity makes available two types of CEPs to low-income populations in Mongolia:</p> <ol style="list-style-type: none"> <li>1. Energy efficiency: Efficient cooking and heating technologies</li> <li>2. Insulation products: Ger blankets</li> </ol> <p>Stoves are installed in one of two dwelling types: a house or a Ger. A ger (i.e. a yurt) is a portable felt-covered dwelling structure that is the traditional housing type and is a low-cost alternative to a more permanent housing structure.</p> <p><b>CPA (8142-P1-0001-CP1):</b></p> <table border="1"> <tr> <th>CEP Deployed</th><th>CEP model</th><th>PO/Implementer</th></tr> <tr> <td>Efficient cooking</td><td>• Silver Stove Mini (model 131)</td><td>XacBank LLC</td></tr> </table>		CEP Deployed	CEP model	PO/Implementer	Efficient cooking	• Silver Stove Mini (model 131)	XacBank LLC
CEP Deployed	CEP model	PO/Implementer						
Efficient cooking	• Silver Stove Mini (model 131)	XacBank LLC						

	and heating stoves (Stove)	<ul style="list-style-type: none"> <li>• Silver Stove Turbo (model 26)</li> <li>• Royal Stove Dul model (Royal Single model)</li> <li>• Royal Stove Golomt model (Royal Double model)</li> </ul>												
	<u>Insulation products:</u> Ger blankets	<ul style="list-style-type: none"> <li>• 4-walled model</li> <li>• 5-walled model</li> </ul>	XacBank LLC											
<p>The efficient stove is designed to use less amount of fuel as well as it provides required amount of energy for cooking and heating during cold weather. Stoves are credited according to the dwelling type in which they are located, either a house or a ger.</p> <p>A ger insulation blanket has a double layer of insulation inside and a waterproof layer outside which comes in six sections as stated in the CPA DD/6/. The six sections of ger helps to keep wind, water and dirt away and mainly insulating the inside area.</p> <p>Technical specification of each type of CEP models are verified with the details provided by respective CEP suppliers /22/ and found to be consistent with the monitoring report.</p> <p>The summary of the total installation as confirmed form the MEC's Tracker Platform/12/ is as follows-</p> <table border="1"> <thead> <tr> <th>Installation Month-Year</th><th>Stove-House*</th><th>Stove-Ger*</th><th>Ger Blanket</th><th>Total CEPs</th></tr> </thead> <tbody> <tr> <td>Heating Season 2018-19</td><td>4,465</td><td>14,173</td><td>1,270</td><td>19,908</td></tr> </tbody> </table> <p>*For the stoves with unknown dwelling type, the PP has conservatively considered the type with lower ER for this particular heating season.</p> <p><b>CPA (8142-P1-0001-CP1):</b> CEPs were distributed in Mongolia, which is consistent with the description given in the included CPA DD/6/. The verification team reviewed the ER sheet/11/ which clearly depicts the calculation of energy savings. In the ER sheet/11/, the energy savings of the CPA is 127.45 GWhth, which is way below the threshold of 180 GWhth. The CEPs are sold to end users and the sales data is collected by means of sales receipts/13/ at the time of sale to the end user.</p>					Installation Month-Year	Stove-House*	Stove-Ger*	Ger Blanket	Total CEPs	Heating Season 2018-19	4,465	14,173	1,270	19,908
Installation Month-Year	Stove-House*	Stove-Ger*	Ger Blanket	Total CEPs										
Heating Season 2018-19	4,465	14,173	1,270	19,908										
<b>Findings</b>	None													
<b>Conclusion</b>	<p>a) The verification team is of the opinion that physical features of the CPA have been implemented in accordance with the CPA DD/6/.</p> <p>b) No specific monitoring equipment had to be installed according to the monitoring plan.</p> <p>c) It is also confirmed, through the physical site visit and review of the supporting documentation that physical features of the component CPA have been implemented in accordance with the CPA DD/6/.</p> <p>d) The CPA was also found to be completely operational in line with the CPA DD/6/.</p> <p>e) The information provided in the relevant sections of the monitoring report are appropriately describe the implementation and operational status of the PoA.</p> <p>f) CME has chosen to distribute the CPAs in many batches for the purpose of verification. DOE can confirm that all the monitoring reports contain mutually exclusive batches of CPA and have the same monitoring period that can encompass all monitoring results obtained during the period.</p> <p>g) The assessment team also confirms that monitoring periods are consecutive.</p>													

**E.3.2. Post-registration changes****E.3.2.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents**

N/A

**E.3.2.2. Corrections**

NA

**E.3.2.3. Changes to the start-date of the crediting period**

NA

**E.3.2.4. Inclusion of a monitoring plan**

NA

**E.3.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents**

NA

**E.3.2.6. Changes to the project design**

NA

**E.3.2.7. Changes specific to afforestation and reforestation activities**

NA

**E.3.3. Compliance of the registered monitoring plan with applied methodologies and standardized baselines**

<b>Means of verification</b>	The monitoring plan as contained in CPA DD/6/ was reviewed against the monitoring requirements of the applied methodology AMS-II.E version 10 /3/ as well as PoA DD/1/ with reference to the technology involved. Based on this review it was found the monitoring plan contained in the CPA DD/6/ 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 AMS-II.E version 10 /3/.
<b>Findings</b>	None
<b>Conclusion</b>	The monitoring plan is in accordance with the approved methodology, AMS-II.E version 10 /3/, that is included in CPA DD/6/.

**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****Net calorific value of biomass ( $NCV_{coal}$ ), TJ/tonne**

<b>Means of verification</b>	The value of the parameter was checked with the PoA-DD/1/ and included CPA DD/6/ and found to be correct. The value of this parameter mentioned below:		
	CPA Ref. No.	Value Applied	Consistency Checked with
	8142-P1-0001-CP1	0.0189	CPA DD /6/
<b>Findings</b>	No findings.		
<b>Conclusion</b>	The values in the Monitoring Report /5/ and corresponding Emission Reduction Spreadsheet /11/ are consistent with the PoA-DD/1/ and CPA DD/6/. The values were checked with source-IPCC 2006 /27/ also and found to be correct. The applied values are correct and justified.		

**Emission factor: subbituminous coal ( $EF_{coal}$ ), tCO<sub>2</sub>/TJ**

<b>Means of verification</b>	The value of the parameter was checked with the PoA-DD/1/ and included CPA DD/6/ and found to be correct. The value of this parameter mentioned below:
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	CPA Ref. No.	Value Applied	Consistency Checked with
	8142-P1-0001-CP1	96.1	CPA DD /6/
<b>Findings</b>	No findings.		
<b>Conclusion</b>	The values in the Monitoring Report /5/ and corresponding Emission Reduction Spreadsheet /11/ are consistent with the PoA-DD/1/ and CPA DD/6/. The values were checked with source-IPCC 2006 /27/ also and found to be correct. The applied values are correct and justified.		

**Regression coefficients for the determination of baseline coal consumption, Variable**

<b>Means of verification</b>	<p>The value of this parameter is calculated through following formula:</p> $C_{y\_old,CEPi} = 4.57681 - (0.67248 \sum W_{Sy,s}) - (0.01124 \sum T_{y,s}) + 0.14638 DW_{y,house} + 0.11988 D_{y,Songinokhairkhan} - 0.36234 D_{y,Bayangol}$ <p>Where: <math>C_{y\_old,CEPi}</math> = Mean coal consumption during the heating season (Fall, Winter, Spring)  <math>T_{y,s}</math> = Mean temperature in Celsius for year y and season s (Fall, Winter, Spring, Summer)  <math>W_{Sy,s}</math> = Mean wind speed in Knots for year y and season s (Fall, Winter, Spring, Summer)  <math>D_{y,Songinokhairkhan}</math> = District location is Songinokhairkhan district (dummy variable 1=yes, 0=no)  <math>D_{y,Bayangol}</math> = District location is Bayangol district (dummy variable 1=yes, 0=no)  <math>DW_{y,house}</math> = Dwelling is a house (dummy variable 1=house, 0=ger)</p> <p>The regression model equation and its regression coefficients were found to be consistent with the CPA DD/6/.</p>
<b>Findings</b>	No findings.
<b>Conclusion</b>	The values of regression coefficients in the Monitoring Report /5/ and corresponding Emission Reduction Spreadsheet /11/ are consistent with the PoA-DD/1/ and CPA DD/6/. The applied values are correct and justified.

