




Verification and certification report form for CDM programme of activities
(version 01.0)

Complete this form in accordance with the "Attachment. Instructions for filling out the verification and certification report form for CDM programme of activities" at the end of this form.

VERIFICATION AND CERTIFICATION REPORT

Title of the programme of activities (PoA)	MicroEnergy Credits - Microfinance for Clean Energy Product Lines - Mongolia		
UNFCCC reference number of the PoA	UNFCCC ID: 8142 TN P-No.: 8000465065 – 16/133		
Version number(s) of the PoA-DD(s) applicable to this report	2.2		
Version number of the verification and certification report	1.0		
Completion date of the verification and certification report	29/08/2017		
Monitoring period number	3		
Duration of this monitoring period	01/05/2016 - 30/04/2017 (First and last days included)		
Number and version number of the monitoring report to which this report applies	3.0		
Coordinating/managing entity (CME)	MicroEnergy Credits		
Host Party(ies)	Host Party(ies) of the PoA	Is this a host Party to a CPA covered in this report? (yes/no)	
	Mongolia	Yes	
Sectoral scope(s)	3: Energy demand		
Selected methodology(ies)	AMS-II.E: Energy efficiency and fuel switching measures for buildings, Version 10		
Selected standardized baseline(s)	N/A		
Total estimated GHG emission reductions or net GHG removals for this monitoring period in the included CPA(s) covered in this report	CPA under verification	Value estimated in ex ante calculation	
	8142-0001	50,133	
Total certified GHG emission reductions or net GHG removals for this monitoring period for the included CPA(s) covered in this report	Project Activity	ER_y (tCO₂e)	
		2016	2017
	CPA # 0001	25,826	20,219
			Total
			46,045

Name of DOE	TÜV NORD CERT GmbH
Name, position and signature of the approver of the verification and certification report	 Stefan Winter Final Approver

SECTION A. Executive summary

MicroEnergy Credits (MEC), has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 3rd periodic verification of 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 01/05/2016 to 30/04/2017 (including both days).

The project activity is intended to replace:

- inefficient stoves for heating and cooking
- 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-0001 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

Installation Month-Year	Stove-House*	Stove-Ger*	Ger Blanket	Total CEPs
Heating Season 2016-17	4,465	14,173	1,270	19,908

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

The starting date of the project activity is 26/01/2012, as stated in the registered CPA-DD. However, the first CEP included in the project activity was installed on 03/05/2013. The CPA considers only the fuel savings in the heating season, the 3rd monitoring period of CPA-0001 starts from 01/05/2016 and covers the heating season in Year 2016-2017, which ends on 30/04/2017 (both days included).

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

Table A-1: Project Location

CPA No.: 001	Project Location	
Host Country	Mongolia	
Province	Ulaanbaatar	
City	Ulaanbaatar city	
Focal point	Latitude	Longitude
Ulaanbaatar	47.92 ⁰ N	106.92 ⁰ 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"> - Silver Stove Mini (model 131) - Silver Stove Turbo (model 126) - Royal Stove Dul model (Royal Single model) - Royal Stove Golomt model (Royal Double model)
Ger blanket	-	<ul style="list-style-type: none"> - 4-walled model - 5-walled model <p>double layer inside and a waterproof layer outside</p> <p>Six sections, including a special door covering and a section that covers the base of the ger on the outside</p>

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 3rd periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:

Emission reductions: **46,045 tCO₂e**

SECTION B. Verification team, technical reviewer and approver**B.1. Verification team members**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader+ Technical Expert	EI	Mishra	Prakash Kumar	TÜV NORD CERT	x	x	x	x

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

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	EI	Lubanga	David	-
2.	Technical reviewer /Approver	IR	Winter	Stefan	TÜV NORD CERT

SECTION C. Means of verification**C.1. Desk review**

During the desk review all documents initially provided by the client and publicly available documents relevant for the CPA-0001 verification were reviewed. The main documents are listed below:

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

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.

C.2. On-site inspection

Duration of on-site inspection: 04/08/2017 to 06/08/2017				
No.	Activity performed on-site	Site location	Date	Team member
1.	<ul style="list-style-type: none"> Formal Introduction with CME, CPA implementer and other involved personnel in GHG data monitoring, discussion on audit planning, site lay out. Record keeping. Sales receipt verification 	Ulaanbaatar Region of Mongolia (Xac Bank office)	04/08/2017	Prakash Kumar Mishra (PKM)

Duration of on-site inspection: 04/08/2017 to 06/08/2017				
No.	Activity performed on-site	Site location	Date	Team member
	<ul style="list-style-type: none"> Double counting avoidance procedure Interviews of the CME, PO and sales personnel Master data verification Competency of the PO and involved personnel. Overall organizational structure for data management and flow of information Meeting and interview with third party survey agency on procedure adopted for sampling and survey 			
2	Onsite verification of deployed stoves, 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)	04/08/2017	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)	05/08/2017	Prakash Kumar Mishra
4	<ul style="list-style-type: none"> Discussion on Monitoring reports compliance with MR filling guideline, PoA DD, CPA DDs, Validation report Documentary evidence check, data verification and comparison with onsite observation 	Ulaanbaatar Region of Mongolia (Xac Bank office)	06/08/2017	Prakash Kumar Mishra

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Nugent	Nick	MEC	03/08/2017	Program overview and Organisational structure, implementation status, Sales and credit tracker database management	PKM
2.	Subramanian	Sriskandh	MEC	03/08/2017	Program overview and Organisational structure, implementation status, Sales and credit tracker database management, Development of MR and	PKM

No .	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
					related documentation for CPA01 verification	
3.	A	Bayarmaa	XAcBank	03/08/2017	CPA implementation overview, Procedure and mechanism followed during usage survey	PKM
4.	-			03/08/2017	Procedure and mechanism followed during usage survey, QA/QC followed during survey	PKM
5.	NAMSUREN	GOMBOSUREN	CEP users	04/08/2017	CEP Information and usage	PKM
6.	JON	NYAM-OSOR	CEP users	04/08/2017	CEP Information and usage	PKM
7.	Yanji	Otgonbayar	CEP users	04/08/2017	CEP Information and usage	PKM
8.	BARIZANG	Ganbaatar	CEP users	04/08/2017	CEP Information and usage	PKM
9.	Davaasuren	Nyamdeleg	CEP users	04/08/2017	CEP Information and usage	PKM
10.	BALDORJ	Tsend	CEP users	04/08/2017	CEP Information and usage	PKM
11.	Mandala	Rentsen	CEP users	04/08/2017	CEP Information and usage	PKM
12.	MUNJARJALA	Batmunkh	CEP users	04/08/2017	CEP Information and usage	PKM
13.	SharynDorj	Hish	CEP users	04/08/2017	CEP Information and usage	PKM
14.	MUNKZUEL	Khashchuluun	CEP users	04/08/2017	CEP Information and usage	PKM
15.	ULSODSANHAN	Bayartsaikhan	CEP users	05/08/2017	CEP Information and usage	PKM
16.	Ulziibat	Manibadar	CEP users	05/08/2017	CEP Information and usage	PKM
17.	Avirmed	Lkhagvasuren	CEP users	05/08/2017	CEP Information and usage	PKM

