




**Verification and certification report form for  
CDM programme of activities  
(version 02.0)**

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

**BASIC INFORMATION**

<b>Title and UNFCCC reference number of the programme of activities (PoA)</b>	MicroEnergy Credits - Microfinance for Clean Energy Product Lines – Mongolia UNFCCC ID: 8142		
<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>	1.0		
<b>Completion date of the verification and certification report</b>	07/07/2018		
<b>Monitoring period number and duration of this monitoring period</b>	4 <sup>th</sup> - 01/05/2017 - 30/04/2018 (First and last days included)		
<b>Number and version number of the monitoring report to which this report applies</b>	2 Version: 02		
<b>Coordinating/managing entity (CME)</b>	MicroEnergy Credits		
<b>Host Parties</b>	Host Parties of the PoA	Is this a host Party to a CPA covered in this report? (yes/no)	
	Mongolia	Yes	
<b>Applied methodologies and standardized baselines</b>	AMS-II.E: Energy efficiency and fuel switching measures for buildings, Version 10 No Standardised baseline is applicable		
<b>Mandatory sectoral scopes linked to the applied methodologies</b>	1: Energy industries (renewable - / non-renewable sources) 3: Energy Demand		
<b>Conditional sectoral scopes linked to the applied methodologies, 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>	CPA under verification	Value estimated in ex ante calculation	
	8142-0002	50,133 tCO <sub>2</sub> eq	
	8142-0003	50,133 tCO <sub>2</sub> eq	
<b>Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included CPAs covered in this report</b>	<b>Project Activity</b>	<b>ER<sub>y</sub> (tCO<sub>2</sub>e)</b>	
		<b>2017</b>	<b>2018</b>
	<b>CPA # 0002</b>	24,207	18,951
	<b>CPA # 0003</b>	1,454	1,139
<b>Name and UNFCCC reference number of</b>	TÜV NORD CERT GmbH		

the DOE	E-022
Name, position and signature of the approver of the verification and certification report	 Stefan Winter Deputy Head-CDM JI Programme Final Approver

**SECTION A. Executive summary**

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MicroEnergy Credits (MEC), has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 4<sup>th</sup> periodic verification of CPA-0002 and CPA-0003 under the CDM Programme of Activities (CDM-PoA):

**“MicroEnergy Credits - Microfinance for Clean Energy Product Lines - Mongolia”**

with regard to the relevant requirements for CDM PoAs.

This verification covers the period from 01/05/2017 to 30/04/2018 (including both days).

The project activity is intended to replace:

- inefficient stoves for heating
- inefficient Ger insulation

by installing and maintaining energy efficient products at household level.

The replacements are expected to reduce the consumption of fossil fuel required to keep the house at a habitable temperature during heating season and subsequently reduce GHG emissions during combustion.

The technologies adopted in the CPA-0002 and CPA-0003 are identical to the technology defined in PoA-DD, i.e. install and maintain the energy efficient products (CEPs) at household level and then replace

- inefficient stoves for heating and cooking
- inefficient ger insulation

The installation date of a CEP, when a XacBank representative visits the household and confirms installation of the product, is the start of crediting for each individual CEP.

Stoves are credited according to the dwelling type in which they are located, either a house or a ger.

**Summary Installations of CEPs**

<b>Installation Month-Year</b>	<b>Stove-House*</b>	<b>Stove-Ger*</b>	<b>Total CEPs</b>
CPA-0002 Heating Season 2017-18	4,218	12,320	16,538
CPA-0003 Heating Season 2017-18	193	633	826

\*Stoves with unknown dwelling type are conservatively considered to be located in dwelling type with lower ER for this particular heating season.

**CPA-0002**

All the CEPs under this CPA were installed during 2014 & 2015. However, the official start date of the CPA-0002 crediting period is 08/03/2016, as the CPA inclusion date is 08/03/2016. First CEP under CPA-0002 was installed on 02/01/2014 and last CEP under CPA-0002 was installed on 14/04/2015.

**CPA-0003**

All the CEPs under this CPA-0003 were installed during 2015. However, the official start date of the CPA-0003 crediting period is 08/03/2016, as the CPA inclusion date is 08/03/2016. First CEP under CPA-0003 was installed on 05/01/2015 and last CEP under CPA-0003 was installed on 05/11/2015.

At PoA level, the fourth monitoring period covers the duration from 01/05/2017 - 30/04/2018 (Both days included). Although, the current monitoring period spans from 01/05/2017 to 30/04/2018 (Both days included), but only the heating seasons would be covered for crediting. The stoves are primarily used for space heating during the cold season in Mongolia (namely, Heating Season). This period last from August to April. From May to July stoves are used sparingly and more for cooking purpose. The monitoring surveys have been accordingly carried out and baseline was also defined accordingly in PoA-DD and CPA-DD. Hence for this monitoring report crediting starts from 01/08/2017 and ends on 30/04/2018 (Both days included).

Details of the PoA location are given in table A-1 below:

**Table A-1:** Project Location

CPA No.: 002 & CPA No.: 003		Project Location	
Host Country		Mongolia	
Province		Ulaanbaatar	
City		Ulaanbaatar city	
Focal point		Latitude	Longitude
Ulaanbaatar		47.92 <sup>0</sup> N	106.92 <sup>0</sup> E

Basic technical details of the PoA are summarized in table A-2.

**Table - A-2:** Technical data of the project activity for ICS:

Key project technology/installation is given in Table -: N/A

**Table – A-3:** Technical data of the project activity

Project activity	Unit	Type
Stove	-	<ul style="list-style-type: none"> <li>- Silver Stove Mini (model 131)</li> <li>- Silver Stove Turbo (model 126)</li> <li>- Royal Stove Dul model (Royal Single model)</li> <li>- Royal Stove Golomt model (Royal Double model)</li> </ul>
Ger blanket <sup>1</sup>	No Ger blankets distributed under CPA0002 and CPA0003 so far	

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated Component project activity design document.
- the monitoring plan is in accordance with the applied approved CDM methodology, i.e., AMS II.E. ver. 10
- the monitoring system is in place and functional. The project has generated GHG emission reductions.

As the result of the 4<sup>th</sup> periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV

<sup>1</sup> No Ger Blanket is credited under this issuance.

NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:

Emission reductions: **45,751 tCO<sub>2</sub>e**

## SECTION B. Verification team, technical reviewer and approver

### B.1. Verification team members

#### B.2.

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 review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader+ Technical Expert	IR	Mishra	Prakash Kumar	TÜV NORD CERT	x	x	x	x

### B.3. 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	Kunal	Rami	TÜV NORD CERT
2.	Approver	IR	Winter	Stefan	TÜV NORD CERT

## SECTION C. Application of materiality in conducting the verification

### C.1. Consideration of materiality in planning the verification

In order to ensure a complete, transparent and timely execution of the verification task the team leader has planned the complete sequence of events necessary to arrive at a substantiated final verification opinion.

Various tools have been established in order to ensure an effective verification planning.

#### Materiality Threshold

The verification is based on the materiality threshold identified in table C-1 below:

**Table C-1:** Applied Materiality Threshold

	Threshold	Related to
<input type="checkbox"/>	0.5 %	Emission reductions or removals for registered CDM project activities achieving a total emission reduction or removal equal to or more than 500,000 tonnes of carbon dioxide equivalent per year <sup>2</sup> ;
<input type="checkbox"/>	1 %	Emission reductions or removals for registered CDM project activities achieving a total emission reduction or removal of between 300,000 and 500,000 tonnes of carbon dioxide equivalent per year;

<sup>2</sup> A year refers to a period of 12 consecutive months.

	Threshold	Related to
<input type="checkbox"/>	2 %	Emission reductions or removals for registered large-scale CDM project activities achieving a total emission reduction or removal of 300,000 tonnes of carbon dioxide equivalent per year or less;
<input checked="" type="checkbox"/>	5 %	Emission reductions or removals for registered small-scale CDM PoA other than registered CDM PoA covered under next category below;
<input type="checkbox"/>	10 %	Emission reductions or removals for the type of registered small-scale CDM PoA referred to in decision 3/CMP.6, paragraph 38 (referred to as microscale project activities).

### Strategic Analysis

At the beginning of the verification the verification team leader has assessed the nature, scale and complexity of the verification tasks by carrying out a strategic analysis of all activities relevant to the project activity. The team leader has collected and reviewed the information relevant to assess that the designated verification team is sufficiently competent to carry out the verification and to ensure that it is able to conduct the necessary risk analysis.

### Risk analysis and detailed audit testing planning

For the identification and assessment of potential reporting risks and to determine the necessary detailed audit testing procedures for residual risk areas the following table is used.

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.	Transfer of data from household energy survey (HES) related to usage rate and project biomass consumption to excel ER spreadsheet.	Low	Human error during transfer of data from HES for BE, PE and ER calculations	Thorough cross-check and assessment required on the generation and transfer of data to the ER spreadsheet. Assessment of HES and value obtained for POF (product operation fraction) and biomass consumption data
2.	Transfer of Temperature and wind speed data for the entire monitoring period to the ER calculation spreadsheet	Low	Human error during transfer of data from source NOAA to the ER calculation spreadsheet.	Cross check of NOAA data and ER calculation spreadsheet for wind speed and temperature data accounted during the current monitoring period.

On the basis of the risk analysis the verification has been planned. A detailed audit / verification plan has been prepared and submitted to the project participant(s) in due time before the site visit.

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

Based on the verification planning, verification process is carried out. The concept of materiality considered during the verification process. A breakdown of the chosen approaches is included in the following table.

Parameter	Approach*	Errors* detected	Findings reference	Corrected	Remaining verification risk
(POF) Product Operation	SPL	<input checked="" type="checkbox"/>	CAR E1	<input checked="" type="checkbox"/>	Not material

Fraction					
<b>C<sub>y,new,CEP-i</sub></b> (represents the quantity of coal used in the project scenario for CEP-I installation, weighted average if multiple clusters of CEP, for target groups in Ger Area homes.)	CDC	<input checked="" type="checkbox"/>	CAR E1	<input checked="" type="checkbox"/>	Not material
<b>T<sub>y,s</sub> household stoves and/or insulation</b> (Mean temperature in Celsius for year y and season s (Fall, Winter, Spring, Summer) for target groups in Ger Area Homes)	CDC	<input checked="" type="checkbox"/>	CAR E1	<input checked="" type="checkbox"/>	Not material
<b>WS<sub>y,s</sub> household stoves and/or insulation</b> (Mean wind speed in knots for year y and season s (Fall, Winter, Spring, Summer) for target groups in Ulaanbaatar)	CDC	<input checked="" type="checkbox"/>	CAR E1	<input checked="" type="checkbox"/>	Not material
<b>Aggregate</b>					Materiality threshold not exceeded

\*) incl. omissions and misstatements

+) Verification Approaches:

CDC: Complete data check of data including all data aggregation steps

NDC: Non-complete data check – omissions not material

SPL: Sampling approach (all data available)

ASP: Acceptance Sampling

COM: Data check at higher data aggregation levels and sampling at original data levels

For above mentioned risk mentioned under above table under section C.1, verification team has conducted a thorough cross check and verification as follows:

**1. Transfer of data from household energy survey (HES) related to usage rate and project biomass consumption to excel ER spreadsheet:**

House hold Energy survey sheet along with survey results presented in HES report was assessed and compared with onsite visit and interview response by the project technologies users. Product operation fraction (POF) is observed to be declined since last monitoring and also in line with onsite observation which has been correctly demonstrated and presented in the POF sheet. The value of POF and corresponding biomass consumption during the verification period taken for different crediting category under the CPA are found correctly used in the MR and ER calculation spreadsheet. Moreover, CAR

E1 was raised and closed successfully during course of verification.

## 2. Transfer of Temperature and wind speed data for the entire monitoring period to the ER calculation spreadsheet:

Value for this parameter over the monitoring period is used from the National Climatic Data Center Climatic Service Branch of the National Oceanic and Atmospheric Administration (NOAA). NOAA's conducts research, data services, information, and knowledge for use by the Nation's businesses, communities, and people's daily lives. NOAA services include climate predictions and projections; weather and water reports, forecasts and warnings; nautical charts and navigational information; and the continuous delivery of a range of Earth observations and scientific data sets for use by public, private, and academic sectors.

NOAA was established in 1970 and now is a world renowned agency which provide services from daily weather forecasts, severe storm warnings, and climate monitoring to fisheries management, coastal restoration etc.

PP has used the data from the NOAA for the mean temperature and mean wind speed for autumn, winter and spring seasons in order to account the values appropriately to calculate the emission reduction. PP has omitted the value for summer in a conservative basis.

The verification has been carried out as per the verification plan. Registered CDM component project activity is based on the actual situation on-site visit and verification of the facility is found to be in line with registered monitoring plan. During the course of verification minor issues e.g. resulted value of HES and eventual biomass consumption data and corresponding ER calculation were identified to be incorrect which was corrected during the verification process and hence, resolved. No significant and major revision of the overall plan was required.

## SECTION D. Means of verification

### D.1. Desk/document review

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During the desk review all documents initially provided by the client and publicly available documents relevant for the CPA-0002 & CPA-0003 verification were reviewed. The main documents are listed below:

- the latest version of the PoA-DD including the monitoring plan<sup>/PoA-DD/</sup>,
- the last revision of the CPA-DD<sup>/CPA-DD/</sup>
- the last revision of the CPA validation report<sup>/VAL/</sup>,
- documentation of validation which are relevant during verification<sup>/VAL/</sup>
- the emission reduction calculation spreadsheet<sup>/XLS/</sup>
- previous verification reports (MPI)<sup>/VER/</sup>.

Other supporting documents, such as publicly available information on the UNFCCC website and background information were also reviewed. List of all the relevant documents reviewed during verification process are listed in Appendix 3.