**Regression coefficients for the determination of baseline biomass consumption, Variable**

<b>Means of verification</b>	<p>The value of this parameter is calculated through following formula:</p> $B_{y\_old,CEPi} = 3.42434 - (0.46183 \sum W_{Sy,s}) - (0.00748 \sum T_{y,s}) + 0.57023 D_{y,Songinokhairkhan} - 0.36234 D_{y,Bayangol} - 0.14078 D_{y,Chingeltei}$ <p>Where:  <math>B_{y\_old,CEPi}</math> = Mean biomass consumption during the heating season (Fall, Winter, Spring)  <math>T_{y,s}</math> = Mean temperature in Celsius for year y and season s (Fall, Winter, Spring, Summer)  <math>W_{Sy,s}</math> = Mean wind speed in Knots for year y and season s (Fall, Winter, Spring, Summer)  <math>D_{y,Songinokhairkhan}</math> = District location is Songinokhairkhan district (dummy variable 1=yes, 0=no)  <math>D_{y,Bayangol}</math> = District location is Bayangol district (dummy variable 1=yes, 0=no)  <math>D_{y,Chingeltei}</math> = District location is Chingeltei district (dummy variable 1=yes, 0=no)</p> <p>The regression model equation and its regression coefficients was found to be consistent with the CPA DD/6/.</p>
<b>Findings</b>	No findings.
<b>Conclusion</b>	The values of regression coefficients in the Monitoring Report /5/ and corresponding Emission Reduction Spreadsheet /11/ are consistent with the PoA-DD/1/ and CPA DD/6/. The applied values are correct and justified.

**E.3.4.2. Data and parameters monitored****Total number of CEPs disseminated ( $N_{all}$ ), number**

Means of verification	Criteria/Requirements	Assessment/Observation
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	Measuring /Reading /Recording frequency	Measured Continuously/Recording																																	
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes																																	
	Monitoring equipment	Not applicable																																	
	Calibration frequency /interval:	Not applicable																																	
	How were the values in the monitoring report verified?	<p>The values reported in the final MR /5/ (and corresponding ER sheet /11/) were verified through the MEC Tracker database Platform /12/ that records appliance type, dwelling type, sysnum number, date of installation, and geographical location. All CEP sold till the end of the current monitoring period are included in the ER sheet/11/ of the CPA(SSC threshold limit has also been ensured and demonstrated in the ER sheet).</p> <p>The verified value for stoves sold/distributed under each CPA at the end of the current monitoring period is presented below;</p> <p>For Heating Season 2018-2019</p> <table border="1"> <thead> <tr> <th>Crediting Category (by CEP):</th><th>N<sub>all</sub></th><th>Total CEP-Heating Seasons</th></tr> </thead> <tbody> <tr><td>1. House-Song.</td><td>1,148</td><td>1,148</td></tr> <tr><td>2. House-Bayan.</td><td>957</td><td>957</td></tr> <tr><td>3. House-Other</td><td>2,360</td><td>2,360</td></tr> <tr><td>4. Ger-Song.</td><td>4,594</td><td>4,594</td></tr> <tr><td>5. Ger-Bayan.</td><td>1,986</td><td>1,986</td></tr> <tr><td>6. Ger-Other</td><td>7,593</td><td>7,593</td></tr> <tr><td>7. Ger – song - blanket</td><td>778</td><td>778</td></tr> <tr><td>8. Ger – Bayan - blanket</td><td>76</td><td>76</td></tr> <tr><td>9. Ger – other - blanket</td><td>416</td><td>416</td></tr> <tr><td><b>Total</b></td><td><b>19,908</b></td><td></td></tr> </tbody> </table> <p>The CEPs disseminated under the PoA have a unique identifier number, 'sysnum', which helps in identifying the CEPs.</p> <p>For the cases, where dwelling types are unknown, CME has applied the lower ER for the dwelling type, conservatively. The approach impacts the number (N<sub>all</sub>) across different heating seasons for the different crediting categories, however the overall number of CEPs is still the same across the heating seasons.</p>	Crediting Category (by CEP):	N <sub>all</sub>	Total CEP-Heating Seasons	1. House-Song.	1,148	1,148	2. House-Bayan.	957	957	3. House-Other	2,360	2,360	4. Ger-Song.	4,594	4,594	5. Ger-Bayan.	1,986	1,986	6. Ger-Other	7,593	7,593	7. Ger – song - blanket	778	778	8. Ger – Bayan - blanket	76	76	9. Ger – other - blanket	416	416	<b>Total</b>	<b>19,908</b>	
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9. Ger – other - blanket	416	416																																	
<b>Total</b>	<b>19,908</b>																																		
If applicable, has the reported data been cross-checked with other available data?	Yes. The information provided in the CPA Database /28/ were verified randomly during the site visit with the sales receipt /13/ and through interview of the household representatives.																																		
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	<p>The CME supervises the activities of the PO, providing training, guidelines and templates to facilitate accurate record keeping in their MIS system/Credit Tracker Platform.</p> <p>During the site visit the sale process, record keeping was reviewed and were found reliable.</p>																																		

<b>Findings</b>	CAR#03 has been raised and resolved.
<b>Conclusion</b>	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/3/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/1/.

**Product Operation Fraction (PoF), fraction**

Means of verification	Criteria/Requirements	Assessment/Observation																		
	Measuring /Reading /Recording frequency	Annually																		
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	The prescribed frequency is at least once in two years (Biennial) in the PoA DD and CPA DD. However, CME has done it annually, which is more frequent and complying with the requirement. Thus, it was accepted by the verification team.																		
	Monitoring equipment	Not applicable																		
	Calibration frequency /interval:	Not applicable																		
	How were the values in the monitoring report verified?	<p>The CME has determined the value of the parameter through sampling surveys.</p> <p>The surveys have been conducted by PO with the assistance of 3<sup>rd</sup> party consultant. Simple formula of dividing the number of end users reporting the CEP to be in use by total number of houses surveyed, has been applied in the ER sheet/11/ on the sampling result, which yields the final value of parameter for each sampling frame.</p> <p>The calculation for determining the sample size were checked by the verification team and found to be appropriate and consistent with equation in PoA DD/1/.</p> <p>The verified values are included in the final Monitoring Report /5/.</p> <p>The verified results were as under:</p> <p>For 2018-19 heating season</p> <table><tr><td>1. House-Song.</td><td>0.90</td></tr><tr><td>2. House-Bayan.</td><td>0.89</td></tr><tr><td>3. House-Other</td><td>0.87</td></tr><tr><td>4. Ger-Song.</td><td>0.88</td></tr><tr><td>5. Ger-Bayan.</td><td>0.89</td></tr><tr><td>6. Ger-Other</td><td>0.88</td></tr><tr><td>7. Blanket-Song.</td><td>0.90</td></tr><tr><td>8. Blanket-Bayan</td><td>0.88</td></tr><tr><td>9. Blanket-Other</td><td>0.91</td></tr></table>	1. House-Song.	0.90	2. House-Bayan.	0.89	3. House-Other	0.87	4. Ger-Song.	0.88	5. Ger-Bayan.	0.89	6. Ger-Other	0.88	7. Blanket-Song.	0.90	8. Blanket-Bayan	0.88	9. Blanket-Other	0.91
	1. House-Song.	0.90																		
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4. Ger-Song.	0.88																			
5. Ger-Bayan.	0.89																			
6. Ger-Other	0.88																			
7. Blanket-Song.	0.90																			
8. Blanket-Bayan	0.88																			
9. Blanket-Other	0.91																			
If applicable, has the reported data been cross-checked with other available data?	<p>The survey results/9/, assumptions and sales records/28/ were checked by the verification team and were found acceptable. The results are reproducible in the corresponding ER sheet/11/ of final Monitoring Report.</p> <p>The verification team randomly selected 18 samples from each CPA under this batch issuance for DOE's field survey and found that all the CEPs were operational, which was consistent with the CME's sample survey result.</p>																			

**CDM-PoA-VCR-FORM**

	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. The QA/QC procedure are in place, internal checks have been done by the CPA implementer and established during the onsite assessment
<b>Findings</b>	CAR#02 has been raised and closed.	
<b>Conclusion</b>	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.	