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
18.	Tulveen	Tudevavniy	CEP users	05/08/2017	CEP Information and usage	PKM
19.	Yadamsuren	Amarbayasgalan	CEP users	05/08/2017	CEP Information and usage	PKM
20.	Gonchigdorj	Batbayar	CEP users	05/08/2017	CEP Information and usage	PKM

C.4. Sampling approach

C.4.1 Sampling during monitoring

<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 ¹⁾	Sampling Type ²⁾	Total Population	Sample Size by PP
	POF	SiRS	PS	19,908	Heating Season 2016/17 – 401
	$C_{y,new,CEP-i}$	SiRS	PS		Heating Season 2016/17—401 (355 samples have been considered for arriving at the value for this parameter)
	$C_{y_old,CEPi}$	SiRS	PS		Heating Season 2016/17— 401 (355 samples have been considered for arriving at the value for this parameter)

¹⁾ Sampling Approaches:

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

²⁾ 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 3rd party survey report document^{/HES/} 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 $C_{y,old,CEP-I}$ 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 $C_{y,old,CEP-I}$ 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 2016-2017 is 401 based on which corresponding emission reduction are conservatively claimed.

According to survey^{/HES/}, and as mentioned above, monitoring surveys have been carried out in nine 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
- Frame 7: Ger blanket in Songinokhairkhan district
- Frame 8: Ger blanket in Bayangol district
- Frame 9: Ger blanket in other district

The split of samples into these frames is as follows –

Heating Season 2016-2017 – Total samples - 401

Dwelling ->	GER			HOUSE		
District - >	Bayangol	Songinokhairkhan	Other	Bayangol	Songinokhairkhan	Other
Frame						
1	-	-	-	-	45	-
2	-	-	-	46	-	-
3	-	-	-	-	-	47
4	-	48	-	-	-	-
5	43	-	-	-	-	-
6	-	-	47	-	-	-
7	-	45	-	-	-	-
8.	40	-	-	-	-	-

9.	-	-	40	-	-	-
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Out of total 19,908 (N_{all}) efficient heating products under CPA-0001, 4,465 have been deployed in the house hold, 14,173 in ger and 1,270 ger blanket. CME has selected sample of 401 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 5)^{/G-SS/}. A sample size calculation spread sheet^{/SSCAL/Annex-08/} 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-2016-17 and **ANNEX 2 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 heating season 2016-2017

Crediting Category	N	POF	Std. Err.	90% Confidence Level: Precision Achieved	Meets 90/10 Rule?
House-Song.	45	89%	0.05	8.67%	Yes
House-Bayan.	46	89%	0.05	8.47%	Yes
House-Other	47	89%	0.04	8.28%	Yes
Ger-Song.	48	90%	0.04	8.10%	Yes
Ger-Bayan.	43	88%	0.05	9.10%	Yes
Ger-Other	47	89%	0.04	8.28%	Yes

Blanket-Song	45	87%	0.05	9.62%	Yes
Blanket-Bayan	40	88%	0.05	9.83%	Yes
Blanket-Other	40	88%	0.05	9.83%	Yes

C_{y,new,CEPi} Survey results for heating season 2016-2017

Crediting Category	N	Mean (tons coal/HH/ heating season)	Standard Deviation	90% Confidence Level: Precision Achieved	Meets 90/10 Rule?
House-Song.	40	3.81	0.81	5.51%	Yes
House-Bayan.	41	3.50	1.11	8.15%	Yes
House-Other	42	3.58	0.63	4.45%	Yes
Ger-Song.	43	3.44	0.62	4.54%	Yes
Ger-Bayan.	38	3.17	0.67	5.61%	Yes
Ger-Other	42	3.44	0.71	5.24%	Yes
Blanket-Song	39	4.17	0.50	3.19%	Yes
Blanket-Bayan	35	3.59	0.79	6.15%	Yes
Blanket-Other	35	3.93	0.98	6.96%	Yes

Complete details of the HES survey, data analysis, and results can be found in **ANNEX 1 - ER Calculations & HES-2016-17**.

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 in both cases for both the heating seasons.

C.4.2 Sampling approaches during verification

<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 ¹⁾	Sampling Type ²⁾	Sample survey Population by PP	Sample survey by VT
	POF	SiRS	AS	401	16
	C _{y,new,CEP-i}	SiRS	AS	401	16
	C _{y,old,CEP-i}	SiRS	AS	401	16

¹⁾ Sampling Approaches:

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

²⁾ 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 04.0)” and the “*Standard for Sampling and Surveys for CDM Project Activities and Programme Activities* (version 05.0). 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^{MT/}”, 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. 65 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

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

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
General			
Compliance of the monitoring report with the monitoring report form	0	0	0
Remaining forward action requests from validation and/or previous verification	0	0	0
Specific-case CPA(s) considered for verification and covered in this report	0	1	0
Programme of activities			
Compliance of the programme implementation with the registered PoA-DD	1	0	0
Implementation and operation of the management system	1	0	0
Post-registration changes			
<ul style="list-style-type: none"> Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline 	0	0	0
<ul style="list-style-type: none"> Corrections 	0	0	0
<ul style="list-style-type: none"> Inclusion of a monitoring plan in a registered 	0	0	0

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
PoA-DD (including its generic CPA-DD(s))			
• Permanent changes to the monitoring plan as described in the registered PoA-DD, applied methodology, or applied standardized baseline	0	0	0
• Changes to the programme design of the registered PoA-DD (including corresponding changes to project design of the generic CPA-DD(s)) and updates to the eligibility criteria for inclusion of specific-case CPAs in the PoA	0	0	0
• Types of changes specific to afforestation and reforestation activities	0	0	0
Component project activity(ies)			
Compliance of the CPA implementation with the included CPA design document	0	0	0
Post-registration changes			
• Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline	0	0	0
• Corrections	0	0	0
• Changes to the start date of the crediting period	0	0	0
• Inclusion of a monitoring plan to an included CPA-DD	0	0	0
• Permanent changes to the monitoring plan as described in the included CPA-DD, applied methodology, or applied standardized baseline	0	0	0
• Changes to the programme design of the included CPA-DD	0	0	0
• Types of changes specific to afforestation and reforestation component project activities	0	0	0
Compliance of the monitoring plan with the monitoring methodology including applicable tool and standardized baseline	0	0	0
Compliance of monitoring activities with the registered monitoring plan	0	0	0
• Data and parameters fixed ex ante or at renewal of crediting period	0	0	0
• Data and parameters monitored	0	2	0
• Implementation of sampling plan	0	0	0
Compliance with the calibration frequency requirements for measuring instruments	0	0	0
Assessment of data and calculation of emission reductions or net removals	-	-	-
• Calculation of baseline GHG emissions or baseline net GHG removals by sinks	0	0	0
• Calculation of project GHG emissions or actual net GHG removals by sinks	0	1	0
• Calculation of leakage GHG emissions	0	0	0
• Summary of calculation of GHG emission reductions or net GHG removals by sinks	0	0	0
• Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included specific-case CPA	0	0	0
• Remarks on difference from estimated value in registered PDD	0	0	0
Others (please specify)	0	0	0
Total	1	4	0

SECTION D. 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 E. Verification opinion

MicroEnergy Credits (MEC), has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 3rd 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 VT during onsite verification audit. This verification covers the period from 01/05/2016 to 30/04/2017 (including both days).