### D.2. On-site inspection

Duration of on-site inspection: 13/06/2018 to 16/06/2018				
No.	Activity performed on-site	Site location	Date	Team member
1.	<ul style="list-style-type: none"> <li>• Formal Introduction with CME, CPA implementer and other involved personnel in GHG data monitoring, discussion on audit planning, site lay out.</li> <li>• Record keeping.</li> <li>• Sales receipt verification</li> <li>• Double counting avoidance procedure</li> <li>• Interviews of the CME, PO and sales</li> </ul>	Ulaanbaatar Region of Mongolia (Xac Bank office)	13/06/2017-16/06/2018	Prakash Kumar Mishra (PKM)



Duration of on-site inspection: 13/06/2018 to 16/06/2018				
No.	Activity performed on-site	Site location	Date	Team member
	personnel <ul style="list-style-type: none"> <li>Master data verification</li> <li>Competency of the PO and involved personnel.</li> <li>Overall organizational structure for data management and flow of information</li> <li>Meeting and interview with third party survey agency on procedure adopted for sampling and survey</li> </ul>			
2	Onsite verification of deployed stoves/Ger blanket, interview with the ICS users on related issues, e.g. usage pattern, fuel saving, awareness level, maintenance procedure fuel consumption etc.	Ulaanbaatar Region of Mongolia (Xac Bank office), MEC office	13/06/2017-16/06/2018	Prakash Kumar Mishra
3	Onsite verification of deployed stoves/gers, interview with the users on related issues, e.g. usage pattern, fuel saving, awareness level, maintenance procedure fuel consumption etc.	Ulaanbaatar Region of Mongolia (Xac Bank office), MEC office	13/06/2017-16/06/2018	Prakash Kumar Mishra
4	<ul style="list-style-type: none"> <li>Discussion on Monitoring reports compliance with MR filling guideline, PoA DD, CPA DDs, Validation report</li> <li>Documentary evidence check, data verification and comparison with onsite observation</li> </ul>	Ulaanbaatar Region of Mongolia (Xac Bank office), MEC office	16/06/2018	Prakash Kumar Mishra

### D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Nugent	Nick	MEC	13/06/2017-16/06/2018	Program overview and Organisational structure, implementation status, Sales and credit tracker database management	PKM
2.	Subramanian	Sriskandh	MEC	13/06/2017-16/06/2018	Program overview and Organisational structure, implementation status, Sales and credit tracker database management, Development of MR and related documentation for CPA01 verification	PKM
3.	Batsukh	Anand	XAcBank	13/06/2017-16/06/2018	Program overview and	PKM

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
					Organisational structure, implementation status, Sales and credit tracker database management, Development of MR and related documentation for CPA01 verification	
4.	Myadag	Serjee	XacBank	13/06/2017-16/06/2018	Program overview and Organisational structure, implementation status, Sales and credit tracker database management, Development of MR and related documentation for CPA01 verification	PKM
5.	Zegas	Greg	XAcBank	13/06/2017-16/06/2018	CPA implementation overview, Procedure and mechanism followed during usage survey	PKM
6	G	Tuul	XAcBank	13/06/2017-16/06/2018	Procedure and mechanism followed during usage survey, QA/QC followed during survey	PKM
7.	Baatarkhuu	BULGANKHAN GAI	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
8.	Yadamjav	TEGShBAYaR	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
9.	Purevjav	LUKSUREN	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
10.	Janchivrentsen	Baasansuren	CEP users	13/06/2017-16/06/2018	13/06/2018	PKM
11.	Dashdondong	NARSETSEGA	CEP users	13/06/2017-16/06/2018	14/06/2018	PKM
12.	Onooroi	Janchivlan	CEP users	13/06/2017-16/06/2018	14/06/2018	PKM
13.	Baljinnyam	Myagmarsuren	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
14.	Dorjjantsan	OCHIRALA	CEP users	13/06/2017-	CEP	PKM

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
				16/06/2018	Information and usage	
15.	Delgermörön	Tsetsegmaa	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
16.	Danzan	SONOMTEREN	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
17.	Batsaikhan	Erdenechimeg	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
18.	Tudev	LYTDAA	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
19.	Baldir	Baldir	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
20.	Tsend	KHSJSURREN	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
21.	Batsukh	Aledir	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
22.	Dugar	Rentsenkha	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
23.	Samu	Enkhtsetse	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
24.	Bodsukh	Jupiftr	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
25.	Chimedbaz	Munkhsaikhan	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
26.	Tsevegsüren	Davaadorjin	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
27.	Vanchigravdan	Altangerel	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
28.	Ghtej	Gunchindorj	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
29.	Purevdorj	Munguntsetseg	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
30.	Namsrai	Sukhbaatar	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
31.	Jantsandorj	Erdenekhu	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
32.	Altansukh	Banzragch	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
33.	Gyatso	Tumurbaatar	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
34.	Shaalai	Altantsesteg	CEP users	13/06/2017-	CEP	PKM

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
				16/06/2018	Information and usage	
35	Batmunkh	Monkhzori	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
36	Luvsanjam	Oyusama	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM
37	Orgodol	Sarantuyaa	CEP users	13/06/2017-16/06/2018	CEP Information and usage	PKM

#### D.4. Sampling approach

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##### CPA-0002: Sampling during monitoring by the PP:

<input type="checkbox"/>	No sampling approach has been used by the PP to determine the monitored parameters				
<input checked="" type="checkbox"/>	A sampling approach has been taken for the following monitored parameter(s):				
	Parameter	Sampling approach <sup>1)</sup>	Sampling Type <sup>2)</sup>	Total Population	Sample Size by PP
	POF	SiRS	PS	16,538	Heating Season 2017/18 – 326
	C <sub>y,new,CEP-i</sub>	SiRS	PS		Heating Season 2017/18—326 (292 samples have been considered for arriving at the value for this parameter)
	C <sub>y,old,CEPi</sub>	SiRS	PS		Heating Season 2017/18— 326 (292 samples have been considered for arriving at the value for this parameter)

<sup>1)</sup> Sampling Approaches:

SiRS: Simple Random Sampling  
 StRS: Stratified Random Sampling  
 SS: Systematic Sampling  
 CS: Cluster Sampling  
 MSS: Multi-stage Sampling

<sup>2)</sup> Sampling Types:

PS: Parameter Sampling

##### CPA-0003: Sampling during monitoring by the PP:

<input type="checkbox"/>	No sampling approach has been used by the PP to determine the monitored parameters				
<input checked="" type="checkbox"/>	A sampling approach has been taken for the following monitored parameter(s):				
	Parameter	Sampling approach <sup>1)</sup>	Sampling Type <sup>2)</sup>	Total Population	Sample Size by PP
	POF	SiRS	PS	823	Heating Season 2017/18 – 264
	C <sub>y,new,CEP-i</sub>	SiRS	PS		Heating Season 2017/18—264 (236 samples have been considered for arriving

				at the value for this parameter)
$C_{y\_old,CEPi}$	SiRS	PS		Heating Season 2017/18— 264 (236 samples have been considered for arriving at the value for this parameter)

<sup>1)</sup> Sampling Approaches:

SiRS: Simple Random Sampling  
 StRS: Stratified Random Sampling  
 SS: Systematic Sampling  
 CS: Cluster Sampling  
 MSS: Multi-stage Sampling

<sup>2)</sup> Sampling Types:

PS: Parameter Sampling

Simple random sampling method has been applied to determine the samples for the monitored parameters (POF,  $C_{y,new,CEP-i}$ ). Randomization was done using random function in Microsoft Excel. The monitoring parameter,  $N_{all}$  is monitored 100% and continuously through the online credit tracker platform and the monitoring parameter  $C_{y\_old,CEPi}$  is calculated applying regression analysis as approved at PoA validation and procedure for calculation of the same is fixed. The procedure for regression calculation and the result of the parameter is found to be appropriately calculated and in line with onsite observation and interview with end users.

A 3<sup>rd</sup> party survey report document<sup>/HES/</sup> has been referenced for the design of the sampling procedure, random selection of sample and the surveys done to determine the value of the monitored parameters. This has been verified and found to be appropriate.

According to the applied methodology (AMS.II.E. version 10), registered PoA-DD and CPA-DD, the project proponent is required to measure/monitor the parameters POF,  $C_{y,new,CEP-I}$  and  $C_{y\_old,CEPi}$  at least every 2 years, however PP 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 approach is deemed to be conservative.

The sample size for the monitored parameters, POF,  $C_{y,new,CEP-I}$  and  $C_{y\_old,CEPi}$  has been determined by following the relevant requirements for sampling laid down in “Guidelines for sampling and survey for CDM project activities and CDM PoAs”.

The dwelling type is decisive for project and baseline coal consumption and hence both dwelling types i.e. ger and stoves are included in this CPA and sampling has been done for both dwelling types. Stoves with unknown dwelling type are conservatively considered to be located in dwelling type with lower ER for that particular heating season. To ensure accuracy of results, the total samples determined through simple random sampling on the total population which has been further split into districts – Bayangol, Songinokhairkhan and other. Further, considering possible low response rate and households response bias into account, oversampling has been applied. The sample size that has been taken for year 2017-2018 is 326 for CPA-0002 and 264 for CPA-0003 based on which corresponding emission reduction are conservatively claimed.

According to survey<sup>/HES/</sup>, and as mentioned above, monitoring surveys have been carried out in six dwelling district combinations or frames namely:

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

The split of samples into these frames is as follows –

CPA-0002: Heating Season 2017/2018 – Total samples - 326

Dwelling ->	GER			HOUSE		
District - >	Bayangol	Songinokhairkhan	Other	Bayangol	Songinokhairkhan	Other
Frame	-	-	-	-	-	-
1	-	-	-	-	51	-
2	-	-	-	44	-	-
3	-	-	-	-	-	60
4	-	58	-	-	-	-
5	62	-	-	-	-	-
6	-	-	61	-	-	-

CPA-0003: Heating Season 2017/2018 – Total samples – 264

Dwelling ->	GER			HOUSE		
District - >	Bayangol	Songinokhairkhan	Other	Bayangol	Songinokhairkhan	Other
Frame	-	-	-	-	-	-
1	-	-	-	-	51	-
2	-	-	-	9	-	-
3	-	-	-	-	-	63
4	-	46	-	-	-	-
5	37	-	-	-	-	-
6	-	-	58	-	-	-

#### For CPA-0002

Out of total 16,538 ( $N_{all}$ ) efficient heating products under CPA-0002, 4,218 have been deployed in the house hold and 12,320 in ger. CME has selected sample of 326 is in coherence with Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities” (Version 04.0) and “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities” (version 7)<sup>/G-SS/</sup>. A sample size calculation spread sheet<sup>/SSCAL//Annex-08/</sup> is submitted by PP which is assessed to be appropriately provided with the sample size calculation procedure in accordance with Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities” (Version 04.0). Verification team has assessed these spreadsheets with the registered sampling plan in the PoA-DD, applied methodology AMS-II.E, version 10, and the “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities” (version 05.0). Based on that verification team can conclude that sampling and survey conducted by the PP is reasonable and appropriate.

#### For CPA-0003

Out of total 826 ( $N_{all}$ ) efficient heating products under CPA-0002, 193 have been deployed in the house hold and 633 in ger. CME has selected sample of 264 is in coherence with Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities” (Version 04.0) and “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities” (version 7)<sup>/G-SS/</sup>. A sample size calculation spread sheet<sup>/SSCAL//Annex-08/</sup> is submitted by PP which is assessed to be appropriately provided with the sample size calculation procedure in accordance with Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities”

(Version 04.0). Verification team has assessed these spreadsheets with the registered sampling plan in the PoA-DD, applied methodology AMS-II.E, version 10, and the “*Standard for Sampling and Surveys for CDM Project Activities and Programme Activities*” (version 05.0). Based on that verification team can conclude that sampling and survey conducted by the PP is reasonable and appropriate.

## Reliability

As far as calculations for reliability (Confidence/precisions) are concerned, CME has adopted a transparent and traceable approach in accordance with Appendix 4. “Best-practice examples for reliability calculations”; Annex-6 of EB 67 (Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities” (Version 04.0).

Reliability has been demonstrated separately for mean and proportion based parameter i.e. “ $C_{y,new}$  CEPI” – project coal consumption,  $C_{y,old,CEPI}$ - Baseline coal consumption and “POF”- Product Operation Fraction respectively.

For mean based reliability test, CME has calculated the mean value of the parameter, standard deviation, standard error, and precision as per Section 4 of “Best-practice examples for reliability calculations”. For proportion based reliability test, CME has calculated Standard Error and precision as per Section 5 of “Best-practice examples for reliability calculations”.

Reliability calculations at the total sample size level and also at the level of the dwelling district combination. Precision meets the 10% requirement in both cases for both the Heating seasons.

The Validation Team has assessed the **ANNEX 1** - ER Calculations & HES-2017-18\_CPA2 and **ANNEX 2** - ER Calculations & HES-2017-18\_CPA3 and **ANNEX 5, 6 and ANNEX-7** -Tracker platform in this regard and found the calculation/demonstration as appropriate.

A summary of the HES sampling results are shown below. Each of the parameters met required confidence/precision for all sampling frames.

### POF Survey results for CPA-002

Heating Season 2017-18

Crediting Category	N	POF	Std. Err.	90% Confidence Level: Precision Achieved	Meets 90/10 Rule?
House-Song.	51	90%	0.04	7.59%	Yes
House-Bayan.	44	89%	0.05	8.88%	Yes
House-Other	60	90%	0.04	7.08%	Yes
Ger-Song.	58	90%	0.04	7.34%	Yes
Ger-Bayan.	52	88%	0.04	8.24%	Yes
Ger-Other	61	90%	0.04	6.96%	Yes

### POF Survey results for CPA-003

Heating Season 2017-18

Crediting Category	N	POF	Std. Err.	90% Confidence Level: Precision	Meets 90/10 Rule?
--------------------	---	-----	-----------	---------------------------------	-------------------

				<b>Achieved</b>	
House-Song.	51	86%	0.05	9.19%	Yes
House-Bayan.	9	100%	0.00	0.00%	Yes
House-Other	63	90%	0.04	6.72%	Yes
Ger-Song.	46	89%	0.05	8.47%	Yes
Ger-Bayan.	37	89%	0.05	9.42%	Yes
Ger-Other	58	90%	0.04	7.34%	Yes

**C<sub>y,new,CEPi</sub> Survey results for CPA-002**

Heating Season 2017-18

<b>Crediting Category</b>	<b>N</b>	<b>Mean (tons coal/HH/ heating season)</b>	<b>Standard Deviation</b>	<b>90% Confidence Level: Precision Achieved</b>	<b>Meets 90/10 Rule?</b>
House-Song.	46	3.89	0.83	5.15%	Yes
House-Bayan.	39	3.62	0.79	5.78%	Yes
House-Other	54	3.62	0.95	5.89%	Yes
Ger-Song.	52	3.51	0.88	5.74%	Yes
Ger-Bayan.	46	3.08	0.43	3.37%	Yes
Ger-Other	55	3.42	1.13	7.31%	Yes

**C<sub>y,new,CEPi</sub> Survey results for CPA003**

Heating Season 2017-18

<b>Crediting Category</b>	<b>N</b>	<b>Mean (tons coal/HH/ heating season)</b>	<b>Standard Deviation</b>	<b>90% Confidence Level: Precision Achieved</b>	<b>Meets 90/10 Rule?</b>
House-Song.	44	3.42	1.04	7.55%	Yes
House-Bayan.	9	3.54	0.52	8.02%	Yes
House-Other	57	3.33	0.98	6.38%	Yes
Ger-Song.	41	3.00	0.72	6.19%	Yes
Ger-Bayan.	32	3.28	0.76	6.62%	Yes
Ger-Other	52	3.08	1.32	9.81%	Yes

Complete details of the HES survey, data analysis, and results can be found in ANNEX 1 - ER Calculations & HES-2017-18-CPA2 & ANNEX 1 - ER Calculations & HES-2017-18-CPA3.

Further, CME has carried out reliability calculations at the total sample size level and also at the level of the dwelling district combination. It is verified that the precision is meeting the 10% requirement.

