



Monitoring report form for CDM programme of activities
(version 01.0)

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

MONITORING REPORT

Title of the programme of activities (PoA)	MicroEnergy Credits -- Microfinance for Clean Energy Product Lines - Mongolia	
UNFCCC reference number of the PoA	CDM PoA 8142, CPA No. 002 & CPA No. 003	
Version number(s) of the PoA-DD(s) applicable to this monitoring report	3	
Coordinating/managing entity (CME)	MicroEnergy Credits	
Version number of this monitoring report	1	
Completion date of this monitoring report	08/09/2016	
Monitoring period number and dates covered by this monitoring report	Monitoring Period # 1 for CPA-002 & CPA-003 Duration: 01/05/2014 - 30/04/2016	
Monitoring report number for this monitoring period	2	
Host Party(ies)	Host Party(ies) of the PoA	Is this a host Party to a specific-case CPA covered in this monitoring report?(yes/no)
	Mongolia	Yes
Sectoral scope(s)	Sectoral scope 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 amount of GHG emission reductions or net GHG removals by sinks for all specific-case CPAs in the PoA covered in this monitoring report	GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012	GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards
	N/A	9,664

PART I - Programme of activities

SECTION A. Description of PoA

A.1. Brief description of the PoA

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The PoA involves the installation and maintenance of clean energy products (CEPs) including efficient cooking and heating stoves and home insulation products by Partner Organization (PO) in Mongolia.

The current practice in Mongolia is to use inefficient stoves for cooking and heating and inefficient home insulation at the household level, resulting in necessary combustion of large amounts of coal, the primary fuel used for heating. The use of this fuel generates several greenhouse gases (GHG) including Carbon dioxide (CO₂). The replacement of these traditional products with CEPs reduces the amount of fuel required for heating and reduces the amount of GHGs emitted into the atmosphere during combustion.

MicroEnergy Credits (MEC) is the CME for the PoA. MEC is a social enterprise that helps micro-entrepreneurs and low-income households in developing countries to invest in CEPs through their local microfinance institution. Under the PoA, MEC develops programs with microfinance institutions¹ and clean product suppliers to market, distribute, and finance CEPs to micro-entrepreneurs and low-income households.

Policy/measure or stated goal of the PoA

The goal of the PoA is to use microfinance to expand access to clean energy to millions of microentrepreneurs and low income households, enabling:

- Households to achieve critical development improvements (health, education, economic status)
- Households to benefit from savings on energy expenditures
- Expansion of the clean energy product supply chain to serve low income populations
- Reduced environmental impacts from carbon emissions and deforestation

A.1.1. Generic CPA(s)

Title, identification/reference number and/or version number of the generic CPA(s) of the PoA	Sectoral scope(s)	Applied methodology(ies) or combination of methodologies and/or standardized baseline(s)
Title: MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia –CPA No.XX “Name of CPA implementor or Partner Organization” Version Number: 2.2 dated 10/10/2012	Sectoral scope 3: Energy demand;	AMS II.E. Energy Efficiency and Fuel Switching Measures for Buildings, version 10

¹ For the purposes of this document, a “microfinance institution” is defined as a local institution that provides financial services to low income households.

A.1.2. Specific-case CPA(s) covered in this monitoring report

Reference number of the specific-case CPA included in the PoA as of the end of this monitoring period	Title, identification/ reference number and version number of the generic CPA to which the specific-case CPA applies	Crediting period dates of the specific-case CPA	Is this specific-case CPA covered in this monitoring report? (yes/no)
8142-0001	Title: MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia –CPA No.XX “Name of CPA implementor or Partner Organization” Version Number: 2.2 dated 10/10/2012	01 Aug 2013 - 31 Jul 2020 (Renewable)	No
8142-0002	Title: MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia –CPA No.XX “Name of CPA implementor or Partner Organization” Version Number: 2.2 dated 10/10/2012	08 Mar 2016 - 07 Mar 2023 (Renewable)	Yes
8142-0003	Title: MicroEnergy Credits – Microfinance for Clean Energy Product Lines - Mongolia –CPA No.XX “Name of CPA implementor or Partner Organization” Version Number: 2.2 dated 10/10/2012	08 Mar 2016 - 07 Mar 2023 (Renewable)	Yes

A.2. Contact information of the coordinating/managing entity (CME) and/or responsible persons(s)/entity(ies)

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SECTION B. Implementation of PoA**B.1. Implementation of the management system of the PoA**

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The management system validated in the PoA has been implemented in line with the provisions on the implementation of the management system in the Project Standard.

The CME has helped PO's establish a marketing and lending program for CEPs. This program engages its own staff, as well as local distributors, technicians and other service providers to effectively market the Clean Energy Products (CEPs) to clients (households). The PO's followed the monitoring plan and procedures to identify each CEP sold during the project so that the appropriate amount of emissions reductions can be claimed.

MEC is the CME responsible for carrying out process of inclusion of CPAs in the PoA. Within MEC, the person responsible for carrying out this process is the Carbon Operations Manager. This individual is trained using the MEC user manual, which specifies how to complete the inclusion process. This individual has sufficient experience with CDM projects and terminology to successfully carry out the duties. The CME has ensured that Carbon Operations Manager received relevant training and has all necessary competencies to accurately assess and oversee the inclusion process, including the following:

- Sound understanding of all inclusion criteria
- Knowledgeable on issues relating to Additionality
- Adept at ensuring protocol are followed to prevent double counting

The Carbon Operations Manager reports to the CEO of MEC. As necessary, the Carbon Origination Manager will contract expert assistance from a carbon consulting group to complete the inclusion process. If the Carbon Operations Manager leaves or takes on a new role, the incoming Manager will be similarly trained. The Carbon Operations Manager, the CME and the POs all respond to annual audits and address any issues found during those audits to ensure that the PoA continues to improve overtime.

MEC's

Tracker Platform enables MicroEnergy Credits to maintain consistent data on all CPAs and product installations Credit Tracker Platform is used to maintain records for each SSC-CPA. The MEC Credit Tracker Platform has been designed specifically for accelerating microfinance access to clean and efficient energy. The Credit Tracker Platform is used to collect and store the information related to the unique identification number, location, installation date, and usage status of each clean energy product (CEP) in each CPA, making it easy to identify, locate and verify any or all of the installations that pertain to a given CPA. The MEC Credit Tracker Platform is a hosted internet service, limiting the risk of loss of data.

The Credit. The process for entering data into the Credit Tracker Platform is consistent across all CPAs. At the time of installation, the PO creates a Booking Record (in paper or electronic format) that captures detailed data on the installation:

- Household name
- Location of household (address and/or GPS location)
- Product type installed
- Product model installed
- Date of installation
- Unique identifier number for CEP
- Respective CPA

Once the installation is complete, the PO ensures that all the data from the Booking Record created at the time of installation is accurately captured in the electronic Booking Record in the Credit Tracker Platform.

The PO implements an internal check to verify the accuracy of data entry and to ensure that the data captured in Credit Tracker is identical to the data recorded at the time of installation. Personnel are trained in a group training session where the monitoring presentation is given by staff of the clean energy product unit. Personnel are also provided with a user manual. These training sessions take place at least once before the sale of the first CEP, and as needed according to the progress of the sales, or at least every month--whichever occurs earlier. The CME will provide the DOE with the materials generated from the meetings and trainings with all parties to demonstrate that they were conducted. The materials could be any of the following, but are not limited to, photos, emails, participation sheets, self-statements and training materials.

B.2. Implementation of single sampling plan(s)

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Sampling plan is implemented separately for each specific-case CPA. There is no single-sampling applied to any of the specific-case CPAs under this PoA for this monitoring period.

1. Based on CEP type, dwelling type, and district, CEPs credited in the monitoring period are classified into one of six frames which were used to for sampling to determine coal consumption.

Frame 1: Stove in house dwelling type, located in Songinokhairkhan district ("House - Song.")

Frame 2: Stove in house dwelling type, located in Bayangol district ("House - Bayan.")

Frame 3: Stove in house dwelling type, located in other district ("House-Other")

Frame 4: Stove in ger dwelling type, located in Songinokhairkhan district ("Ger - Song.")

Frame 5: Stove in ger dwelling type, located in Bayangol district ("Ger - Bayan.")

Frame 6: Stove in ger dwelling type, located in other district ("Ger - Other")

These sampling frames also serve as the crediting categories for CEPs. These sampling frames are drawn out separately for CPA-002 and CPA-003.

SECTION C. Post-registration changes to the PoA (including the generic CPA(s))**C.1. Corrections**

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N/A

C.2. Inclusion of a monitoring plan to the registered PoA-DD (including its generic CPA-DD(s)), if a monitoring plan was not included at the time of registration

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N/A

C.3. Permanent changes to the monitoring plan as described in the registered PoA-DD, applied methodology, or applied standardized baseline

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N/A

C.4. 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

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N/A

C.5. Types of changes specific to afforestation and reforestation activities

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N/A

PART II - Specific-case component project activity(ies)**SECTION D. Description of specific-case CPA(s)**

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D.1. Brief description of implemented specific-case CPA(s)

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XacBank LLC is the PO for CPA No. 002 & CPA No. 003. XacBank is a leading microfinance institution in Mongolia, which in partnership with MEC developed a clean energy lending program to offer the CEPs included in the PoA. XacBank has signed the standard contractual agreement with the CME (MEC) to participate in the PoA, which guides the transfer of the emission reduction rights to the CME (MEC).

CPA Reference Number: 8142 – 0002

Purpose of the specific-case CPA(s) and the measures taken for GHG emission reductions or net GHG removals by sinks –

Purpose: Under the CPA, MicroEnergy Credits works with PO – XacBank to develop a successful and diversified clean energy lending program. The clean energy program addresses typical barriers for low income clients including education, price, finance, and supply and aftersales service. MicroEnergy Credits trains the PO's to implement the clean energy lending program, as well as a robust and transparent carbon credit monitoring and tracking system to quantify and record the volume of carbon emission reductions created through the clean energy program.

Measures taken: The proposed specific-case CPA involves marketing, distributing, and financing improved cook stoves and insulation products for low income households in Mongolia. These products provide efficient energy for cooking .

1. Brief description of the installed technology and equipment

The project activity makes available two types of CEPs to low-income populations in Mongolia:

1. Energy efficiency: Efficient cooking and heating technologies
2. Insulation products: Ger blankets

In this monitoring period, only efficient cooking and heating stoves are credited.