This verification covers the emission reductions achieved by CPA-8142-0001 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: **46,045 tCO₂e**

SECTION F. 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.: 03
 from: 01/05/2016
 to: 30/04/2017

(including both days) as follows:

Emission reductions: **46,045 tCO₂e.**

New Delhi, 29/08/2017

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

SECTION G. Verification findings - General**G.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"> • /MR/ • /MRT/ • /unfccc/ 	
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"/>	The respective requirements have widely been complied with; however; the following issues needed to be addressed in this context:
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.	

G.2. Remaining forward action requests from validation and/or previous verification

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^{PDD/} and the validation report^{VAL/}, 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 not 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.
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<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 not yet been appropriately addressed (for details please refer to appendix 4):
	- N/A

G.3. Specific-case CPA(s) considered for verification and covered in this report

Reference number of the specific-case CPA included in the PoA as of the end of this monitoring period	Is the specific-case CPA considered for this verification? (yes/no)	Version number of the registered PoA-DD to which the specific-case CPA complies with	Confirmation that a request for issuance including the specific-case CPA has been published for the previous monitoring period (Y/N)
8142-0001	Yes	2.2	Y

SECTION H. Verification findings – Programme of activities

H.1. Compliance of the programme implementation with the registered programme design document

Means of verification	<p>By means of an in-depth review of the PoA-DD^{/PoA-DD/} 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"> • /PoA-DD/ • /CPA-DD/ • /MR/ • /VVS/ • /XLS/ • /unfccc/ • /IM/ 	
Findings	<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):

	<input type="checkbox"/>	- 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 section 3.1 of 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	
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.
	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.	

H.2. Implementation and operation of the management system

Means verification	of	<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^{TRNG/} 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.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /PoA-DD/ • /CPA-DD/ • /VAL/ • /VER/ • /MR/ • /VVS/ • /XLS/ • IM • /TRNG/
Findings		No CARs/CLs have been raised in this context. No correction was required in the context.
Conclusion		The management system is implemented as per the registered PoA-DD & CPA-DD

H.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.

H.3.1. Temporary deviations from the registered monitoring plan, monitoring methodology or 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	<table border="1"> <tr> <td>Title</td> <td></td> </tr> <tr> <td>Status</td> <td><input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)</td> </tr> <tr> <td>Appr.date</td> <td></td> </tr> <tr> <td>Ref. No.</td> <td></td> </tr> </table>	Title		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)	Appr.date		Ref. No.	
Title										
Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)									
Appr.date										
Ref. No.										
	2	<table border="1"> <tr> <td>Title</td> <td></td> </tr> <tr> <td>Status</td> <td><input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)</td> </tr> <tr> <td>Appr.date</td> <td></td> </tr> <tr> <td>Ref.No.</td> <td></td> </tr> </table>	Title		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)	Appr.date		Ref.No.	
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:								

H.3.2. 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:	
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.		

H.3.3. Inclusion of a monitoring plan in a registered PoA-DD (including its generic CPA-DD(s))

<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

H.3.4. Permanent changes to the monitoring plan as described in the registered PoA-DD, applied methodology, or applied standardized baseline

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:

H.3.5. Changes to the programme design of the registered PoA-DD (including corresponding changes to project design of the generic CPA-DD(s)) and updates to the eligibility criteria for inclusion of specific-case CPAs in the PoA

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:

H.3.6. Types of changes specific to afforestation and reforestation activities

<input checked="" type="checkbox"/>	N/A - as this monitoring plan was part of the registered PDD
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SECTION I. Verification findings – Component project activity(ies)**I.1. Compliance of the CPA implementation with the included CPA design document**

Means verification of	CPA-8142-0001 is 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. Moreover during course of verification a clarification is raised on measure to avoid cross effect due to two kind of technologies under the project activity by the same households.
Findings	Please refer CL F1 under Appendix-4 of this report for detailed information on the same.
Conclusion	The CPA-8142-0001 has 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.

I.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.

I.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	<table border="1"> <tr> <td>Title</td> <td></td> </tr> <tr> <td>Status</td> <td><input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)</td> </tr> <tr> <td>Appr.date</td> <td></td> </tr> <tr> <td>Ref. No.</td> <td></td> </tr> </table>	Title		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)	Appr.date		Ref. No.	
Title										
Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)									
Appr.date										
Ref. No.										
	2	<table border="1"> <tr> <td>Title</td> <td></td> </tr> <tr> <td>Status</td> <td><input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)</td> </tr> <tr> <td>Appr.date</td> <td></td> </tr> <tr> <td>Ref.No.</td> <td></td> </tr> </table>	Title		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)	Appr.date		Ref.No.	
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	<table border="1"> <tr> <td>Issue:</td> <td></td> </tr> </table>	Issue:							
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:	

I.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.		

I.2.3. Changes to the start date of the crediting period

N/A

I.2.4. Inclusion of a monitoring plan to an included CPA-DD

<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

I.2.5. Permanent changes to the monitoring plan as described in the included CPA-DD, applied methodology, or applied standardized baseline

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:		

I.2.6. Changes to the programme design of the included CPA-DD

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:

I.2.7. Types of changes specific to afforestation and reforestation component project activities

<input checked="" type="checkbox"/>	N/A - as this monitoring plan was part of the registered PoA-DD
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I.3. Compliance of monitoring plan with the monitoring methodology including applicable tool and standardized baseline

Means of verification	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"> • /MR/ • /AMS II.E/ • /unfccc/ 			
Findings	<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:			

Conclusion	<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.

I.4. Compliance of monitoring activities with the registered monitoring plan

I.4.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification		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"> • /MR/ • /XLS/ • /PoA-DD/ • /CPA-DD/ • /PS/ • /VVS/ • /unfccc/
Findings	<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
Conclusion	<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.