**Sampling approaches during verification by verification team:****CPA-0002**



<input type="checkbox"/>	No sampling approach has been used by the VT to verify the monitored parameters				
<input checked="" type="checkbox"/>	A sampling approach has been applied by the VT for the following monitored parameter(s):				
	Parameter	Sampling approach <sup>1)</sup>	Sampling Type <sup>2)</sup>	Sample survey Population by PP	Sample survey by VT
	POF	SiRS	AS	326	16
	C <sub>y,new,CEP-i</sub>	SiRS	AS	326	16
	C <sub>y,old,CEP-i</sub>	SiRS	AS	326	16

<sup>1)</sup> Sampling Approaches:

SiRS: Simple Random Sampling  
 StRS: Stratified Random Sampling  
 SS: Systematic Sampling  
 CS: Cluster Sampling  
 MSS: Multi-stage Sampling

<sup>2)</sup> Sampling Types:

AS: Acceptance Sampling  
 PS: Parameter Sampling  
 COM: Full data check at higher data aggregation levels and sampling at original data levels

During the on-site verification, a sampling approach has been followed by the verification team to verify the reported values for the monitored parameters.

The sampling approach is conducted according with “*Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities* (version 04.1)” and the “*Standard for Sampling and Surveys for CDM Project Activities and Programme Activities* (version 07.0). Simple random sampling method is adopted for verification of the parameters.

Since the CPAs included in the PoA implements technologies/measures with high degree of standardization and the stove capacities in terms of energy savings per year in the CPAs are less than 1% of small scale CDM thresholds which is appropriately demonstrated in emission reduction calculation spread sheet and in line with the “Assessment of debundling for small-scale project activities, version 04<sup>MT/</sup>”, the verification team decided to draw samples mainly from the project samples selected by PP. i.e. the acceptance sampling approach has been applied.

Guidelines for sampling and survey for small-scale CDM project activities has been applied. 16 samples in total have been randomly selected by verification team taking the possible low response rate into account.

AQL 01%, UQL 20%, producer risk 5% and consumer risk 15% have been adopted as per standard for sampling and survey for CDM project activities and programme of the activities. The values for AQL/UQL/producer risk and consumer risk have been taken by applying professional judgement and also considering experiences from the previous verification audit of this CPA. These considerations were made to select samples separately for both heating seasons. No discrepancies were found during the verification site-visit.

**Table 5-2:** Applied sampling standard

AQL	1%
UQL	20%
Producer risk	5%
Consumer risk	15%
Sample size	16
Acceptance Number	1

**CPA-0003**

<input type="checkbox"/>	No sampling approach has been used by the VT to verify the monitored parameters				
<input checked="" type="checkbox"/>	A sampling approach has been applied by the VT for the following monitored parameter(s):				
	Parameter	Sampling approach <sup>1)</sup>	Sampling Type <sup>2)</sup>	Sample survey Population by PP	Sample survey by VT
	POF	SiRS	AS	264	16
	C <sub>y,new,CEP-i</sub>	SiRS	AS	264	16
	C <sub>y,old,CEP-i</sub>	SiRS	AS	264	16

<sup>1)</sup> Sampling Approaches:

SiRS: Simple Random Sampling  
 StRS: Stratified Random Sampling  
 SS: Systematic Sampling  
 CS: Cluster Sampling  
 MSS: Multi-stage Sampling

<sup>2)</sup> Sampling Types:

AS: Acceptance Sampling  
 PS: Parameter Sampling  
 COM: Full data check at higher data aggregation levels and sampling at original data levels

During the on-site verification, a sampling approach has been followed by the verification team to verify the reported values for the monitored parameters.

The sampling approach is conducted according with “*Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities* (version 04.1)” and the “*Standard for Sampling and Surveys for CDM Project Activities and Programme Activities* (version 07.0). Simple random sampling method is adopted for verification of the parameters.

Since the CPAs included in the PoA implements technologies/measures with high degree of standardization and the stove capacities in terms of energy savings per year in the CPAs are less than 1% of small scale CDM thresholds which is appropriately demonstrated in emission reduction calculation spread sheet and in line with the “Assessment of debundling for small-scale project activities, version 04<sup>MT/</sup>”, the verification team decided to draw samples mainly from the project samples selected by PP. i.e. the acceptance sampling approach has been applied.

Guidelines for sampling and survey for small-scale CDM project activities has been applied. 16 samples in total have been randomly selected by verification team taking the possible low response rate into account.

AQL 01%, UQL 20%, producer risk 5% and consumer risk 15% have been adopted as per standard for sampling and survey for CDM project activities and programme of the activities. The values for AQL/UQL/producer risk and consumer risk have been taken by applying professional judgement and also considering experiences from the previous verification audit of this CPA. These considerations were made to select samples separately for both heating seasons. No discrepancies were found during the verification site-visit.

**Table 5-2:** Applied sampling standard

AQL	01%
UQL	20%
Producer risk	5%
Consumer risk	15%
Sample size	16
Acceptance Number	1

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

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
<b>General</b>			
Compliance of the monitoring report with the monitoring report form	-	-	-
Remaining forward action requests from validation and/or previous verification	-	-	
CPA(s) 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			
<ul style="list-style-type: none"> <li>Temporary deviations from the registered monitoring plan, applied methodology or applied standardized baseline</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Corrections</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Inclusion of a monitoring plan</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Permanent changes to the registered monitoring plan or permanent deviation of monitoring from the applied methodology, standardized baseline or other applied standards or tools</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Changes to the programme design or project design</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Change of coordinating/managing entity</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Changes specific to afforestation and reforestation activities</li> </ul>	-	-	-
<b>Component project activities</b>			
Compliance of the CPA implementation with the included CPA design document	-	-	-
Post-registration changes			
<ul style="list-style-type: none"> <li>Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Corrections</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Changes to the start date of the crediting period of component project activities</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Inclusion of a monitoring plan</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Permanent changes to the registered monitoring plan or permanent deviation of monitoring from the applied methodology, standardized baseline or other applied standards or tools</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Changes to the programme design of project design</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Changes specific to afforestation and reforestation component project activities</li> </ul>	-	-	-
Compliance of the registered monitoring plan with the methodology including applicable tool(s) and standardized baseline	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	01	-
<ul style="list-style-type: none"> <li>Data and parameters fixed ex ante or at renewal of crediting period</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Data and parameters monitored</li> </ul>	-	-	-
<ul style="list-style-type: none"> <li>Implementation of sampling plan</li> </ul>	-	-	-
Compliance with the calibration frequency requirements for measuring instruments			
Assessment of data and calculation of emission reductions or net removals	-	01	-

• Calculation of baseline GHG emissions or baseline net GHG removals by sinks	-	-	-
• Calculation of project GHG emissions or actual net GHG removals by sinks	-	-	-
• Calculation of leakage GHG emissions	-	-	-
• Summary of calculation of GHG emission reductions or net GHG removals by sinks	-	-	-
• Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included CPA	-	-	-
• Remarks on difference from estimated value in included CPA	-	-	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Others (please specify)	-	-	-
<b>Total</b>	0	02	0

## SECTION E. Verification findings

### E.1. General

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

Means of verification	<p>The project participant submitted a draft monitoring report to the verification team. The DOE has made this report publicly available prior to the start of the verification activities. No comments were received.</p> <p>By means of the UNFCCC website it has been checked whether the latest applicable MR template CDM-PoA-MR-FORM has been used.</p> <p>Further it has been checked whether the latest instructions for filling out the MR template have been followed. Every section has been checked against the respective guidance.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"><li>• /MR/</li><li>• /MRT/</li><li>• /unfccc/</li></ul>	
Findings	<input checked="" type="checkbox"/>	The latest reporting template CDM-PoA-MR-FORM as listed on the UNFCCC website has been used for the Monitoring Report to be uploaded.
	<input type="checkbox"/>	The latest instructions for filling out the MR have been followed. No adverse finding has been identified in the course of this verification.
	<input type="checkbox"/>	<p>The respective requirements have widely been complied with; however; the following issues needed to be addressed in this context:</p> <div></div>
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	The verification team has checked all sections of the PoA MR and confirms by means of comparing the MR that the standardized MR template has been applied.	

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

>>

During the validation, the validating DOE might have raised issues that could not be closed or resolved during the validation stage. For this purpose FARs might have been raised.

In the course of this verification the latest version of the PoA-DD<sup>/PDD/</sup> and the validation report<sup>/VAL/</sup>, has been checked in order to identify any remaining forward action requests. For the current monitoring period the following applies:

- (i) Open issues from validation:

<input checked="" type="checkbox"/>	There were no open issues which have been addressed in the latest version of the validation report.
<input type="checkbox"/>	All open issues from the validation have been appropriately addressed in the context of previous verifications.
<input type="checkbox"/>	All issues related to the validation have been appropriately addressed in the course of the current monitoring period (for details please refer to appendix 4)
<input type="checkbox"/>	The following issues related to the validation have <b>not</b> yet been appropriately addressed (for details please refer to appendix 4):
	- N/A

(ii) Open issues from previous verifications:

<input type="checkbox"/>	N/A – as this is the first monitoring period for this CDM project activity.
<input checked="" type="checkbox"/>	There were no open issues which have been addressed in the previous verification report
<input type="checkbox"/>	All issues related to the previous verification have been appropriately addressed in the course of the current monitoring period (for details please refer to appendix 4)
<input type="checkbox"/>	The following issues related to the previous verification have <b>not</b> yet been appropriately addressed (for details please refer to appendix 4):
	- N/A

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

<b>Title and UNFCCC reference number of the CPA included in the PoA as of the end of this monitoring period</b>	<b>Is the CPA considered for this verification? (yes/no)</b>	<b>The date when the CPA was included</b>	<b>Version of the PoA-DD</b>	<b>Confirmation that a request for issuance including the CPA has been published for the previous monitoring period (Y/N)</b>
MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia –CPA No.001: XacBank LLC 8142-0001	No	12/11/2012	2.2	Y
MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia –CPA No.001: XacBank LLC 8142-0002	Yes	08/03/2016	2.2	Y

MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia –CPA No.001: XacBank LLC 8142-0003	Yes	08/03/2016	2.2	Y
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## E.2. Programme of activities

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

<b>Means of verification</b>	<p>By means of an in-depth review of the PoA-DD/<sup>PoA-DD/</sup> in its latest form – as downloaded from the UNFCCC project site - and the checks carried out during the on-site visits, an assessment has been carried out whether the project has been implemented and operated in line with the latest approved version of the PoA-DD and whether all physical features of the project are in place. The following has been checked: implemented technology, project equipment as well as monitoring and metering equipment.</p> <p>Further it has been checked if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period.</p> <p>Interviews with operational personnel have been carried out, management system records; maintenance records, survey and related monitoring procedures were checked in this context.</p> <p>Special focus has further been laid to determine whether a potential phase wise implementation has occurred within the crediting period or any delays with respect to the starting dates have occurred.</p> <p>Further it has been checked whether any observed deviations from the registered project design have been correctly addressed as PRCs.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /PoA-DD/</li> <li>• /CPA-DD/</li> <li>• /MR/</li> <li>• /VVS/</li> <li>• /XLS/</li> <li>• /unfccc/</li> <li>• /IM/</li> </ul>	
<b>Findings</b>	<input checked="" type="checkbox"/>	The project has been implemented as described in the latest version of the PoA-DD as well as in section B.1 of the monitoring report. No deviations thereof have been identified in the course of this verification.
	<input checked="" type="checkbox"/>	The following deviations from the registered / approved project design and or the project description in the MR have been identified in the course of this verification (for further details please refer to section E.4): - N/A
	<input type="checkbox"/>	In this context the following CARs, CLs have been raised:
	<i>In case of phased implementation:</i>	
	<input checked="" type="checkbox"/>	N/A
	<input type="checkbox"/>	The phased implementation has correctly and in sufficient detail been described in the latest version of the PoA-DD.
	<input type="checkbox"/>	The description in the MR differs in content or the level of detail from the latest version of the PoA-DD. However, the description in the MR is correct and reflects the situation during the site inspection.
	<input type="checkbox"/>	The project description in the PoA-DD/MR is not deemed sufficient. The detailed implementation timeline is as follows:

		N/A
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		During the verification an onsite visit was carried out. On the basis of this site visit and the reviewed project documentation it can be confirmed that w.r.t. the realized technology, the project equipment, as well as the monitoring equipment, the project has been implemented and operated as described in the approved PoA-DD and CPA-DD, version 2.2.

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

<b>Means of verification</b>	<p>By means of review of the final PoA DD, validation report, previous verification report followed by an onsite inspection and interview with the CME, CPA implementer including personnel involved in the PoA, verification team observed that, the operation of the management system of the PoA is carried out as per the registered PoA design.</p> <p>It has been further checked by means of interview with the local partner/XAC-Bank of the PoA, CME and CPA implementer on their training and competency to carry out the operation of the management system, and found it satisfactory.</p> <p>Several training records<sup>/TRNG/</sup> submitted by CME including training on record keeping, data entry, data management, data protection, awareness etc. have also been checked during the course of verification process. A clear operation and management structure have been observed during the onsite visit and interview. The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /PoA-DD/</li> <li>• /CPA-DD/</li> <li>• /VAL/</li> <li>• /VER/</li> <li>• /MR/</li> <li>• /VVS/</li> <li>• /XLS/</li> <li>• IM</li> <li>• /TRNG/</li> </ul>
<b>Findings</b>	No CARs/CLs have been raised in this context. No correction was required in the context.
<b>Conclusion</b>	The management system is implemented as per the registered PoA-DD & CPA-DD

### E.2.3. Post-registration changes

- ☒ By means of site visit, document check and interview it could be verified that the project is implemented and operated in line with the registered PoA-DD and the applied methodology.
- ☐ Post registration changes have been identified and are assessed in detail in the subsequent steps.

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

>>

It has been checked whether Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM) have been applied during this monitoring period. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM).have been submitted to the
-------------------------------------	--

UNFCCC prior to the current monitoring period.			
<input type="checkbox"/>	The following TDfrMP or TDfMM have been approved or are under approval by the UNFCCC		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.: )
		Appr.date	
		Ref. No.	
	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.: )
		Appr.date	
Ref.No.			
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a TDfrMP or TDfMM has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
<input type="checkbox"/>	An approval of the following TDfrMP or TDfMM is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.		
	1	Issue:	
<input type="checkbox"/>	The following TDfrMP or TDfMM for which appendix 1 of the PS is applicable have been applied:		
	1	Issue:	
	2	Issue:	

**E.2.3.2. Corrections**

&gt;&gt;

It has been checked whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	During the verification of the current MP no need for corrections has been identified.		
<input type="checkbox"/>	The following corrections have been applied:		
	1	Issue:	
	2	Issue:	
	The CPA-DD has been revised accordingly:		
	Revision date:		
	It is confirmed that the updated / corrected information is an accurate reflection of the actual project information and that the corrected parameters are in accordance with the applied methodology and the monitoring plan.		
	<input type="checkbox"/> A related post registration change has been submitted prior to the issuance request. The approval has been received on DD/MM/YYYY via approval number PRC-XXXX-00Z. <input type="checkbox"/> A related post registration change is submitted along with this issuance request. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.		

**E.2.3.3. Inclusion of a monitoring plan**

&gt;&gt;



<input checked="" type="checkbox"/>	N/A - as this monitoring plan was part of the registered PoA-DD /CPA-DD
<input type="checkbox"/>	In line with PS § 281 or § 282 the PP has forwarded a monitoring plan to the DOE for validation. No prior approval of the monitoring plan was required as the PP in line with PS § 282 wished to submit the monitoring plan together with the request for issuance for the first monitoring period. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.
<input type="checkbox"/>	In line with § 282 the PP submitted a monitoring plan prior to the submission of the request for issuance for validation to the DOE. A DOE has assessed the monitoring plan in line with related VVS requirements and submitted a related PRC report for prior approval. The approval has been received on DD/MM/YYYY via approval number

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

&gt;&gt;

It has been checked whether any permanent changes from the registered monitoring plan (PCfrMP) or applied methodologies (PCfMM) including standardized baselines (PCfSB) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No PCfrMP, PCfMM or PCfSB have been submitted to the UNFCCC prior to the current monitoring period		
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB have been approved or are under approval by the UNFCCC		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr.date	
		Ref. No.	
	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr.date	
		Ref.No.	
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a PCfrMP, PCfMM or PCfSB has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
<input type="checkbox"/>	An approval of the following PCfrMP, PCfMM or PCfSB is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB for which appendix 1 of the PS is applicable have been applied:		
	1	Issue:	
	2	Issue:	

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

&gt;&gt;

It has been checked whether any changes to the project design (CoPD) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No CoPD has been submitted to the UNFCCC prior to the current monitoring period		
<input type="checkbox"/>	The following CoPD have been approved or are under approval by the UNFCCC		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr.date	
		Ref. No.	
	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr.date	
		Ref.No.	
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a CoPD has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
<input type="checkbox"/>	An approval of the following CoPD.is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following CoPD for which appendix 1 of the PS is applicable have been applied:		
	1	Issue:	
	2	Issue:	

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

>>

NA

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

>>

<input checked="" type="checkbox"/>	N/A - as this registered PoA is not an afforestation and reforestation activity
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### E.3. Component project activities

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

<b>Means of verification</b>	CPA-8142-0002 & CPA-8142-0003 are involved in disseminating of efficient cooking and stoves of high efficiency more than specified efficiency of 20% and replacing inefficient “ger” insulation by efficient ones in Ulaanbaatar region of Mongolia. These technologies reduce the coal consumption (as primary fuel). All monitoring parameters are assessed to be monitored as per the registered monitoring plan included in the CPA-DD and registered PoA-DD version 2.2.
<b>Findings</b>	NA

<b>Conclusion</b>	The CPA-8142-0002 & CPA-8142-0003 have been implemented as described in the CPA design document and registered PoA-DD downloaded from the PoA webpage of UNFCCC website and onsite observation by the verification team. It is also found to be implemented in line with the applied methodology AMS-II.E. version 10.
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### E.3.2. Post-registration changes

- ☒ By means of site visit, document check and interview it could be verified that the project is implemented and operated in line with the registered CPA-DDs and the applied methodology.
- ☐ Post registration changes have been identified and are assessed in detail in the subsequent steps.

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

>>

The result is summarized in the table below.

<input checked="" type="checkbox"/>	No Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM) have been submitted to the UNFCCC prior to the current monitoring period.		
<input type="checkbox"/>	The following TDfrMP or TDfMM have been approved or are under approval by the UNFCCC		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.: )
		Appr.date	
		Ref. No.	
	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.: )
		Appr.date	
		Ref.No.	
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a TDfrMP or TDfMM has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
<input type="checkbox"/>	An approval of the following TDfrMP or TDfMM is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following TDfrMP or TDfMM for which appendix 1 of the PS is applicable have been applied:		
	1	Issue:	

#### E.3.2.2. Corrections

>>

It has been checked whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	During the verification of the current MP no need for corrections has been identified.
<input type="checkbox"/>	The following corrections have been applied:

1	Issue:	
2	Issue:	
N/A		
N/A		
<input type="checkbox"/> A related post registration change has been submitted prior to the issuance request. The approval has been received on DD/MM/YYYY via approval number PRC-XXXX-00Z.		
<input type="checkbox"/> A related post registration change is submitted along with this issuance request. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.		

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

&gt;&gt;

NA

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

&gt;&gt;

<input checked="" type="checkbox"/>	N/A - as this monitoring plan was part of the included CPA-DD
<input type="checkbox"/>	In line with PS § 281 or § 282 the PP has forwarded a monitoring plan to the DOE for validation. No prior approval of the monitoring plan was required as the PP in line with PS § 282 wished to submit the monitoring plan together with the request for issuance for the first monitoring period. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.
<input type="checkbox"/>	In line with § 282 the PP submitted a monitoring plan prior to the submission of the request for issuance for validation to the DOE. A DOE has assessed the monitoring plan in line with related VVS requirements and submitted a related PRC report for prior approval. The approval has been received on DD/MM/YYYY via approval number

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

&gt;&gt;

It has been checked whether any permanent changes from the registered monitoring plan (PCfrMP) or applied methodologies (PCfMM) including standardized baselines (PCfSB) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No PCfrMP, PCfMM or PCfSB have been submitted to the UNFCCC prior to the current monitoring period		
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB have been approved or are under approval by the UNFCCC		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr.date	
		Ref. No.	
	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved

	Appr.date	
	Ref.No.	
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a PCfrMP, PCfMM or PCfSB has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA	
<input type="checkbox"/>	An approval of the following PCfrMP, PCfMM or PCfSB is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.	
	1	Issue:
	2	Issue:
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB for which appendix 1 of the PS is applicable have been applied:	
	1	Issue:
	2	Issue:

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

&gt;&gt;

It has been checked whether any changes to the project design (CoPD) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No CoPD has been submitted to the UNFCCC prior to the current monitoring period	
<input type="checkbox"/>	The following CoPD have been approved or are under approval by the UNFCCC	
	1	Title
		Status <input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr.date
		Ref. No.
	2	Title
		Status <input type="checkbox"/> under approval; <input type="checkbox"/> approved
		Appr.date
		Ref.No.
<input checked="" type="checkbox"/>	During the verification of the current MP no need for a CoPD has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA	
<input type="checkbox"/>	An approval of the following CoPD is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.	
	1	Issue:
	2	Issue:
<input type="checkbox"/>	The following CoPD for which appendix 1 of the PS is applicable have been applied:	
	1	Issue:
	2	Issue:

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

&gt;&gt;

<input checked="" type="checkbox"/>	N/A - as this registered PoA is not an afforestation and reforestation activity
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### E.3.3. Compliance of the registered monitoring plan with the methodology including applicable tool(s) and standardized baseline

<b>Means of verification</b>	By means of comparison of the MR with (i) the applied CDM methodology (ii) all applicable CDM Meth tools and (iii) if applicable, a standardized baseline the verification team has checked whether the Monitoring Plan (MP) is in compliance with the MP related requirements of the applied methodology/tools/SB. The following sources of information have been used in this context: <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /AMS II.E/</li> <li>• /unfccc/</li> </ul>			
<b>Findings</b>	<input checked="" type="checkbox"/>	The MP is completely in accordance with the approved methodology applied by the CDM PoA project (last registered/approved version of the PoA-DD)		
	<input checked="" type="checkbox"/>	The breakdown of MP accordance of the referenced guidelines is as follows:		
		1	Title (of the guideline)	
			MP compliance	<input type="checkbox"/> full compliance <input type="checkbox"/> findings have been raised <input checked="" type="checkbox"/> N/A (for MP)
		2	Title (of the tool)	[Name_SB]
			Version	[Version_SB]
			MP compliance	<input type="checkbox"/> full compliance <input type="checkbox"/> findings have been raised <input checked="" type="checkbox"/> N/A
	<input type="checkbox"/>	The breakdown of MP accordance of the applicable SB is as follows:		
		1	Title (of the SB)	Name of SB
			Version	
		MP compliance		
<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:			
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.		
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.		
	The applied methodology is consistent with the versions on the UNFCCC website. No tools have been applied. No standardised baseline is applied.			

### 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

<b>Means of verification</b>	By means of comparison of the MR and the ER calculation with the latest version of the registered PoA-DD the verification team has checked whether all parameters fixed ex-ante have been applied correctly.  Further it has been checked whether the GWP for the respective period have been correctly applied.  The following sources of information have been used in this context: <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /XLS/</li> <li>• /PoA-DD/</li> <li>• /CPA-DD/</li> </ul>
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	<ul style="list-style-type: none"> <li>• /PS/</li> <li>• /VVS/</li> <li>• /unfccc/</li> </ul>	
<b>Findings</b>	<input checked="" type="checkbox"/>	The MR and the ER calculation have considered the parameters fixed ex-ante correctly, no deviations have been observed.
	<input type="checkbox"/>	The following deviations from the parameters fixed ex-ante or at renewal of crediting period have been identified in the course of this verification: - N/A
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:  For details please refer to appendix 5
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out.
	The data and parameters listed in the section G.1 of MR was cross checked with the applied methodology, registered CPA-DD, and are found to be consistent.	

**E.3.4.2. Data and parameters monitored**

<b>Means of verification</b>	During the verification, all relevant monitoring parameters (as listed in chapter B.7.1 of the PoA-DD and D.7.1 of the CPA-DD) have been verified with regard to the (i) appropriateness of the applied measurement / determination method, (ii) the correctness of the values applied for ER calculation, (iii) the accuracy, and applied QA/QC measures. The results as well as the verification procedure are described parameter-wise in the project specific verification checklist (Appendix 5).	
<b>Findings</b>	CAR E1	
<b>Conclusion</b>	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	During the verification, all relevant monitoring parameters (as listed in chapter B.7.1 of the registered CPA-DD) have been verified with regard to the appropriateness of the applied measurement / determination method, the correctness of the values applied for ER calculation, the accuracy, and applied QA/QC measures. The results as well as the verification procedure are described parameter-wise in the project specific verification checklist (Appendix 5). After appropriate corrections were carried out by the project participant it can be confirmed that all monitoring parameters have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements.	

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

<b>Means of verification</b>	The verification team have assessed whether the PPs have applied a sampling approach to determine the monitored values. Further it has been checked whether the PPs have correctly applied the implemented sampling plan including (i) description of the implemented sampling design (ii) collected data (iii) analysis of collected data (iv) demonstration on whether the required confidence/precision has been met. The following sources of information have been used in this context: <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /XLS/</li> <li>• /PoA-DD/</li> <li>• /CPA-DD/</li> </ul>
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		<ul style="list-style-type: none"> <li>• /HES/</li> <li>• /SSCL/</li> <li>• /ANN-10/</li> <li>• /REGG/</li> <li>• /Annex-8/</li> <li>• /CPA-DD/.</li> </ul>							
Findings	<input type="checkbox"/>	The PPs have not applied sampling approaches for the parameters monitored.							
	<input checked="" type="checkbox"/>	The PPs have applied sampling approaches for the following parameters monitored.							
		1	<table border="1"> <tr> <td>Parameter:</td><td><b>POF</b></td></tr> <tr> <td>Name:</td><td>Product Operation Fraction – Fraction of CEP installations which are in use and operational. This parameter is used to determine the share of distributed products that are still operating, measured ex-post through survey/ user feedback</td></tr> <tr> <td>Description on how the sampling efforts and survey comply with the validated sampling plan:</td><td> <p>The value is derived from the Household Energy Survey (HES) (Household Energy Survey Data Analysis) report, which is performed by an independent project consultant. The project development officer fills the stove status into the tracker database once has been informed by on-site monitoring staff and android system.</p> <p>As per the registered monitoring plan the POF is required to be monitored at least every 2 years. However, CME/PP is monitoring the same on annual basis.</p> <p>Samples exceeded calculated minimum sample size for 90/10 confidence/precision.</p> </td></tr> </table>	Parameter:	<b>POF</b>	Name:	Product Operation Fraction – Fraction of CEP installations which are in use and operational. This parameter is used to determine the share of distributed products that are still operating, measured ex-post through survey/ user feedback	Description on how the sampling efforts and survey comply with the validated sampling plan:	<p>The value is derived from the Household Energy Survey (HES) (Household Energy Survey Data Analysis) report, which is performed by an independent project consultant. The project development officer fills the stove status into the tracker database once has been informed by on-site monitoring staff and android system.</p> <p>As per the registered monitoring plan the POF is required to be monitored at least every 2 years. However, CME/PP is monitoring the same on annual basis.</p> <p>Samples exceeded calculated minimum sample size for 90/10 confidence/precision.</p>
		Parameter:	<b>POF</b>						
		Name:	Product Operation Fraction – Fraction of CEP installations which are in use and operational. This parameter is used to determine the share of distributed products that are still operating, measured ex-post through survey/ user feedback						
Description on how the sampling efforts and survey comply with the validated sampling plan:	<p>The value is derived from the Household Energy Survey (HES) (Household Energy Survey Data Analysis) report, which is performed by an independent project consultant. The project development officer fills the stove status into the tracker database once has been informed by on-site monitoring staff and android system.</p> <p>As per the registered monitoring plan the POF is required to be monitored at least every 2 years. However, CME/PP is monitoring the same on annual basis.</p> <p>Samples exceeded calculated minimum sample size for 90/10 confidence/precision.</p>								
2	<table border="1"> <tr> <td>Parameter:</td><td><b>C<sub>y,new,CEP-i</sub></b></td></tr> <tr> <td>Name:</td><td>Quantity of coal used in the project scenario for CEP-I installation, weighted average if multiple clusters of CEP, for target groups in Ger Area homes</td></tr> <tr> <td>Description on how the sampling efforts and survey comply with the validated sampling plan:</td><td> <p>C<sub>y,new,CEP-i</sub> represents the quantity of coal used in the heating season in the project scenario for CEP-i installation, weighted average if multiple clusters of CEP for target groups in Ger Area homes.</p> <p>Calculation of C<sub>y,new,CEP-i</sub> is the quantity of each unit used multiplied by the quantity of coal in each unit, as demonstrated below.</p> <p><b>Household Coal consumption per season (ton) = # 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)</b></p> <p>Coal consumption across the heating season is the sum of coal consumption in Autumn, Winter, and Spring. C<sub>y,new,CEP-i</sub> is calculated by taking the mean value of coal consumption for the heating season for the sampling frame. C<sub>y,new,CEP-i</sub> meets 90/10 confidence precision for each sampling frame.</p> </td></tr> </table>	Parameter:	<b>C<sub>y,new,CEP-i</sub></b>	Name:	Quantity of coal used in the project scenario for CEP-I installation, weighted average if multiple clusters of CEP, for target groups in Ger Area homes	Description on how the sampling efforts and survey comply with the validated sampling plan:	<p>C<sub>y,new,CEP-i</sub> represents the quantity of coal used in the heating season in the project scenario for CEP-i installation, weighted average if multiple clusters of CEP for target groups in Ger Area homes.</p> <p>Calculation of C<sub>y,new,CEP-i</sub> is the quantity of each unit used multiplied by the quantity of coal in each unit, as demonstrated below.</p> <p><b>Household Coal consumption per season (ton) = # 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)</b></p> <p>Coal consumption across the heating season is the sum of coal consumption in Autumn, Winter, and Spring. C<sub>y,new,CEP-i</sub> is calculated by taking the mean value of coal consumption for the heating season for the sampling frame. C<sub>y,new,CEP-i</sub> meets 90/10 confidence precision for each sampling frame.</p>		
Parameter:	<b>C<sub>y,new,CEP-i</sub></b>								
Name:	Quantity of coal used in the project scenario for CEP-I installation, weighted average if multiple clusters of CEP, for target groups in Ger Area homes								
Description on how the sampling efforts and survey comply with the validated sampling plan:	<p>C<sub>y,new,CEP-i</sub> represents the quantity of coal used in the heating season in the project scenario for CEP-i installation, weighted average if multiple clusters of CEP for target groups in Ger Area homes.</p> <p>Calculation of C<sub>y,new,CEP-i</sub> is the quantity of each unit used multiplied by the quantity of coal in each unit, as demonstrated below.</p> <p><b>Household Coal consumption per season (ton) = # 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)</b></p> <p>Coal consumption across the heating season is the sum of coal consumption in Autumn, Winter, and Spring. C<sub>y,new,CEP-i</sub> is calculated by taking the mean value of coal consumption for the heating season for the sampling frame. C<sub>y,new,CEP-i</sub> meets 90/10 confidence precision for each sampling frame.</p>								