1. Energy efficiency: Efficient cooking and heating stoves (Stove)
The efficient cooking and heating stove models under this CPA are:

<u>Stove Model</u>	<u>Thermal Efficiency</u>
Silver Stove Mini (model 131)	71%
Silver Stove Turbo (model 26)	74%
Silver Twin (model 181)	70%
Royal Single/Dul Stove	70%
Royal Double Stove	72%
Royal Golomt Stove	75.8%
Ikh Tengeriin Khuhch LLC Bekas Stove (model 107)	70%
Chin-1 Stove	72.7%
Elmeko LLC Talst Stove (model 001)	83%

The efficient cooking and heating stoves reduce the amount of fuel required to keep the house at a habitable temperature during cold weather. The stoves use an insulated combustion chamber and are designed to retain heat for longer and at a higher temperature than the traditional versions, allowing users to keep their homes warmer while using less fuel. All stoves employed in the CPA utilize the most common and locally accessible fuel sources—primarily pit-coal along with a minority use of wood (primarily non-renewable biomass) as a starter fuel—while significantly enhancing the combustion process. The PoA includes emissions reductions from decreased use of coal only; to be

conservative it does not include emissions reductions from decreased consumption of non-renewable biomass used as starter fuel.

As all of the efficient cooking and heating stoves are similar in design and have thermal efficiency specifications within +/-5% of each other², they are considered as a single technology type of “stove” in crediting.

Stoves are installed in one of two dwelling types: a house or a ger. A ger (i.e. a yurt) is a portable felt-covered dwelling structure that is the traditional housing type and is a low-cost alternative to a more permanent housing structure for many Mongolians. According to analysis of the baseline population, the dwelling type has a significant impact on the amount of coal consumed in the baseline population, therefore the dwelling type was considered to be a factor that would have significant impact on coal consumption in the project scenario (See **ANNEX 8** – Baseline Fuel Consumption Analysis). Therefore stoves are divided by dwelling type in crediting.

2. Insulation products: Ger blankets

The ger-blanket models under this CPA are:

- 4-walled model
- 5-walled model

A ger insulation blanket is an insulated blanket which can go over the traditional wool felt ger covering or replace it. It has a double layer of insulation inside and a waterproof layer outside. The blanket comes in six sections, including a special door covering and a section that covers the base of the ger on the outside to keep out wind, water and dirt.

Previously, well-insulated ger blankets were not available on the market due to market barriers. Ger producers did not think there was a demand for the product, because low income people could not afford them, and because marketing and distribution were difficult given the large geographic spread of ger homes. XacBank LLC worked with local small and medium enterprises to develop a high quality ger blanket, and then created the clean energy financing program that would make the products affordable.

While ger blankets reduce household coal consumption, they are conservatively not credited in this monitoring period.

2. *Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.)*

All the CEPs under this CPA were installed during 2014 & 2015. However, the official start date of the CPA crediting period is 08/03/2016. The PoA conservatively only credits the reduction in coal used during the heating season, as coal usage during the summer is minimal, used only for cooking. As reported in the Household Energy Survey, 99% of households report using less or the same amount of coal in summer after adopting the CEP (see **ANNEX 5** - Household Energy Survey: Fuel Consumption and Usage Report).

The first monitoring period covers the duration from 08/03/2016 - 30/04/2016. Below is the summary of installations under the CPA-002:

Dwelling type and Districts	Number of cookstoves
GER Bayangol	766
GER Songinokhairkhan	4120
House Bayangol	248
House Songinokhairkhan	1245

² See technical specifications in Supporting Documents

GER Other	7370
House Other	2725
Total	16474

3. Total GHG emission reductions or net anthropogenic GHG removals by sinks: 86,626 tCO₂e

Table 1: Total GHG emissions reductions and GWh_{thermal} Savings

Project Activity	tCO ₂ e	GWh _{thermal} Savings
CPA No. 002	9,186	38
Total	9,186	38

Source: **ANNEX 2** - ER Calculations

Per AMS-II.E, the aggregate energy savings of a single CPA may not exceed 180 GWh thermal per year. As demonstrated above, CPA No. 001 is below the threshold. Calculations of GWh thermal are demonstrated in **ANNEX 2** - ER Calculations.

CPA Reference Number: 8142 – 0003

Purpose of the specific-case CPA(s) and the measures taken for GHG emission reductions or net GHG removals by sinks –

Purpose: Under the CPA, MicroEnergy Credits works with PO – XacBank to develop a successful and diversified clean energy lending program. The clean energy program addresses typical barriers for low income clients including education, price, finance, and supply and aftersales service. MicroEnergy Credits trains the PO's to implement the clean energy lending program, as well as a robust and transparent carbon credit monitoring and tracking system to quantify and record the volume of carbon emission reductions created through the clean energy program.

Measures taken: The proposed specific-case CPA involves marketing, distributing, and financing improved cook stoves and insulation products for low income households in Mongolia. These products provide efficient energy for cooking .

4. Brief description of the installed technology and equipment

The project activity makes available two types of CEPs to low-income populations in Mongolia:

3. Energy efficiency: Efficient cooking and heating technologies
4. Insulation products: Ger blankets

In this monitoring period, only efficient cooking and heating stoves are credited.

3. Energy efficiency: Efficient cooking and heating stoves (Stove)
The efficient cooking and heating stove models under this CPA are:

<u>Stove Model</u>	<u>Thermal Efficiency</u>
Silver Stove Mini (model 131)	71%
Silver Stove Turbo (model 26)	74%
Silver Twin (model 181)	70%
Royal Single/Dul Stove	70%
Royal Double Stove	72%
Royal Golomt Stove	75.8%
Ikh Tengeriin Khuhch LLC Bekas Stove (model 107)	70%

Chin-1 Stove	72.7%
Elmeko LLC Talst Stove (model 001)	83%

The efficient cooking and heating stoves reduce the amount of fuel required to keep the house at a habitable temperature during cold weather. The stoves use an insulated combustion chamber and are designed to retain heat for longer and at a higher temperature than the traditional versions, allowing users to keep their homes warmer while using less fuel. All stoves employed in the CPA utilize the most common and locally accessible fuel sources—primarily pit-coal along with a minority use of wood (primarily non-renewable biomass) as a starter fuel—while significantly enhancing the combustion process. The PoA includes emissions reductions from decreased use of coal only; to be conservative it does not include emissions reductions from decreased consumption of non-renewable biomass used as starter fuel.

As all of the efficient cooking and heating stoves are similar in design and have thermal efficiency specifications within +/-5% of each other³, they are considered as a single technology type of “stove” in crediting.

Stoves are installed in one of two dwelling types: a house or a ger. A ger (i.e. a yurt) is a portable felt-covered dwelling structure that is the traditional housing type and is a low-cost alternative to a more permanent housing structure for many Mongolians. According to analysis of the baseline population, the dwelling type has a significant impact on the amount of coal consumed in the baseline population, therefore the dwelling type was considered to be a factor that would have significant impact on coal consumption in the project scenario (See **ANNEX 8** – Baseline Fuel Consumption Analysis). Therefore stoves are divided by dwelling type in crediting.

4. Insulation products: Ger blankets

The ger-blanket models under this CPA are:

- 4-walled model
- 5-walled model

A ger insulation blanket is an insulated blanket which can go over the traditional wool felt ger covering or replace it. It has a double layer of insulation inside and a waterproof layer outside. The blanket comes in six sections, including a special door covering and a section that covers the base of the ger on the outside to keep out wind, water and dirt.

Previously, well-insulated ger blankets were not available on the market due to market barriers. Ger producers did not think there was a demand for the product, because low income people could not afford them, and because marketing and distribution were difficult given the large geographic spread of ger homes. XacBank LLC worked with local small and medium enterprises to develop a high quality ger blanket, and then created the clean energy financing program that would make the products affordable.

While ger blankets reduce household coal consumption, they are conservatively not credited in this monitoring period.

5. *Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.)*

All the CEPs under this CPA were installed during 2014 & 2015. However, the official start date of the CPA crediting period is 08/03/2016. The PoA conservatively only credits the reduction in coal used during the heating season, as coal usage during the summer is minimal, used only for cooking. As reported in the Household Energy Survey, 99% of households report using less or the same amount of coal in summer after adopting the CEP (see **ANNEX 5** - Household Energy Survey: Fuel Consumption and Usage Report).

³ See technical specifications in Supporting Documents

The first monitoring period covers the duration from 08/03/2016 - 30/04/2016. Below is the summary of installations under the CPA-003:

Dwelling type and Districts	Number of cookstoves
GER Bayangol	43
GER Songinokhairkhan	202
House Bayangol	10
House Songinokhairkhan	38
GER Other	386
House Other	145
Total	824

6. Total GHG emission reductions or net anthropogenic GHG removals by sinks: 86,626 tCO₂e

Table 2: Total GHG emissions reductions and GWh_{thermal} Savings

Project Activity	tCO ₂ e	GWh _{thermal} Savings
CPA No. 002	478	38
Total	478	2

Source: **ANNEX 2** - ER Calculations

Per AMS-II.E, the aggregate energy savings of a single CPA may not exceed 180 GWh thermal per year. As demonstrated above, CPA No. 001 is below the threshold. Calculations of GWh thermal are demonstrated in **ANNEX 2** - ER Calculations.

D.2. Geographical references or other means of identification of the location of the specific-case CPA(s)

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The host party of the project activity is Mongolia.



Figure 1: National Map of Mongolia (Source: Asian Development Bank)

The boundary of the CPA-002 & CPA-003 is determined by the location of the households where the CEPs are installed, but is limited to the boundaries Mongolia. The location of each clean energy installation⁴ is recorded in MEC's Tracker Platform, which has been designed specifically for accelerating microfinance access to clean and efficient energy (See **ANNEX 3** - MicroEnergy Credits Tracker Platform Summary). These locations define the more precise boundary of the project activity.

GPS coordinates for Ulaanbaatar (focal point of CPAs): 47.9200° N, 106.9200° E

The Tracker Platform is used to collect and store information for each CEP, including the unique identification number or sysnum, location, order date, installation date, and usage status of each CEP in the CPA, making it easy to identify, locate, and verify the installations that pertain to the CPA. The MEC Tracker Platform is a hosted internet service, limiting the risk of loss of data.

⁴ Location is defined by one of the following sets of information:

- A. Precise GPS location of the household that purchases/installs clean energy product.
- B. Credible address for household.
- C. Three of the following identifiers: Purchaser name, household address, phone number, bank ID number, national ID number, unique identification number, household GPS location, or GPS location within one mile of household.

SECTION E. Post-registration changes to specific-case CPA(s)**E.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline**

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In this monitoring period, only efficient cooking and heating stoves are credited. Ger blankets are conservatively not credited, though they are included in the CPA-002 & CPA-003 and may be credited in future monitoring periods. This is due to the current inability to accurately track product overlap in households, which is necessary to take cross-effects of the technologies into account.