**Quantity of coal used in the heating season in the project scenario for CEP-I installation ( $C_{y,new,CEP-i}$ ),  
Tonnes/year**

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	The frequency is at least once in two years (Biennial) in the PoA DD and CPA DD. However, CME has done it annually, more frequent and complying with the requirement. Thus, it was accepted by the verification team.
	Monitoring equipment	Not applicable
	Calibration frequency /interval:	Not applicable
	How were the values in the monitoring report verified?	<p>The parameter is the quantity of coal used in the heating season in the project scenario. The CME has determined the value of the parameter through sampling surveys. The surveys have been conducted by PO with the assistance of 3<sup>rd</sup> party consultant.</p> <p>The formula in line with the CPA DD/6/ is as follows:  <b>Household Coal consumption per season (ton)</b> = # Zil-130 used *(5 ton/Zil) + # of porters used *(1.72 ton/porter) + # of Government Baganuur bags used (.04 ton/bag) + # Other bags used *(0.0221 ton/bag)</p> <p>The end user responded by telling the type and quantity (how many – say: half/full/ two) have they consumed in each season. This helps to determine the project coal consumption value for each season.</p> <p><math>C_{y,new,CEP-i}</math> is calculated by taking the mean value of coal consumption for the heating season for each sampling frame, where the value of coal consumption is sum of coal consumption in Autumn, Winter, and Spring.</p> <p>The calculation for determining the sample size were checked by the verification team and found to be appropriate and consistent with equation in PoA DD/1/.</p> <p>The survey results/9/ are reproducible in the ER sheet/11/ of final Monitoring Report/5/. These survey results were cross checked by the verification team during onsite visit. The verification team randomly selected 18 samples from</p>

**CDM-PoA-VCR-FORM**

		<p>the CPA under this batch issuance (CME's samples) for DOE's field survey. Each household visited, by the team, was asked the question about the total number and type of coal bags they have consumed for the heating during the season. These numbers and type as responded by end users was then cross checked with the number of bags mentioned in the ER sheet for the corresponding users and found consistent. Thus, the verification team confirms that quantity of coal as reported and used in the ER sheet is correct.</p> <p>The verified values are included in the final Monitoring Report /5/.</p> <p>The verified results were as under:</p> <p>For 2018-19 heating season</p> <table><tr><td>1. House-Song.</td><td>3.38</td></tr><tr><td>2. House-Bayan.</td><td>3.15</td></tr><tr><td>3. House-Other</td><td>3.31</td></tr><tr><td>4. Ger-Song.</td><td>3.21</td></tr><tr><td>5. Ger-Bayan.</td><td>2.80</td></tr><tr><td>6. Ger-Other</td><td>2.78</td></tr><tr><td>7. Blanket-Song.</td><td>2.64</td></tr><tr><td>8. Blanket-Bayan</td><td>2.50</td></tr><tr><td>9. Blanket-Other</td><td>3.10</td></tr></table>	1. House-Song.	3.38	2. House-Bayan.	3.15	3. House-Other	3.31	4. Ger-Song.	3.21	5. Ger-Bayan.	2.80	6. Ger-Other	2.78	7. Blanket-Song.	2.64	8. Blanket-Bayan	2.50	9. Blanket-Other	3.10
	1. House-Song.	3.38																		
	2. House-Bayan.	3.15																		
	3. House-Other	3.31																		
4. Ger-Song.	3.21																			
5. Ger-Bayan.	2.80																			
6. Ger-Other	2.78																			
7. Blanket-Song.	2.64																			
8. Blanket-Bayan	2.50																			
9. Blanket-Other	3.10																			
If applicable, has the reported data been cross-checked with other available data?	The type and quantity of coal consumed by the end users, during the season, as reported by CME and also verified by assessment team during the on-site survey (by asking questions about coal consumed), have also been randomly verified from the coal purchase receipts/33/ available with the household's owners.																			
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. The QA/QC procedure are in place, internal checks have been done by the CPA implementer and established during the onsite assessment																			
Findings	CAR#02 has been raised and closed.																			
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.																			

**Quantity of coal used in the baseline cluster ( $C_{y,old,CEP-i}$ ), Tonnes/year**

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	The frequency is at least once in two years (Biennial) in the PoA DD and CPA DD. However, CME has done it annually, more frequent and complying with the requirement. Thus, it was accepted by the verification team.
	Monitoring equipment	Not applicable

	Calibration frequency /interval:	Not applicable																		
	How were the values in the monitoring report verified?	<p>The parameter is the quantity of coal used in the baseline cluster. The CME has determined the value of the parameter through sampling surveys. The surveys have been conducted by PO with the assistance of 3<sup>rd</sup> party consultant.</p> <p>The coal consumption has been calculated through the Regression model for parameter 'Baseline Coal Consumption Regression Model'. The values applied in the calculation have been verified through the MEC Tracker, local wind speed and temperature data from NOAA climate data base; district baseline regression model</p> <p>The value of the variables in this equation are actually monitored parameters (<math>T_{y,s}</math>, <math>WS_{y,s}</math>, <math>DW_{y,house}</math>, <math>D_{y,songinokhairkhan}</math>, <math>D_{y,bayangol}</math>) which are assessed in detail separately in this section. The ER sheet/11/ was also checked thoroughly to confirm the correct value applied for each sample. The verified average value of the parameter for each sampling frame are stated below:</p> <p>For 2018-19 heating season</p> <table border="1"> <tr><td>1. House-Song.</td><td>5.12</td></tr> <tr><td>2. House-Bayan.</td><td>3.64</td></tr> <tr><td>3. House-Other</td><td>4.75</td></tr> <tr><td>4. Ger-Song.</td><td>4.74</td></tr> <tr><td>5. Ger-Bayan.</td><td>3.24</td></tr> <tr><td>6. Ger-Other</td><td>4.44</td></tr> <tr><td>7. Blanket-Song.</td><td>4.68</td></tr> <tr><td>8. Blanket-Bayan</td><td>3.24</td></tr> <tr><td>9. Blanket-Other</td><td>4.32</td></tr> </table>	1. House-Song.	5.12	2. House-Bayan.	3.64	3. House-Other	4.75	4. Ger-Song.	4.74	5. Ger-Bayan.	3.24	6. Ger-Other	4.44	7. Blanket-Song.	4.68	8. Blanket-Bayan	3.24	9. Blanket-Other	4.32
	1. House-Song.	5.12																		
	2. House-Bayan.	3.64																		
3. House-Other	4.75																			
4. Ger-Song.	4.74																			
5. Ger-Bayan.	3.24																			
6. Ger-Other	4.44																			
7. Blanket-Song.	4.68																			
8. Blanket-Bayan	3.24																			
9. Blanket-Other	4.32																			
If applicable, has the reported data been cross-checked with other available data?	This parameter is calculated based on monitoring value and also default values. The default values (eg. temperature data) were cross checked with the data and information publicly available at various sources on internet and found acceptable. The cross checks for the monitored value (coal consumption) is reported in the respective section of that parameter in this monitoring report.																			
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. The QA/QC procedure are in place, internal checks have been done by the CPA implementer and established during the onsite assessment																			
<b>Findings</b>	CAR#02 has been raised and closed.																			
<b>Conclusion</b>	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.																			