	3	Parameter:	$C_{y\_old,CEPi}$
		Name:	Quantity of coal used in the baseline cluster (installation cluster CEP (i) may represent baseline for single or multiple CEP installations, thus addressing cross-effects).
		Description on how the sampling efforts and survey comply with the validated sampling plan:	<p>The quantity of coal used is determined for the following 6 sample frames for the applied monitoring period as follows:</p> <ul style="list-style-type: none"> <li>• Frame 1: Stove in house dwelling type, located in Songinokhairkhan district</li> <li>• Frame 2: Stove in house dwelling type, located in Bayangol district</li> <li>• Frame 3: Stove in house dwelling type, located in other district</li> <li>• Frame 4: Stove in ger dwelling type, located in Songinokhairkhan district</li> <li>• Frame 5: Stove in ger dwelling type, located in Bayangol district</li> <li>• Frame 6: Stove in ger dwelling type, located in other district</li> </ul> <p>The value is derived from a 3<sup>rd</sup> party survey report. i.e. Household Energy Survey (HES)<sup>/HES/</sup> (Household Energy Survey Data Analysis) report. The survey has been carried out by using “simple random sampling” and taking dwelling type and the level of precision of 90/10 into account. Regression Model has been also applied in order to calculate the parameter– ‘Baseline Coal Consumption Regression Model’</p>
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR Gen-1. Please refer Appendix 4 for details.	
<b>Conclusion</b>	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.	
	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.	
	Implementation of sampling plan as observed during onsite visit and documents verification, is in line with the applied monitoring methodology and registered monitoring plan.		

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

<b>Means of verification</b>	<p>This PoA involves the distribution of clean energy products as efficient heating devices in the Ulaanbaatar region in Mongolia, where the majority of households were using inefficient fuel intensive heating stoves. Measurements required for monitoring does not directly require equipment and its calibration in the PP's hand. For stove efficiency test<sup>/ANNEX-4/</sup>, a third party Government body did the Water Boiling test for the thermal efficiency of deployed CEP. The same is checked and reviewed during the verification.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /XLS/</li> <li>• /PoA-DD/</li> <li>• /PoA-DD/</li> <li>• /AMS. II.E/</li> <li>• /ANNEX-4/</li> </ul>
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<b>Findings</b>	<input type="checkbox"/>	Based on the details listed in appendix 6 the verification team can confirm that all installed monitoring equipment has been duly calibrated for this entire monitoring period.
	<input type="checkbox"/>	Based on the assessment and information as per appendix 6 delay(s) in calibration have been identified. The PP has applied the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration. From the related calibration certificates and emission reduction calculation the verification team confirms that the maximum permissible error has been applied in a conservative manner so that the adjusted measured values due to the delayed calibration result in fewer claimed emission reductions. For details please refer to appendix 6
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: N/A
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		This CPA is not involved in installation of monitoring equipment which requires calibration, however, based on assessment of documents, HES report and data maintenance and recording procedures, it can be concluded that recording of all the data related to monitoring is appropriate and accurate.

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

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

<b>Means of verification</b>		<p>During the verification the calculation of baseline GHG emissions has been checked. In detail the following has been verified:</p> <ul style="list-style-type: none"> <li>• Transparency: It has been checked whether the calculation of baseline emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae.</li> <li>• Parameter consistency: It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spread sheet.</li> <li>• Correctness: It has been checked whether the applied formulae and methods for calculating baseline emissions are in accordance with the monitoring plan and the approved methodology.</li> <li>• Completeness: It has been checked whether all calculations are complete and without omissions.</li> </ul> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR//</li> <li>• /ANN-1/</li> <li>• /XLS/</li> <li>• /HES/</li> </ul>
<b>Findings</b>	<input checked="" type="checkbox"/>	The calculation of the baseline emissions was found to be fully compliant with the above stated principles. The calculations of baseline GHG emissions or baseline net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.
	<input type="checkbox"/>	The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR E1
<b>Conclusion</b>	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.

	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 5.
		Where corrections were required a revised calculation was prepared by the PPs and presented to the verification team. All raised issues were addressed appropriately so that it can be confirmed that the baseline calculation is overall correct.

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

<b>Means of verification</b>		<p>During the verification the calculation of project GHG emissions has been checked. In detail the following has been verified:</p> <ul style="list-style-type: none"> <li>• Transparency: It has been checked whether the calculation of project emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae.</li> <li>• Parameter consistency: It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spread sheet.</li> <li>• Correctness: It has been checked whether the applied formulae and methods for calculating project emissions are in accordance with the monitoring plan and the approved methodology.</li> <li>• Completeness: It has been checked whether all calculations are complete and without omissions.</li> </ul> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>• /MR/</li> <li>• /AMS II.E/</li> <li>• /XLS/</li> <li>• /HES/.</li> </ul>
<b>Findings</b>	<input checked="" type="checkbox"/>	<p>The calculation of the project emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of project GHG emissions or actual net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p>
	<input checked="" type="checkbox"/>	The verification team has identified mistakes in the project emissions calculation or the underlying calculation approaches.
	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR E1, please refer Appendix-4
<b>Conclusion</b>	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	<p>The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.</p> <p>Where corrections were required a revised calculation was prepared by the PPs and presented to the verification team. All raised issues were addressed appropriately so that it can be confirmed that the baseline calculation is overall correct.</p>

### E.3.5.3. Calculation of leakage GHG emissions

<b>Means of verification</b>		<p>During the verification the calculation of project GHG emissions has been checked. In detail the following has been verified:</p> <ul style="list-style-type: none"> <li>• Transparency: It has been checked whether the calculation of project emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae.</li> <li>• Parameter consistency: It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spreadsheet.</li> <li>• Correctness: It has been checked whether the applied formulae and methods for calculating project emissions are in accordance with the monitoring plan and the approved methodology.</li> </ul>
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	<ul style="list-style-type: none"> <li>Completeness: It has been checked whether all calculations are complete and without omissions.</li> </ul> <p>As per the small scale methodology AMS-II. E version 10.0 paragraph 07, "If the energy efficiency technology is equipment transferred from another activity or if the existing equipment is transferred to another activity, leakage is to be considered"</p> <p>As verified during onsite audit and interview with the PO, XacBank, there are no equipment transfer from another activity and they 100% replace the old stove with new and end user hand over their old stove at the time new stove installation which in turn given/sold to a recycling company. The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> <li>/MR/</li> <li>/AMS II.E/</li> <li>/IM/</li> <li>/XLS/.</li> </ul>						
<b>Findings</b>	<table border="1"> <tr> <td><input checked="" type="checkbox"/></td><td> <p>The calculation of the project emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of project GHG emissions or actual net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information have been identified.</p> </td></tr> <tr> <td><input type="checkbox"/></td><td>The verification team has identified mistakes in the project emissions calculation or the underlying calculation approaches.</td></tr> <tr> <td><input type="checkbox"/></td><td>In this context the following CARs, CLs, FARs have been raised:</td></tr> </table>	<input checked="" type="checkbox"/>	<p>The calculation of the project emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of project GHG emissions or actual net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information have been identified.</p>	<input type="checkbox"/>	The verification team has identified mistakes in the project emissions calculation or the underlying calculation approaches.	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:
<input checked="" type="checkbox"/>	<p>The calculation of the project emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of project GHG emissions or actual net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information have been identified.</p>						
<input type="checkbox"/>	The verification team has identified mistakes in the project emissions calculation or the underlying calculation approaches.						
<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:						
<b>Conclusion</b>	<table border="1"> <tr> <td><input checked="" type="checkbox"/></td><td>No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</td></tr> <tr> <td><input type="checkbox"/></td><td>The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.</td></tr> </table> <p>As stated in the registered PoA-DD, leakage may be considered if the displaced baseline stove is not dismantled or if it is put to a secondary purpose that does not involve cooking or heating. The PoA aims to dismantle 100% of old stoves.</p> <p>As per the assessment of House Hold Energy Survey report which was found included with a survey question asking respondents about the fate of the previous stove which was found confirmed during onsite visit that all the households reported that they gave up their stove at installation. The same is also in line with stove dismantling procedure<sup>/Annex-6/</sup> in the registered PoA-DD.</p>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.		
<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.						
<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.						

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

<b>Means of verification</b>	<p>The verification team has checked if the MR includes a summary table of the emission reductions calculation specifying separately</p> <ul style="list-style-type: none"> <li>Total baseline emissions,</li> <li>Total project emissions,</li> <li>Total leakage,</li> <li>Total emission reductions.</li> </ul> <p>It has been assessed whether the values are correct or need to be revised as a consequence of issues identified above.</p>								
<b>Findings</b>	<table border="1"> <tr> <td><input checked="" type="checkbox"/></td><td>Section H.4 of the MR includes in a summary table of the emission reductions calculation.</td></tr> <tr> <td><input checked="" type="checkbox"/></td><td>The summary table specified the total baseline, project and leakage emissions as well as the total emission reductions separately.</td></tr> <tr> <td><input type="checkbox"/></td><td>The values as specified in the ER summary table are correct; no issues have been identified during the verification which requires changes in the ER calculation.</td></tr> <tr> <td><input checked="" type="checkbox"/></td><td>During the verification issues with impact on the ER calculation have been identified.</td></tr> </table>	<input checked="" type="checkbox"/>	Section H.4 of the MR includes in a summary table of the emission reductions calculation.	<input checked="" type="checkbox"/>	The summary table specified the total baseline, project and leakage emissions as well as the total emission reductions separately.	<input type="checkbox"/>	The values as specified in the ER summary table are correct; no issues have been identified during the verification which requires changes in the ER calculation.	<input checked="" type="checkbox"/>	During the verification issues with impact on the ER calculation have been identified.
<input checked="" type="checkbox"/>	Section H.4 of the MR includes in a summary table of the emission reductions calculation.								
<input checked="" type="checkbox"/>	The summary table specified the total baseline, project and leakage emissions as well as the total emission reductions separately.								
<input type="checkbox"/>	The values as specified in the ER summary table are correct; no issues have been identified during the verification which requires changes in the ER calculation.								
<input checked="" type="checkbox"/>	During the verification issues with impact on the ER calculation have been identified.								

	<input checked="" type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: CAR E1. Please refer Appendix-4 for details
<b>Conclusion</b>	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 5.
	Where corrections were required a revised calculation was prepared by the PPs and presented to the verification team. All raised issues were addressed appropriately so that it can be confirmed that the emission reduction calculation is overall correct.	

Specific-case CPA reference number	Baseline emissions or baseline net GHG removals by sinks (tCO <sub>2</sub> e)	Project emissions or actual net GHG removals by sinks (tCO <sub>2</sub> e)	Leakage (tCO <sub>2</sub> e)	GHG emission reductions or net GHG removals by sinks (tCO <sub>2</sub> e) achieved in the monitoring period		
				Up to 31/12/2012	From 01/01/2013	Total amount
CPA 8142-0002	136,929	93,770	0	0	43,158	43,158
CPA 8142-0003	6,786	4,192	0	0	2,593	2,593
<b>Total</b>	143,715	97,962	0	0	45,751	45,751

A year wise accrued emission by per CPA is presented in tale below:

Project Activity	ER <sub>y</sub> (tCO <sub>2</sub> e)		
	2017	2018	Total
CPA # 0002	24,207	18,951	43,158
CPA # 0003	1,454	1,139	2,593
<b>Total</b>	25,661	20,090	45,751

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

<b>Means of verification</b>	The verification team has checked if the MR includes a comparison of actual values of the monitoring period with the estimations in the registered PoA-DD. It has further checked which of the below listed cases is applicable for the calculated ER of the current monitoring period.	
<b>Findings</b>	<input checked="" type="checkbox"/>	Case 1: The ex-ante estimated value was found to be proportionally higher than the ex-post determined value. No further action is deemed required.
	<input type="checkbox"/>	Case 2: The ex-ante estimated value fits very good to the actually monitored value. No further justification is deemed required.
	<input type="checkbox"/>	Case 3: The ex-ante estimated value was found to be proportionally lower than the ex-post determined value.
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.

	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		Comparison of GHG emission reductions from the estimated value in the CPA-DD and the current monitoring period is sufficiently and transparently provided which is assessed to be in line with CDM PS and MR filling guideline.

Title and UNFCCC reference number of the CPA	Value estimated in ex ante calculation in the included CPA-DD(s)	Actual values achieved by the CPAs during this monitoring period
MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia – CPA No.001: XacBank LLC 8142-0003	50,133 tCO <sub>2</sub> e	43,158 tCO <sub>2</sub> e
MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia – CPA No.001: XacBank LLC 8142-0003	50,133 tCO <sub>2</sub> e	2,593 tCO <sub>2</sub> e
<b>Total</b>	100,266 tCO <sub>2</sub> e	45,751 tCO <sub>2</sub> e

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

<b>Means of verification</b>	On the basis of the above comparison of actual values of the monitoring period with the estimations in the registered PoA-DD (E.8.5) the verification team has checked whether (in case 3) an appropriate explanation is included in the MR.	
<b>Findings</b>	<input checked="" type="checkbox"/>	No further justification or explanation is deemed required as actual emissions of this MP do not exceed significantly the ex-ante calculated emission reductions (applicable for case 1 and 2).
	<input type="checkbox"/>	For case 3: The PP has provided a related justification in the MR. The reasons for the increase are as follows: - N/A
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:
<b>Conclusion</b>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		Emissions reductions achieved during the monitoring period are lower than the values estimated in the ex-ante calculation of registered CPA-DD for the stoves and GER Blankets.

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

<b>Means of verification</b>	NA
<b>Findings</b>	
<b>Conclusion</b>	

#### E.3.7. Global stakeholder consultation

<b>Means of verification</b>	By means on PoA web page assessment and verification, no comments from the Global Stakeholders were received during the webhosting period.
<b>Findings</b>	NA
<b>Conclusion</b>	No comments received during the GSC period.

**SECTION F. Internal quality control**

Before the submission of the final verification report a technical review of the whole verification procedure was carried out. Each member of the technical review team is a competent GHG auditor. At least one person of the technical review team is being appointed for the scope this project falls under. Thus, the technical review team collectively has all knowledge and skills to conduct a technical review. The technical reviewers are not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the verification opinion and the topic specific assessments as prepared by the verification team leader may have been confirmed or revised. Furthermore, reporting improvements might have been achieved.

After the successful technical review an overall (esp. procedural) assessment of the complete verification has been carried out by a senior assessor located in the accredited premises of TÜV NORD.

After this step, the submission for requesting for issuance is conducted.

**SECTION G. Verification opinion**

MicroEnergy Credits (MEC), has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 4<sup>th</sup> periodic verification of the CDM PoA:

**“MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia”,**

The project reduces GHG emissions due to: i) the using of inefficient stove for heating and cooking and ii) the inefficient Ger insulation, by installing and maintaining energy efficient products at household level. The same was observed and cross verified from the corresponding documents by the Verification Team during onsite verification audit. This verification covers the period from 01/05/2017 to 30/04/2018 (including both days).

This verification covers the emission reductions achieved by CPA-8142-0002 & CPA-8142-0003 in its corresponding monitoring period:

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated project design document.
- the monitoring plan is in accordance with the applied approved CDM methodology, i.e., AMS-II.E. -ver. 10
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring system is in place and functional. The project has generated GHG emission reductions,
- the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.

TÜV NORD JI/CDM CP further confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:

Emission reductions: **45,751 tCO<sub>2</sub>e**

**SECTION H. Certification statement**

As a duly accredited DOE, TÜV NORD CERT confirms that the CDM PoA

**“MicroEnergy Credits - Microfinance for Clean Energy Product Lines - Mongolia”**

registered under UNFCCC-No.: POA 8142

has achieved emission reductions in accordance with all applicable requirements for registered CDM project activities during the current monitoring period

MP-No.: 04  
 from: 01/05/2017  
 to: 30/04/2018

(including both days) as follows:

Emission reductions: **45,751 tCO<sub>2</sub>e.**

New Delhi, 07/07/2018



Prakash Kumar Mishra  
 Verification Team Leader  
 TÜV NORD JI/CDM Certification Program



## Appendix 1. Abbreviations

Abbreviations	Full texts
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CO <sub>2</sub>	Carbon dioxide
CO <sub>2eq</sub>	Carbon dioxide equivalent
CL	Clarification Request
CME	Coordinating Managing Entity
XacBank	XacBank, CPA implémenter
DVerR	Draft Verification Report
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
CEP	Clean Energy Products
HES	Household Energy Survey
IM	Interview Memo
MP	Monitoring Plan
MR	Monitoring Report
PA	Project Activity



PDD	Project Design Document
PCP	Project Cycle Procedure
PP	Project Participant
PS	Project Standard
QA/QC	Quality Assurance / Quality Control
MEC	Micro Energy Credits
QMS	Quality Management System
UNFCCC	United Nations Framework Convention on Climate Change
VT	Validation Team
VVS	Validation and Verification Standard
XLS	Emission Reduction Calculation Spread Sheet

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

**Statement of Competence**  
Appointment and authorization according to the procedures of the TÜV NORD JICDM Certification Program

**Mr. Prakash Kumar Mishra**

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2018-08-17
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2018-08-17

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
3.1	Energy demand

146 - Rev. 5.2, Date: 2018-05-17

146\_S01-VA080-F20\_2018-01-03\_mw5.2.doc

**Statement of Competence**  
Appointment and authorization according to the procedures of the TÜV NORD JICDM Certification Program

**Mr. Kunal Rami**

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2020-03-26
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2020-03-26

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
6.1	Construction
13.1	Solid waste and wastewater

224 - Rev. 6, Date: 2017-03-27

224\_S01-VA080-F20\_2017-03-07\_mw5.doc

S01-VA080-F20 mvd / 2012-10-25

S01-VA080-F20 mvd / 2012-10-25

## Appendix 3. Documents reviewed or referenced

No.	Author	Reference	Title	References to the document	Provider
1	UNFCCC	/MT/	Methodology and Tool	<a href="http://cdm.unfccc.i">http://cdm.unfccc.i</a>	Other

No.	Author	Reference	Title	References to the document	Provider
			<ul style="list-style-type: none"> <li>AMS II.E Energy efficiency and fuel switching measures for buildings version 10"</li> <li>Assessment of debundling for small-scale project activities, version 04</li> </ul>	nt	
2	PP	<b>/CPA-DD/</b>	Component Project Activity Design Document titled" MicroEnergy Credits -- Microfinance for Clean Energy Product Lines – Mongolia- CPA No.001", version 2.2	<a href="http://cdm.unfccc.int">http://cdm.unfccc.int</a>	other
3	PP	<b>/PoA-DD/</b>	Programme of Activities Design Document titled "MicroEnergy Credits – Microfinance for Clean Energy Product Lines – Mongolia", version 2.2		other
4	MEC	<b>/ANNEX-1/</b> <b>/XLS/</b>	ER Calculations spreadsheet and House hold Energy Survey-2017-18_v2		other
6	MEC	<b>/ANN-2/</b> <b>/CTP/</b>	MicroEnergy Credits Tracker Platform Summary_v1	2017-18	Other
7	MEC	<b>/ANN-3/</b> <b>/HES/</b>	MCA Mongolia Household Survey Report (Baseline)	2011-2012	other
8	SEET/MEC	<b>/ANN-4/</b> <b>/TECH/</b>	Stove Testing Report (All tests were conducted by the Stove Emissions and Efficiency Testing (SEET) Laboratory in Ulaanbaatar Mongolia)	2013-2014	Other
09	MEC	<b>/ANNEX-5/</b>	Baseline Fuel Consumption Analysis	2011-2012	
10	MEC	<b>/ANN-6/</b>	Stove Dismantling procedures	2011	Other
11	MEC	<b>/ANN-7/</b> <b>/CTP/</b>	MEC Tracker Database_CPA No. 001_v1	<a href="http://tracker3.microenergycredits.net/admin/xac">http://tracker3.microenergycredits.net/admin/xac</a>	Other
13	MEC	<b>/ANN-08/SSCAL/</b> <b>/XLS/</b>	Sample Size calculation spreadsheet	2018	Other
14	DOE	<b>/CPM/</b>	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)		Other
14	IPCC	<b>/IPCC/</b>	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book	<a href="http://www.ipcc-nggip.iges.or.jp">www.ipcc-nggip.iges.or.jp</a>	Other
15	UNFCCC	<b>/KPI/</b>	Kyoto Protocol (1997)	<a href="http://unfccc.int/kyoto_protocol/items/2830.php">http://unfccc.int/kyoto_protocol/items/2830.php</a>	Other
16	UNFCCC	<b>/MA/</b>	Decision 3/CMP. 1 (Marrakesh – Accords)	<a href="http://cdm.unfccc.int/Reference/CO2PMOP/index.html">http://cdm.unfccc.int/Reference/CO2PMOP/index.html</a>	Other
17	UNFCCC	<b>/MRT/</b>	Monitoring Report Form (CDM-PoA-MR-FORM), Version 02.0	<a href="https://cdm.unfccc.int/Reference/PDs_Forms/index.html">https://cdm.unfccc.int/Reference/PDs_Forms/index.html</a>	Other
18	UNFCCC	<b>/PS/</b>	CDM Project Standard for programme of activities (Version 1.0, EB93-A07)	<a href="http://cdm.unfccc.int/Reference/Standards/index.html">http://cdm.unfccc.int/Reference/Standards/index.html</a>	Other
19	PP	<b>/VAL/</b>	Validation Report for PoA project	unfccc	Other

No.	Author	Reference	Title	References to the document	Provider
			“MicroEnergy Credits -- Microfinance for Clean Energy Product Lines - Mongolia” report No.2012-9611  Validation Report for CPA project “MicroEnergy Credits -- Microfinance for Clean Energy Product Lines - Mongolia”- CPA No.001, reference No.2012-9655		
20	MEC	<b>/TECH/</b>	Technical specification of CEP	-	Other
21	UNFCCC	<b>/VVS/</b>	CDM Validation and Verification Standard for programme of activities (Version 1, EB93-A08)	<a href="http://cdm.unfccc.int/Reference/Standards/index.html">http://cdm.unfccc.int/Reference/Standards/index.html</a>	Other
22	UNFCCC	<b>/G-SS/</b>	“Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities” (Version 04.0) “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities” (version 7.0)	<a href="https://cdm.unfccc.int/Reference/Guidclarif/index.html">https://cdm.unfccc.int/Reference/Guidclarif/index.html</a>  <a href="http://cdm.unfccc.int/Reference/Standards/index.html">http://cdm.unfccc.int/Reference/Standards/index.html</a>	Other
23	UNFCCC	<b>/GOT/</b>	Glossary “CDM terms” (version 09.1)	<a href="https://cdm.unfccc.int/filestorage/e/x/t/extfile-20150226124447549-glos_CDM.pdf/glos_CDM.pdf?t=UmZ8bnFjODI3fDCW9A3vJwR03kQq4sbLiYu">https://cdm.unfccc.int/filestorage/e/x/t/extfile-20150226124447549-glos_CDM.pdf/glos_CDM.pdf?t=UmZ8bnFjODI3fDCW9A3vJwR03kQq4sbLiYu</a>	Other
24	PP	<b>/MR/</b>	MicroEnergy Credits - Microfinance for Clean Energy Product Lines – Mongolia version 1.0 dated 18/05/2018, version 2.0 dated 28/06/2018		CME
25	PP	<b>/TRNG/</b> <b>/ANN-09/</b>	PO Staff Training Records Usage Survey report attachment		Other
26	TN CERT GmbH	<b>/VER/</b>	1st Periodic Verification and Certification Report: MicroEnergy Credits --Microfinance for Clean Energy Product Lines – Mongolia, dated 15/09/2015 2nd Periodic Verification and Certification Report: MicroEnergy Credits --Microfinance for Clean Energy Product Lines – Mongolia, dated 14/09/2017		DOE

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

Table 4. Remaining FARs from validation and/or previous verification

FAR ID	xx	Section no.	Date: DD/MM/YYYY
Description of FAR			
n.a.			
CME response			Date: DD/MM/YYYY

<b>Documentation provided by the CME</b>	
<b>DOE assessment</b>	<b>Date:</b> DD/MM/YYYY

Table 5. CLs from this verification

<b>CL ID</b>	xx	<b>Section no.</b>		<b>Date:</b> DD/MM/YYYY
<b>Description of CL</b>				
<i>n.a.</i>				
<b>CME response</b>				<b>Date:</b> DD/MM/YYYY
<b>Documentation provided by the CME</b>				
<b>DOE assessment</b>				<b>Date:</b> DD/MM/YYYY

Table 6. CARs from this verification

<b>CAR ID</b>	E 1	<b>Section no.</b>	Cover page of MR, C.1, F.4 and F.5	<b>Date:</b> 17/07/2018
<b>Description of CAR</b>				
Draft MR version 1.0 As assessed from household energy Survey (Annex-1), the value of coal consumption taken for project emission calculation is not found correct and hence the value of ERs including all other dependent values shall be revised accordingly.				
<b>Project participant response (1<sup>st</sup> round)</b>				<b>Date:</b> 23/06/2018
There was an error in copying the value of Coal Consumption from the Household Energy Survey to the ER calculation sheets. The error has been rectified and accordingly all linked values have also been updated in the ER sheet as well as the monitoring report. Please refer to the revised monitoring report and ER calculation spreadsheet.				
<b>Documentation provided by project participant (1<sup>st</sup> round)</b>				
Revised ER calculation spreadsheet and revised monitoring report submitted by PP is assessed against the HES analysis sheet and HES survey result (Annex-1) and found to be appropriate and thus acceptable to the verification team.  CAR E1 is closed out.				
<b>DOE assessment (1<sup>st</sup> round)</b>				<b>Date:</b> 23/06/2018
Revised ER calculation spreadsheet and revised monitoring report submitted by PP is assessed against the HES analysis sheet and HES survey result (Annex-1) and found to be appropriate and thus acceptable to the verification team.  CAR E1 is closed out.				

<b>CAR ID</b>	E2	<b>Section no.</b>	E, General	<b>Date:</b> 17/06/2018
<b>Description of CAR</b>				
A consolidate CAR E-2 is raised Below related to sampling survey, monitoring plan and related Supportive documents: <ol style="list-style-type: none"> <li>1. It is to be explained that how the sample size for each sampling frame under the CPA is arrived at and in accordance with the "Guideline for Sampling and surveys for CDM project activities and programmes of activities version 04.0" and "Standard for Sampling and surveys for CDM project activities and programmes of activities version 07.0 and prescribed provision in the registered PoA-DD and corresponding generic CPA-DD.</li> <li>2. Training records for the current monitoring period</li> <li>3. Most recently updated MEC Tracker Database</li> </ol>				
<b>Project participant response (1<sup>st</sup> round)</b>				<b>Date:</b> 23/06/2018

Following are the responses to consolidated CAR	
<ol style="list-style-type: none"> <li>1. Sample size has been calculated according to the Guideline for Sampling and surveys for CDM project activities and programmes of activities version 04.0" and "Standard for Sampling and surveys for CDM project activities and programmes of activities version 07.0. Oversampling has been applied and each sampling frame has a separate sample drawn. Please find enclosed the Annex-8, sample size calculator, which shows the calculations to arrive at the sample size for each sampling frame.</li> <li>2. Enclosed are the training records for the monitoring team of the XAC Bank which is the PO for the CPA</li> <li>3. Enclosed is Annex-7, most recent version of MEC tracker database for CPA-2 and 3. Also enclosed is Annex - 2. MicroEnergy Credits Tracker Platform Summary_v1</li> </ol>	
<b>Documentation provided by project participant (1<sup>st</sup> round)</b>	
<ol style="list-style-type: none"> <li>1. Annex-08 sample size calculator</li> <li>2. Training record</li> <li>3. MEC tracker database (Annex-7 and Annex-2)</li> </ol>	
<b>DOE assessment (1<sup>st</sup> round)</b>	<b>Date: 24/06/2018</b>
<ol style="list-style-type: none"> <li>1. Sample size calculator submitted by PP is assessed by verification team with regards to the sample size calculation for different sampling frames and found to be sufficiently chosen the samples in accordance with guidelines for sampling and survey and also the sample size calculator available at unfccc website for PP. Moreover, PP has also demonstrated the reliability test for the interest parameter and found to meet the relative precision in line with requirements in the registered PoA DD. CAR point is closed out</li> <li>2. Training records are submitted</li> <li>3. MEC tracker database submitted to verification team assessed and found to be in conformity with ER calculation spreadsheet and MR</li> </ol>	

Table 7. FARs from this verification

<b>FAR ID</b>	xx	<b>Section No.</b>		<b>Date:</b> DD/MM/YYYY
<b>Description of FAR</b>				
n.a.				
<b>CME response</b>				<b>Date:</b> DD/MM/YYYY
<b>Documentation provided by the CME</b>				
<b>DOE assessment</b>				<b>Date:</b> DD/MM/YYYY