The MEC Tracker Platform contains a unique entry for every CEP purchased, identifiable by sysnum (See **ANNEX 3 - MicroEnergy Credits Tracker Platform Summary**). Each CEP entry in the database contains multiple identifying characteristics to ensure that the product is accurately tracked, including household address, client's government issued passport number, GPS coordinates, and ongoing usage status updated through monitoring, described in Stage 1 of Section C. The MEC Tracker Platform also contains information critical to crediting for each CEP, including CEP type, date of installation, and dwelling type. In order to credit two CEPs in the household, the MEC Tracker Platform must demonstrate the number of CEPs in the household, the order of installation, and the sysnum of the "sister" CEP (other CEP in household). The MEC Tracker Platform currently defines the household via a match of household identifiers in the database (address, passport number, name) to identify those households that have purchased multiple CEPs. At this time, the MEC Tracker Platform is partially incomplete with respect to the identification of households and therefore the number and details of multiple CEPs in households. As this affects crediting for each CEP, the CME conservatively chooses to not credit ger blankets in this monitoring period. In subsequent monitoring periods, this information shall be completed to enable crediting of both CEPs in two installation households.

This temporary deviation does not require a request for prior approval by the Board, nor does it present a deviation from the applied methodology.

E.2. Corrections

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Not applicable

E.3. Changes to the start date of the crediting period of the specific-case CPA(s)

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Not applicable

E.4. Inclusion of a monitoring plan into the specific-case CPA(s) that was not included at registration

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Not applicable

E.5. Permanent changes to the monitoring plan as described in the registered specific-case CPA-DD(s), applied methodology or standardized baseline

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Not applicable

E.6. Changes to project design of the specific-case CPA(s)

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Not applicable

E.7. Types of changes specific to afforestation and reforestation specific-case CPA(s)

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Not applicable

SECTION F. Description of the monitoring system of specific-case CPA(s)

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Monitoring of CPA No. 002 & CPA No. 003:

Stage 1: MEC Tracker Platform - for determination of installation date, N_{all} , Ulaanbaatar district, and household type

Stage 1 of the monitoring methodology determines the following parameters:

- N_{all} – accurate number of CEPs
- $DW_{y,type}$ – dwelling type, house or ger [required for calculation of $C_{y,old,CEP-i}$]
- $D_{y, Songinokhairkhan}$ – district, if in Songinokhairkhan district [required for calculation of $C_{y,old,CEP-i}$]
- $D_{y, Bayangol}$ – district, if in Bayangol district [required for calculation of $C_{y,old,CEP-i}$]

All CEPs disseminated under the PoA are assigned a unique identifier number, the “sysnum”, in the MEC Tracker Platform at the time of sale. Each unique sysnum is assigned to one CPA based on installation date to ensure no double counting. Because the MEC Tracker Platform serves as the sales database for all CPAs, duplicate instances of products can easily be checked and resolved.

The Credit Tracker Platform also includes the following information:

- Household name
- Passport number of purchaser
- Mobile phone number of purchaser
- Location of household (address and/or GPS location)
- Product type installed, i.e. stove or ger blanket
- Product model installed
- Date of sale
- Date of installation
- Unique identifier number for CEP (sysnum)
- Dwelling type categorized as house or ger
- District name
- CPA Assignment (based on sales date)

Household name, purchaser passport number, purchaser mobile number, and location are used to locate end users for surveys or other customer follow-up. Product type and dwelling type are used for assigning CEPs to one of the crediting categories in this monitoring period. District name and dwelling type are needed for calculation of the baseline coal consumption using the Baseline Coal Consumption Regression Model (**ANNEX 9** - MCA-Mongolia Household Survey Report), and defined in ex-ante parameters. As noted above, sysnum and installation date are used to uniquely assign individual CEPs to CPAs.

QAQC is conducted on the MEC Tracker Platform through multiple mechanisms at both the PO and CME level. The brief description of the processes ensuring the accuracy of the Credit Tracker Platform follows (further information on the development and procedures to ensure database accuracy included in **ANNEX 3** - MicroEnergy Credits Tracker Platform Summary):

- The PO maintains in the MEC Tracker Platform a record of all clean energy products that are installed.

- The PO identifies the exact location of the CEP using GPS location and/or address of the household or organization.
- The emissions parameters required for ex-post management are maintained in the Credit Tracker Platform. These include the number and type of CEPs still in operation.
- The CME uses the MEC Tracker Platform to cross-check the new records with existing records in the MEC Tracker Platform in order to confirm that the installation record is complete, authentic, and that no double-counting occurs.
- The Credit Tracker records are cross-checked with the MFI banking MIS system, so that the number of systems is equivalent to the number of systems that were paid for.
- The CME reviews entries with insufficient information and requires the PO to re-check or collect more information or if insufficient information is gathered, does not include them in a CPA for crediting.
- The CME reviews entries for the location of the product, and if the product is located outside of the project boundary for the CPA, it is not included for crediting.
- The project will be audited by a DOE at minimum biennially. Corrective actions will be taken to ensure more accurate monitoring as necessary, based on the results of the audit.
- All monitored data required for verification and issuance will be kept for two years after the end of the crediting period or the last issuance of CERs for the PoA, whichever occurs later.
- The electronic files holding installation records are backed up on the Internet, reducing risk of any loss of data.
- The unique system ID number which is linked to a combination of a GPS location or verified address and the passport number of the head of household eliminates any risk of double-counting between CPAs.
- The sampling Household Energy Survey asks enumerators to verify Tracker information, including product type, dwelling type, and product usage status.

Error! Reference source not found. below shows the data flow into the MEC Tracker Platform and the QAQC measures taken by the PO and CME, described in further detail in **ANNEX 3 - MicroEnergy Credits Tracker Platform Summary**).

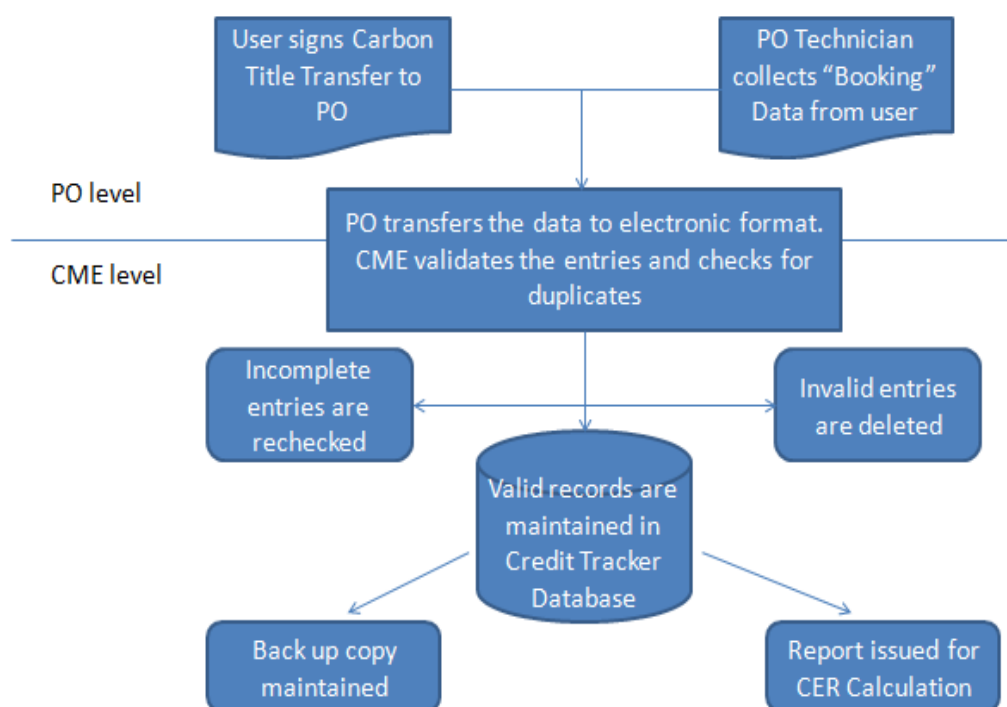


Figure 2: PoA Stage 1 Monitoring Plan

Stage 2: Household Energy Survey (HES)

The HES, ex-post sampling, was conducted to determine the following parameters:

- POF – fraction of CEPs that were in use during monitoring period (by CEP)
- $C_{y,new\ CEPi}$ – project coal consumption (by household)
- $C_{y,old\ CEPi}$ – baseline coal consumption (by household)

A detailed description of the HES including methods use is included in **ANNEX 5 - Household Energy Survey: Fuel Consumption and Usage Report**.

Sampling was conducted separately within each of the six sampling frames, therefore sample sizes were calculated to ensure that mean values of POF, $C_{y,new\ CEPi}$, and $C_{y,old\ CEPi}$ determined from the HES met 90/10 confidence and precision for all sampling frames defined in Section B.1.

MEC Tracker Platform was utilized to assign each credited CEP to 1 of the 6 frames, based on dwelling type and district.

Simple random sampling within each frame was employed. All aforementioned parameters in Stage 2, except $C_{y,old\ CEPi}$, were determined by asking the sampled households the questions on the HES, including if they were using the product during the heating season, the amount of coal and wood they consumed, their perceptions of air pollution with the new stoves, and the type of coal they used.

$C_{y,old\ CEPi}$ was calculated using the baseline regression model validated at registration and for each sampled household substituting into the equation the appropriate values for CEP dwelling type, district, and average temperature and average wind speed during the heating season (see section D.1 for description of the ex-ante parameter, Baseline Coal Consumption Regression Model).

Over 30% of the surveys were conducted in person and the remaining surveys were conducted by phone. In-person and phone surveys were conducted using a survey form developed on Open Data Kit (ODK) open source software; in-person surveys were conducted using android phones. Complete text versions of the survey including skip logic are found in **ANNEX 7 - Introduction to the Household Energy Survey**. The use of electronic data collection, both via ODK survey on smart phones and Survey Monkey's online survey tool, simplifies and shortens the data collection process, and minimizes errors of secondary data entry.

The parameters $T_{y,s}$ and $WS_{y,s}$ were calculated based on the daily temperature and windspeed recordings in Ulaanbaatar, Mongolia by NOAA (**ANNEX 6 - Household Energy Survey Data Analysis**). The parameter η_{new} was determined through third party testing of stoves included in the project (**ANNEX 15 - Stove Testing Reports**).

SECTION G. Data and parameters

G.1. Data and parameters fixed ex ante, at registration, inclusion or renewal of crediting period

(Copy this table for each piece of data and parameter)

These data and parameters are same for CPA-002 & CPA-003.