Mean temperature in Celsius for year  $y$  and season  $s$  (Autumn, Winter, Spring) for target groups in Ger Area homes ( $T_{y,s}$  household stoves and/or insulation), Celsius

Means of verification	Criteria/Requirements	Assessment/Observation
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**CDM-PoA-VCR-FORM**

	Measuring /Reading /Recording frequency	Annually for representative sample of appliances installed. For Heating Season 2018-1 data was extracted in May 2019						
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes						
	Monitoring equipment	Not applicable						
	Calibration frequency /interval:	Not applicable						
	How were the values in the monitoring report verified?	<p>The value of parameter is calculated based on the data of National Climatic Data Center Climatic Service Branch of the National Oceanic and Atmospheric Administration (NOAA). The value has been verified through from NOAA weather data base/32/. NOAA calculates the value for each season by taking an average of daily temperature recorded. The data was extracted and recorded annually for each season from source stated above. The applied data has been extracted in May 2019 for 2018-2019 heating season.</p> <p>The verified results were as under:</p> <p>For Heating Season 2018-19</p> <table><tr><td>T<sub>1,Autumn</sub></td><td>8.16</td></tr><tr><td>T<sub>1,Winter</sub></td><td>-19.25</td></tr><tr><td>T<sub>1,Spring</sub></td><td>-10.12</td></tr></table> <p>The verified values are included in the final Monitoring Report /5/.</p>	T <sub>1,Autumn</sub>	8.16	T <sub>1,Winter</sub>	-19.25	T <sub>1,Spring</sub>	-10.12
	T <sub>1,Autumn</sub>	8.16						
	T <sub>1,Winter</sub>	-19.25						
T <sub>1,Spring</sub>	-10.12							
If applicable, has the reported data been cross-checked with other available data?	N/A							
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. The QA/QC procedure are in place, internal checks have been done by the CPA implementer and established during the onsite assessment							
Findings	CAR#02 has been raised and closed.							
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.							

**Mean wind speed in knots for year y and season s (Autumn, Winter, Spring) for target groups in Ulaanbaatar (WS<sub>y,s</sub> household stoves and/or insulation), Knots**

Means verification	of	Criteria/Requirements	Assessment/Observation
		Measuring /Reading /Recording frequency	Annually

	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	Not applicable
	Calibration frequency /interval:	Not applicable
	How were the values in the monitoring report verified?	<p>The value of parameter is calculated based on the data of National Climatic Data Center Climatic Service Branch of the National Oceanic and Atmospheric Administration (NOAA). The value has been verified through from NOAA weather data base/32/. NOAA calculates the value for each season by taking an average of daily temperature recorded. The data was extracted and recorded annually for each season from source stated above. The applied data has been extracted in May 2019 for 2018-2019 heating season.</p> <p>The verified results were as under:</p> <p>For Heating Season 2018-19</p> <p>WS<sub>1,Autumn</sub> 5.56 knots  WS<sub>1,Winter</sub> 3.33 knots  WS<sub>1,Spring</sub> 5.46 knots</p> <p>The verified values are included in the final Monitoring Report /5/.</p>
	If applicable, has the reported data been cross-checked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. The QA/QC procedure are in place, internal checks have been done by the CPA implementer and established during the onsite assessment
<b>Findings</b>	CAR#02 has been raised and closed.	
<b>Conclusion</b>	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.	

Number of dwellings that are houses for target groups in Ger Area homes (DW<sub>y,type</sub>, household stoves and/or insulation),

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Monitored continuously. Applied annually.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes

	Monitoring equipment	Not applicable
	Calibration frequency /interval:	Not applicable
	How were the values in the monitoring report verified?	<p>The parameter is monitored to know the dwelling type. It tells number of dwellings that are houses for target groups in Ger Area homes.</p> <p>The value of parameter is determined through MEC Tracker Platform/12/ and Household Energy Survey (HES)/25/.</p> <p>In the ER sheet, the CME reports 1 if it's house and 0 if it's Ger.</p> <p>The team leader visited 18 samples and found that dwellings have correctly been listed as house in the ER sheet/11/.</p> <p>The calculation for determining the monitoring parameter were checked by the verification team and found to be appropriate and consistent with approach stated in PoA DD/1/.</p>
	If applicable, has the reported data been cross-checked with other available data?	The monitoring parameter was checked by the verification team and were found acceptable as per the HES data. The results are reproducible in the corresponding ER sheet/11/ of final Monitoring Report/5/.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. The QA/QC procedure are in place, internal checks have been done by the CPA implementer and established during the onsite assessment
<b>Findings</b>	None	
<b>Conclusion</b>	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.	

**Thermal Efficiency ( $\eta_{\text{new}, i}$ ), %**

Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	According to registered PoA-DD/1/ and CPA-DD/6/ it has to be calculated in case new stoves are added.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	Calibration frequency /interval:	NA
	How were the values in the monitoring report verified?	<p>Since, no new stove has been added during the current monitoring period, no fresh test has been conducted.</p> <p>The results of the stoves already included are presented below:</p>

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		<table><tr><th>Stove Type</th><th>Thermal Efficiency</th><th>Tester, Year</th></tr><tr><td>Royal Single/Mini Dul</td><td>74.3%</td><td>SEET, 2014</td></tr><tr><td>Royal Double/Golomt</td><td>75.8%</td><td>SEET, 2014</td></tr><tr><td>Silver Turbo/Khas</td><td>77.0%</td><td>SEET, 2014</td></tr><tr><td>Silver Mini/ Ulzii</td><td>76.2%</td><td>SEET, 2013</td></tr></table>	Stove Type	Thermal Efficiency	Tester, Year	Royal Single/Mini Dul	74.3%	SEET, 2014	Royal Double/Golomt	75.8%	SEET, 2014	Silver Turbo/Khas	77.0%	SEET, 2014	Silver Mini/ Ulzii	76.2%	SEET, 2013
		Stove Type	Thermal Efficiency	Tester, Year													
		Royal Single/Mini Dul	74.3%	SEET, 2014													
		Royal Double/Golomt	75.8%	SEET, 2014													
Silver Turbo/Khas	77.0%	SEET, 2014															
Silver Mini/ Ulzii	76.2%	SEET, 2013															
The tests were conducted following protocol: “UJ SeTAR Centre Standard Operating Procedure: The Heterogeneous Testing Procedure for Thermal Performance and Trace Gas Emissions.”. The results were checked and found to be consistent with the test reports/24/.																	
If applicable, has the reported data been cross-checked with other available data?	NA																
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA																
Findings	None																
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. As per registered POA-DD/1/ and CPA-DD/6/; the efficiency is to be determined only once when a new CEP is introduced post inclusion. The efficiency test is to be done now only when new model of the CEP is to be added. As there is no CEP added during this monitoring period, hence no new efficiency tests have been conducted. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.																

**E.3.4.3. Implementation of sampling plan**

<b>Means of verification</b>	<p>The monitoring has been carried out in accordance with the monitoring plan contained in the PoA DD/1/ and CPA DD/6/.</p> <p><b>Sampling Design/Target Population/Sampling Frame/Reliability:</b></p> <p>In this sampling design, CPA that are covered under the current monitoring period were subject. The sampling frame considered confidence level and precision as 90/10 considering the requirement of Standard for sampling and surveys for CDM PAs and PoAs.</p> <p>Sampling plan is implemented separately for each specific-case CPA. There is no single-sampling applied to all of the specific-case CPAs under this PoA for this monitoring period. This verification covers only one CPA.</p> <p>The following parameters have been determined by survey using the sampling approach:</p> <ul style="list-style-type: none"> <li>• POF – fraction of CEPs that were in use during monitoring period</li> <li>• <math>C_{y,new\ CEPi}</math> – project coal consumption</li> <li>• <math>C_{y,old\ CEPi}</math> – baseline coal consumption</li> </ul> <p><b>Sampling Method:</b></p> <p>Simple random sampling method has been applied to determine the samples for the monitored parameters (POF, <math>C_{y,new,CEP-i}</math>) randomly from the total population.</p>
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	<p><b>Sample Size (Required and Actual) for Parameter of Interest:</b></p> <p>The sample size for the monitored parameters, POF, <math>C_{y,new,CEP-i}</math> and <math>C_{y,old,CEP-i}</math> has been determined by following the requirements for sampling laid down in "Guidelines for sampling and survey for CDM project activities" version 4.0/19/.</p> <p>The CME has formed nine sampling frames for monitoring applying combinations of technology/dwelling type and district, which are listed below:</p> <ol style="list-style-type: none"> <li>1. Stove in house dwelling type, located in Songinokhairkhan district</li> <li>2. Stove in house dwelling type, located in Bayangol district</li> <li>3. Stove in house dwelling type, located in other district</li> <li>4. Stove in ger dwelling type, located in Songinokhairkhan district</li> <li>5. Stove in ger dwelling type, located in Bayangol district</li> <li>6. Stove in ger dwelling type, located in other district</li> <li>7. Blanket in Songinokhairkhan district</li> <li>8. Blanket-Bayangol district</li> <li>9. Blanket-Other district</li> </ol> <p><b>Sample selection:</b></p> <p>The samples were randomly selected from the complete sales databases/28/ (irrespective of their usage status determined during usage survey as a part of QA/QC inline to registered PoA-DD/1/) for the CPA. The sample can be confirmed to be representative of the total population.</p> <p>Sampling period: May-June 2019</p> <p><b>Reliability and precision calculation:</b></p> <p>The verification team has verified the ER calculation spreadsheets/11/ with the monitored data, where the actual achieved precision is calculated against the Guidelines outlined under "Standard for sampling and surveys for CDM project activities and programme of activities"/18/ and can confirm that the calculation of achieved reliability was done correctly.</p> <p>Reliability and precision check are carried out for each CEP installed under the CPA.</p> <p>In the same manner, the parameter of interest is included in the ER spreadsheet for the relevant CPA. These were checked for the input values as well as formula applied and were found consistent. The reliability (demonstration of precision achieved after the survey results) is depicted in the ER calculation sheets /11/ corresponding to final Monitoring Report /5/, which were also found correct.</p> <p>Based on the verified results the verification team found that the required precision is met in all the cases and therefore the survey results /11/ were directly used in the calculation of ERs.</p>
<b>Findings</b>	None
<b>Conclusion</b>	The verification team confirmed that the sampling plan and the parameter values are in accordance with the monitoring plan provided in PoA DD/1/.