## Appendix 5. Monitored Parameters

**Table A-5:** Periodic Verification Checklist – Monitored Parameters

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<b>A. N<sub>all</sub>:</b>		<b>Total number stoves disseminated</b>		
<p><b>a) Measurement / Determination method (VVS, §§ 345-349)</b>  Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).  Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</p>	<p>/MR/  /METH/  /CPA-DD/  /XLS-ANNEX-1-2/  /ANN-8/</p>	<p><i>Description:</i></p> <p>The value is derived from the excel database, named “tracker platform”. i.e. the installation data of stoves and ger blankets will be recorded as per stove/ger blankets on-site check which was performed by monitoring staff per android system. The hardcopy documents i.e. the delivery note is counter-signed by household.</p> <p>The N<sub>all</sub> is monitored continuously.</p> <p><i>Verifier’s action:</i></p> <p>The N<sub>all</sub> covering this monitoring period was verified by verification team from the recorded data in the excel sheet and credit tracker database. The data is taken as the input for the ER calculations meaning it is the basis for determining of the CPA emission reductions. The same was also cross verified by the onsite observation and interview with the CME, CPA implementer, consultant and verification on database system maintained by the CME</p> <p><i>Conclusion:</i></p> <p>The value of this parameter is monitored and recorded according to the registered monitoring plan.</p>	OK	OK
<p><b>b) Accuracy and QA/QC Procedure (VVS, §§ 350-356)</b>  In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance</p>	/MR/	<p><i>Description:</i></p> <p>The N<sub>all</sub> could be cross-evidenced by stove/ger blanket installation and delivery form. Random samples have been taken by verification team and no unacceptable inaccuracies</p>	OK	OK

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<b>Checklist Item</b> (incl. guidance for the verification team)	<b>Reference</b>	<b>Verification Team Comments</b> (Means and results of assessment)	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p><i>with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p> <p><i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.</i></p>		<p>have been identified.</p> <p><i>Verifier's action:</i></p> <p>The data flow of N<sub>all</sub> was checked by verification team. Correspondingly hardcopy evidence, i.e. the stove/ger blanket installation form, stove/ger blanket delivery form, bank transfer note were verified by randomly selecting CEPs.</p> <p><i>Conclusion:</i></p> <p>It is concluded that there are no inaccuracies in the calculation of this parameter.</p>		
<p><b>c) Correctness</b> <b>(VVS, §§ 345-349)</b></p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	<p>/MR/ /XLS/ /ANN-8/</p>	<p><input checked="" type="checkbox"/> Correct      <input type="checkbox"/> Not correct (initial assessment)</p> <p><i>Description:</i></p> <p>The N<sub>all</sub> is recorded and updated once the stove/ger blanket is installed. During the registration and login process on tracker, the stove/ger blanket delivery form, bank transfer note is cross checked. The inaccuracy is low.</p> <p><i>Verifier's action:</i></p> <p>The data flow of N<sub>all</sub> was checked by verification team. Correspondingly hardcopy evidence, i.e. the stove/ger blanket installation, stove/ger blanket delivery forms were verified by randomly selecting samples.</p> <p><i>Conclusion:</i></p> <p>It is concluded by means of onsite inspection and review stove installation database, the data reported and transcribed from the database i.e. credit tracker platform in the MR is correct.</p>	OK	OK
<b>B. POF</b>		<b>Product Operation Fraction</b>		
<p><b>a) Measurement / Determination method</b> <b>(VVS, §§ 345-349)</b></p> <p><i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied</i></p>	<p>/MR/ /CPA-DD/ /HES/</p>	<p><i>Description:</i></p> <p>The value is derived from the Household Energy Survey (HES) (Household Energy Survey Data Analysis) report, which is performed by independent project consultant. The project development officer office fills the stove/ger blanket status into</p>	OK	OK

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<b>Checklist Item</b> (incl. guidance for the verification team)	<b>Reference</b>	<b>Verification Team Comments</b> (Means and results of assessment)	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p><i>data aggregation trails (from ODL to data aggregation level zero (DAL0)).</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	<p align="center">/IM/</p>	<p>the tracker database once has been informed by on-site monitoring staff and android system.</p> <p>This parameter is calculated as Number of households who reported they were using CEP during survey divided by total number of households surveyed of same dwelling type that purchased CEP type.</p> <p>The POF is required to be monitored at least every 2 years, however, it is being monitored annually.</p> <p><i>Verifier's action:</i></p> <p>The POF in HES report covering the monitoring period has been checked by verification team</p> <p>On-site check and phone call interview records from monitoring staff have been random sampled and cross checked.</p> <p><i>Conclusion:</i></p> <p>The measurement approach of parameter data is according to the registered CPA-DD and registered monitoring plan.</p> <p>Samples exceeded calculated minimum sample size for 90/10 confidence/precision</p>		
<p><b>b) Accuracy and QA/QC Procedure (VVS, §§ 350-356)</b></p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p>	<p align="center">/MR/ /CPA-DD/ /HES/ /IM/</p>	<p><i>Description:</i></p> <p>The POF could be cross evidenced by stove/ger blanket installation and on-site monitoring records. Random samples have been taken by verification team and no unacceptable inaccuracies have been identified.</p> <p><i>Verifier's action:</i></p> <p>The POF was checked by verification team. Correspondingly hardcopy evidence, i.e. the stove/ger blanket installation and on-site monitoring records were random sampled along with the verification of HES and interview with the household and involved personnel in the monitoring from CME and PO.</p> <p><i>Conclusion:</i></p>	<p align="center">OK</p>	<p align="center">OK</p>



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<b>Checklist Item</b> (incl. guidance for the verification team)	<b>Reference</b>	<b>Verification Team Comments</b> (Means and results of assessment)	<b>Draft Concl.</b>	<b>Final Concl.</b>
<i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.</i>		The parameter is monitored according to the registered CPA-DD and monitoring plan approved at the time of PoA registration.		
<p><b>c) Correctness</b> <b>(VVS, §§ 345-349)</b></p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	<p>/MR/ /CPA-DD/ /HES/ /IM/</p>	<p><input checked="" type="checkbox"/> Correct      <input type="checkbox"/> Not correct (initial assessment)</p> <p><i>Description:</i></p> <p>The POF is surveyed and calculated at 90/10 and updated once the stove/ger blanket installation form has been submitted via the android system in credit tracker platform. During the tracker inputting process, the stove/ger blanket installation and monitoring records from XaC bank technician is cross checked. The inaccuracy is observed to be low.</p> <p><i>Verifier's action:</i></p> <p>The data flow of POF was checked by verification team. Credit tracker system verification and comparison between the result during onsite observation and documents review.</p> <p><i>Conclusion:</i></p> <p>The parameter information is according to registered CPA-DD.</p>		OK
<b>C. C<sub>y,new,CEP-i</sub></b>		<b>C<sub>y,new,CEP-i</sub> represents the quantity of coal used in the project scenario for CEP-I installation, weighted average if multiple clusters of CEP, for target groups in Ger Area homes.</b>		
<p><b>a) Measurement / Determination method</b> <b>(VVS, §§ 345-349)</b></p> <p><i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the</i></p>	<p>/MR/ /CPA-DD/ /MT/ /ANNEX-1//XLS/ /HES/</p>	<p><i>Description:</i></p> <p>The quantity of coal used is determined for the following 6 sample frames for the applied monitoring period as follows:</p> <ul style="list-style-type: none"> <li>Frame 1: Stove in house dwelling type, located in Songinokhairkhan district</li> <li>Frame 2: Stove in house dwelling type, located in Bayangol district</li> <li>Frame 3: Stove in house dwelling type, located in other district</li> <li>Frame 4: Stove in ger dwelling type, located in Songinokhairkhan district</li> </ul>	<p><del>CAR</del> E4</p>	OK

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<b>Checklist Item</b> (incl. guidance for the verification team)	<b>Reference</b>	<b>Verification Team Comments</b> (Means and results of assessment)	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p><i>frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>		<ul style="list-style-type: none"> <li>Frame 5: Stove in ger dwelling type, located in Bayangol district</li> <li>Frame 6: Stove in ger dwelling type, located in other district</li> </ul> <p>The value is derived from a 3<sup>rd</sup> party survey report. i.e. Household Energy Survey (HES)<sup>/HES/</sup> (Household Energy Survey Data Analysis) report. The survey has been carried out by using “simple random sampling” and taking dwelling type and the level of precision of 90/10 into account.</p> <p><i>Verifier’s action:</i></p> <p>The sampling plan has been cross checked by verification team according to EB sampling guideline and applied methodology.</p> <p>The coal consumption sheet.</p> <p>The researcher from this 3<sup>rd</sup> party has been also verified by means of on-site visit and interview (sample based) and assessment of House Hold Energy Survey Analysis has been interviewed, w.r.t. the design and implementation of sampling plan, the independence and competence of survey implementer</p> <p><i>Conclusion:</i></p> <p>The parameter is in accordance with the registered monitoring plan of the CPA-DD and the applied methodology.</p> <p>However, during course of verification CAR E1 is raised and closed out successfully.</p>		
<p><b>b) Accuracy and QA/QC Procedure</b>  <b>(VVS, §§ 350-356)</b></p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have</i></p>	<p>/MR/ /HES/</p>	<p><i>Description:</i></p> <p>The value of this parameter is calculated based on the derived value from a survey report<sup>/HSE/</sup>, which is carried out by using of “simple random sampling” and taking dwelling type and the level of precision of 90/10 into account.</p> <p><i>Verifier’s action:</i></p> <p>The sampling plan has been cross checked by verification team according to EB sampling guideline and applied methodology.</p>	<p><del>CAR</del> <del>E1</del></p>	<p>OK</p>

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.																								
<p><i>been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p> <p><i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.</i></p>		<p>The coal consumption has been also verified by means of on-site visit and interview (sample based).</p> <p>The senior researcher from this 3rd party has been interviewed, w.r.t. the design and implementation of sampling plan, the independence and competence of survey implementer.</p> <p><i>Conclusion:</i></p> <p>There are no inconsistencies in the data reported for the parameter. However, during course of verification CAR E1 is raised and closed out successfully.</p>																										
<p><b>c) Correctness</b> <b>(VVS, §§ 345-349)</b></p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	<p>/MR/ /CPA/ /HES/ /IM/</p>	<p><input checked="" type="checkbox"/> Correct      <input type="checkbox"/> Not correct (initial assessment)</p> <p><i>Description:</i></p> <p>The sampling plan has been cross checked by verification team according to EB sampling guideline and applied methodology.</p> <p>The <b>C<sub>y,new,CEP-i</sub></b> is calculated as :</p> <p>For CPA-002</p> <table><tr><td>1. House-Song.</td><td>3.89</td></tr><tr><td>2. House-Bayan.</td><td>3.62</td></tr><tr><td>3. House-Other</td><td>3.62</td></tr><tr><td>4. Ger-Song.</td><td>3.51</td></tr><tr><td>5. Ger-Bayan.</td><td>3.08</td></tr><tr><td>6. Ger-Other</td><td>3.42</td></tr></table> <p>For CPA-003</p> <table><tr><td>1. House-Song.</td><td>3.42</td></tr><tr><td>2. House-Bayan.</td><td>3.54</td></tr><tr><td>3. House-Other</td><td>3.33</td></tr><tr><td>4. Ger-Song.</td><td>3.00</td></tr><tr><td>5. Ger-Bayan.</td><td>3.28</td></tr><tr><td>6. Ger-Other</td><td>3.08</td></tr></table> <p><i>Verifier's action:</i></p>	1. House-Song.	3.89	2. House-Bayan.	3.62	3. House-Other	3.62	4. Ger-Song.	3.51	5. Ger-Bayan.	3.08	6. Ger-Other	3.42	1. House-Song.	3.42	2. House-Bayan.	3.54	3. House-Other	3.33	4. Ger-Song.	3.00	5. Ger-Bayan.	3.28	6. Ger-Other	3.08	<p><del>CAR</del> E1</p>	<p>OK</p>
1. House-Song.	3.89																											
2. House-Bayan.	3.62																											
3. House-Other	3.62																											
4. Ger-Song.	3.51																											
5. Ger-Bayan.	3.08																											
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1. House-Song.	3.42																											
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3. House-Other	3.33																											
4. Ger-Song.	3.00																											
5. Ger-Bayan.	3.28																											
6. Ger-Other	3.08																											

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<p>The sampling plan has been cross checked by verification team according to EB sampling guideline and applied methodology.</p> <p>The coal consumption has been also verified by means of on-site visit and interview (sample based) and value presented in MR are cross verified from HES Analysis sheet. The calculation of <math>C_{y,new,CEP-i}</math> was reviewed by verification team.</p> <p><i>Conclusion:</i></p> <p>It is concluded by means of onsite inspection and document review the data reported in the MR is correctly. However during course of verification CAR E1 was raised and closed successfully.</p>		
<b>D. <math>C_{y,old,CEP-i}</math></b>		<b>The quantity of coal in the baseline scenario in tonnes during year y for CEP-installation cluster (installation cluster (i) may represent baseline for single or multiple CEP installations, thus addressing cross-effects).</b>		
<p><b>a) Measurement / Determination method (VVS, §§ 345-349)</b></p> <p><i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	<p>/MR/ /CPA-DD/ /AMS/ /HES/</p>	<p><i>Description:</i></p> <p>The quantity of coal used is determined for the 9 sampling frames for this monitoring period:</p> <ul style="list-style-type: none"> <li>• Frame 1: Stove in house dwelling type, located in Songinokhairkhan district</li> <li>• Frame 2: Stove in house dwelling type, located in Bayangol district</li> <li>• Frame 3: Stove in house dwelling type, located in other district</li> <li>• Frame 4: Stove in ger dwelling type, located in Songinokhairkhan district</li> <li>• Frame 5: Stove in ger dwelling type, located in Bayangol district</li> <li>• Frame 6: Stove in ger dwelling type, located in other district</li> </ul>	OK	OK

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<p>The value is derived from a 3<sup>rd</sup> party survey report. i.e. Household Energy Survey (HES) (Household Energy Survey Data Analysis) report. The survey has been carried out by using of “simple random sampling” and taking dwelling type and the level of precision of 90/10 into account.</p> <p><i>Verifier’s action:</i></p> <p>The sampling plan has been cross checked by verification team according to EB sampling guideline and applied methodology as well as registered PoA DD.</p> <p>The coal consumption has been also verified by means of on-site visit and interview (sample based).</p> <p><i>Conclusion:</i></p> <p>The parameter is in accordance with the registered monitoring plan of the CPA-DD and the applied methodology.</p>		
<p><b>b) Accuracy and QA/QC Procedure</b> <b>(VVS, §§ 350-356)</b></p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p> <p><i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.</i></p>	<p>/MR/ /CPA/ /PoA-DD/ /AMS/ /HES/</p>	<p><i>Description:</i></p> <p>The value is derived from a 3<sup>rd</sup> party survey report, which is carried out by using “Baseline Fuel Consumption Regression Analysis” as approved at the time of PoA registration.</p> <p><i>Verifier’s action:</i></p> <p>The sampling plan has been cross checked by verification team according to EB sampling guideline and applied methodology.</p> <p>The coal consumption has been also verified by means of on-site visit and interview (sample based).</p> <p>The senior researcher from this 3<sup>rd</sup> party has been interviewed, w.r.t. the design and implementation of sampling plan, the independence and competence of survey implementer.</p> <p><i>Conclusion:</i></p> <p>There are no inconsistencies in the data reported for the parameter.</p>	OK	OK
<p><b>c) Correctness</b></p>	<p>/MR/</p>	<p><input checked="" type="checkbox"/> Correct      <input type="checkbox"/> Not correct (initial assessment)</p>	OK	OK

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.																								
<p><b>(VVS, §§ 345-349)</b></p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	<p>/CPA/ /PoA-DD/ /AMS/ /HES/</p>	<p><i>Description:</i></p> <p>The sampling plan has been cross checked by verification team according to EB sampling guideline and applied methodology.</p> <p>The <b>C<sub>y,old,CEP-i</sub></b> is calculated as :</p> <p>For 2017-18 heating season For CPA-002</p> <table><tr><td>1. House-Song.</td><td>5.74</td></tr><tr><td>2. House-Bayan.</td><td>4.30</td></tr><tr><td>3. House-Other</td><td>5.38</td></tr><tr><td>4. Ger-Song.</td><td>5.31</td></tr><tr><td>5. Ger-Bayan.</td><td>3.86</td></tr><tr><td>6. Ger-Other</td><td>4.95</td></tr></table> <p>For CPA-003</p> <table><tr><td>1. House-Song.</td><td>5.72</td></tr><tr><td>2. House-Bayan.</td><td>4.27</td></tr><tr><td>3. House-Other</td><td>5.36</td></tr><tr><td>4. Ger-Song.</td><td>5.28</td></tr><tr><td>5. Ger-Bayan.</td><td>3.83</td></tr><tr><td>6. Ger-Other</td><td>4.92</td></tr></table> <p><i>Verifier’s action:</i></p> <p>The sampling plan has been cross checked by verification team according to EB sampling guideline and applied methodology.</p> <p>The coal consumption has been also verified by means of on-site visit and interview (sample based).</p> <p>The senior researcher from this 3rd party has been interviewed, w.r.t. the design and implementation of sampling plan, the independence and competence of survey implementer.</p> <p>The calculation of <b>C<sub>y,old,CEP-i</sub></b> was reviewed by verification team.</p>	1. House-Song.	5.74	2. House-Bayan.	4.30	3. House-Other	5.38	4. Ger-Song.	5.31	5. Ger-Bayan.	3.86	6. Ger-Other	4.95	1. House-Song.	5.72	2. House-Bayan.	4.27	3. House-Other	5.36	4. Ger-Song.	5.28	5. Ger-Bayan.	3.83	6. Ger-Other	4.92		
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<b>Checklist Item</b> (incl. guidance for the verification team)	<b>Reference</b>	<b>Verification Team Comments</b> (Means and results of assessment)	<b>Draft Concl.</b>	<b>Final Concl.</b>
		<p><i>Conclusion:</i></p> <p>It is concluded by means of onsite inspection and document review the data reported in the MR is correctly.</p>		
<b>E. T<sub>y,s</sub> household stoves and/or insulation</b>		<b>Mean temperature in Celsius for year y and season s (Fall, Winter, Spring, Summer) for target groups in Ger Area homes</b>		
<p><b>a) Measurement / Determination method (VVS, §§ 345-349)</b></p> <p><i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	<p>/MR/ /CPA-DD/ /AMS/ /PoA-DD/ /IM/ /NOAA/</p>	<p><i>Description:</i></p> <p>The value is derived from (US) National Climatic Data Centre Climatic Service Branch of the National Oceanic and Atmospheric Administration (NOAA).</p> <p>Values applied for season represent average of daily temperature measurement recorded by NOAA for every day during season, following seasonal definitions below:</p> <ul style="list-style-type: none"> <li>• T1,Autumn 7.5</li> <li>• T1,Winter -20.9</li> <li>• T1,Spring -5.9</li> </ul> <p><i>Verifier's action:</i></p> <p>The source has been cross checked by verification team according to registered PoA-DD and CPA-DD</p> <p><i>Conclusion:</i></p> <p>The parameter is in accordance with the registered monitoring plan of the CPA-DD and the applied methodology.</p>	OK	OK
<p><b>b) Accuracy and QA/QC Procedure (VVS, §§ 350-356)</b></p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most</i></p>	<p>/MR/ /CPA-DD/ /AMS/ /PoA-DD/ /IM/</p>	<p><i>Description:</i></p> <p>The value is derived from a 3rd party report, which is carried out by (US) National Climatic Data Centre Climatic Service Branch of the National Oceanic and Atmospheric Administration (NOAA)</p> <p><i>Verifier's action:</i></p> <p>The resource has been cross checked by verification team</p>	OK	OK

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<b>Checklist Item</b> (incl. guidance for the verification team)	<b>Reference</b>	<b>Verification Team Comments</b> (Means and results of assessment)	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p><i>conservative assumptions theoretically possible have been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p> <p><i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.</i></p>	/NOAA/	<p>according to registered PoA-DD and CPA-DD</p> <p><i>Conclusion:</i></p> <p>There are no inconsistencies in the data reported for the parameter.</p>		
<p><b>c) Correctness</b> <b>(VVS, §§ 345-349)</b></p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	/ MR / / MR / / CPA-DD / / AMS / / PoA-DD / / IM / / NOAA /	<div> <input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct (initial assessment) </div> <p><i>Description:</i></p> <p>The source has been cross checked by verification team according to registered PoA-DD and CPA-DD</p> <p>Value applied: For Heating Season 2014-15</p> <ul style="list-style-type: none"> <li>T1, Autumn 7.5</li> <li>T1, Winter -20.9</li> <li>T1, Spring -5.9</li> </ul> <p>Values applied for season represent average of daily temperature measurement recorded by NOAA for every day during season.</p> <p><i>Verifier's action:</i></p> <p>The source has been cross checked by verification team according to registered PoA-DD and CPA-DD</p> <p><i>Conclusion:</i></p> <p>It is concluded by means of document review the data reported in the MR is correctly.</p>	OK	OK
<b>F. WS<sub>y,s</sub> household stoves and/or insulation</b>		<b>Mean wind speed in knots for year y and season s (Fall, Winter, Spring, Summer) for target groups in Ulaanbaatar</b>		



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<b>Checklist Item</b> (incl. guidance for the verification team)	<b>Reference</b>	<b>Verification Team Comments</b> (Means and results of assessment)	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p><b>a) Measurement / Determination method</b> <b>(VVS, §§ 345-349)</b></p> <p><i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	<p>/MR/ /CPA-DD/ /AMS/ /HES/ /NOAA/</p>	<p><i>Description:</i></p> <p>The value is derived from (US) National Climatic Data Centre Climatic Service Branch of the National Oceanic and Atmospheric Administration (NOAA).</p> <p>Values applied for season represent average of daily wind speed recorded by NOAA for every day during season, following seasonal definitions below:</p> <p><i>Verifier's action:</i></p> <p>The source has been cross checked by verification team according to registered PoA-DD and CPA-DD</p> <p><i>Conclusion:</i></p> <p>The parameter is in accordance with the registered monitoring plan of the CPA-DD and the applied methodology.</p>	OK	OK
<p><b>b) Accuracy and QA/QC Procedure</b> <b>(VVS, §§ 350-356)</b></p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p> <p><i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.</i></p>	<p>/MR/ /CPA-DD/ /AMS/ /HES/ /NOAA/</p>	<p><i>Description:</i></p> <p>The value is derived from a 3rd party report, which is carried out by (US) National Climatic Data Centre Climatic Service Branch of the National Oceanic and Atmospheric Administration (NOAA)</p> <p><i>Verifier's action:</i></p> <p>The resource has been cross checked by verification team according to registered PoA-DD and CPA-DD</p> <p><i>Conclusion:</i></p> <p>There are no inconsistencies in the data reported for the parameter.</p>	OK	OK
<b>c) Correctness</b>	/MR/	<input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct (initial assessment)	OK	OK

**CDM-PoA-VCR-FORM**

<b>Checklist Item</b> (incl. guidance for the verification team)	<b>Reference</b>	<b>Verification Team Comments</b> (Means and results of assessment)	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p><b>(VVS, §§ 345-349)</b></p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	/CPA-DD/ /AMS/ /HES/ /NOAA/	<p><i>Description:</i></p> <p>The source has been cross checked by verification team according to registered PoA-DD and CPA-DD</p> <p>Value applied:</p> <p>For Heating Season 2017-2018</p> <p>WS<sub>1,Autumn</sub> 5.0 knots</p> <p>WS<sub>1,Winter</sub> 3.0 knots</p> <p>WS<sub>1,Spring</sub> 5.4 knots</p> <p>Values applied for season represent average of daily wind speed measurement recorded by NOAA for every day during season, following seasonal definitions below:</p> <ul style="list-style-type: none"> <li>• Autumn – August 2017, September 2017, October 2017</li> <li>• Winter – November 2017, December 2017, January 2018</li> <li>• Spring – February 2018, March 2018, April 2018</li> </ul> <p><i>Verifier's action:</i></p> <p>The source has been cross checked by verification team according to registered PoA-DD and CPA-DD</p> <p><i>Conclusion:</i></p> <p>It is concluded by means of document review the data reported in the MR is correctly applied.</p>		
<b>G. DW<sub>y,type</sub>, household stoves and/or insulation</b>		<b>Number of dwellings that are houses for target groups in Ger Area homes</b>		
<p><b>a) Measurement / Determination method</b></p> <p><b>(VVS, §§ 345-349)</b></p> <p><i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation</i></p>	/MR/ /CPA-DD/ /HES/ /AMS/	<p><i>Description:</i></p> <p>The value is derived from tracker platform and 3rd party survey report.(Household Energy Survey (HES) report)</p> <p>1 or 0 stands for each household that used product and reported coal consumption in project scenario to calculate baseline coal consumption.</p>	OK	OK

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<b>Checklist Item</b> (incl. guidance for the verification team)	<b>Reference</b>	<b>Verification Team Comments</b> (Means and results of assessment)	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p><i>level zero (DAL0)).</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	<p>/Cre-T/ /DATA/ /XLS/</p>	<p><i>Verifier's action:</i></p> <p>The resource has been cross checked by verification team according to HES report</p> <p><i>Conclusion:</i></p> <p>The parameter is in accordance with the registered monitoring plan of the CPA-DD and the applied methodology.</p>		
<p><b>b) Accuracy and QA/QC Procedure</b> <b>(VVS, §§ 350-356)</b></p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p> <p><i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.</i></p>	<p>/MR/ /HES/</p>	<p><i>Description:</i></p> <p>The value is derived from tracker platform and 3rd party survey report.(Household Energy Survey (HES) report)</p> <p><i>Verifier's action:</i></p> <p>The resource has been cross checked by verification team according to HES report</p> <p><i>Conclusion:</i></p> <p>There are no inconsistencies in the data reported for the parameter.</p>	OK	OK
<p><b>c) Correctness</b> <b>(VVS, §§ 345-349)</b></p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment</i></p>	<p>/MR/ /CPA1/ /EI3/ /EI6/</p>	<p><input checked="" type="checkbox"/> Correct      <input type="checkbox"/> Not correct (initial assessment)</p> <p><i>Description:</i></p> <p>The source has been cross checked by verification team according to registered HES report</p> <p>Value applied: 1 or 0 stands for each household that used product and reported coal consumption in project scenario to calculate baseline coal consumption.</p>	OK	OK

**CDM-PoA-VCR-FORM**

<b>Checklist Item</b> (incl. guidance for the verification team)	<b>Reference</b>	<b>Verification Team Comments</b> (Means and results of assessment)	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p><i>of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>		<p><i>Verifier's action:</i></p> <p>The resource has been cross checked by verification team according to 3<sup>rd</sup> party report</p> <p><i>Conclusion:</i></p> <p>It is concluded by means of document review the data reported in the MR is correctly applied.</p>		
<b>H. <math>\eta_{new}</math></b>		<b>Efficiency of the new efficient CEP</b>		
<p><b>a) Measurement / Determination method</b> <b>(VVS, §§ 345-349)</b></p> <p><i>Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	<p>/IM01/ /POADD/ /AMS II.G/ /ANN-3/ /ANN-4/</p>	<p><i>Description:</i></p> <p>The efficiency of the new stove was tested by the Stove Emissions and Efficiency Testing (SEET) Laboratory in Ulaanbaatar Mongolia., which was developed with support from the Asian Development Bank and currently under management of the national Mongolian University of Science and Technology (MUST). Testing followed the protocol: "UJ SeTAR Centre Standard Operating Procedure: The Heterogeneous Testing Procedure for Thermal Performance and Trace Gas Emissions."</p> <p><i>Verifier's action:</i></p> <p>The resource has been cross checked by verification team according to HES report</p> <p><i>Conclusion:</i></p> <p>The parameter is in accordance with the registered monitoring plan of the CPA-DD and the applied methodology.</p>	OK	OK
<p><b>b) Accuracy and QA/QC Procedure</b> <b>(VVS, §§ 350-356)</b></p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have</i></p>	<p>/IM01/ /POADD/ /AMS II.G/ /ANN-3/ /ANN-4/</p>	<p><i>Description:</i></p> <p>The value is derived from 3<sup>rd</sup> party report, i.e. the Stove Emissions and Efficiency Testing (SEET) Laboratory in Ulaanbaatar Mongolia.</p> <p><i>Verifier's action:</i></p> <p>The resource has been cross checked by verification team according to SEET report</p>	OK	OK

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Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.								
<p><i>been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p> <p><i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Annex 2.</i></p>		<p><i>Conclusion:</i></p> <p>There are no inconsistencies in the data reported for the parameter.</p>										
<p><b>c) Correctness</b> <b>(VVS, §§ 345-349)</b></p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	<p>/IM01/ /POADD/ /AMS II.G/ /ANN-3/ /ANN-4/</p>	<p><input checked="" type="checkbox"/> Correct      <input type="checkbox"/> Not correct (initial assessment)</p> <p><i>Description:</i></p> <p>The source has been cross checked by verification team according to SEET report</p> <p>Value applied for the different Stove Types:</p> <table><tr><td>Royal Single/Mini Dul</td><td>74.3%</td></tr><tr><td>Royal Double/Golomt</td><td>75.8%</td></tr><tr><td>Silver Turbo/Khas</td><td>77.0%</td></tr><tr><td>Silver Mini/ Ulzii</td><td>76.2%</td></tr></table> <p><i>Verifier’s action:</i></p> <p>The resource has been cross checked by verification team according to 3<sup>rd</sup> party report</p> <p><i>Conclusion:</i></p> <p>It is concluded by means of document review the data reported in the MR is correctly applied.</p>	Royal Single/Mini Dul	74.3%	Royal Double/Golomt	75.8%	Silver Turbo/Khas	77.0%	Silver Mini/ Ulzii	76.2%	OK	OK
Royal Single/Mini Dul	74.3%											
Royal Double/Golomt	75.8%											
Silver Turbo/Khas	77.0%											
Silver Mini/ Ulzii	76.2%											

## Appendix 6. Calibration dates and validity of installed monitoring equipment

**Table A-6:** Periodic Verification Checklist – Calibration details

Monitoring equipment	Related monitoring parameter as per applicable registered monitoring plan	Serial number	Type	Accuracy or accuracy class	Previous calibration (last calibration before start of this monitoring period)	Calibration date(s) during this monitoring period	Validity of calibration(s)	Delay in calibration: yes/no	Period of delayed calibration
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<input type="checkbox"/> No <input type="checkbox"/> Yes	From: To:
-	-	-	-	-	-	-	-	<input type="checkbox"/> No <input type="checkbox"/> Yes	From: To:

**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
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		