Data / Parameter:	NCV_{coal}
Unit:	TJ/tonne
Description:	Net calorific value of the coal that is substituted.
Source of data:	IPCC 2006
Value(s) applied:	0.0189

Purpose of data:	Calculation of baseline emissions Calculation of project emissions
Additional comment:	

Data / Parameter:	EF_{coal}
Unit:	tCO ₂ /TJ
Description:	Emission factor: subbituminous coal
Source of data:	IPCC 2006
Value(s) applied:	96.1
Purpose of data:	Calculation of baseline emissions Calculation of project emissions
Additional comment:	

Data / Parameter:	<i>Baseline Coal Consumption Regression Model</i>
Unit:	variable
Description:	Regression coefficients for the determination of baseline coal consumption
Source of data:	Baseline Report (ANNEX 8 - Baseline Fuel Consumption Analysis, ANNEX 9 - MCA-Mongolia Household Survey Report)
Value(s) applied:	$C_{y_old,CEPi} = 4.57681 - \left(0.67248 \sum WS_{y,s}\right) - \left(0.01124 \sum T_{y,s}\right) + 0.14638DW_{y,house} + 0.11988D_{y,Songinokhairkhan} - 0.36234D_{y,Bayangol}$ <p>Where the following are monitored parameters:</p> <p>$C_{y_old,CEPi}$ = Mean coal consumption during the heating season (Autumn, Winter, Spring)</p> <p>$T_{y,s}$ = Mean temperature in Celsius for year y and season s (Autumn, Winter, Spring, Summer)</p> <p>$WS_{y,s}$ = Mean wind speed in Knots for year y and season s (Autumn, Winter, Spring, Summer)</p> <p>$DW_{y,house}$ = Dwelling is a house (dummy variable 1=house, 0=ger)</p> <p>$D_{y,Songinokhairkhan}$ = District location is Songinokhairkhan district (dummy variable 1=yes, 0=no)</p> <p>$D_{y,Bayangol}$ = District location is Bayangol district (dummy variable 1=yes, 0=no)</p> <p>Applied regression analysis found the five aforementioned independent variables to have a statistically significant effect on coal consumption.</p>
Purpose of data:	Calculation of baseline emissions
Additional comment:	See ANNEX 8 - Baseline Fuel Consumption Analysis.

Data / Parameter:	<i>Baseline Biomass Consumption Regression Model</i>
Unit:	variable
Description:	Regression coefficients for the determination of baseline biomass consumption
Source of data:	Baseline Report (ANNEX 8 - Baseline Fuel Consumption Analysis, ANNEX 9 - MCA-Mongolia Household Survey Report)
Value(s) applied:	$B_{y_old,CEPi} = 3.42434 - (0.46183 \sum WS_{y,s}) - (0.00748 \sum T_{y,s})$ $+ 0.57023D_{y,Songinokhairkhan} - 0.36234D_{y,Bayangol}$ $- 0.14078D_{y,Chingeltei}$ <p>Where:</p> <p>$B_{y_old,CEPi}$ = Mean biomass consumption during the heating season (Autumn, Winter, Spring)</p> <p>$T_{y,s}$ = Mean temperature in Celsius for year y and season s (Autumn, Winter, Spring, Summer)</p> <p>$WS_{y,s}$ = Mean wind speed in Knots for year y and season s (Autumn, Winter, Spring, Summer)</p> <p>$D_{y,Songinokhairkhan}$ = District location is Songinokhairkhan district (dummy variable 1=yes, 0=no)</p> <p>$D_{y,Bayangol}$ = District location is Bayangol district (dummy variable 1=yes, 0=no)</p> <p>$D_{y,Chingeltei}$ = District location is Chingeltei district (dummy variable 1=yes, 0=no)</p>
Purpose of data:	Calculation of leakage
Additional comment:	See ANNEX 8 - Baseline Fuel Consumption Analysis.

G.2. Data and parameters monitored

(Copy this table for each piece of data and parameter)

Data / Parameter:	N _{all}
Unit:	Number
Description:	<p>Total number of CEP installations disseminated.</p> <p>CEP crediting categories in Issuance 1 include:</p> <ol style="list-style-type: none"> 1. House-Song. 2. House-Bayan. 3. House-Other 4. Ger-Song. 5. Ger-Bayan. 6. Ger-Other
Measured/ Calculated / Default:	Number of CEP installations disseminated is measured.
Source of data:	MEC Tracker Platform

Value(s) of monitored parameter:	<p>For CPA-002</p> <table border="1"> <thead> <tr> <th>Crediting Category (by CEP):</th><th>N_{all}</th><th>Total CEP-Heating Seasons</th></tr> </thead> <tbody> <tr> <td>1. House-Song.</td><td>1,245</td><td>245</td></tr> <tr> <td>2. House-Bayan.</td><td>248</td><td>49</td></tr> <tr> <td>3. House-Other</td><td>2,725</td><td>537</td></tr> <tr> <td>4. Ger-Song.</td><td>4,120</td><td>812</td></tr> <tr> <td>5. Ger-Bayan.</td><td>766</td><td>151</td></tr> <tr> <td>6. Ger-Other</td><td>7,370</td><td>1,452</td></tr> </tbody> </table> <p>For CPA-003</p> <table border="1"> <thead> <tr> <th>Crediting Category (by CEP):</th><th>N_{all}</th><th>Total CEP-Heating Seasons</th></tr> </thead> <tbody> <tr> <td>1. House-Song.</td><td>38</td><td>7</td></tr> <tr> <td>2. House-Bayan.</td><td>10</td><td>2</td></tr> <tr> <td>3. House-Other</td><td>145</td><td>29</td></tr> <tr> <td>4. Ger-Song.</td><td>202</td><td>40</td></tr> <tr> <td>5. Ger-Bayan.</td><td>43</td><td>8</td></tr> <tr> <td>6. Ger-Other</td><td>386</td><td>76</td></tr> </tbody> </table>	Crediting Category (by CEP):	N_{all}	Total CEP-Heating Seasons	1. House-Song.	1,245	245	2. House-Bayan.	248	49	3. House-Other	2,725	537	4. Ger-Song.	4,120	812	5. Ger-Bayan.	766	151	6. Ger-Other	7,370	1,452	Crediting Category (by CEP):	N_{all}	Total CEP-Heating Seasons	1. House-Song.	38	7	2. House-Bayan.	10	2	3. House-Other	145	29	4. Ger-Song.	202	40	5. Ger-Bayan.	43	8	6. Ger-Other	386	76
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Monitoring equipment:	MEC Tracker Platform																																										
Measuring/ Reading/ Recording frequency:	Continuous monitoring/recording																																										
Calculation method (if applicable):	<p>N_{all} is the total number of stoves installed and credited during the monitoring period. N_{all} is adjusted according to actual operational days during a given monitoring period to derive '<i>Total CEP-Heating Seasons</i>'. The installation date for each CEP listed in Credit Tracker signifies the start of operation for each CEP. The operational days of each CEP is divided by the total number of days of the current monitoring period to determine each individual CEP's '<i>CEP-Heating Season</i>', the sum of which is '<i>Total CEP-Heating Seasons</i>'.</p>																																										
QA/QC procedures:	<p>See ANNEX 3 - MicroEnergy Credits Tracker Platform Summary for measures to ensure accuracy of database.</p> <p>See ANNEX 2 - Emissions Reductions Calculations, Sheet '3a-3b' for demonstration of calculation of N_{all} by adjusting according to monitoring start date.</p>																																										
Purpose of data:	<p>Calculation of baseline emissions</p> <p>Calculation of project emissions</p>																																										

Additional comment:	<p>All CEPs disseminated under the PoA have a unique identifier number, 'sysnum' allowing to doubtlessly identify the CEP.</p> <p>Each CEP record in the MEC Tracker Database shall also contain appliance type, date of installation, and geographic location (through GPS coordinates or other specific location identifiers) allowing appliance to be monitored on a regular basis.</p> <p>Per requirements of the PoA, location is defined by one of the following sets of information:</p> <p>A. Precise GPS location of the household that purchases/installs clean energy product.</p> <p>B. GPS location within one mile of the household and credible address for household.</p> <p>C. The following identifiers: Purchaser name, household address, phone number.</p> <p>For evidence of the above, see ANNEX 2 - Emissions Reductions Calculations, Sheet '5. CPA No. 002 & CPA No. 003'</p>
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Data / Parameter:	POF - Product Operation Fraction	
Unit:	Fraction	
Description:	Fraction of CEP installations which are in use and operational. Determined for the following six crediting categories for Issuance 1: 1. House-Song. 2. House-Bayan. 3. House-Other 4. Ger-Song. 5. Ger-Bayan. 6. Ger-Other	
Measured/ Calculated / Default:	Survey	
Source of data:	Household Energy Survey (HES) (ANNEX 6 – Household Energy Survey Data Analysis)	
Value(s) of monitored parameter:	For CPA-002 1. House-Song. 0.94 2. House-Bayan. 0.95 3. House-Other 0.93 4. Ger-Song. 0.94 5. Ger-Bayan. 0.92 6. Ger-Other 0.95 For CPA-003 1. House-Song. 0.95 2. House-Bayan. 0.94 3. House-Other 0.94 4. Ger-Song. 0.95 5. Ger-Bayan. 0.93 6. Ger-Other 0.95	

Monitoring equipment:	Household Energy Survey (HES)
Measuring/ Reading/ Recording frequency:	Biennial (at least every 2 years) for representative sample of appliances installed.
Calculation method (if applicable):	Number of households who reported they were using CEP divided by total number of households surveyed of same dwelling type that purchased CEP type.
QA/QC procedures:	The PO conducted the survey with assistance provided by 3 rd party consultant who provided survey, training materials, and survey protocol. Training was conducted for enumerators and testers. See ANNEX 5 - Household Energy Survey: Fuel Consumption and Usage Report for detailed description of QA/QC measures in survey design, training, implementation, data quality, and analysis.
Purpose of data:	Calculation of baseline emissions Calculation of project emissions
Additional comment:	

Data / Parameter:	$C_{y,new,CEP-i}$																								
Unit:	Tonnes coal/HH/heating season																								
Description:	<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>Determined for the following six crediting categories for Issuance 1:</p> <ol style="list-style-type: none"> 1. House-Song. 2. House-Bayan. 3. House-Other 4. Ger-Song. 5. Ger-Bayan. 6. Ger-Other 																								
Measured/ Calculated / Default:	Survey																								
Source of data:	Household Energy Survey (HES)																								
Value(s) of monitored parameter:	<p>For CPA-002</p> <table> <tr><td>1. House-Song.</td><td>3.58</td></tr> <tr><td>2. House-Bayan.</td><td>3.42</td></tr> <tr><td>3. House-Other</td><td>3.39</td></tr> <tr><td>4. Ger-Song.</td><td>3.45</td></tr> <tr><td>5. Ger-Bayan.</td><td>2.98</td></tr> <tr><td>6. Ger-Other</td><td>3.34</td></tr> </table> <p>For CPA-003</p> <table> <tr><td>1. House-Song.</td><td>3.62</td></tr> <tr><td>2. House-Bayan.</td><td>3.28</td></tr> <tr><td>3. House-Other</td><td>3.25</td></tr> <tr><td>4. Ger-Song.</td><td>3.36</td></tr> <tr><td>5. Ger-Bayan.</td><td>3.01</td></tr> <tr><td>6. Ger-Other</td><td>3.28</td></tr> </table>	1. House-Song.	3.58	2. House-Bayan.	3.42	3. House-Other	3.39	4. Ger-Song.	3.45	5. Ger-Bayan.	2.98	6. Ger-Other	3.34	1. House-Song.	3.62	2. House-Bayan.	3.28	3. House-Other	3.25	4. Ger-Song.	3.36	5. Ger-Bayan.	3.01	6. Ger-Other	3.28
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5. Ger-Bayan.	3.01																								
6. Ger-Other	3.28																								

Monitoring equipment:	n/a
Measuring/ Reading/ Recording frequency:	Biennial (at least every 2 years) for representative sample of appliances installed.
Calculation method (if applicable):	<p>HES questions are framed in the quantity of units in which households purchase coal, i.e. Zil-130, Porter, or Bag. For example, "how many porters of coal did you use last Autumn?"</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 style="text-align: center;">Household Coal consumption per season (ton) = # Zil-130 used * (5 ton/Zil) + # of porters used * (2 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> <p>See also ANNEX 5 - Household Energy Survey: Fuel Consumption and Usage Report</p>
QA/QC procedures:	<p>The PO conducted the survey with assistance provided by 3rd party consultant, who provided survey, training materials, and survey protocol. Training was conducted for enumerators and testers. See ANNEX 5 - Household Energy Survey: Fuel Consumption and Usage Report for detailed description of the QA/QC measures in survey design, training, implementation, data quality, and analysis.</p> <p>Further evidence cannot be provided in the form of receipts as households do not get or save receipts for coal. In future monitoring periods, the project intends to have a third party review of the HES to confirm coal consumption values derived from the survey.</p>
Purpose of data:	Calculation of project emissions
Additional comment:	

Data / Parameter:	$C_{y_old,CEP-i}$
Unit:	Tonnes coal/HH/heating season

Description:	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). Determined for following crediting categories for Issuance 1: 1. House-Song. 2. House-Bayan. 3. House-Other 4. Ger-Song. 5. Ger-Bayan. 6. Ger-Other												
Measured/ Calculated / Default:	Calculated												
Source of data:	Household type and location from MEC Tracker Platform; local wind speed and temperature data from NOAA climate data base; district baseline regression model (see ANNEX 8 – Baseline Fuel Consumption Regression Analysis). Calculated for households included in the HES.												
Value(s) of monitored parameter:	<table> <tr> <td>1. House-Song.</td><td>5.68</td></tr> <tr> <td>2. House-Bayan.</td><td>4.21</td></tr> <tr> <td>3. House-Other</td><td>5.38</td></tr> <tr> <td>4. Ger-Song.</td><td>5.25</td></tr> <tr> <td>5. Ger-Bayan.</td><td>3.89</td></tr> <tr> <td>6. Ger-Other</td><td>4.82</td></tr> </table>	1. House-Song.	5.68	2. House-Bayan.	4.21	3. House-Other	5.38	4. Ger-Song.	5.25	5. Ger-Bayan.	3.89	6. Ger-Other	4.82
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3. House-Other	5.38												
4. Ger-Song.	5.25												
5. Ger-Bayan.	3.89												
6. Ger-Other	4.82												
Monitoring equipment:	n/a												
Measuring/ Reading/ Recording frequency:	Biennial (at least every 2 years) for representative sample of appliances installed.												
Calculation method (if applicable):	Regression Model – See ex-ante parameter 'Baseline Coal Consumption Regression Model'												
QA/QC procedures:	The PO conducted the HES with assistance provided by 3 rd Party Consultant, which provided survey, training materials, and survey protocol. Training was conducted for enumerators and testers. See ANNEX 5 - Household Energy Survey: Fuel Consumption and Usage Report for detailed description of the QA/QC measures in sampling, survey design, training, implementation, data quality, and analysis.												
Purpose of data:	Calculation of baseline emissions												
Additional comment:													

Data / Parameter:	$T_{y,s}$ household stoves and/or insulation
Unit:	Celsius
Description:	Independent Variable: Mean temperature in Celsius for year y and season s (Autumn, Winter, Spring) for target groups in Ger Area homes
Measured/ Calculated / Default:	Measured
Source of data:	(US) National Climatic Data Center Climatic Service Branch of the National Oceanic and Atmospheric Administration (NOAA). See also ANNEX 6 - Household Energy Survey Data Analysis, sheet '7. $T_{y,s}$ and $WS_{y,s}$ Data'
Value(s) of monitored parameter:	$T_{1,\text{Autumn}}$ 7.5 C $T_{1,\text{Winter}}$ -18.2 C $T_{1,\text{Spring}}$ -7.2 C Values applied for season represent average of daily temperature measurement recorded by NOAA for every day during season, following seasonal definitions below: <ul style="list-style-type: none"> • Autumn – August 2013, September 2013, October 2013 • Winter – November 2013, December 2013, January 2014 • Spring – February 2014, March 2014, April 2014
Monitoring equipment:	NOAA weather station
Measuring/ Reading/ Recording frequency:	Data is extracted and recorded annually for each season; applicable data was extracted in November 2014 for 2013-2014 heating season.
Calculation method (if applicable):	Calculate mean temperature from daily recordings for seasons in question.
QA/QC procedures:	Confirm that temperature data corresponds to time that seasonal surveys were conducted for year y
Purpose of data:	Calculation of baseline emissions
Additional comment:	

Data / Parameter:	$WS_{y,s}$ household stoves and/or insulation
Unit:	knots
Description:	Independent Variable: Mean wind speed in knots for year y and season s (Autumn, Winter, Spring) for target groups in Ulaanbaatar
Measured/ Calculated / Default:	Measured

Source of data:	(US) National Climatic Data Center Climatic Service Branch of the National Oceanic and Atmospheric Administration (NOAA). See also ANNEX 6 - Household Energy Survey Data Analysis, sheet '7. $T_{y,s}$ and $WS_{y,s}$ Data'
Value(s) of monitored parameter:	$WS_{1,Autum}$ n 5.5 knots $WS_{1,Winter}$ 3.0 knots $WS_{1,Spring}$ 5.0 knots Values applied for season represent average of daily wind speed measurement recorded by NOAA for every day during season
Monitoring equipment:	NOAA weather station
Measuring/ Reading/ Recording frequency:	Data is extracted and recorded annually for each season; applicable data was extracted in October 2014 for 2013-2014 heating season.
Calculation method (if applicable):	n/a
QA/QC procedures:	Check that wind speed data corresponds to time that seasonal surveys were conducted for year y
Purpose of data:	Calculation of baseline emissions
Additional comment:	

Data / Parameter:	$DW_{y,type}$, household stoves and/or insulation
Unit:	1=House, 0=Ger
Description:	<i>Independent Variable:</i> Number of dwellings that are houses for target groups in Ger Area homes
Measured/ Calculated / Default:	Measured
Source of data:	MEC Tracker Platform and Household Energy Survey (HES)
Value(s) of monitored parameter:	1 or 0, determined for each household that used product and reported coal consumption in project scenario to calculate baseline coal consumption.
Monitoring equipment:	MEC Tracker Platform
Measuring/ Reading/ Recording frequency:	Monitored continuously. Applied annually for HHs sampled in Household Energy Survey. Applicable HES was conducted September 2014 - January 2015.
Calculation method (if applicable):	n/a
QA/QC procedures:	Verification of MEC Tracker data through HES, in-person and phone survey.
Purpose of data:	Calculation of baseline emissions
Additional comment:	-

Data / Parameter:	η_{new}															
Unit:	% thermal efficiency															
Description:	Efficiency of the new CEP															
Measured/ Calculated / Default:	Measured															
Source of data:	Credit Tracker and Household Energy Survey															
Value(s) of monitored parameter:	<table border="1"> <thead> <tr> <th>Stove Type</th><th>Thermal Efficiency</th><th>Tester, Year</th></tr> </thead> <tbody> <tr> <td>Royal Single/Mini Dul</td><td>74.3%</td><td>SEET, 2014</td></tr> <tr> <td>Royal Double/Golomt</td><td>75.8%</td><td>SEET, 2014</td></tr> <tr> <td>Silver Turbo/Khas</td><td>77.0%</td><td>SEET, 2014</td></tr> <tr> <td>Silver Mini/ Ulzii</td><td>76.2%</td><td>SEET, 2013</td></tr> </tbody> </table> <p>All tests were conducted by the Stove Emissions and Efficiency Testing (SEET) Laboratory in Ulaanbaatar Mongolia. The laboratory was developed with support from the Asian Development Bank to conduct efficiency, emissions, and stove performance testing, particularly focused on household level stoves. The SEET Lab is currently under management of the national Mongolian University of Science and Technology (MUST). Testing followed the protocol: "UJ SeTAR Centre Standard Operating Procedure: The Heterogenous Testing Procedure for Thermal Performance and Trace Gas Emissions."</p> <p>Source: ANNEX 15 -Stove Testing Reports</p>	Stove Type	Thermal Efficiency	Tester, Year	Royal Single/Mini Dul	74.3%	SEET, 2014	Royal Double/Golomt	75.8%	SEET, 2014	Silver Turbo/Khas	77.0%	SEET, 2014	Silver Mini/ Ulzii	76.2%	SEET, 2013
Stove Type	Thermal Efficiency	Tester, Year														
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Silver Turbo/Khas	77.0%	SEET, 2014														
Silver Mini/ Ulzii	76.2%	SEET, 2013														
Monitoring equipment:	Stove manufacturer technical specifications															
Measuring/ Reading/ Recording frequency:	Ongoing as new stoves are added															
Calculation method (if applicable):	n/a															
QA/QC procedures:																
Purpose of data:	Eligibility criteria #18 for inclusion of CEP in CPA: "The specifications of technology/measure including the level and type of service, performance specifications including compliance with testing/certifications"															
Additional comment:																

G.3. Implementation of specific-case CPA level sampling plan

>>

The following parameters have been determined by survey using the sampling approach, described in Stage 2 of the monitoring approach (section C):

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

The samples were selected through simple random sampling from the 6 frames separately:

Frame 1: Stove in house dwelling type, located in Songinokhairkhan district ("House - Song.")

Frame 2: Stove in house dwelling type, located in Bayangol district ("House - Bayan.")

Frame 3: Stove in house dwelling type, located in other district ("House-Other")

Frame 4: Stove in ger dwelling type, located in Songinokhairkhan district ("Ger - Song.")

Frame 5: Stove in ger dwelling type, located in Bayangol district ("Ger - Bayan.")

Frame 6: Stove in ger dwelling type, located in other district ("Ger - Other")

A summary of the HES sampling results are shown in Table 3-**Error! Reference source not found.** below. The application of the sampled parameters in calculating emissions reductions is demonstrated in Section E.1. As demonstrated below, each of the parameters met required confidence/precision for both sampling frames.