### E.3.5. Compliance with the calibration frequency requirements for measuring instruments

<b>Means of verification</b>	No monitoring equipment required to monitor the parameters, as verified through the registered monitoring plan as outline in the CPA-DD/6/ and PoA-DD/1/.
<b>Findings</b>	None
<b>Conclusion</b>	The verification team has determined that no monitoring equipment has been used by the PP. Therefore, there was no requirement of calibration. This was in accordance with the accepted monitoring plan and the applied monitoring methodology.

### E.3.6. Assessment of data and calculation of emission reductions or net removals

#### E.3.6.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

<b>Means of verification</b>	<p>Emissions reductions are calculated using the following equations:</p> $ER_y = \sum_i B E_{y, CEPi} - P E_{y, CEPi}$
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	ER <sub>y</sub>	Emission reductions during the year y in tCO <sub>2</sub> e					
	BE <sub>y, CEP-i</sub>	Baseline emissions for CEP-i during the year y in tCO <sub>2</sub> e.					
	PE <sub>y, CEP-i</sub>	Project activity emissions for CEP-i during the year y for technology i in tCO <sub>2</sub> e.					
	<p>Where, The formula for calculating the baseline emission is as follows-</p> $BE_{y, CEP-i} = C_{y, old, CEP-i} * NCV_{coal} * EF_{coal}$ <p>Where:</p> <table border="1"> <tr> <td>C<sub>y, old, CEP-i</sub></td><td>Quantity of coal used in the heating season in the absence of the project activity in tons of coal per household per heating season, calculated through baseline regression model</td></tr> <tr> <td>NCV<sub>coal</sub></td><td>Net calorific value of coal.</td></tr> <tr> <td>EF<sub>coal</sub></td><td>Emission factor for the amount of CO<sub>2</sub>e resulting from the combustion of coal</td></tr> </table> <p>The equations were used to determine the baseline emissions as provided in the monitoring report /5/ and applied in the corresponding ER calculations sheet /11/. The expressions used were found consistent with the PoA DD/1/, CPA DD/6/ and the applied methodology AMS-II.E., version 10/3/.</p> <p>Each parameter used in the equation is assessed in detail in the section E.3.4.2. of this report.</p> <p>The CME has also calculated emission reduction from wood consumption in the ER sheet but has not claimed it conservatively under the PoA.</p>		C <sub>y, old, CEP-i</sub>	Quantity of coal used in the heating season in the absence of the project activity in tons of coal per household per heating season, calculated through baseline regression model	NCV <sub>coal</sub>	Net calorific value of coal.	EF <sub>coal</sub>
C <sub>y, old, CEP-i</sub>	Quantity of coal used in the heating season in the absence of the project activity in tons of coal per household per heating season, calculated through baseline regression model						
NCV <sub>coal</sub>	Net calorific value of coal.						
EF <sub>coal</sub>	Emission factor for the amount of CO <sub>2</sub> e resulting from the combustion of coal						
<b>Findings</b>	None						
<b>Conclusion</b>	<p>The verification team confirms that</p> <ol style="list-style-type: none"> <li>The complete data was available and is duly reported;</li> <li>As indicated above, the description regarding cross-check of reported data is included under respective parameter.</li> <li>Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals were followed;</li> <li>Appropriate emission factors, IPCC default factors and other reference values were correctly applied.</li> <li>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.</li> </ol>						

### E.3.6.2. Calculation of project GHG emissions or actual net GHG removals by sinks

<b>Means of verification</b>	The formula for calculating the baseline emission is as follows-						
	$PE_{y, CEP-i} = C_{y, new, CEP-i} * NCV_{coal} * EF_{coal}$						
	Where:						
	<table border="1"> <tr> <td>C<sub>y, new, CEP-i</sub></td><td>Quantity of coal used in the heating season used during the project activity in tons of coal per household per heating season, measured through surveys.</td></tr> <tr> <td>NCV<sub>coal</sub></td><td>Net calorific value of coal.</td></tr> <tr> <td>EF<sub>coal</sub></td><td>Emission factor for the amount of CO<sub>2</sub>e resulting from the combustion of coal</td></tr> </table> <p>The equations were used to determine the baseline emissions as provided in the monitoring report /5/ and applied in the corresponding ER calculations sheet/11/. The expressions used were found consistent with the PoA DD/1/, CPA DD/6/ and the applied methodology AMS-II.E., version 10/3/.</p>		C <sub>y, new, CEP-i</sub>	Quantity of coal used in the heating season used during the project activity in tons of coal per household per heating season, measured through surveys.	NCV <sub>coal</sub>	Net calorific value of coal.	EF <sub>coal</sub>
C <sub>y, new, CEP-i</sub>	Quantity of coal used in the heating season used during the project activity in tons of coal per household per heating season, measured through surveys.						
NCV <sub>coal</sub>	Net calorific value of coal.						
EF <sub>coal</sub>	Emission factor for the amount of CO <sub>2</sub> e resulting from the combustion of coal						

	Each parameter used in the equation is assessed in detail in the section E.3.4.2. of this report.
<b>Findings</b>	None
<b>Conclusion</b>	<p>The verification team confirms that</p> <ul style="list-style-type: none"> <li>a) The complete data was available and is duly reported;</li> <li>b) As indicated above, the description regarding cross-check of reported data is included under respective parameter.</li> <li>c) Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals were followed;</li> <li>d) Appropriate emission factors, IPCC default factors and other reference values were correctly applied.</li> <li>e) 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.</li> </ul>

### E.3.6.3. Calculation of leakage GHG emissions

<b>Means of verification</b>	<p>As per the registered PDD, the leakage shall be considered for the two reasons which are:</p> <ul style="list-style-type: none"> <li>1- Displaced stoves: The CME has provided the stove dismantling procedure document /29/ followed for each HH/Ger receiving the project stove. Additionally, CME has added a question which is asked at the time of survey to confirm the fate of old stove. At the time of verification, the samples visited by team leader were also checked for the same. All these activities corroborate that old stove is no longer exists in any of houses receiving the project stove. This is fifth verification and there has been no new installation done under this CPA since 2014. The check for the consistency between number of project activity equipment distributed by the project and the number of scrapped equipment correspond with each other for already disseminated systems was already done in the previous verification as confirmed from the verification report of previous MP. No fresh dismantling documents have been prepared by the CME as there is no new sale done. Thus, it can be confirmed that for all systems disseminated till now, CME has documented and independently verified the information of the replaced systems. Thus, no leakage is considered due to the displaced stoves for this verification.</li> <li>2- NRB Consumption: CME has demonstrated in the ER sheet/11/ through monitored value of biomass consumption in project and baseline scenario, that the biomass consumption has reduced since the use of the project stove which has conservatively not claimed. Thus, no leakage is considered due to wood consumption.</li> </ul>
<b>Findings</b>	None
<b>Conclusion</b>	CME has not considered leakages due to the reasons stated above. The type of leakages checked for applicability were found to be in line with the PoA DD/1/ and CPA DD/6/

**E.3.6.4. Summary of calculation of GHG emission reductions or net GHG removals by sinks**

<b>Means of verification</b>	As discussed in the above sections, the entire emission reductions from the PoA were based on baseline emissions. The calculations presented in this regard in the final monitoring report and corresponding ER calculations sheet/11/ were found appropriate and complying with the provisions prescribed in the registered monitoring plan of CPA DD/6/, PoA DD/1/ and applied methodology/3/. The verification team confirms that an audit trail that contains the evidence and records that validated the stated figures were checked and found acceptable.
<b>Findings</b>	CL#01 has been raised and resolved.
<b>Conclusion</b>	The verification team confirms that a) The complete data was available and is duly reported; b) As indicated above, the description about cross-check of reported data is included under respective parameter; c) Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals, project emissions and leakage emissions were followed; d) Appropriate emission factors, IPCC default factors and other reference values were correctly applied. e) There is no pro-rate approach (CDM VVS-PoA Version 02) 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. f) The total number of ERs achieved during the current monitoring period is 44,214 tCO <sub>2e</sub> .

Title and UNFCCC reference number of the CPA	Baseline emissions or baseline net GHG removals by sinks (tCO <sub>2e</sub> )	Project emissions or actual net GHG removals by sinks (tCO <sub>2e</sub> )	Leakage (tCO <sub>2e</sub> )	GHG emission reductions or net GHG removals by sinks (tCO <sub>2e</sub> )		
				Amount achieved before 1 January 2013	Amount achieved from 1 January 2013	Amount achieved in the entire monitoring period
8142-P1-0001-CP1	1,37,226	93,012	0	0	44,214	44,214
<b>Total</b>	1,37,226	93,012	0	0	44,214	44,214

**E.3.6.5. Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included CPA**

<b>Means of verification</b>	As verified and evident from the final Monitoring Report and corresponding ER calculations sheet/11/, the actual emission reductions achieved by the CPA that is included in the current monitoring period was found less than the estimated quantity in the CPA DD/6/ for the comparable period. Considering there is no increase in ERs no further verification effort was put in. The quantitative details of actual values of achieved ERs for the CPA and value estimated in the specific CPA DD is presented in the next table.
<b>Findings</b>	None
<b>Conclusion</b>	The actual emission reductions achieved in the specific CPA DD as stated in the MR/5/ is not higher than the estimated quantity of ERs in the CPA DD/6/. Therefore, it was accepted by the verification team.

Title and UNFCCC reference number of the CPA	Actual values achieved by the CPAs during this monitoring period	Value estimated in ex ante calculation in the included CPA-DD(s)
8142-P1-0001-CP1	44,214	50,133
<b>Total</b>	44,214	50,133

**E.3.6.6. Remarks on difference from estimated value in included CPA**

<b>Means of verification</b>	The achieved emission reduction was compared with the ex-ante estimated number
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	and was found that CPA under this request of issuance has achieved less than the estimates for ICS distribution.
<b>Findings</b>	None
<b>Conclusion</b>	Considering the actual/achieved emission reductions in the current monitoring period are less than ex-ante estimates for comparable period, no further investigation was done.

### E.3.7. Assessment of reported sustainable development co-benefits

<b>Means of verification</b>	The CME has not requested DOE to verify sustainable development co-benefits.
<b>Findings</b>	None
<b>Conclusion</b>	Not applicable

### E.3.8. Global stakeholder consultation

<b>Means of verification</b>	There were no public comments received during the period of publication of monitoring report.
<b>Findings</b>	None
<b>Conclusion</b>	Not applicable

## SECTION F. Internal quality control

A draft 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 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 Director on behalf of Earthood Services Private Limited.

## SECTION G. Verification opinion

Earthood Services Private Limited (ESPL), contracted by MicroEnergy Credits Corporation Private Limited (the CME for the PoA), has performed the sixth independent verification of the emission reductions for the registered CDM PoA 8142 "MicroEnergy Credits – Microfinance for Clean Energy Product Lines – Mongolia" in Mongolia for the fifth monitoring period **01/05/2018 to 30/04/2019** (both days included) as reported in the Monitoring Report (public) Version 01 dated 02/09/2019/4/. The present verification is 1st Batch of the 5<sup>th</sup> monitoring period. The 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 the CPA 8142-P1-0001-CP1 which were included at the UNFCCC webpage at the end of the current monitoring period.

ESPL confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. This verification report has been prepared using the latest available template specified by UNFCCC and complies with the instructions to follow of CDM VVS-PoA Version 02/14/.

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 CPA confirm to the PoA DD/1/ as well as comply with applicable CDM rules and regulations and in accordance with applied monitoring methodologies, AMS II.E (Version 10)/3/.

As a result, it is confirmed that the emission reductions from the CDM PoA 8142 "MicroEnergy Credits – Microfinance for Clean Energy Product Lines – Mongolia" are correctly reported in the Monitoring Report (final) Version 2.3 dated 31/10/2019/5/ and corresponding ER sheets for the monitoring period **01/05/2018 to 30/04/2019** (including both days) amount as **44,214 tCO<sub>2</sub>e**. Therefore, this is being submitted as part of request for issuance as per CDM PCP Version 02/16/.

**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 **01/05/2018 to 30/04/2019** are fairly stated in the Monitoring Report (final) **Version 2.3 dated 31/10/2019/5/**.

ESPL, based on outcome of verification activities, certify in writing that, during the monitoring period **01/05/2018 to 30/04/2019** (including both days), the registered CDM PoA "MicroEnergy Credits – Microfinance for Clean Energy Product Lines – Mongolia" and the included CDM CPA (8142-P1-0001-CP1) in the registered CDM PoA achieved the verified amount of **44,214 tCO<sub>2</sub>e** reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the CPA.

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

CPAs (included in this request)	Emission Reductions (Amount) in this monitoring period (in tCO <sub>2</sub> e)	
	Up to 31/12/2012 (1 <sup>st</sup> commitment period)	01/01/2013 onwards
8142-P1-0001-CP1	-	<b>44,214</b>
Total	-	<b>44,214</b>

## Appendix 1. Abbreviations

Abbreviations	Full texts
AQL	Acceptable Quality Level
BPC	Barefoot Power Connect
BPF	Barefoot Power Firefly
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	Clean Development Mechanism Validation and Verification Standard
CER	Certified Emission Reduction
CEP	Clean Energy Product
CL	Clarification Request
CME	Coordinating or Managing Entity
CPA	Component Project Activity
CP	Crediting period
DOE	Designated Operational Entity
DNA	Designated National Authority
EB	Executive Board
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
ICS	Improved Cook Stove
IPCC	Intergovernmental Panel on Climate Change
MEC	MicroEnergy Credits Corporation Private Limited
MIS	Management Information System
PDD	Project Design Document
PO	Partner Organization
RMP	Registered monitoring plan
TA	Technical Area (with in Sectoral Scope)
TR	Technical Reviewer
VVS	Validation and Verification Standard
UNFCCC	United Nations Framework Convention on Climate Change
UQL	Unacceptable Quality Level
WBT	Water Boiling Test

## Appendix 2. Competence of team members and technical reviewers

Competence Statement	
<b>Name</b>	Kaviraj Singh
<b>Country</b>	India
<b>Education</b>	Ph.D. (Environmental Engineering), IIT Delhi Masters (Energy & Environmental), DAVV Indore
<b>Experience</b>	15 Years +
<b>Field</b>	Climate Change & Environment
Approved Roles	
<b>Team Leader</b>	YES
<b>Validator</b>	YES

<b>Verifier</b>	YES		
<b>Methodology Expert</b>	AMS-I.D., AMS-II.D., ACM0006, AMS-I.A., AMS-I.C., AMS-II.B., AMS-III.H, ACM0002, ACM0001, AM0080		
<b>Local expert</b>	YES (India)		
<b>Financial Expert</b>	YES		
<b>Technical Reviewer</b>	YES		
<b>TA Expert</b>	YES (TA 1.1, TA 1.2, TA 3.1, TA 13.1, TA 13.2)		
<b>Reviewed by</b>	Abhishek Mahawar	<b>Date</b>	26/09/2019
<b>Approved by</b>	Ashok Gautam	<b>Date</b>	26/09/2019