I.4.2. Data and parameters monitored

Means of verification		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 <ul style="list-style-type: none"> (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).
Findings		CAR G1 and CAR G2 were raised. Please refer to appendix 4
Conclusion	<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.
		<p>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).</p> <p>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.</p>

I.4.3. Implementation of sampling plan

Means of verification	<p>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</p> <ul style="list-style-type: none">(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. <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none">• /MR/• /XLS/• /PoA-DD/• /CPA-DD/• /HES/• //SSCL/• /ANN-10/• /REGG/• Annex-8/• /CPA-DD/.						
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><tr><td>Parameter:</td><td>POF</td></tr><tr><td>Name:</td><td>Product Operation Factor – 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></table>	Parameter:	POF	Name:	Product Operation Factor – 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
		Parameter:	POF				
Name:	Product Operation Factor – 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						
	<table><tr><td>Description on how the sampling efforts and survey comply with the validated sampling plan:</td><td>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.</td></tr><tr><td></td><td>As per the registered monitoring plan the POF is required to be monitored at least every 2 years. However, CME/PP is</td></tr></table>	Description on how the sampling efforts and survey comply with the validated sampling plan:	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.		As per the registered monitoring plan the POF is required to be monitored at least every 2 years. However, CME/PP is		
Description on how the sampling efforts and survey comply with the validated sampling plan:	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.						
	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. Samples exceeded calculated minimum sample size for 90/10 confidence/precision.
		2	Parameter:	$C_{y,new,CEP-i}$
			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>$C_{y,new,CEP-i}$ 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 $C_{y,new,CEP-i}$ is the quantity of each unit used multiplied by the quantity of coal in each unit, as demonstrated below.</p> <p>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)</p> <p>Coal consumption across the heating season is the sum of coal consumption in Autumn, Winter, and Spring. $C_{y,new,CEP-i}$ is calculated by taking the mean value of coal consumption for the heating season for the sampling frame. $C_{y,new,CEP-i}$ 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 9 sample frames for the applied monitoring period as follows:</p> <ul style="list-style-type: none"> • 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

			<ul style="list-style-type: none"> • Frame 7: Ger blanket in Songinokhairkhan district • Frame 8: Ger blanket in Bayangol district • Frame 9: Ger blanket in other district <p>The value is derived from a 3rd party survey report. i.e. Household Energy Survey (HES)^{/HES/} (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 G1 and CAR G2. Please refer Appendix 4 for details.	
Conclusion	<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.		

1.5. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	<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^{/ANNEX-4/}, 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"> • /MR/ • /XLS/ • /PoA-DD/ • /PoA-DD/ • /AMS. II.E/ • /ANNEX-4/ 		
Findings	<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"/>	<p>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.</p> <p>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.</p>	

		For details please refer to appendix 6
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: N/A
Conclusion	<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.

I.6. Assessment of data and calculation of emission reductions or net removals

I.6.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification		<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"> • Transparency: It has been checked whether the calculation of baseline emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae. • 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. • 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. • Completeness: It has been checked whether all calculations are complete and without omissions. <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR// • /ANN-1/ • /XLS/ • /HES/
Findings	<input checked="" type="checkbox"/>	<p>The calculation of the baseline emissions was found to be fully compliant with the above stated principles.</p> <p>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.</p>
	<input type="checkbox"/>	The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.
	<input checked="" type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised:</p> <p>CAR D1 and CAR H1</p>
Conclusion	<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.

I.6.2. Calculation of project GHG emissions or actual net GHG removals by sinks

Means of	During the verification the calculation of project GHG emissions has been
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Means of verification	<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"> • Transparency: It has been checked whether the calculation of project emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae. • 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. • 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. • Completeness: It has been checked whether all calculations are complete and without omissions. <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" 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.</p>
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	The following sources of information have been used in this context: <ul style="list-style-type: none"> • /MR/ • /AMS II.E/ • /IM/ • /XLS/. 	
Findings	<input checked="" type="checkbox"/>	The calculation of the project emissions was found to be fully compliant with the above stated principles. 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. No errors, miscalculations, omissions, misstatements or incomplete information have been identified.
	<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:
Conclusion	<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.
	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. 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 ^{/Annex-6/} in the registered PoA-DD.	

I.6.4. Summary of calculation of GHG emission reductions or net GHG removals by sinks

Means of verification	The verification team has checked if the MR includes a summary table of the emission reductions calculation specifying separately <ul style="list-style-type: none"> • Total baseline emissions, • Total project emissions, • Total leakage, • Total emission reductions. It has been assessed whether the values are correct or need to be revised as a consequence of issues identified above.	
Findings	<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 H1. Please refer Appendix-4 for details
Conclusion	<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 ₂ e)	Project emissions or actual net GHG removals by sinks (tCO ₂ e)	Leakage (tCO ₂ e)	GHG emission reductions or net GHG removals by sinks (tCO ₂ e)		
				Results achieved in the period up to 31 December 2012	Results achieved in the period from 1 January 2013 onwards	Results achieved in the entire monitoring period
CPA 001 heating season 2016-17	155,362	109,317	0	0	46,045	46,045
Total	155,362	109,317	0	0	46,045	46,045

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

Project Activity	ER _y (tCO ₂ e)		
	2016	2017	Total
CPA # 0001	25,826	20,219	46,045

I.6.5. Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included specific-case CPA

Means of verification	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.	
Findings	<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:
Conclusion	<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.
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Specific-case CPA reference number	Value estimated in ex ante calculation in the included specific-case CPA-DD(s)	Actual values achieved by the specific-case CPA(s) during this monitoring period
8142-0001	50,133 tCO ₂ e	46,045 tCO ₂ e

I.6.6. Remarks on difference from estimated value in registered CPA-DD


Means of verification	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.	
Findings	<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"/>	<i>For case 3:</i> 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:
Conclusion	<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.

Appendix 1. Abbreviations

Abbreviations	Full texts
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CO ₂	Carbon dioxide
CO _{2eq}	Carbon dioxide equivalent
CL	Clarification Request
CME	Co-ordinating 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 TUV NORD J/CDM Certification Program

Mr. Prakash Kumar Mishra


SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification) Technical Reviewer	2017-12-17
VCS / ISO 14064-2	Lead Assessor Technical Reviewer	2017-12-17

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
3.1	Energy demand

146 - Rev. 4, Date: 2016-05-09

146_S01-VA050-F03_2016-05-09_rev4.doc 001-VA050-F03 rev3 / 2012-10-25



Statement of Competence
Appointment and authorization according to the procedures
of the TUV NORD J/CDM Certification Program


Mr. David Lubanga

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification)	2018-10-20
VCS / ISO 14064-2	Lead Assessor	2018-10-20

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
3.1	Energy demand

251 - Rev. 4, Date: 2015-10-21



Statement of Competence
Appointment and authorization according to the procedures
of the TUV NORD J/CDM Certification Program

Mr. Stefan Winter

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2017-07-27
VCS	Senior Assessor (Validation, Verification) Technical Reviewer	2017-07-27

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal energy generation
1.2	Renewables
2.1	Energy distribution
3.1	Energy demand
4.1	Cement and lime production
4.2	Paper
5.2	Caprolactam, nitric and adipic acid
9.1	Aluminium and magnesium production
9.2	Iron, steel and Ferro-alloy production
13.1	Solid waste and wastewater
13.2	Manure