Table 3.1: POF Survey results for CPA-002

Crediting Category	N	POF	Std Err	90% Confidence Level: Precision Achieved	Meets 90/10 Rule?
House-Song.	52	94%	0.04	5.68%	Yes
House-Bayan.	41	95%	0.03	4.71%	Yes
House-Other	55	93%	0.04	5.25%	Yes
Ger-Song.	48	94%	0.04	5.96%	Yes
Ger-Bayan.	42	92%	0.05	6.67%	Yes
Ger-Other	56	95%	0.03	4.86%	Yes

Source: **ANNEX 6** - Household Energy Survey Data Analysis

Table 4.2: POF Survey results for CPA-003

Crediting Category	N	POF	Std Err	90% Confidence Level: Precision Achieved	Meets 90/10 Rule?
House-Song.	25	95%	0.04	5.61%	Yes
House-Bayan.	8	94%	0.03	4.59%	Yes
House-Other	40	94%	0.04	5.49%	Yes
Ger-Song.	41	95%	0.03	4.57%	Yes
Ger-Bayan.	28	93%	0.05	6.22%	Yes
Ger-Other	40	95%	0.04	5.62%	Yes

Source: **ANNEX 6** - Household Energy Survey Data Analysis

Table 5.1: $C_{y,new,CEPi}$ Survey results for CPA-002

Crediting Category	N	Mean (tons coal/HH/heating season)	Standard Deviation	90% Confidence Level: Precision Achieved	Meets 90/10 Rule?
House-Song.	52	3.58	1.01	7.45%	Yes
House-Bayan.	41	3.42	1.12	8.54%	Yes

House-Other	55	3.39	1.05	7.54%	Yes
Ger-Song.	48	3.45	0.89	6.23%	Yes
Ger-Bayan.	42	2.98	0.78	6.02%	Yes
Ger-Other	56	3.34	1.39	9.17%	Yes

Source: **ANNEX 6** - Household Energy Survey Data Analysis

Table 6.2: $C_{y,new,CEPi}$ Survey results for heating season 2015-16

Crediting Category	N	Mean (tons coal/HH/ heating season)	Standard Deviation	90% Confidence Level: Precision Achieved	Meets 90/10 Rule?
House-Song.	25	3.62	1.03	7.67%	Yes
House-Bayan.	8	3.28	1.16	8.67%	Yes
House-Other	40	3.25	1.2	7.84%	Yes
Ger-Song.	41	3.36	0.72	6.01%	Yes
Ger-Bayan.	28	3.01	0.81	6.22%	Yes
Ger-Other	40	3.28	1.25	8.97%	Yes

Source: **ANNEX 6** - Household Energy Survey Data Analysis

Complete details of the HES survey, data analysis, and results can be found in **ANNEX 5** - Household Energy Survey: Fuel Consumption and Usage Report and **ANNEX 6** - Household Energy Survey Data Analysis.

SECTION H. Calculation of GHG emission reductions or net GHG removals by sinks

H.1. Calculation of baseline emissions or baseline net GHG removals by sinks

>>

1. Emissions Reductions per product

Emissions reductions are calculated using the following equations:

$$ER_y = \sum_i B E_{y,CEPi} - P E_{y,CEPi}$$

Where:

ER_y	Emission reductions during the year y in tCO ₂ e
$B E_{y,CEPi}$	Baseline emissions for CEP-i during the year y in tCO ₂ e.
$P E_{y,CEPi}$	Project activity emissions for CEP-i during the year y for technology i in tCO ₂ e.

$B E_y$ and $P E_y$ are determined through surveys, which may encompass single CEP or multiple CEP installations in a building or structure. As the baseline study determined that the district in which a household is located affects coal consumption, the CEP and household location is also taken into consideration in dividing the population into frames. As ger blankets are not credited in Issuance 1, the following combinations of installed project CEPs per building were surveyed:

Frame 1: Stove in house dwelling type, located in Songinokhairkhan district ("House - Song.")

Frame 2: Stove in house dwelling type, located in Bayangol district ("House - Bayan.")

Frame 3: Stove in house dwelling type, located in other district ("House-Other")

Frame 4: Stove in ger dwelling type, located in Songinokhaikhan district ("Ger - Song.")

Frame 5: Stove in ger dwelling type, located in Bayangol district ("Ger - Bayan.")

Frame 6: Stove in ger dwelling type, located in other district ("Ger - Other")

$$BE_{y,CEP-i} = C_{y,old,CEP-i} * NCV_{coal} * EF_{coal}$$

$$PE_{y,CEP-i} = C_{y,new,CEP-i} * NCV_{coal} * EF_{coal}$$

Where:

$C_{y,old,CEP-i}$	Quantity of coal used in the heating season in the absence of the project activity in tons of coal per household per heating season, calculated through baseline regression model (see ANNEX 8 – Baseline Fuel Consumption Regression Analysis)
$C_{y,new,CEP-i}$	Quantity of coal used in the heating season used during the project activity in tons of coal per household per heating season, measured through surveys.
NCV_{coal}	Net calorific value of coal.
EF_{coal}	Emission factor for the amount of CO ₂ e resulting from the combustion of coal

Demonstration of calculations of ER_y for each sampling frame and equivalent crediting category is demonstrated below.

$$BE_y = C_{y_old} * NCV_{coal} * EF_{coal}$$

For CPA-002

Parameter	Unit	House-Song.	House-Bayan.	House-Other	Ger-Song.	Ger-Bayan.	Ger-Other
C_{y_old}	tons coal/HH/Heating Season	5.68	4.21	5.38	5.25	3.89	4.82
NCV_{coal}	TJ/ton	0.0189					
EF_{coal}	tCO ₂ e/TJ	96.1					
BE_y	tCO ₂ e/HH/Heating Season	10.32	7.65	9.77	9.54	7.07	8.75

For CPA-003

Parameter	Unit	House-Song.	House-Bayan.	House-Other	Ger-Song.	Ger-Bayan.	Ger-Other
C_{y_old}	tons coal/HH/Heating Season	5.68	4.21	5.38	5.25	3.89	4.82
NCV_{coal}	TJ/ton	0.0189					
EF_{coal}	tCO ₂ e/TJ	96.1					
BE_y	tCO ₂ e/HH/Heating Season	10.32	7.65	9.77	9.54	7.07	8.75

$$PE_{y,CEP-i} = C_{y,new,CEP-i} * NCV_{coal} * EF_{coal}$$

For CPA-002

Parameter	Unit	House-Song.	House-Bayan.	House-Other	Ger-Song.	Ger-Bayan.	Ger-Other
$C_{y,new}$	tons coal/HH/Heating Season 2015-16	3.58	3.42	3.39	3.45	2.98	3.34
NCV_{coal}	TJ/ton	0.0189					
EF_{coal}	tCO ₂ e/TJ	96.1					
PE_y	tCO ₂ e/HH/Heating Season 2014-15	6.50	6.21	6.16	6.27	5.41	6.07

For CPA-003

Parameter	Unit	House-Song.	House-Bayan.	House-Other	Ger-Song.	Ger-Bayan.	Ger-Other
$C_{y,new}$	tons coal/HH/Heating Season 2015-16	3.62	3.28	3.25	3.36	3.01	3.28
NCV_{coal}	TJ/ton	0.0189					
EF_{coal}	tCO ₂ e/TJ	96.1					
PE_y	tCO ₂ e/HH/Heating Season 2014-15	6.57	5.96	5.90	6.10	5.47	5.96

$$ER_y = BE_y - PE_y$$

For CPA-002

Parameter	Unit	House-Song.	House-Bayan.	House-Other	Ger-Song.	Ger-Bayan.	Ger-Other
ER_y	tCO ₂ e/HH/Heating Season 2015-16	3.81	1.43	3.61	3.27	1.65	2.69

For CPA-003

Parameter	Unit	House-Song.	House-Bayan.	House-Other	Ger-Song.	Ger-Bayan.	Ger-Other
ER_y	tCO ₂ e/HH/Heating Season 2015-16	3.74	1.69	3.87	3.43	1.60	2.80

In summary, BE_y , PE_y , and ER_y are demonstrated for the two crediting categories in **Error! Reference source not found.** below.

2. Emissions Reductions over the monitoring period

POF is taken into consideration for calculation of ER for the monitoring period. Table 7 below demonstrates the emissions reductions in tCO₂e per year by crediting category realized during the monitoring period. Calculation of emissions reductions is included in **ANNEX 2 - ER Calculations**.

Table 7.1 : Emissions Reductions CPA-002

Crediting Category	ER _y	POF	N _{all}	Total CEP - Heating Seasons	tCO ₂ e
Total	2.75	0.94	16,474	3,247	9,186
House-Song.	3.81	0.94	1,245	245	880
House-Bayan.	1.43	0.95	248	49	67
House-Other	3.61	0.93	2,725	537	1,805
Ger-Song.	3.27	0.94	4,120	812	2,495
Ger-Bayan.	1.65	0.92	766	151	230
Ger-Other	2.69	0.95	7,370	1,452	3,709

Source: **ANNEX 2 - ER Calculations**

Table 8.2 : Emissions Reductions CPA-003

Crediting Category	ER _y	POF	N _{all}	Total CEP - Heating Seasons	tCO ₂ e
Total	2.85	0.94	824	162	478
House-Song.	3.74	0.95	38	7	27
House-Bayan.	1.69	0.94	10	2	3
House-Other	3.87	0.94	145	29	104
Ger-Song.	3.43	0.95	202	40	130
Ger-Bayan.	1.60	0.93	43	8	13
Ger-Other	2.80	0.95	386	76	202

Source: **ANNEX 2 - ER Calculations**

Emissions reductions are calculated for each 'CEP Heating Season' accrued in the monitoring period, or the portion of the monitoring period that the CEP was installed and active.

Emissions reductions for each crediting period are calculated by multiplying ER_y per product, adjusted N_{all} (or Total CEP-Heating Seasons), and the POF for each crediting category.

H.2. Calculation of project emissions or actual net GHG removals by sinks

>>

N/A

H.3. Calculation of leakage

>>

1. Displaced stoves

As stated in the PDD, 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. According to XacBank operating procedures, every household must give up their old stove at the time of installation of the new stove (see **ANNEX 14 - Stove Dismantling Procedures**). The stove is collected by the XacBank representative at time of installation and stored in a container at the sales center. XacBank has an on-going contract with a local stove dismantling company which picks up the old stoves in the container and destroys them. The scrap metal is then sold to a recycling company. XacBank and project partners agreed that for households that demonstrate with official government letter they are a newly married couple or a household that is otherwise purchasing their first stove, the old stove requirement is waived as there is no previous stove to surrender (see **ANNEX 14 - Stove Dismantling Procedures**).

The HES included a survey question asking respondents about the fate of the previous stove which confirmed the procedures outlined above. Of households surveyed, over 98% reported that they gave up their stove at installation, and <1 % (1 household) had the newly married couple exemption.

2. NRB Consumption

Wood is used as a starter fuel in the use of both baseline stoves and efficient stoves. While the consumption of biomass is expected to decrease, the project conservatively does not credit reduction in wood consumption. The consumption of wood in the project scenario was monitored to ensure that consumption did not increase as a result of using the efficient stove. This parameter is compared to the calculated value of baseline biomass consumption, derived from the ex-ante parameter, *Baseline Biomass Consumption Regression Model*.