Competence Statement			
Name	Deepika Mahala		
Country	India		
Education	M. Sc. (Environmental Management), GGSIP University B.Sc. Hons. (Chemistry), Sri Venkateshwar College, DU		
Experience	3 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	YES		
TA Expert	YES (TA 1.2 & TA 3.1)		
Reviewed by	Shreya Garg	Date	14/09/2018
Approved by	Anshika Gupta	Date	14/09/2018

Competence Statement	
Name	Sanjeev Kumar
Country	India
Education	B. Tech. (Chemical Engineering) M.Tech. (Energy Management)
Experience	13.5 years +
Field	Climate Change, Environment, Energy
Approved Roles	
Team Leader	YES
Validator	YES
Verifier	YES
Methodology Expert	YES (ACM0002, ACM0006, ACM0004, ACM0009, ACM0012, ACM0001, AMS I.D, AMS I.F, AMS I.C, AMS I.A, AMS II.D, AMS II.E, AMS III.H, AM0009, AM0013, AM0025, AM0056, AM0028, AM0029, AM0008)
Local expert	YES (India)
Financial Expert	NO
Technical Reviewer	YES
TA Expert	YES (TA 1.1, TA 1.2, 4.1, 13.1)

<b>Reviewed by</b>	Shreya Garg	<b>Date</b>	13/12/2018
<b>Approved by</b>	Anshika Gupta	<b>Date</b>	13/12/2018

Competence Statement			
<b>Name</b>	Gaurav Shresth		
<b>Education</b>	B.Tech (Mechanical Engineering) M.E. (Thermal Engineering)		
<b>Experience</b>	4+ years		
<b>Field</b>	Mechanical and thermal engineering		
Approved Roles			
<b>Team Leader</b>	NO		
<b>Validator</b>	Yes (Trainee)		
<b>Verifier</b>	Yes (Trainee)		
<b>Methodology Expert</b>	NO		
<b>Local expert</b>	NO		
<b>Financial Expert</b>	NO		
<b>Technical Reviewer</b>	NO		
<b>TA Expert</b>	YES (1.2, 3.1)		
<b>Reviewed by</b>	Shreya Garg	<b>Date</b>	01/05/2019
<b>Approved by</b>	Anshika Gupta	<b>Date</b>	02/05/2019

Competence Statement			
<b>Name</b>	Chinbat Tserevsuren		
<b>Education</b>	Bachelor's in business administration		
<b>Experience</b>	5+ years		
<b>Field</b>	Economics, Marketing		
Approved Roles			
<b>Team Leader</b>	No		
<b>Validator</b>	No		
<b>Verifier</b>	No		
<b>Methodology Expert</b>	No		
<b>Local expert</b>	Yes (Mongolia)		
<b>Financial Expert</b>	No		
<b>Technical Reviewer</b>	No		
<b>TA Expert</b>	No		
<b>Reviewed by</b>	Shreya Garg	<b>Date</b>	09/08/2019
<b>Approved by</b>	Anshika Gupta	<b>Date</b>	09/08/2019

Competence Statement	
<b>Name</b>	Ashok Gautam
<b>Country</b>	India
<b>Education</b>	M. Sc. (Environmental Sciences) M. Tech. (Energy & Environmental Management)
<b>Experience</b>	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-I.E, AMS-II.D., AMS-II.G., AMS-III.E., AMS-III.H., AMS-III.Q, AMS-III.Z., AMS-III.AV., AM0029, AM0025, AM0056, ACM0001, ACM0002, ACM0004, ACM0012, ACM0006, AM0018, ACM0009, AM0034, AMS.I.B		
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	Shreya Garg	Date	25/01/2019
Approved by	Anshika Gupta	Date	25/01/2019

### Appendix 3. Documents reviewed or referenced

<b>N o.</b>	<b>Author</b>	<b>Title</b>	<b>References to the document</b>	<b>Provider</b>
1.	CME	PoA DD	Version 2.2, Dated 10/10/2012	Others
2.	DNV	Validation Report for Registered PoA-DD	Report No.- 2012-9611, Dated 23/03/2012	Others
3.	UNFCCC	AMS-II.E “Energy efficiency and fuel switching measures for buildings”	Version 10	Others
4.	MEC	Monitoring Report (publication)	Version 1, Dated 02/09/2019	CME
5.	MEC	Monitoring Report (final)	Version 2.3, Dated 31/10/2019	CME
6.	MEC	CPA DD (8142-P1-0001-CP1)	Version 2.2, Dated 10/10/2012	CME
7.	MEC	Spot Check user records and the pictures of the stoves	-	CME
8.	MEC	Baseline Fuel Consumption Analysis	-	
9.	MEC	Sampling survey forms for parameters monitored for CEP	-	CME
10.	UNFCCC	CDM-PoA-MR-FORM	Version 03	Others
11.	MEC	ER spreadsheet (final) – CPA verified	Pertaining to latest MR	CME
12.	MEC	Credit Tracker Platform / Online – Output File	-	CME
13.	MEC	Original copies of sales receipts	-	CME
14.	UNFCCC	CDM VVS for PoA	Version 2	Others
15.	UNFCCC	CDM PS for PoA	Version 2	Others
16.	UNFCCC	CDM PCP for PoA	Version 2	Others
17.	UNFCCC	Glossary of CDM terms	Version 09.1	Others
18.	UNFCCC	Standard: Sampling and surveys for CDM project activities and programme of activities	Version 7	Others
19.	UNFCCC	Guideline: Sampling and surveys for CDM project activities and programme of activities	Version 4.0	Others
20.	TUV NORD	Previous Verification Report	Version 1, Dated 07/07/2018	Others

21.	MEC	Random sample generator spreadsheet	-	CME
22.	Various	Technical Specifications of cookstoves and insulation systems	Various	CME
23.	ESPL	DoE Sample survey for each type of CEP	-	
24.	MEC	Stove test reports	-	CME
25.	MCA	Mongolia Household Survey Report(survey sheets)	-	
26.	UNFCCC	UNFCCC webpage of PoA 8142	last accessed on 01/07/2019	Others
27.	IPCC	IPCC Defaults	2006	Others
28.	MEC	Sales database for the CPA covered in the current monitoring period	-	CME
29.	MEC	Stove dismantling procedure document	-	CME
30.	MEC	Training records	-	CME
31.	MEC	CPA 1 Inclusion report	Report No.- 2012-9655, Dated 15/09/2012	CME
32.	National Climatic Data Center	National Oceanic and Atmospheric Administration (NOAA) weather database	-	Others
33.	Other	Purchase receipts (bills) of coal bought by end users	Various dates	Others

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

**Table 1. Remaining FAR from validation and/or previous verification**

FAR ID	01	Section no.	Date : DD/MM/YYYY
<b>Description of FAR</b>			
NA			
<b>Project participant response</b>			<b>Date : DD/MM/YYYY</b>
NA			
<b>Documentation provided by project participant</b>			
NA			
<b>DOE assessment</b>			<b>Date: DD/MM/YYYY</b>
NA			

There was no FAR from the previous validation/verification.

**Table 2. CL from this verification**

CL ID	01	Section no.	E 3.6.4	Date : 03/10/2019
<b>Description of CL</b>				
All the emission reduction values are inconsistent in the "ER Calculations" sheet cell G11 to G20 from the section F.1 of the MR and page 1, 26 of the MR.				
<b>Project participant response</b>				<b>Date : 20/10/2019</b>
There was an error during pasting values from ER sheet to the MR. Same has been corrected now.				
<b>Documentation provided by project participant</b>				
Monitoring report version 2				
<b>DOE assessment</b>				<b>Date: 22/10/2019</b>
The emission reduction of 44,363 tCO <sub>2</sub> is updated in the MR sheet as per ER sheet. But in the sheet "Summary ERs" cell E25 the value of Total ER is 44,362. PP needs to correct this. Thus, The CL stands Open.				
<b>Project participant response</b>				<b>Date : 24/10/2019</b>
The inconsistency has been addressed in the revised ER sheet. Cell E25 value is now 44,363 tCO <sub>2</sub>				

Documentation provided by project participant	
NA	
DOE assessment	Date: 24/10/2019
The correction has been made in the revised ER sheet and found correct. Thus, the CL stands closed.	