163 - Rev. 4, Date: 2015-01-05

163_S01-VA050-F03_2015-01-05_rev4.doc 001-VA050-F03 rev3 / 2012-10-25

Documents reviewed or referenced

No.	Author	Reference	Title	References to the document	Provider
1	UNFCCC	/MT/	Methodology and Tool <ul style="list-style-type: none"> AMS II.E Energy efficiency and fuel switching measures for buildings version 10" Assessment of debundling for small-scale project activities, version 04 	http://cdm.unfccc.int	Other
2	PP	/CPA-DD/	Component Project Activity Design Document titled "MicroEnergy Credits -- Microfinance for Clean Energy Product Lines – Mongolia-CPA No.001", version 2.2	http://cdm.unfccc.int	other
3	PP	/PoA-DD/	Programme of Activities Design Document titled "MicroEnergy Credits – Microfinance for Clean Energy Product Lines – Mongolia", version 2.2		
4	MEC	/ANNEX-1/ /XLS/	ER Calculations spreadsheet and House hold Energy Survey-2016-17_v2		
6	MEC	/ANN-2/ /CTP/	MicroEnergy Credits Tracker Platform Summary_v1	2016-17	Other
7		/ANN-3/ /HES/	MCA Mongolia Household Survey Report	2011-2012	other
8	SEET/MEC	/ANN-4/ /TECH/	Stove Testing Report (All tests were conducted by the Stove Emissions and Efficiency Testing (SEET) Laboratory in Ulaanbaatar Mongolia)	2013-2014	Other
09	MEC	/ANNEX-5/	Baseline Fuel Consumption Analysis	2011-2012	
10	MEC	/ANN-6/	Stove Dismantling procedures	2011	Other
11	MEC	/ANN-7/ /CTP/	MEC Tracker Database_CPA No. 001_v1	http://tracker3.microenergycredits.net/admin/xac	Other
13	MEC	/ANN-08/SSCAL/ /XLS/	Sample Size calculation spreadsheet	2017	Other
14	DOE	/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)		Other
14	IPCC	/IPCC/	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book	www.ipcc-nggip.iges.or.jp	Other
15	UNFCCC	/KP/	Kyoto Protocol (1997)	http://unfccc.int/kyoto_protocol/items/2830.php	Other
16	UNFCCC	/MA/	Decision 3/CMP. 1 (Marrakesh – Accords)	http://cdm.unfccc.int/Reference/COPMOP/index.html	Other
17	UNFCCC	/MRT/	Monitoring Report Form (CDM-PoA-MR-FORM), Version 02.0	https://cdm.unfccc.int/Reference/	Other

No.	Author	Reference	Title	References to the document	Provider
				PDDs Forms/index.html	
18	UNFCCC	/PS/	CDM Project Standard for programme of activities (Version 1.0, EB93-A07)	http://cdm.unfccc.int/Reference/Standards/index.html	Other
19	PP	/VAL/	Validation Report for PoA project "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	unfccc	Other
20	MEC	/TECH/	Technical specification of CEP	-	Other
21	UNFCCC	/VVS/	CDM Validation and Verification Standard for programme of activities (Version 1, EB93-A08)	http://cdm.unfccc.int/Reference/Standards/index.html	Other
22	UNFCCC	/G-SS/	"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 5.0)	https://cdm.unfccc.int/Reference/Guidclarif/index.html http://cdm.unfccc.int/Reference/Standards/index.html	Other
23	UNFCCC	/GOT/	Glossary "CDM terms" (version 08.0)	https://cdm.unfccc.int/filestorage/e/x/t/extfile-20150226124447549-glos_CDM.pdf/glos_CDM.pdf?t=UmZ8bnFjODI3fDCW9A3vJwR03kQQh4sbLiYu	Other
24	PP	/MR/	MicroEnergy Credits - Microfinance for Clean Energy Product Lines – Mongolia dated 0/06/2017, version 1.0 MicroEnergy Credits - Microfinance for Clean Energy Product Lines – Mongolia dated 08/08/2017, version 2.0 MicroEnergy Credits - Microfinance for Clean Energy Product Lines – Mongolia dated 17/08/2017, version 3.0 MicroEnergy Credits - Microfinance		CME

No.	Author	Reference	Title	References to the document	Provider
			for Clean Energy Product Lines – Mongolia dated 22/08/201, version 3.0		
25	PP	/TRNG/ /ANN-09/	PO Staff Training Records Usage Survey report attachment		Other
26	TN CERT GmbH	/VER/	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 22/02/2017		DOE

Appendix 3. Clarification requests, corrective action requests and forward action requests

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

FAR ID		Section no.		Date: DD/MM/YYYY
Description of FAR				
No FAR is raised during the validation/verification				
Project participant response (1st round)				Date: DD/MM/YYYY
Documentation provided by project participant (1st round)				
<input type="checkbox"/>	Changes in the PoA-DD	Section(s):	New version No.:	
<input type="checkbox"/>	Changes in the CPA-DD	Section(s):	New version No.:	
<input type="checkbox"/>	Changes in MR	Section(s):	New version No.:	
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:	
<input type="checkbox"/>	Other:			
DOE assessment (1st round)				Date: DD/MM/YYYY
Conclusion <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input type="checkbox"/> The finding is closed		

Table 2. CL from this verification

CL ID	CL F1	Section no.	F	Date: 05/08/2017
Description of CL				
It is observed that ger blankets are included in emission reductions in the current monitoring period. PP is required to explain/substantiate that how it is ensured that there are no cross effects in the situation where same household has ger blanket and cook stove.				
Project participant response (1st round)				Date: 06/08/2017
<p>GER blankets have been accounted for Emission reductions crediting in this monitoring period. A few additional questions have been added in the household survey questionnaire to check if the gers that have purchased an insulation blanket have also purchased an efficient project stove from Xacbank or an efficiency stove through any other source. Primarily these two products are expensive and people are normally not expected to own the products simultaneously. To make sure that cross effects are accounted for, in the surveys carried out for ger blankets, households were asked if they purchased efficient stoves in addition to the GER Blankets. From the responses, it was observed that while majority of the households reported to be using the ger blankets with an inefficient stove, some of the households did report having both the products with the ger blankets purchased first and an efficient stove later from retail sources. In line with the approach mentioned in the registered CPA-DD, when ger blankets are credited and blanket is the first CEP in the household, the emission reductions shall be calculated against a baseline of the inefficient stove. However, to ensure that the emission reductions are conservatively calculated, such households fraction of households owning both CEPs were not accounted in the POF. Thus, the overall usage rate was reduced by the same fraction. Hence, as a conservative approach the fraction of households with two CEPs were excluded from CER calculations.</p>				
Documentation provided by project participant (1st round)				
<input type="checkbox"/>	Changes in the PoA-DD	Section(s):	New version No.:	
<input type="checkbox"/>	Changes in the CPA-DD	Section(s):	New version No.:	
<input type="checkbox"/>	Changes in MR	Section(s):	New version No.:	
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:	
<input type="checkbox"/>	Other:			
DOE assessment (1st round)				Date: 09/08/2017

Registered CPA-DD includes the provision to account the when ger blankets are credited and blanket is the first CEP in the household, the emission reductions shall be calculated against a baseline of the inefficient stove. It was checked from the ER calculation spread sheet and HES survey and data sheet, that where households which have both the clean energy products (ger blanket and clean cook stove) from this project (CPA) PP has not accounted the ERs corresponding to that situation. The same has been verified during onsite visit and interview as well as ER sheet verification. Based on above and response from the PP clarification from the PP can be considered to be acceptable and appropriate.