As demonstrated in **ANNEX 5 - Household Energy Survey: Fuel Consumption and Usage Report** households saved wood in the project scenario, shown in **Error! Reference source not found.** below. As such, no leakage is considered due to wood consumption.

H.4. Summary of calculation of GHG emission reductions or net GHG removals by sinks

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) achieved in the monitoring period		
				Up to 31/12/2012	From 01/01/2013	Total amount
CPA 002	27,848	18,662	0	0	9,186	9,186
CPA 003	1,393	915	0	0	478	478
Total	29,241	19,577	0	0	9,664	9,664

H.5. Comparison of GHG emission reductions or net GHG removals by sinks with estimates in the included CPA-DD(s)

Specific-case CPA reference number	Value estimated in ex ante calculation in the included CPA-DD(s)	Actual values achieved by the specific-case CPA(s) during this monitoring period
CPA 003	9,880	9,186
CPA 003	8,279	478

H.6. Remarks on difference from the estimated value in the included CPA-DD(s)

>> CPA-002

Emissions reductions achieved during the monitoring period are comparable to the values estimated in the ex-ante calculation of registered PDD. Emission reductions are slightly lower because ger blankets are not credited during this heating season.

CPA-003

Emissions reductions achieved during the monitoring period are lower than the values estimated in the ex-ante calculation of registered PDD because number of cook-stoves installed during the monitoring period were far less than the number estimated in the PDD.

Appendix 1. Contact information of coordinating/managing entity and/or responsible persons/entities

Coordinating/managing entity and/or responsible person/entity	<input type="checkbox"/> Coordinating/managing entity <input type="checkbox"/> Person/entity responsible for completing the CDM-MR-FORM
Organization name	MicroEnergy Credits
Street/P.O. Box	1201 Alaskan Way #200
Building	
City	Seattle
State/Region	Washington
Postcode	98103
Country	USA
Telephone	+1 202 549 7190
Fax	
E-mail	sriskandh@microenergycredits.com
Website	www.microenergycredits.com
Contact person	Sriskandh Subramanian
Title	Head of Carbon and Sustainability
Salutation	Mr.
Last name	Subramanian
Middle name	
First name	Sriskandh
Department	Carbon and Sustainability
Mobile	+91 9555397592
Direct fax	
Direct tel.	
Personal e-mail	sriskandh@microenergycredits.com

Attachment: Instructions for filling out the monitoring report form for CDM programme of activities

1. General instructions

1. When completing the CDM-PoA-MR-FORM, in addition to applying the "[CDM project standard](#)" (Project standard) and the selected approved [baseline and monitoring methodology\(ies\)](#) (hereinafter referred to as the selected methodology(ies)), consult the "[Rules and Reference](#)" section of the UNFCCC CDM website. This section contains all regulatory documents for the CDM, such as [standards](#) (including [methodologies](#), [tools](#) and [standardized baselines](#)), [procedures](#), [guidelines](#), [clarifications](#), [forms](#) and the "[Glossary: CDM terms](#)".
2. Make any data, values and formulae included in electronic spreadsheets accessible and verifiable.
3. Complete the CDM-PoA-MR-FORM and all attached documents in English, or attach a full translation of relevant sections in English.
4. Complete the CDM-PoA-MR-FORM using the same format without modifying its font, headings or logo, and without any other alteration to the form.
5. Do not modify or delete tables and their columns in the CDM-PoA-MR-FORM. Add rows in the tables and attach appendices as needed.
6. Part II is to be completed for all specific-case CPAs covered in this monitoring report. Specific-case CPAs can be grouped as appropriate (e.g. by host Party, technology measure, etc.). Replicate each section of Part II per specific-case CPA or group of specific-case CPAs. Provide information pertaining to the group and/or unique to each specific-case CPA, as appropriate and in accordance with the monitoring and reporting requirements of the Project Standard.
7. If a section of the CDM-PoA-MR-FORM is not applicable, please write N/A.
8. Use an internationally recognized format for presentation of values in the CDM-PoA-MR-FORM, for example use digit grouping in thousands and mark a decimal point with a dot (.), not with a comma (,).
9. Complete the CDM-PoA-MR-FORM deleting this attachment "Instructions for filling out the monitoring report form for CDM programme of activities".

2. Specific-case instructions

1. Provide the following information on the cover page:
 - (a) Title of the programme of activities (PoA);
 - (b) UNFCCC reference number of the PoA;
 - (c) Version number(s) of the PoA-DD(s) applicable to this monitoring report;
 - (d) Coordinating/managing entity (CME);
 - (e) Version number of this monitoring report;
 - (f) Completion date of this monitoring report (DD/MM/YYYY);
 - (g) Monitoring period number and dates covered by the monitoring period. The monitoring period number is an ordinal number referring to the chronological order of monitoring periods (e.g. "first monitoring period"). For the monitoring period dates, first and last days are included (DD/MM/YYYY – DD/MM/YYYY);
 - (h) Number of this monitoring report for this monitoring period. In case multiple separate monitoring reports are prepared for this monitoring period, assign an ordinal number from 1 to a maximum of 10 to each monitoring report in consecutive order, and indicate it in the monitoring report.
 - (i) Host Party(ies): List all host Parties of the PoA as of the end of this monitoring period. For each host Party, indicate whether this report applies to that Party by 'Yes/No' (this report applies to a Party when a specific-case CPA hosted by that Party is covered in this monitoring report);
 - (j) Sectoral scope(s). List all sectoral scopes applicable to the PoA;
 - (k) Selected methodology(ies). List all the selected methodologies and combination of methodologies applicable to the PoA;
 - (l) Selected standardized baseline(s). List all the selected standardized baseline applicable to the PoA;
 - (m) Total amount of GHG emission reductions or net GHG removals for all specific-case CPAs in the PoA that are covered in this monitoring report (in tonnes of CO₂ equivalent).

Part I - Programme of activities

SECTION A. Description of PoA

A.1. Brief description of the PoA

1. Provide a summary of the policy/measure or stated goal and framework for the implementation of the PoA.

A.1.1. Generic CPA(s)

1. In the first column of the table, list the generic CPA(s) described in the latest approved version of the PoA-DD as of the end date of the monitoring period. If the generic CPA does not have the required information (i.e. title, identification/reference number and/or version number), the CME is encouraged to provide such information in this monitoring report for reference.
2. For each generic CPA, provide the corresponding information required in the rest of the columns. Add rows for additional generic CPAs as needed.
3. In the third column, indicate the exact reference (number, title, version) of:
 - (a) The applied methodology(ies) (e.g. ACM0001: "Large-scale consolidated methodology: Flaring or use of landfill gas" (Version 15.0)) or combination of methodologies;
 - (b) Any tools and other methodologies to which the applied methodology(ies) refers (e.g. "Methodological tool: Tool for the demonstration and assessment of additionality" (version 07.0.0));
 - (c) The applied standardized baseline(s), where applicable (e.g. ASB0001 "Standardized baseline: Grid emission factor for the Southern African power pool" (version 01.0)).
4. Refer to the UNFCCC CDM website for the exact reference of the applied methodologies, tools and standardized baselines.

A.1.2. Specific-case CPA(s) covered in this monitoring report

1. In the first column of the table, list the specific-case CPA(s) included in the PoA as of the end date of the monitoring period.
2. In the second column, title, identification/reference and version number of the generic CPA should be the same as those indicated in section A.1.1 of Part I.
3. In the third column, provide the crediting period of the specific-case CPA(s) in the format 'DD/MM/YYYY - DD/MM/YYYY' (start and end date included).
4. In the fourth column, a specific-case CPA is intended as "not covered in the monitoring report" if its crediting period starts after the end date of the monitoring period covered by the monitoring report, and/or the project participants opted for multiple monitoring reports for this monitoring period in line with applicable requirements in the CDM Project cycle procedure (PCP) and the CDM Project standard (PS), and did not include that specific-case CPA in the batch of specific-case CPAs covered by this monitoring report.
5. Add rows to the table for additional specific-case CPAs as needed.

A.1.3. Contact information of responsible person(s)/entity(ies)

1. Provide contact information of the person(s)/entity(ies) responsible for completing the CDM-PoA-MR-FORM and indicate whether the person(s)/entity(ies) is(are) also the CME in Appendix 1.

SECTION B. Implementation of PoA**B.1. Implementation of the management system of the PoA**

1. Provide information on how the validated management system was implemented in accordance with applicable provisions on the implementation of the management system in the Project Standard.

B.2. Implementation of single sampling plan(s)

1. If a single sampling plan covering all specific-case CPAs covered in this monitoring report has been undertaken to estimate parameter values, provide a description of how the CME implemented the sampling for those parameters for all specific-case CPAs according to the validated single sampling plan, including the following information:
 - (a) List of CPAs to which the single sampling was applied;
 - (b) Description of implemented single sampling design;
 - (c) Collected data (electronic spreadsheets may be attached and referenced);
 - (d) Analysis of the collected data;
 - (e) Demonstration of whether the required confidence/precision has been met;
 - (f) Demonstration of whether the samples were randomly selected and are representative of the population.
2. If sampling plan(s) is(are) implemented separately for each specific-case CPA or group of specific-case CPAs, indicate it in this section and provide information in section D.3 of Part II.

SECTION C. Post-registration changes to the PoA (including the generic CPA(s))**C.1. Corrections to the PoA-DD (including the generic CPA-DD(s))**

1. Indicate whether any corrections to project information or parameters fixed at validation in the PoA-DD (including the generic CPA-DD(s)) have been approved during this monitoring period or submitted with this monitoring report.
2. In cases where the correction(s) and the revised PoA-DD and, if applicable, the generic CPA-DD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the specific-case CPA-DD, and if applicable, the revised PoA-DD or generic CPA-DD, and the DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

C.2. Inclusion of a monitoring plan into the registered PoA-DD (including its generic CPA-DD), if a monitoring plan was not included at the time of registration

1. Indicate whether the inclusion of a monitoring plan into the registered PoA-DD for which the delayed submission of the monitoring plan was chosen by the CME at the time of the registration of the PoA, has been approved by the Board prior to the submission of this monitoring report or is being submitted with this monitoring report.

2. If the inclusion of a monitoring plan into the registered PoA-DD has been approved by the Board prior to the submission of this monitoring report, provide the date of approval and reference number of the revised PoA-DD and generic CPA-DD.
3. Otherwise, provide the version number and the completion date of the revised PoA-DD including its generic CPA-DD and DOE validation opinion on the request for post-registration inclusion of a monitoring plan into the registered PoA-DD that is being submitted with this monitoring report.

C.3. Permanent changes to the monitoring plan as described in the registered PoA-DD, applied methodology, or applied standardized baseline

1. Indicate whether any permanent changes from the monitoring plan as described in the registered PoA-DD, applied methodologies or applied standardized baseline, including changes in the sampling plan, have been approved during this monitoring period or submitted with this monitoring report.
2. In cases where the change(s) and the revised PoA-DD and generic CPA-DD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the revised specific-case CPA-DD, and if applicable, the revised PoA-DD or generic CPA-DD, and DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

C.4. 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

1. State whether any changes to the programme design in the registered PoA-DD, including corresponding changes to the project design in the registered generic CPA-DD(s) or any updates to the eligibility criteria for inclusion of specific-case CPAs in the PoA-DD, have been approved by the Board prior to the submission of this monitoring report or are being submitted with this monitoring report.
2. If changes to the programme design or updates to the eligibility criteria for inclusion of specific-case CPAs in the PoA have been approved by the Board prior to the submission of the monitoring report, provide the date of approval and reference number of the revised PoA-DD and generic CPA-DD.
3. Otherwise, provide the version number and the completion date of the revised PoA-DD, generic CPA-DD and DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

C.5. Types of changes specific to an afforestation and reforestation component project activity

1. Indicate whether any changes specific to afforestation or reforestation project activities have been approved during this monitoring period or submitted with this monitoring report.
2. In cases where the change(s) and the revised PoA-DD and generic CPA-DD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the revised specific-case CPA-DD, generic CPA-DD and PoA-DD, and DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

Part II - Specific-case component project activity(ies)

1. Part II is to be completed for all specific-case CPAs covered in this monitoring report and grouped, as appropriate, according to each generic CPA identified in section A.1.1 of Part I.
2. Within each generic CPA, homogeneous specific-case CPAs (e.g. specific-case CPAs implemented in the same country, or implementing the same technology/measures, etc.) can be regrouped as appropriate. Include the rationale for the regrouping in the description of the group of specific-case CPAs.
3. Replicate each section of Part II per generic CPA or group of specific-case CPA. Provide information pertaining to the group and/or unique to each specific-case CPA, as appropriate.

SECTION D. Implementation of specific-case CPA(s)

D.1. Brief description of implemented registered specific-case CPA(s)

1. Provide a brief description of the implemented registered specific-case CPA or group of specific-case CPAs in terms of:
 - (a) Purpose of the specific-case CPA(s) and the measures taken for GHG emission reductions or net GHG removals by sinks;
 - (b) Description of the technology employed and installed equipment and/or infrastructure, including information requested by the eligibility criteria;
 - (c) Relevant dates for the specific-case CPA(s) (e.g. construction, commissioning, continued operation periods, etc.);
 - (d) Total GHG emission reductions or net GHG removals by sinks achieved in this monitoring period for the specific-case CPA(s), including information on how double counting is avoided.

D.2. Geographical references or other means of identification of the location of specific-case CPA(s)

1. Provide the following information on the location of the specific-case CPA(s):
 - (a) Host Party(ies);
 - (b) Region/state/province, etc.;
 - (c) City/town/community, etc.;
 - (d) Physical/geographical location.

SECTION E. Post-registration changes to the specific-case CPA(s)

E.1. Temporary deviations from registered monitoring plan, applied methodology, or applied standardized baseline

1. Indicate whether any temporary deviations have been applied during this monitoring period. If applied, provide a description of the deviation(s) in accordance with applicable provisions for temporary deviations from the registered monitoring plan, applied methodologies or applied standardized baseline in the Project Standard.
2. Include the reasons for the deviation(s), how it deviates from the monitoring plan, applied methodology(ies) and/or applied standardized baseline, the duration for which the deviation(s) is(are) applicable and justification on the conservativeness of the approach.
3. For deviation(s) that required prior approval by the Board, include the date of approval and reference number. Otherwise, provide the version number and the completion date of the revised specific-case CPA-DD and DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

E.2. Corrections

1. Indicate whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report.
2. In cases where the correction(s) and the revised PoA-DD and, if applicable, the generic CPA-DD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of revised the specific-case CPA-DD, and if applicable, the revised PoA-DD or generic CPA-DD, and the DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

E.3. Changes to the start date of the crediting period of the specific-case CPA(s)

1. Indicate whether any changes to the start date of the crediting period have been approved during this monitoring period or submitted with this monitoring report.
2. In cases where the changes and the specific-case CPA-DD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number.

E.4. Inclusion of a monitoring plan to the registered specific-case CPA(s) that was not included at registration

1. Indicate whether the inclusion of a monitoring plan into the specific-case CPA-DD(s) for which the delayed submission of the monitoring plan was chosen by the CME at the time of the registration of the PoA, has been approved by the Board prior to the submission of this monitoring report or is being submitted with this monitoring report.
2. If the inclusion of a monitoring plan into the registered CPA-DD(s) has been approved by the Board prior to the submission of this monitoring report, provide the date of approval and reference number.

E.5. Permanent changes to the monitoring plan as described in the registered specific-case CPA-DD(s), applied methodology, or applied standardized baseline

1. Indicate whether any permanent changes from the monitoring plan as described in the registered specific-case CPA-DD(s), applied methodologies or applied standardized baseline, including changes in the sampling plan, have been approved during this monitoring period or submitted with this monitoring report.
2. In cases where the change(s) and the specific-case CPA-DD(s) are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the revised specific-case CPA-DD(s), and if applicable, the revised PoA-DD or generic CPA-DD, and DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

E.6. Changes to project design of the specific-case CPA(s)

1. Indicate whether any changes to the project design of the specific-case CPA have been approved during this monitoring period or submitted with this monitoring report.
2. In cases where the change(s) and the revised PoA-DD and generic CPA-DD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the revised specific-case CPA-DD, generic CPA-DD and PoA-DD, and DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

E.7. Types of changes specific to an afforestation and reforestation component project activity

1. Indicate whether any changes specific to afforestation or reforestation project activities have been approved during this monitoring period or submitted with this monitoring report.
2. In cases where the change(s) and the revised PoA-DD and generic CPA-DD are approved prior to the submission of this monitoring report for request for issuance, provide the approval date and reference number. Otherwise, provide the version number and the completion date of the revised specific-case CPA-DD, generic CPA-DD and PoA-DD, and DOE assessment opinion on the request for post-registration changes that is being submitted with this monitoring report.

SECTION F. Description of monitoring system of specific-case CPA(s)

1. Provide a description of the monitoring system, including the record-keeping system, of each specific-case CPA or group of specific-case CPAs based on the applicable provision on the description of a monitoring system in the Project Standard. Include diagrams of the monitoring system and the information flow where appropriate.

SECTION G. Data and parameters

1. Provide information on all data and parameters relevant to each specific-case CPA(s) or group(s) of specific-case CPAs in accordance with applicable provisions on data and parameters in the Project Standard, using the tables provided in sections G.1 and G.2.
2. For the row "Purpose of data" in the tables in G.1 and G.2, choose one of the following options:
 - (a) Calculation of baseline emissions or baseline net GHG removals by sinks;
 - (b) Calculation of project emissions or actual net GHG removals by sinks;
 - (c) Calculation of leakage.

G.1. Data and parameters fixed ex ante, at registration, inclusion or renewal of crediting period

1. Include data for each specific-case CPA or group of specific-case CPAs that are fixed at registration, inclusion or the renewal of crediting period.
2. For the row "Value(s) applied", multiple values, if applicable, can be reported in the same table.
3. Attach to the monitoring report any electronic spreadsheets used for all items in the table that require full calculations or multiple/detailed information.

G.2. Data and parameters monitored

1. Include data and parameters that are monitored during this monitoring period in this section for each specific-case CPA or group of specific-case CPAs.
2. For the row "Monitoring equipment", provide the information on type, accuracy class, serial number, calibration frequency, date of last calibration and validity.
3. For the row "Value(s) of monitored parameter", multiple values, if applicable, can be reported in the same table.
4. Attach to the monitoring report any electronic spreadsheets used for all items in the table that require full calculations or detailed information.

G.3. Implementation of specific-case CPA-level sampling plan

1. If data and parameters monitored and described in section D.2 above are determined by a sampling approach, provide a description on how each specific-case CPA conducted the sampling for those data and parameters according to the sampling plan. Include:
 - (a) Description of implemented sampling design;
 - (b) Collected data (electronic spreadsheets may be attached and referenced);
 - (c) Analysis of the collected data;
 - (d) Demonstration of whether the required confidence/precision level has been met;
 - (e) Demonstration of whether the selected samples are representative of the population;
 - (f) Demonstration of whether the samples were randomly selected and are representative of the population.
2. Attach to the monitoring report any electronic spreadsheets used to present full calculations or detailed information.
3. State if the single sampling plan described in section B.2 of Part I was applied to the specific-case CPA, without providing (a)–(f) above.

SECTION H. Calculation of GHG emission reductions or net GHG removals by sinks**H.1. Calculation of baseline emissions or baseline net GHG removals by sinks**

1. Provide all formulae and calculations of baseline emissions or baseline net GHG removals by sinks. Attach to the monitoring report any electronic spreadsheets used to present full calculations or detailed information.

H.2. Calculation of project emissions or actual net GHG removals by sinks

1. Provide all formulae and calculations of project emissions or actual net GHG removals by sinks. Attach to the monitoring report any electronic spreadsheets used to present full calculations or detailed information.

H.3. Calculation of leakage

1. Provide all formulae and calculations of leakage. Attach to the monitoring report any electronic spreadsheets used to present full calculations or detailed information.

H.4. Summary of calculation of GHG emission reductions or net GHG removals by sinks

1. Summarize the results of sections H.1, H.2, and H.3 above and provide the GHG emission reductions or net GHG removals by sinks for this monitoring period for each specific-case CPA, including the total for all specific-case CPAs covered in this monitoring report, using the table.
2. If the monitoring period starts before 31 December 2012 and ends anytime thereafter, provide actual GHG emission reductions or net GHG removals by sinks achieved for the following two periods respectively:
 - a) Up to 31 December 2012 (first commitment period); and
 - b) From 1 January 2013 onwards.

H.5. Comparison of GHG emission reductions or net GHG removals by sinks with estimates in the registered specific-case CPA-DD(s)

1. Provide a comparison of GHG emission reductions or net GHG removals by sinks achieved by the specific-case CPA(s) during this monitoring period, including the total for all specific-case CPAs covered in this monitoring report, with the estimates in the registered specific-case CPA-DDs.

H.6. Remarks on difference from estimated value in the registered specific-case CPA-DD(s)

1. Explain the reason for any increase in the GHG emission reductions or net GHG removals by sinks achieved by the specific-case CPA(s) during this monitoring period based on the applicable provision for calculation of emission reductions or net GHG removals in the Project Standard.

Appendix 1. Contact information of coordinating/managing entity and/or responsible persons/entities

1. In accordance with section A.2 of Part I above, complete the table in Appendix I, with the following mandatory fields: Coordinating/managing entity and/or responsible person/ entity, Organization, Street/P.O. Box, City, Postcode, Country, Telephone, Fax, E-mail and Name of contact person. Copy and paste the table as needed.

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
01.0	1 April 2015	Initial publication.
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