**Table 3. CAR from this verification**

CAR ID	02	Section no.	E.4.3.2	Date : 03/10/2019
Description of CAR				
Following are the inconsistencies observed in the submitted MR version 01;				
<ol style="list-style-type: none"> <li>1- The source of the data for the monitoring parameter PoF, is inconsistent from the CPA-DD page 22.</li> <li>2- All the values of the monitoring parameter POF is inconsistent from the "ER Calculations" sheet column 20.</li> <li>3- The unit of the monitoring parameter 'Cy,new,CEP-I' is inconsistent from the CPA-DD page 23.</li> <li>4- All values of the monitoring parameter 'Cy,new,CEP-I' is inconsistent from the "ER Calculation" sheet Column 14.</li> <li>5- The unit of the monitoring parameter 'Cy,old,CEP-I' is inconsistent from the CPA-DD page 24.</li> <li>6- Values of the monitoring parameter 'Cy,old,CEP-I' for 'Ger-other' is inconsistent from the "ER Calculation" sheet Cell J10.</li> <li>7- PP needs to justify why summer data was not calculated for monitoring parameters 'T,ys' and 'WS,y,s'.</li> </ol>				
Project participant response				Date : 20/10/2019
<ol style="list-style-type: none"> <li>1 – Source of data has been mentioned as survey in Monitoring Report as well as CPA-DD</li> <li>2 – The values have been corrected in the revised Monitoring Report</li> <li>3 – Unit of 'Cy,new,CEP-I' has been corrected in revised MR</li> <li>4 - The values have been corrected in the revised Monitoring Report</li> <li>5- The unit has been corrected in the revised Monitoring Report</li> <li>6- The values have been corrected in the revised Monitoring Report</li> <li>7 – All the monitoring data is pertaining to heating season, including coal consumption. Hence, temperature and wind speed data has also been used for heating season only.</li> </ol>				
Documentation provided by project participant				
Revised MR				
DOE assessment				Date: 22/10/2019
<ol style="list-style-type: none"> <li>1- The source of the data for the monitoring parameter PoF, has been updated to ANNEX 1 - ER Calculations &amp; HES-2018-19 in the page 15 of the monitoring report. The source of the data found consistent as per the CPA-DD.</li> <li>2- All the values of the monitoring parameter POF in the page 15 of the MR has been updated as per the sheet "Summary ERs" column D and found consistent</li> <li>3- The unit of the monitoring parameter 'Cy,new,CEP-I' which is Tonnes/year has been updated in the MR page 16 and found consistent as per the CPA-DD page 23.</li> <li>4- All the values of the monitoring parameter 'Cy,new,CEP-I' in the page 16 of the MR has been updated as per the sheet "ER Calculations" row 15 and found consistent</li> <li>5- The unit of the monitoring parameter 'Cy,old,CEP-I' which is Tonnes/year has been updated in the MR page 17 and found consistent as per the CPA-DD page 24.</li> <li>6- Values of the monitoring parameter 'Cy,old,CEP-I' for 'Ger-other, Blanket-song, Blanket-Bayan, Blanket-other' in page 17 of the MR is inconsistent from the "ER Calculation" sheet Row 10. Open</li> <li>7- As all the data has been collected for the heating season the summer data calculation is not required.</li> </ol>				
Thus, the CAR stands Open.				
Project participant response				Date 22/20/2019
6- Values seems to be same in MR and ER sheet. Please recheck.				
Documentation provided by project participant				
NA				
DOE assessment				Date: 24/10/2019
6- The values of the monitoring parameter 'Cy,old,CEP-I' for 'Ger-other, Blanket-song, Blanket-Bayan, Blanket-other' in page 17 of the MR is found consistent from the "ER Calculation" sheet Row 10.				
Thus, the CAR stands closed.				

CAR ID	03	Section No.	E.3.4.2	Date: 31/10/2019
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<b>Description of CAR</b>	
<ol style="list-style-type: none"> <li>1. In the ER sheet, worksheet "7a-Sample_House_Song", cell BS8, the stove has been marked as operational, however, the project coal consumption and baseline coal consumption is not calculated in the respective columns for this entry. There are many such cases. Please see the highlighted cells in the ER sheet.</li> <li>2. There are some entries in the column E, worksheet 'CPA No. 001', ER sheet for which the phone number is same. PP shall clarify if the same household has received multiple systems or not.</li> <li>3. There are some entries with same name under column E, worksheet 'CPA No. 001', ER sheet. PP shall clarify how it has discounted the cases where one house has received multiple units.</li> <li>4. The stove dissemination started in 2012. The current monitoring period is 01/05/2018 - 30/04/2019. PP shall clarify what is the lifespan of the products disseminated and how do they treat the cases where the lifetime of the stove has expired.</li> </ol>	
<b>Project participant response</b>	<b>Date : 31/10/2019</b>
<ol style="list-style-type: none"> <li>1) There was an error due to pasting of formula in the calculations. The errors have been corrected in the revised ER sheet at all the places.</li> <li>2) There are multiple unique identifications that have been deployed for each CEP. These are Unique Sysnum, Passport/National id number, Location co-ordinates etc. The Sysnum and passport numbers are the real unique numbers, which would not match with other clients. This ensures that same household does not receive multiple CEP. In the year 2012-13, the mobile phones was not very common, and hence many clients would use mobile numbers of their friends/relatives. Also, at times, sales agent would have to enter their mobile numbers, which resulted in common phone numbers.</li> <li>3) As mentioned above, the same household receiving multiple devices has been ruled out due to usage of unique identification numbers, sysnum and passport numbers. There are probabilities of same names specially conserving large population of more than 19,000 households.</li> <li>4) The stoves under consideration are not cook-stoves. These are specially designed heating stoves which are expensive (250-300 USD) and are sturdy and very well build. As observed by DOE team during site visit, these stoves are installed as fixed and permanent installations in the households, and show very less sign of wear and tear. Even the product serial numbers and other details were still visible on the stoves. Hence, there is no question of life time expiry of the products.</li> </ol>	
<b>Documentation provided by project participant</b>	
Revised ER sheet, Revised MR	
<b>DOE assessment</b>	<b>Date: 01/11/2019</b>
<ol style="list-style-type: none"> <li>1- The ER sheet has been updated and all the details found correct.</li> <li>2- The dissemination started in 2012-2013, when not everybody owned mobile phone in the target area. At the time of installation, some of end users filled their neighbors phone number to provide contact detail so that the company can contact them for installation/repairment issues. Therefore, it would not be correct to establish the uniqueness of each user in the basis of their mobile number would not be unique to each user. The Unique Sysnum and the passport are the unique number ensures that the no same household received more than one CEP. The team has checked the passport number and sysnum numbers (along with their name and address) of the customer has been checked in the worksheet "CPA No. 001" and found that there is no repetition</li> <li>3- The Unique Sysnum and the passport are the unique number ensures that the no same household received more than one CEP. The team has checked the passport number and sysnum numbers (along with their name and address) of the customer has been checked in the worksheet "CPA No. 001" and found that there is no repetition</li> <li>4- The team leader confirmed through site visit that the stoves are durable and sturdy. Also, the operational rate determined through survey will ensure that the inactive stoves are discounted aptly.</li> </ol> <p>Thus, The CAR stands closed.</p>	

Table 4. FAR from this verification

FAR ID	Section No.	Date : DD/MM/YYYY
<b>Description of FAR</b>		
NA		
<b>Project participant response</b>		<b>Date : DD/MM/YYYY</b>
NA		
<b>Documentation provided by project participant</b>		
NA		
<b>DOE assessment</b>		<b>Date: DD/MM/YYYY</b>
NA		

There is no FAR from this verification.

- - - - -

**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none"><li>• Ensure consistency with version 02.0 of the “CDM validation and verification standard for programmes of activities” (CDM-EB93-A08-STAN);</li><li>• Make structural and editorial improvements.</li></ul>
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).
01.0	5 June 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: programme of activities, verifying and certifying		