CL F1 is closed out.

Conclusion

Tick the appropriate checkbox

- ☐ Additional action should be taken (finding remains open)
☒ The finding is closed

Table 3. CAR from this verification

CAR ID	01	Section no.	MR Form CDM PoA version 02	Date: 05/08/2017
Description of CAR				
Draft MR version 1.0				
Webhosted MR is assessed to be not used the latest valid version of MR filling template available at the CDM website. PP is required to complete the MR for CPA 01 following latest version (Version 02) of CDM PoA MR template.				
Project participant response (1st round)				Date: 19/08/2017
PP accept the mistake and now completed the CPA01 MR using latest version of CDM PoA MR template. Some other editorial improvements have been made and updated accordingly in the revised MR.				
Documentation provided by project participant (1st round)				
<input type="checkbox"/>	Changes in the PoA-DD	Section(s):	New version No.:	
<input type="checkbox"/>	Changes in the CPA-DD	Section(s):	New version No.:	
<input checked="" type="checkbox"/>	Changes in MR	Section(s): Entire MR	New version No.: 03	
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:	
<input type="checkbox"/>	Other:			
DOE assessment (1st round)				Date: 09/08/2017
Revised monitoring report is assessed against requirement of "Instruction for completing CDM PoA MR Form" and also against the detailed requirement with CDM PoA Project Standard version 01.				
Based on the assessment against above documents MR for CPA01 is found to be adequately completed and hence, CAR 1 is closed out.				
Conclusion		<input type="checkbox"/> Additional action should be taken (finding remains open)		
<i>Tick the appropriate checkbox</i>		<input checked="" type="checkbox"/> The finding is closed		

CAR ID	D1	Section no.	D	Date: 05/08/2017
Description of CAR				
Draft MR version 1.0				
Value of ER provided under section D.1 is not correct, please also compare with ER sheet and other part of this MR for values for thermal energy savings and other parameters.				
Moreover, Based on review of ER Calculations & HES-2016-17 spreadsheet and review of credit tracker platform, total Clean Energy Products are not found consistent.				
Project participant response (1st round)				Date: 06/08/2017
There was an error while copying the values from ER sheet and HES sheets to the monitoring report. These errors have been corrected and values in the monitoring report have been made consistent with the ER and HES sheets.				
Documentation provided by project participant (1st round)				
<input type="checkbox"/>	Changes in the PoA-DD	Section(s):	New version No.:	
<input type="checkbox"/>	Changes in the CPA-DD	Section(s):	New version No.:	
<input checked="" type="checkbox"/>	Changes in MR	Section(s): D.1	New version No.: 02	
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:	

<input type="checkbox"/> Other:	
DOE assessment (1st round)	Date: 09/08/2017
<p>Revised monitoring report is assessed to be found corrected with the values of ERs and other dependent parameters such as thermal energy savings and number of total Clean Energy products under the CPA.</p> <p>Now revised MR is in line with ER calculation spread sheet. CAR D1 is closed out successfully.</p>	
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

CAR ID	G1	Section no.	G.2	Date: 05/08/2017
Description of CAR				
<p>A consolidated CAR on section G.2 of the draft monitoring report was raised as following:</p> <ol style="list-style-type: none"> Under the parameter N_{All}, information on ger blanket such as regions and number is not found provided however the ER calculation spreadsheet and HES survey includes the same. Moreover, values for N_{all} is also not found to be consistent with the Annex-1. The values of sampling parameter "POF" and "$C_{y,new,CEPi}$" in the table 2.1 and 3.1 respectively are inconsistent with the value in Annex-1 ER Calculations & HES-2016-17. Parameter "POF - Product Operation Fraction" values provided are not consistent with the baseline survey analysis sheet and ER calculation spreadsheet (ANNEX-1). Furthermore, all data presented in section G for POF survey result are not consistent with the values verified in the HES survey report. Values presented for parameter $C_{y,New,CEP-i}$ and "$C_{y,old,CEPi}$" under section G.2 of the MR are not correct and in line with the Annex-1 (HES 2016-17). Furthermore, all data presented in section G.3 for parameter "$C_{y,new,CEPi}$" survey result is not consistent with the values verified in the HES survey report. Value for $WS_{1,Winter}$ for parameter "$WS_{y,s}$ household stoves and/or insulation" is not consistent with the value in the Annex-1- ER Calculations and HES 2016-17. Values presented for parameter $T_{y,s}$ household stoves and/or insulation under section G.2 of the monitoring report for heating season 2016-17 for Autumn, Winter and Spring are to be evidenced. 				
Project participant response (1st round)				Date: 06/08/2017
<p>Following parameters have been modified/corrected in the revised monitoring report:</p> <ol style="list-style-type: none"> Under the parameter N_{All}, information on ger blanket has been added like location of ger blankets. Value of N_{all} has also been corrected. the values of sampling parameter "POF" and "$C_{y,new,CEPi}$" has been made consistent with the HES sheet. Parameter "POF - Product Operation Fraction" values have been corrected in the revised monitoring report. Values of $C_{y,New, CEP-i}$ and "$C_{y,old,CEPi}$" under section G.2 of the MR have been made consistent with HES sheet. Values of "$C_{y,new,CEPi}$" in section G.3 has been corrected in the revised monitoring report. Value for $WS_{1,Winter}$ for parameter "$WS_{y,s}$ household stoves and/or insulation" have been made consistent with the value in the Annex-1- ER Calculations and HES 2016-17. Supporting sheet with details of values of $T_{y,s}$ household stoves and/or insulation across the heating season has been added to Annex-1. 				
Documentation provided by project participant (1st round)				
<input type="checkbox"/>	Changes in the PoA-DD	Section(s):	New version No.:	
<input type="checkbox"/>	Changes in the CPA-DD	Section(s):	New version No.:	
<input checked="" type="checkbox"/>	Changes in MR	Section(s): G.2	New version No.:	
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:	
<input type="checkbox"/>	Other:			

DOE assessment (1st round)		Date: 09/08/2017
<ol style="list-style-type: none"> 1. Revised MR is checked and under the parameter N_{All}, information on ger blanket including location of ger blankets are found included and also the value of parameter N_{all} found to be corrected and in line with the ER calculation and HES survey report 2016-17. CAR point is closed out. 2. As assessed from the revised monitoring report, the values of sampling parameter "POF" and "$C_{y,new,CEPI}$" are now made consistent with the HES sheet 2016-17 and hence CAR point is closed out. 3. HES sheet. 4. The values of parameter "POF - Product Operation Fraction" have been found to be corrected throughout in the revised monitoring report. CAR point is closed out. 5. Revised monitoring report found to be presented with the correct Values of parameter "$C_{y,new,CEPI}$" in section G.3. 6. Values of parameter for $WS_{1,Winter}$ for parameter "$WS_{y,s}$ household stoves and/or insulation" is found to be consistent and corrected with the Annex-1- ER Calculations and HES 2016-17, and hence CAR point is closed out. 7. Supporting sheet for the values of parameter $T_{y,s}$ household stoves and/or insulation across the heating season is found to be added to Annex-1 and hence acceptable. CAR point is closed out. 		
Conclusion <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

CAR ID	G2	Section no.	G.3	Date: 05/08/2017
Description of CAR				
Draft MR version 1.0 As per assessment of usage Survey HES spreadsheet and report, the total sample surveyed for the current heating season under the applied MP presented under section G.3 is not correct and in line with the Usage Survey (HES).				
Project participant response (1st round)				Date: 06/08/2017
There was an error while copying the values from HES worksheets to the monitoring report. These errors have been corrected and values in the monitoring report have been made consistent with the ER and HES sheets.				
Documentation provided by project participant (1st round)				
<input type="checkbox"/>	Changes in the PoA-DD	Section(s):	New version No.:	
<input type="checkbox"/>	Changes in the CPA-DD	Section(s):	New version No.:	
<input checked="" type="checkbox"/>	Changes in MR	Section(s):	New version No.: 02	
<input checked="" type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:	
<input type="checkbox"/>	Other:			
DOE assessment (1st round)				Date: 09/08/2017
Section G.3 of the revised MR is found to be corrected and made consistent with the usage Survey HES spreadsheet and report. CAR point is closed out.				
Conclusion <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed		

CAR ID	H1	Section no.	H	Date: 05/08/2017
Description of CAR				
Draft MR version 1.0 Demonstration of calculations of ER_y for each sampling frame under section H.1 is not correct as per assessment of Annex-1 ER calculation & HES-201617 spread sheet. Moreover Table 4 and Table 5 under the same section also do not contains the values in line with ER calculation spreadsheet. Also calculated value of emission reduction presented under section H.2 and rest of the MR are also not correct and consistent with the source of the same.				

Project participant response (1st round)		Date: 06/08/2017	
There was an error while copying the values from ER sheet and HES sheets to the monitoring report. These errors have been corrected and values in the monitoring report have been made consistent with the ER and HES sheets.			
Documentation provided by project participant (1st round)			
<input type="checkbox"/>	Changes in the PoA-DD	Section(s):	New version No.:
<input type="checkbox"/>	Changes in the CPA-DD	Section(s):	New version No.:
<input checked="" type="checkbox"/>	Changes in MR	Section(s): H.1	New version No.: 02
<input type="checkbox"/>	Changes in XLS	Worksheet(s):	New version No.:
<input type="checkbox"/>	Other:		
DOE assessment (1st round)		Date: 09/08/2017	
Section H.1 of the revised monitoring report including table 4 and table 5 are corrected and now found to be in line with Annex-1 ER calculation & HES-201617 spread sheet for each sampling frame.			
CAR H1 is successfully closed.			
Conclusion <i>Tick the appropriate checkbox</i>		<input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed	

Appendix 4. 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.
A. N_{all}:		Total number stoves disseminated		
<p>a) Measurement / Determination method (VVS, §§ 345-349) <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> <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. 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/ /METH/ /CPA-DD/ /XLS-ANNEX-1-2/ /ANN-8/^{CTP}</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_{all} is monitored continuously.</p> <p><i>Verifier’s action:</i></p> <p>The N_{all} 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. However CAR G1 was raised and closed successfully during the course of verification.</p>	CAR G1	OK
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 350-356) <i>In case of measured (or estimated) values, check</i></p>	/MR/	<p><i>Description:</i></p> <p>The N_{all} could be cross-evidenced by stove/ger blanket</p>	CAR G1	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>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>installation and delivery form. 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 data flow of N_{all} 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. However, CAR G1 was raised and closed during the course verification.</p>		
<p>c) Correctness (VVS, §§ 345-349)</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/^{CTP}</p>	<p><input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct (initial assessment)</p> <p><i>Description:</i></p> <p>The N_{all} 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_{all} 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. However, CAR G1 was raised and closed during the course verification.</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.
B. POF		Product Operation Fraction		
<p>a) Measurement / Determination method (VVS, §§ 345-349)</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/ /HES/ /IM/</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 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>However, during course of verification CAR G1 and CAR G2 was raised and closed successfully.</p>	<p>CAR G1 CAR G2</p>	<p>OK</p>
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 350-356)</p>	<p>/MR/ /CPA-</p>	<p><i>Description:</i></p> <p>The POF could be cross evidenced by stove/ger blanket</p>	<p>CAR G1</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>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>	DD/ /HES/ /IM/	<p>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>The parameter is monitored according to the registered CPA-DD and monitoring plan approved at the time of PoA registration. However during the course of verification CAR G1 and CAR G2 were raised and closed out successfully.</p>	CARG 2	
<p>c) Correctness (VVS, §§ 345-349)</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/ /CPA-DD/ /HES/ /IM/	<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. However, during the course of verification CAR G1 and CAR G2</p>		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.
		were raised and closed out successfully.		
C. $C_{y,new,CEP-i}$		$C_{y,new,CEP-i}$ 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.		
<p>a) Measurement / Determination method (VVS, §§ 345-349)</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/ /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"> • Frame 1: Stove in house dwelling type, located in Songinokhairkhan district • Frame 2: Stove in house dwelling type, located in Bayangol district • Frame 3: Stove in house dwelling type, located in other district • Frame 4: Stove in ger dwelling type, located in Songinokhairkhan district • Frame 5: Stove in ger dwelling type, located in Bayangol district • Frame 6: Stove in ger dwelling type, located in other district • Frame 7: Blanket-Song. • Frame 8. Blanket-Bayan • Frame 9: Blanket-Other <p>The value is derived from a 3rd party survey report. i.e. Household Energy Survey (HES)^{/HES/} (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>CAR G1 CAR G2</p>	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>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) and assessment of House Hold Energy Survey Analysis sheet.</p> <p>The 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>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 G1 and CAR G2 are raised and closed out successfully.</p>		
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 350-356)</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</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^{/HSE/}, 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>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>CAR G1 CAR G2</p>	<p>OK</p>

CDM-PoA-VCR-FORM

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.																		
Annex 2.		There are no inconsistencies in the data reported for the parameter. However, during course of verification CAR G1 and CAR G2 are raised and closed out successfully.																				
<p>c) Correctness (VVS, §§ 345-349)</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>	<div><input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct (initial assessment)</div> <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 C_{y,new,CEP-i} is calculated as :</p> <table><tr><td>1. House-Song.</td><td>3.81</td></tr><tr><td>2. House-Bayan.</td><td>3.50</td></tr><tr><td>3. House-Other</td><td>3.58</td></tr><tr><td>4. Ger-Song.</td><td>3.44</td></tr><tr><td>5. Ger-Bayan.</td><td>3.17</td></tr><tr><td>6. Ger-Other</td><td>3.44</td></tr><tr><td>7. Blanket-Song.</td><td>4.17</td></tr><tr><td>8. Blanket-Bayan</td><td>3.59</td></tr><tr><td>9. Blanket-Other</td><td>3.93</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) and value presented in MR are cross verified from HES Analysis sheet. The calculation of C_{y,new,CEP-i} 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 G1 and CAR G2 were raised and</p>	1. House-Song.	3.81	2. House-Bayan.	3.50	3. House-Other	3.58	4. Ger-Song.	3.44	5. Ger-Bayan.	3.17	6. Ger-Other	3.44	7. Blanket-Song.	4.17	8. Blanket-Bayan	3.59	9. Blanket-Other	3.93	<div>CAR G1</div> <div>CAR G2</div>	OK
1. House-Song.	3.81																					
2. House-Bayan.	3.50																					
3. House-Other	3.58																					
4. Ger-Song.	3.44																					
5. Ger-Bayan.	3.17																					
6. Ger-Other	3.44																					
7. Blanket-Song.	4.17																					
8. Blanket-Bayan	3.59																					
9. Blanket-Other	3.93																					

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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.
		closed successfully.		
D. $C_{y,old,CEP-i}$		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).		
<p>a) Measurement / Determination method (VVS, §§ 345-349)</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"> • Frame 1: Stove in house dwelling type, located in Songinokhairkhan district • Frame 2: Stove in house dwelling type, located in Bayangol district • Frame 3: Stove in house dwelling type, located in other district • Frame 4: Stove in ger dwelling type, located in Songinokhairkhan district • Frame 5: Stove in ger dwelling type, located in Bayangol district • Frame 6: Stove in ger dwelling type, located in other district • Frame 7: Blanket in Songinokhairkhan district • Frame 8: Blanket in Bayangol district • Frame 9: Blanket in other district <p>The value is derived from a 3rd 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>CAR G1 CARG 2</p>	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>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>However, during course of verification CAR G1 and CAR G2 were raised and closed successfully.</p>		
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 350-356)</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 3rd 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 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.</p>	<p>CAR G1 CAR G2</p>	<p>OK</p>
c) Correctness	/MR/	<input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct (initial assessment)	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>(VVS, §§ 345-349)</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 C_{y,old,CEP-i} is calculated as :</p> <p>For 2016-17 heating season</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><tr><td>7. Blanket-Song.</td><td>5.28</td></tr><tr><td>8. Blanket-Bayan</td><td>3.83</td></tr><tr><td>9. Blanket-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 C_{y,old,CEP-i} 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.</p>	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	7. Blanket-Song.	5.28	8. Blanket-Bayan	3.83	9. Blanket-Other	4.92		
1. House-Song.	5.72																					
2. House-Bayan.	4.27																					
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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.
		However, during course of verification CAR G1 and CAR G2 were raised and closed successfully.		
E. T_{y,s} household stoves and/or insulation		Mean temperature in Celsius for year y and season s (Fall, Winter, Spring, Summer) for target groups in Ger Area homes		
<p>a) Measurement / Determination method (VVS, §§ 345-349)</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"> T1,Autumn 8.1 T1,Winter -20.9 T1,Spring -5.6 <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> <p>However, during course of verification CAR G1 is raised and closed successfully.</p>	CAR G1	OK
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 350-356)</p> <p><i>In case of measured (or estimated) values, check</i></p>	<p>/MR/ /CPA-DD/</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>	CAR G1	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>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>	/AMS/ /PoA-DD/ /IM/ /NOAA/	<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>		
<p>c) Correctness (VVS, §§ 345-349)</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"> T1, Autumn 8.1 T1, Winter -20.9 T1, Spring -5.6 <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>	CAR G1	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>Conclusion:</i></p> <p>It is concluded by means of document review the data reported in the MR is correctly.</p> <p>However during course of verification CAR G1 is raised and closed out.</p>		
F. WS_{y,s} household stoves and/or insulation		Mean wind speed in knots for year y and season s (Fall, Winter, Spring, Summer) for target groups in Ulaanbaatar		
<p>a) Measurement / Determination method (VVS, §§ 345-349)</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> <p>However, during course of verification CAR G1 is raised and closed successfully.</p>	CAR G1	OK
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 350-356)</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</i></p>	<p>/MR/ /CPA-DD/ /AMS/ /HES/</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>	CAR G1	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>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>	/NOAA/	<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>		
<p>c) Correctness (VVS, §§ 345-349)</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/ /CPA-DD/ /AMS/ /HES/ /NOAA/	<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 PoA-DD and CPA-DD</p> <p>Value applied:</p> <p>For Heating Season 2016-2017</p> <p>WS_{1,Autumn} 5.5 knots WS_{1,Winter} 2.7 knots WS_{1,Spring} 5.3 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"> Autumn – August 2016, September 2016, October 2016 Winter – November 2016, December 2016, January 2016 	CAR G5	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.
		<ul style="list-style-type: none"> Spring – February 2017, March 2017, April 2017 <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>		
G. DW_{y,type}, household stoves and/or insulation		Number of dwellings that are houses for target groups in Ger Area homes		
<p>a) Measurement / Determination method (VVS, §§ 345-349)</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/ /HES/ /AMS/ /Cre-T/ /DATA/ /XLS/</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>1 or 0 stands for each household that used product and reported coal consumption in project scenario to calculate baseline coal consumption.</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) Accuracy and QA/QC Procedure (VVS, §§ 350-356)</p> <p><i>In case of measured (or estimated) values, check</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>	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>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><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>		
<p>c) Correctness (VVS, §§ 345-349)</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/ /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> <p><i>Verifier's action:</i></p> <p>The resource has been cross checked by verification team according to 3rd 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>	OK	OK
<p>H. η_{new}</p>		<p>Efficiency of the new efficient CEP</p>		
<p>a) Measurement / Determination method</p>	<p>/IM01/</p>	<p><i>Description:</i></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>(VVS, §§ 345-349)</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>	/POADD/ /AMS II.G/ /ANN-3/ /ANN-4/	<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>		
<p>b) Accuracy and QA/QC Procedure (VVS, §§ 350-356)</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>	/IM01/ /POADD/ /AMS II.G/ /ANN-3/ /ANN-4/	<p><i>Description:</i></p> <p>The value is derived from 3rd 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> <p><i>Conclusion:</i></p> <p>There are no inconsistencies in the data reported for the parameter.</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>c) Correctness (VVS, §§ 345-349)</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>	<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 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 3rd 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 5. 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: