Monitoring report form for CDM programme of activities (Version 03.0)

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

MONITORING REPORT		
Title of the PoA	MicroEnergy Credits – Microfinance for Clean Energy Product Lines – Africa	
UNFCCC reference number of the PoA	10341	
Version numbers of the PoA-DD applicable to this monitoring report	4	
Version number of this monitoring report	5	
Completion date of this monitoring report	07/08/2020	
Monitoring period number	1	
Duration of this monitoring period	21/02/2017 to 25/03/2020 (both days inclusive)	
Monitoring report number for this monitoring period	1	
Coordinating/managing entity	MicroEnergy Credits Corp (MEC)	
Host Parties	Host Party of the PoA	Is this the host Party of a CPA covered in this monitoring report? (yes/no)
	Kenya	Yes
	Uganda	No
Applied methodologies and standardized baselines	AMS-III.AR "Substituting fossil fuel based lighting with LED/CFL lighting systems" (Version 5) AMS-II.G "Energy efficiency measures in thermal applications of non-renewable biomass" (Version 8) AMS III.AV. "Low greenhouse gas emitting water purification systems" (Version 05) Applied Standardized Baselines: N.A.	
Sectoral scopes	1: Energy industries (renewable - / non-renewable sources), 3: Energy demand	
Amount of GHG emission reductions or net anthropogenic GHG removals achieved by all CPAs covered in this monitoring report in this monitoring period	Amount achieved before 1 January 2013	Amount achieved from 1 January 2013
	0 tCO2	151,233 tCO2
Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the CPA-DDs for the CPAs	289,010 tCO2	

covered in this monitoring report	

PART I Monitoring of programme of activities (PoA)

SECTION A. Description of PoA

A.1. General description of PoA

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The purpose of this small scale Programme of Activities ("SSC-PoA") is the dissemination of clean energy products in Africa. The Programme promotes three broad categories of Clean Energy Products ("CEP"):

- Efficient charcoal cook stoves
- Solar Electric Lights
- Water Purifiers

CEPs disseminated under this PoA reduce carbon emissions by reducing the amount of fuel required to cook, boil water for health or provide light for low-income households in Africa that typically rely upon kerosene, non-renewable woody biomass, and charcoal for fuel primarily in the rural areas of Kenya and in Uganda.

For the current monitoring period, CME has chosen not to credit the Improved Cook Stoves disseminated as part of the CPA., this is due to the temporary deviation observed from the registered monitoring plan of the CPA-DD for the parameter pertaining to monitoring of cookstove efficiency.

In this CPA under verification, water purification devices were not part of the design, and hence these have not been distributed or included in the CPA.

MicroEnergy Credits Corp (MEC) is the Coordinating Entity that is implementing the "Microfinance for Clean Energy Product Lines" Programme of Activities, subsequently referred to as the PoA.

MicroEnergy Credits Corp is a social enterprise that helps microentrepreneurs and low income households in developing countries to invest in clean energy through their local microfinance institution. Under the PoA, MEC will develop projects with microfinance institutions, banks[1] and clean product suppliers to market, distribute, and finance clean energy products to these microentrepreneurs and low income households and small businesses.

Many microfinance clients suffer from energy poverty, impacting their health, their ability to educate their children, the gender balance of their household and their ability to save and accumulate wealth. Presently available clean and low carbon technologies can both improve their quality of life and reduce carbon emissions. Many microentrepreneurs and households lack access to clean energy technologies due to economic barriers and market inefficiencies including:

- Lack of access to upfront finance
- Lack of awareness of clean energy products and their value proposition
- Lack of supply of products in the local market place
- Lack of aftersales service and maintenance
- Inability to afford the clean energy product

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

MEC addresses these barriers by working with microfinance institutions to market affordable, reliable clean energy products right to doorstep of the microentrepreneurs. Microfinance institutions are well positioned to provide clean energy to their clients because they offer:

- Awareness: Microfinance Institutions (MFIs) offer education in addition to finance with frequent touch points
- Finance: Ability to finance upfront costs
- Local knowledge: MFIs are typically local organizations that understand local energy resources and needs
- Longevity: Most microfinance clients remain bank clients for many years or decades

Historically a very small percentage of microfinance institutions and banks have offered microfinance for low-carbon technologies due to economic barriers. MEC has developed a program that enables Microfinance institutions and banks to overcome these barriers. Obstacles that have prevented Microfinance institutions and banks from starting clean energy product lines include:

1. High cost of hiring additional staff
2. Expense of marketing and awareness building
3. Steep learning curve to understand products and technologies
4. Lack of partnerships with local suppliers and distributors.
5. Reputational risk
6. Scarcity of on-lending funds
7. Difficulty developing financial products for consumptive loans

MEC uses carbon finance to overcome all of these obstacles, enabling microentrepreneurs to invest in clean energy products. First, MEC works with the microfinance institution to develop an attractive clean energy product offering to its microfinance client base, addressing each of the barriers such as education, price, finance, and supply and aftersales service. Second, MEC trains the microfinance institution to implement the clean energy-lending program. This includes business planning, capacity building, and implementation of marketing, education and supply chain processes. Third, MEC implements 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. Additionally, MEC uses the innovative lending mechanisms like Loan Application (Eco Moto) where users can apply loans from the mobile phones and also order for the clean energy products. Finally, the carbon finance is used to expand and sustain the clean energy program through:

1. Client education and marketing
2. Internal training and capacity building
3. On-lending funds to local SMEs producing the clean energy systems.
4. Aftersales service and maintenance
5. Lowering the interest or principal cost to the client.

Measures taken for GHG emission Reductions or net GHG removal

The PoA involves marketing, distributing, and financing solar lighting systems, improved cook stoves and water purifiers for low income households and microentrepreneurs in Kenya and Uganda. These products provide clean, renewable power for lighting and efficient energy for cooking and safe drinking water.

A.1.1. Corresponding generic component project activities (CPAs)

Title and reference number of the corresponding generic CPA	Version of the PoA-DD	Sectoral scopes	Applied methodologies and standardized baselines

Title and reference number of the corresponding generic CPA	Version of the PoA-DD	Sectoral scopes	Applied methodologies and standardized baselines
MicroEnergy Credits – Microfinance for Clean Energy Product Lines – Africa – Solar Lamps & Efficient cook stoves – 10341 -XXXX Reference number – 10341-XXXX (Combination 1)	Version number- 4	1,3	AMS-III.AR. ver. 5 - Substituting fossil fuel based lighting with LED/CFL lighting systems[2] AMS-II.G. ver. 8 - Energy efficiency measures in thermal applications of non-renewable biomass[3]
MicroEnergy Credits – Microfinance for Clean Energy Product Lines – Africa – Solar Lamps & water filters – 10341 -XXXX Reference number – 10341-XXXX (Combination 2)	Version number- 4	1,3	AMS-III.AR. ver. 5 - Substituting fossil fuel based lighting with LED/CFL lighting systems[4] AMS-III.AV. ver. 5 - Low greenhouse gas emitting safe drinking water production systems[5]

A.1.2. CPAs included in the PoA

Title and UNFCCC reference number of the CPA	Version of the PoA-DD	Title and reference number of the corresponding generic CPA	Crediting period type and duration	Covered in this monitoring report? (yes/no)
MicroEnergy Credits – Microfinance for Clean Energy Product Lines – Africa –CPA 01 and 10341-P1-0001-CP1 Version number of CPA-DD -4	Version number- 4	MicroEnergy Credits – Microfinance for Clean Energy Product Lines – Africa – Solar Lamps & Efficient cook stoves – 10341 -XXXX Reference number – 10341-XXXX (Combination 1)	21/02/ 2017 – 20/02/ 2024 (Renewable)	Yes

A.2. Coordinating/managing entity

>>
Micro Energy Credits Corp is the CME
Micro Energy Credits Corp
Kenya
Email – april@microenergycredits.com

SECTION B. Implementation of PoA

B.1. Description of implemented PoA

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Only one CPA has been included so far under this PoA and hence, the current monitoring report covers CPA-01 only. 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.

[2] https://cdm.unfccc.int/methodologies/DB/B3NUID7DZJNPZ39NP3ZHAL9D42CA4S

[3] https://cdm.unfccc.int/methodologies/DB/ZI2M2X5P7ZLRGFO37YBVDYOW62UHQP

[4] https://cdm.unfccc.int/methodologies/DB/B3NUID7DZJNPZ39NP3ZHAL9D42CA4S

[5] https://cdm.unfccc.int/methodologies/DB/THHX1JKJ2W61SJM8GLC3R0DMOA7USZ

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 Operations 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 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 provides the DOE with the materials generated from the meetings and trainings with all parties to

demonstrate that they were conducted. The materials provided are in the form of participation sheets and training materials.

During the current monitoring period, new CEPs (Clean Energy Products) of Solar lights and clean cookstoves were distributed under this CPA. The details of installations are provided in the CER calculation sheet, Annex-1.

B.2. Post-registration changes to PoA

B.2.1. Corrections

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The following corrections are made to the PoA (including the generic CPA(s)) –

Editorial changes throughout the PoA-DD: There are several editorial changes that have been done either due to small errors in previous versions or due to change in template. There are editorial changes also due to update of section references in new template.
Version number of PoA-DD: 4
Date of completion of PoA-DD: 13/10/2019

B.2.2. Inclusion of monitoring plan

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N/A

B.2.3. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

>>Following changes have been made to the registered monitoring plan of the PoA:

-Including alternate approach for calculating the cookstove Bold at PoA level. In addition to use of default value for B_{old}, this allows option to carry out survey in order to get more precise project specific data at the time of CPA inclusion.

This version of PoA-DD (Ref no: 10341) is approved by CDM-EB on 11th November, 2019 (PRC Reference number “PRC-10341-001”)

B.2.4. Changes to programme design

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The following changes to programme design are made to the PoA (including the generic CPA(s)) –

1. Additional Host Country of Uganda was added to the PoA to expand the boundary. Addition of fnrb and By,old for Uganda to enable addition of CPAs from Uganda.

2. Solar lighting systems: Instead of two years as per option-1 under the methodology; propose to use either of option 1 /2 based on the lamps technologies to be included in the PoA.

This version of PoA-DD (Ref no: 10341) is approved by CDM-EB on 11th November, 2019 (PRC Reference number “PRC-10341-001”)

B.2.5. Changes specific to afforestation or reforestation activities

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N/A

PART II Monitoring of CPAs

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SECTION C. Implementation of CPAs

C.1. Description of implemented CPAs

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CPA 10341-P1-0001-CP1: MicroEnergy Credits – Microfinance for Clean Energy Product Lines – Africa – CPA 01

Purpose of the CPA(s) and the measures taken for GHG emission reductions or net anthropogenic GHG removals–

Purpose: Under the CPA, MicroEnergy Credits Corp works with project partners- Equity Bank, Juhudi and d.light 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 Corp trains project partners 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. The carbon finance is used to expand and sustain the clean energy program through:

- Client education and marketing
- Internal training and capacity building
- Onlending funds to local SMEs producing the clean energy products
- Aftersales service and maintenance
- Lowering the interest or principal cost to the client

The goal of the CPA is to use carbon finance to enable installations of solar lamps, and improved cook stoves for low-income households, community organisations and small/medium enterprises in Kenya. The number of expected installations is based on the internal business projections of the CME.

Technology models implemented under the CPA

Improved cookstoves

There are three models of improved cookstoves that are disseminated under this SSC-CPA. As per CPA-DD, section A.3, page 4, additional models of improved cookstoves could be disseminated under this SSC-CPA during the course of implementation. The complete list of models distributed is made available now during verification. CME also confirms that all the models distributed meets the requirements of the methodology and PoA-DD. Technical specification of the models currently being distributed are provided below:

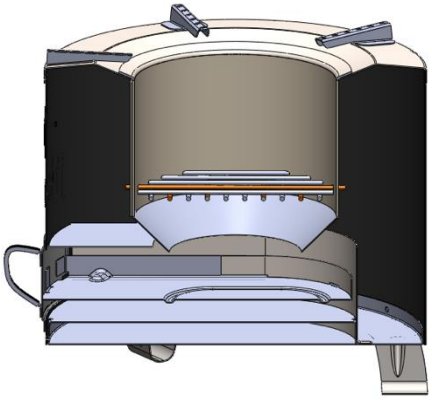
1) Burn Jikokoa G3 efficient cookstove

The technology has the following description:

The Jikokoa cook stove by Burn-stoves is a single burner, high efficiency cookstove that delivers fuel savings up to 50% and minimizes harmful emissions of CO, CO_2 and Particulate Matter. In the

absence of the project activity, the households with improved cookstoves would have continued to use inefficient traditional cookstoves, including three-stone fired and conventional stoves built of mud/clay lacking a chimney and grate to provide energy for cooking. These stoves use charcoal as the fuel. The efficiencies of these conventional stoves are low and are of the order of 10%. The technical specifications[6] of the clean energy products are as follows -

- Stainless steel body
- Ceramic wool fiber insulation
- Lights quickly; approximately 5-minute light time
- Combustion chamber temperature reaches 1,000+ degrees C
- Cooks twice as fast as a traditional jiko



Above is the picture and schematic of the Jikokoa G3 stove. Physical dimensions of the stove
-Diameter: 262mm (10.3” inches)
-Height: 254mm (10 inches high)

The average lifetime of the cookstove as per manufacturer’s specification is 5 years. Also, the efficiency of the cookstove as per the test results is: 45%[7][8]

Below is the summary of production process of these cookstoves.
-Punching/forming, which makes parts from raw materials, primarily sheet metal
-Powder coating, which coats the stoves
-Final assembly which is a continuous flow production line that takes parts and assembles them into finished goods

2)Jiko Fresh efficient cookstove

The Jiko Fresh is a single burner, high efficiency cookstove that delivers fuel savings and minimizes harmful emissions of CO, CO_2 and Particulate Matter and saves significant quantities of charcoal compared to the baseline technology.

The stove offers the following key characteristics:
Diameter- 26cm diameter

The stove has Refractory metal combustion chamber.

The average lifetime of the cookstove as per manufacturer’s specification is 5 years. Also, the

[6] Manufacturer’s certificate on specifications

[7] Burn Jiko efficiency test results_WBT

[8] WBT carried out by Global Alliance for Clean Cookstoves

efficiency of the cookstove as per the test results is: 36.21%

3)Jiko Bora efficient cookstove

The Jiko Bora reduces is a single burner, high efficiency cookstove that delivers fuel savings and minimizes harmful emissions of CO, CO_2 and Particulate Matter and saves significant quantities of charcoal compared to the baseline technology.

The stove offers the following key characteristics:
Diameter- 28cm diameter

The stove has Refractory metal combustion chamber.

The average lifetime of the cookstove as per manufacturer's specification is 5 years. Also, the efficiency of the cookstove as per the test results is: 37.74%

Year	ICS distributed during the year
2016	427
2017	2007
2018	676
2019	1152

Table 1: ICS Distribution annually

Solar Lighting System

There are various models of solar lighting technologies being disseminated under this SSC-CPA. Households receiving these solar lighting systems are either not connected to the grid or have intermittent electricity supply from the grid resulting in use of kerosene for lighting in the baseline scenario. All the project lamps battery systems are charged using Solar PV systems. The models where LED/CFL lighting system has more than one LED/ CFL lamp connected to a single rechargeable battery system, every LED/CFL lamp would be considered as one project lamp.

All the solar lighting system models distributed under the CPA-01, meet the technical requirements as per para 5, 6, & 7 of the methodology AMS III.AR. version 5.

Technical specifications of all the models distributed under the CPA-01 are listed below–

1. Sun King Pro 2[9]

The technical specifications of this product are –

Type and Solar panel Wattage: Polycrystalline/3 W
Lighting Wattage: 1.1
Luminous flux output (Lumens): 160
Lumen maintenance (for 2,000 hours): 96%
Rated lamp life: greater than 10,000 hours
Lighting point (number of project lamps): 1
Battery type/capacity– lithium ion phosphate battery/2900mAh
Type of charge controller - NA
Solar Run time(SRT): 5.5 hours
Warranty – 2 years

[9] www.lightingglobal.org/products/glp-sunkingpro2

All products contain a solar panel, lights as shown in the photograph –

2. Sun King Home 60[10]

The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/6 W
Lighting Wattage: 2.1 W
Luminous flux output (Lumens) – 300
Lumen maintenance (for 2,000 hours): 99%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 3
Battery Type/capacity – 5900 mAh (lithium ion phosphate battery)
Type of charge controller:
Solar Run time(SRT): 5.6 hours
Warranty – 2 years

3. Dlight S300

The technical specifications of this product are –

[10] http://www.lightingglobal.org/products/glp-skhome/

Type and Solar panel Wattage – Monocrystalline/1.6 W
Lighting Wattage: 1.0
Luminous flux output (Lumens) – 100
Lumen maintenance (for 2,000 hours): 97.97%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 1
Battery Type/capacity – 1.8 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 5 hours
Warranty – 2 years

4. Dlight D20

The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/5.4 W
Lighting Wattage: 1.7
Luminous flux output (Lumens) – 170
Lumen maintenance (for 2,000 hours): 97.97%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 2
Battery Type/capacity – 3 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 7 hours
Warranty – 2 years

5. Dlight D30

The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/10.0 W
Lighting Wattage: 3.6
Luminous flux output (Lumens) – 360
Lumen maintenance (for 2,000 hours): 97.97%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 3
Battery Type/capacity – 3 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 5 hours
Warranty – 2 years

6. Dlight D31

The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/10.0 W
Lighting Wattage: 3.6
Luminous flux output (Lumens) – 360
Lumen maintenance (for 2,000 hours): 97.97%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 3
Battery Type/capacity – 3 Ah (lithium ferro phosphate battery)
Type of charge controller: Active

Solar Run time(SRT): 5 hours
Warranty – 2 years

7. Dlight D100R

The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/9 W
Lighting Wattage: 4.8
Luminous flux output (Lumens) – 480
Lumen maintenance (for 2,000 hours): 97.97%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 3
Battery Type/capacity – 9 Ah (lithium ferro phosphate battery)
Type of charge controller: Passive
Solar Run time(SRT): 6 hours
Warranty – 2 years

8. Dlight D330

The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/6.5 W
Lighting Wattage: 4.4
Luminous flux output (Lumens) – 440
Lumen maintenance (for 2,000 hours): 97.97%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 3
Battery Type/capacity – 6 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 4 hours
Warranty – 2 years

9. Dlight X740

The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/30 W
Lighting Wattage: 10 W
Luminous flux output (Lumens) – 1000
Lumen maintenance (for 2,000 hours): 97.97%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 4
Battery Type/capacity – 6 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 7 hours
Warranty – 2 years

10. Dlight X850

The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/40 W

Lighting Wattage: 12 W
Luminous flux output (Lumens) – 1200
Lumen maintenance (for 2,000 hours): 97.97%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 5
Battery Type/capacity – 6 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 6 hours
Warranty – 2 years

11. Dlight D100
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/9 W
Lighting Wattage: 4.8 W
Luminous flux output (Lumens) – 1200
Lumen maintenance (for 2,000 hours): 97.97%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 3
Battery Type/capacity – 9 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 6 hours
Warranty – 2 years

12. Dlight D150
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/10 W
Lighting Wattage: 4.8 W
Luminous flux output (Lumens) – 1200
Lumen maintenance (for 2,000 hours): 97.97%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 3
Battery Type/capacity – 9 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 6 hours
Warranty – 2 years

13. Dlight X1000
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/40 W
Lighting Wattage: 14 W
Luminous flux output (Lumens) – 1400
Lumen maintenance (for 2,000 hours): 97.97%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 5
Battery Type/capacity – 9 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 7 hours

Warranty – 2 years

14. Dlight X1100
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/40 W
Lighting Wattage: 14 W
Luminous flux output (Lumens) – 1400
Lumen maintenance (for 2,000 hours): 97.97%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 5
Battery Type/capacity – 9.6 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 7 hours
Warranty – 2 years

15. Dlight X2000
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/80 W
Lighting Wattage: 14 W
Luminous flux output (Lumens) – 1400
Lumen maintenance (for 2,000 hours): 97.97%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 5
Battery Type/capacity – 12 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 7 hours
Warranty – 2 years

16. Sunking Home 120
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/12 W
Lighting Wattage: 1.4 W
Luminous flux output (Lumens) – 600
Lumen maintenance (for 2,000 hours): >90%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 3
Battery Type/capacity – 12 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 5 hours
Warranty – 2 years

17. Msolar 55 plus aerial
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/55 W
Lighting Wattage: 1 W & 2 W
Luminous flux output (Lumens) – 700
Lumen maintenance (for 2,000 hours): >99%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 6
Battery Type/capacity – 12 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 6 hours
Warranty – 2 years

18. Msolar 6
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/5.7 W
Lighting Wattage: 1.6 W & 0.8 W
Luminous flux output (Lumens) – 400
Lumen maintenance (for 2,000 hours): >99%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 3
Battery Type/capacity – 12 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 5.5 hours
Warranty – 2 years

19. Orb Energy Sol-10
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/3.8 W
Lighting Wattage: 3 W
Luminous flux output (Lumens) – 160
Lumen maintenance (for 2,000 hours): >96%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 1
Battery Type/capacity – 4.5 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 16 hours
Warranty – 2 years

20. Orb Energy Sol-120
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/49 W
Lighting Wattage: 40 W
Luminous flux output (Lumens) – 160
Lumen maintenance (for 2,000 hours): >96%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 4
Battery Type/capacity – 15 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 5.5 hours
Warranty – 2 years

21. Orb Energy Sol-15
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/7.1 W
Lighting Wattage: 5 W
Luminous flux output (Lumens) – 160
Lumen maintenance (for 2,000 hours): >96%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 2
Battery Type/capacity – 1.6 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 4.6 hours
Warranty – 2 years

22. Orb Energy Sol-30
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/10.8 W
Lighting Wattage: 6 W
Luminous flux output (Lumens) – 160
Lumen maintenance (for 2,000 hours): >96%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 4
Battery Type/capacity – 3 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 4.6 hours
Warranty – 2 years

23. Solelectric 600
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/5 W
Lighting Wattage: 200 W
Luminous flux output (Lumens) – 160
Lumen maintenance (for 2,000 hours): >96%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 4
Battery Type/capacity – 20 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 5.5 hours
Warranty – 2 years

24. Sunking Boom
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/2.7 W
Lighting Wattage: 1.2 W
Luminous flux output (Lumens) – 160
Lumen maintenance (for 2,000 hours): >100%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 1
Battery Type/capacity – 3 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 6 hours
Warranty – 2 years

25. Sunking Home 250
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/20 W
Lighting Wattage: 2.3 W
Luminous flux output (Lumens) – 400
Lumen maintenance (for 2,000 hours): >100%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 1
Battery Type/capacity – 5.1 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 6 hours
Warranty – 2 years

26. Sunking HLS 120 plus
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/12 W

Lighting Wattage: 1.4 W
Luminous flux output (Lumens) – 900
Lumen maintenance (for 2,000 hours): >94%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 5
Battery Type/capacity – 12 Ah (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 4 hours
Warranty – 2 years

27 Sunking PICO
The technical specifications of this product are –

Type and Solar panel Wattage – Polycrystalline/0.35 W
Lighting Wattage: 0.28 W
Luminous flux output (Lumens) – 50
Lumen maintenance (for 2,000 hours): >90%
Rated lamp life: greater than 10,000 hours
Lighting points (number of project lamps) – 1
Battery Type/capacity – 400 mAh (lithium ferro phosphate battery)
Type of charge controller: Active
Solar Run time(SRT): 4 hours
Warranty – 2 years
All the solar lighting systems are physically protected against any environmental factors such as rain, heat, insects and ingress etc. and evidence in the form of technical specifications has been provided to the DOE.

All the solar lighting systems under this CPA are falling under Option 1: Project lamps are assumed to operate for up to two years after distribution to end-users, and thus emission reductions are being claimed for up to two years per project lamp.

Lamps Operations Data		
	Duration	Maximum count of solar Lamps in Operation at any point of a crediting year
Year – 1	21/02/2017 to 20/02/2018	539,388
Year – 2	21/02/2018 to 20/02/2019	649,214
Year – 3	21/02/2019 to 20/02/2020	648,416
Year – 4	21/02/2020 to 25/03/2020 (till end of MP)	529,390

At the end of current monitoring period, as on 25/03/2020, number of solar lamps in operation is 498,904. Please refer ER sheet for the details.

C.2. Location of CPAs

>>
The products sold are restricted to the boundary of the Republic of Kenya. The SSC-CPA project activities will involve households across the host country of Kenya. The location of each clean energy installation in the form of household address has been recorded in MicroEnergy Credit's Credit Tracker Platform.

C.3. Post-registration changes to CPAs

C.3.1. Temporary deviations from the monitoring plans in the included CPA-DDs, applied methodologies, standardized baselines or other methodological regulatory documents

>>

The number of ICS distributed are very low, and due to multiple products and batches it was not financially feasible for CME to conduct the WBT annually. Hence CME chose to follow the linear degradation approach for efficiency calculation (as allowed by the methodology AMS-III.AR v5 para 25a) instead of WBT that was specified in revised/approved CPA-DD and PoA-DD. CME has proposed this as a deviation from the registered monitoring plan. CME proposes to follow an alternate monitoring approach of linear degradation of efficiency which is also allowed under the methodology.

In addition, CME also proposed to apply the discounting to ensure the conservativeness of this approach. As per the ER sheet, on following the alternate approach, the total emission reductions achieved for ICS are 2,973. In order to be conservative CME has applied the discounting, and has now claimed zero Emission Reductions for ICS. This temporary deviation is only applied to the current monitoring period.

Thus, in this monitoring period, only Solar Lighting Systems (SLS) have been credited. Improved Cook Stoves (ICS) are not credited, though they are included in the CPA-01 and may be credited in future monitoring periods.

This temporary deviation would only be applicable during the current monitoring period, i.e. from 21 February 2017 to 25 March 2020. This non-conformity would not occur beyond the current monitoring period.

C.3.2. Corrections

>>

Following changes have been made to the project design in the CPA-01. The PRC has been approved on 06 August 2020.

- Corrected the first year ER corresponding to improved cookstoves to 20,644, which were erroneously mentioned as 44,237, in the previous version of CPA-DD

- Reference corrections to sections based on latest template version 9.0

PRC approval date: 06/08/2020
PRC reference number: PRC-10341-002

C.3.3. Changes to the start date of the crediting period

>>

N/A

C.3.4. Inclusion of monitoring plan

>>

N/A

C.3.5. Permanent changes to the included monitoring plans, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

>>

N/A

C.3.6. Changes to project design

>>

Following changes have been made to the project design in the CPA-01. The PRC has been approved on 06 August 2020.

- Updated the number of solar lamps implementation to 650,000 from 200,000
- Technical specification of the product models are updated with additional information to comply with Methodology AMS III.A.R Version 05.0

PRC approval date: 06/08/2020
PRC reference number: PRC-10341-002

C.3.7. Changes specific to afforestation or reforestation CPA

>>

N/A

SECTION D. Description of monitoring system of CPAs

>>

Monitoring of CPA No. 10341-P1-0001-CP1:

<u>MEC Tracker Platform</u>

MicroEnergy Credits Corp's Credit Tracker Platform has been 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.

(i) Record keeping system for each SSC-CPA under the PoA

The Credit Tracker Platform enables MicroEnergy Credits Corp to maintain consistent data on all CPAs and product installations.

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

- Household name
- Location of household (address and/or the address of nearest branch of bank)
- Product type installed
- Product model installed
- Date of installation/distribution
- Mobile number (where available)
- Unique identifier number / receipt number for CEP

After the installation, the CPA implementer 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 CPA implementer has implemented 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.

The Credit Tracker Platform includes a CPA Dashboard that provides a summary on the status of each CPA, and includes the fields:

- Name and unique identifier of each CPA
- List of CEPs included in each CPA
- Name of PO implementing each CPA
- Number of CEPs installed
- Aggregate emissions reductions per year for each CPA

The CPA Monitoring Record maintains monitoring and auditing data on each installation in a CPA:

- Unique identifier number (sales receipt number) for CEP
- Date of monitoring
- Usage status at time of monitoring

Procedures for training of monitoring personnel

- 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 were carried out before the sale of the first CEP... The CME has provide the DOE with the materials generated from the meetings and trainings with all parties to demonstrate that they were conducted. The materials provided are in the form of participation sheets the and training materials.

(ii) A system/procedure to avoid double accounting, e.g. to avoid the case of including a new CPA that has been already registered either as a CDM project activity or as a CPA of another PoA.

Each CPA has unique identifier number that can be attributed to each household and installation within that CPA to ensure no double counting within the PoA. This identifier is in the form of unique sales receipt number issued when the Household involved in the CPA makes the purchase of a

CEP. This information will match with the information displayed on each CPA Credit Tracker Platform, with a copy retained by the customer, thus identifying that each CEP with its unique sales receipt number has been distributed under a PoA managed by the CME of this PoA.

Avoiding double counting –

Each Clean Energy Product sold under each CPA has at least three unique identifiers and these are recorded in MEC credit tracker platform. Out of these, at least two are numeric identifiers - one that is attached to each household and one that is attached to each installation within that CPA to ensure no double-counting within the PoA.

The three unique identifiers for each CEP sold by respective PO is as follows:

Partner	**Unique Identification - 1**	**Unique Identification - 2**	**Unique identification – 3**
d.light	Purchaser name (Customer name)	Product unique identifier number (Product serial number)	GPS location of the nearest branch of PO which services the household
Juhudi	Purchaser name (Customer name)	National ID number	Bank ID number
Equity	Purchaser name (Customer name)	GPS location of the nearest branch of PO which services the household	Bank ID number

All these three unique identifiers are recorded in MEC tracker platform in line with the requirements in PoA-DD, version-4 (footnote 3 on page-5).

At the time of registering a new CPA, MicroEnergy Credits Corp ensures that the project activity is not part of CDM project activity or another PoA:

- MicroEnergy Credits Corp signs contracts with each microfinance institution documenting that the emissions reductions in a specific project activity are included in that CPA alone
- The partner microfinance institution explains the concept of carbon credits to the end user. The microfinance institution signs a contract with each end user recognizing the end user's title to the emissions reductions and transferring it to the microfinance institution, which then transfers it to MicroEnergy Credits Corp, through the MoU between the CPA Implementer and the CME.
- MicroEnergy Credits Corp and partner microfinance institutions consult with participating clean energy product suppliers to clarify that credits are not included in other projects
- Each project is publicly announced at launch, both at the microfinance institution level and at the level of MicroEnergy Credits Corp, including a posting on its website

The MEC Credit Tracker Platform maintains data on all installations, including each CEP unique identifier number, the date of installation and the CPA/PoA with which they are associated. The platform's use of locations for each installation ensures that each clean energy product is only included in a single CPA under a single PoA.

For the current monitoring period, CME has chosen not to credit the Improved Cook Stoves disseminated as part of the CPA., this is due to the temporary deviation observed from the registered monitoring plan of the CPA-DD for the parameter pertaining to monitoring of cookstove efficiency.

Figure 1 below shows the data flow into the MEC Tracker Platform and the QA/QC measures taken by the PO and CME.

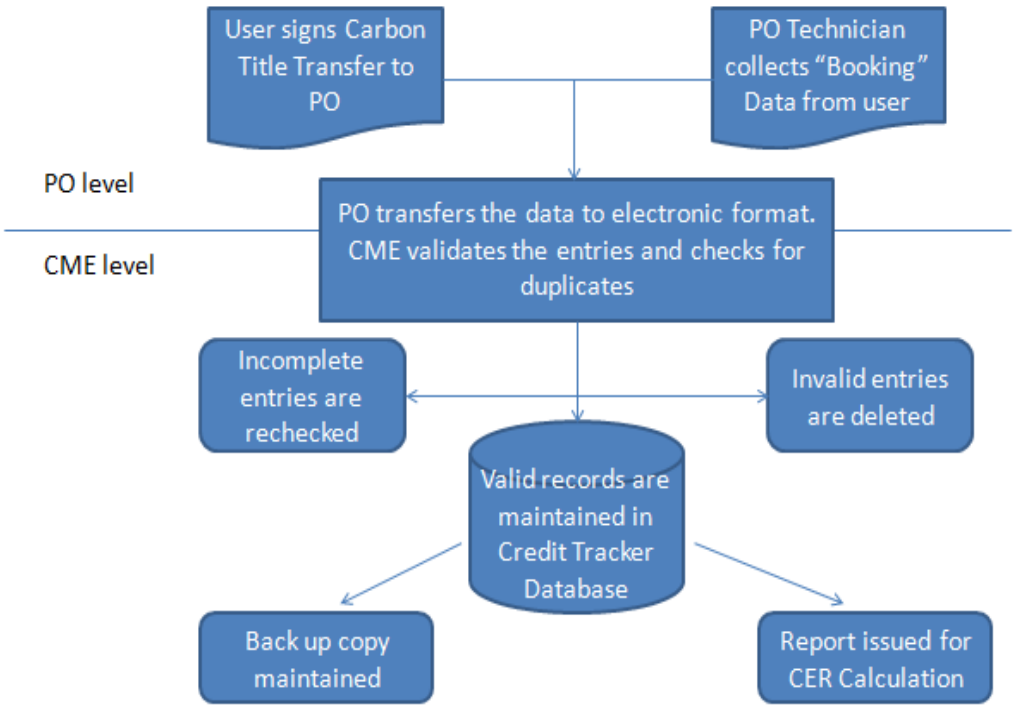


Figure 1: Monitoring Plan

SECTION E. Data and parameters

E.1. Data and parameters fixed ex ante

For solar lighting products:

Data/Parameter	DV
Unit	tCO2e
Description	Default annual baseline emission factor for the project lamp
Source of data	AMS-III.AR. Version 5
Value(s) applied	0.092
Choice of data or measurement methods and procedures	Default Value
Purpose of data	Calculation of baseline emissions
Additional comment	This is based on default calculation and value provided in the methodology based on fuel use rate (0.03 litres/hour), Utilization Rate (3.5 hours/day), Annual Utilization (365 days/year), Fuel Emission Factor (2.4 kgCO2/litre), Leakage Factor (1), Number of lamps replaced per project lamp (1.0) & Net to gross adjustment factor of 1.0.

For efficient cook stoves:

Data/Parameter	$\overline{B_{old,p}}$
Unit	tonnes/person/year

Description	Annual quantity of woody biomass that would have been used per person in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices
Source of data	A default value of 0.5 tonnes/capita per year[11] has been applied for the stoves using non-renewable biomass. For the stoves using Charcoal a factor of 1/6 would be applied as provided in AMS II.G. version 08
Value(s) applied	Wood: 0.5 tonnes/capita per year Charcoal: 0.083 tonnes/capita per year
Choice of data or measurement methods and procedures	Default value has been used
Purpose of data	Calculation of baseline emissions
Additional comment	The ICS have not been credited during this monitoring period

Data/Parameter	$\overline{N_{p,HH}}$
Unit	Number
Description	Average number of persons served per household prior to project implementation
Source of data	Based on the literature review: http://www.arcgis.com/home/item.html?id=d8c1d70fbb2d49028e0713d425b26805
Value(s) applied	4.4
Choice of data or measurement methods and procedures	Established ex ante prior to project implementation
Purpose of data	Calculation of baseline emissions
Additional comment	The ICS have not been credited during this monitoring period

Data/Parameter	$\overline{B_{old,HH}}$
Unit	tonnes/household/year
Description	Annual quantity of woody biomass that would have been used in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices
Source of data	Determined ex ante based on calculations
Value(s) applied	Wood: 2.2 tonnes/household per year Charcoal: 0.366667 tonnes/household per year
Choice of data or measurement methods and procedures	Using following options: 1.$\overline{B_{old,p}}$ times $\overline{N_{p,HH}}$
Purpose of data	Calculation of baseline emissions
Additional comment	The ICS have not been credited during this monitoring period

[11] Refer to “Annex 5 - Information note on the rationale for default factors used in AMS-I.E and AMS-II.G” of the SSC WG 42 meeting report for the derivation of the default.

Data/Parameter	$\overline{B_{old,i,j}}$
Unit	tonnes/year
Description	Annual quantity of woody biomass that would have been used in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project device type *i* and batch *j*
Source of data	This parameter shall be determined ex ante
Value(s) applied	Wood: 2.2 tonnes/household per year Charcoal: 0.366667 tonnes/household per year
Choice of data or measurement methods and procedures	$\overline{B_{old,HH}}$ divided by $\overline{N_{d,HH}}$
Purpose of data	Calculation of baseline emissions
Additional Comment:	The ICS have not been credited during this monitoring period

Data/Parameter	$\overline{f_{NRB,y}}$
Unit	-
Description	Fraction of woody biomass saved by the project activity during year *y* that can be established as non-renewable biomass
Source of data	The default value for Kenya published at the CDM website: https://cdm.unfccc.int/DNA/fNRB/index.html
Value(s) applied	The fNRB,y value for Kenya is 0.92
Choice of data or measurement methods and procedures	Default value
Purpose of data	Calculation of baseline emissions
Additional comment:	The ICS have not been credited during this monitoring period

Data/Parameter	$NCV_{biomass}$
Unit	TJ/tonne
Description	Net calorific value of biomass
Source of data	The net calorific value of wood & charcoal is as given in 2006 IPCC Guidelines Reference: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 2: http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol2.html
Value(s) applied	Wood: 0.015 Charcoal: 0.029
Choice of data or measurement methods and procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	The ICS have not been credited during this monitoring period

Data/Parameter	$EF_{projected\_fossilfuel}$
Unit	tCO_2/TJ
Description	Emission factor: substitution of non-renewable biomass by similar consumers
Source of data	AMS-II.G Version 8
Value(s) applied	**81.6**
Choice of data or measurement methods and procedures	-

Purpose of data	Calculation of baseline emissions
Additional comment	The ICS have not been credited during this monitoring period

Data/Parameter	**L_{NRB}**
Unit	Fraction
Description	Fraction to account for leakage related to the non-renewable woody biomass saved by the proposed SSC-CPA
Source of data	AMS-II.G version 08
Value(s) applied	**0.95**
Choice of data or measurement methods and procedures	According to the methodology, default factor of 0.95 can be used to account for leakage related to the non-renewable woody biomass saved by the proposed SSC-CPA.
Purpose of data	Calculation of baseline emissions
Additional comment	The ICS have not been credited during this monitoring period

E.2. Data and parameters monitored

Solar Lighting Parameters monitored:

Data/Parameter	**Ni,j**
Unit	Number of lights
Description	Number of lights distributed to end users, i, type, j
Measured/calculated/ default	Measured
Source of data	MEC tracker platform
Value(s) of monitored parameter	The total number of lights (Solar Lamps) distributed under this CPA are 1069917. However, each lamps is considered to be operational for two years only as per option-1 under the methodology AMS III.AR. version 5. Hence, in each year, following table provides details of maximum number of lamps that are operational at any point during the year. Thus, lamps under operation does not exceed 650,000 at any point in time during the monitoring period.
Monitoring equipment	-
Measuring/reading/recording frequency	Annual
Calculation method (if applicable)	The data is recorded in a web based tracker platform. The data consist of unique number, number of units sold, to whom and where.
QA/QC procedures	Each solar lighting system, and number of solar lamps in each system, has been recorded in the MEC Tracker System. Associated data resides in the MEC Tracker Database, allowing each installation to be monitored .
Purpose of data/parameter	Calculation of baseline emissions
Additional comments	-

Lamps Operations Data

	Duration	Maximum count of solar Lamps in Operation at any point of a crediting year
Year – 1	21/02/2017 to 20/02/2018	539,388
Year – 2	21/02/2018 to 20/02/2019	649,214
Year – 3	21/02/2019 to 20/02/2020	648,416
Year – 4	21/02/2020 to 25/03/2020 (till end of MP)	529,390

Data/Parameter	GFy
Unit	Fraction
Description	Grid factor in year y
Measured/calculated/ default	Default
Source of data	AMS-III.AR. Version 5
Value(s) of monitored parameter	1
Monitoring equipment	Default value
Measuring/reading/recording frequency	Default value
Calculation method (if applicable)	In line with para 21 of the methodology, this parameter has been considered equal to 1.0 as charging option deployed is the Solar Charging.
QA/QC procedures	-
Purpose of data/parameter	Calculation of baseline emissions
Additional comments	-

Data/Parameter	DBy
Unit	Fraction
Description	Dynamic baseline factor in year y
Measured/calculated/ default	Default
Source of data	AMS III-AR Version 5
Value(s) of monitored parameter	1
Monitoring equipment	Default value
Measuring/reading/recording frequency	Default value chosen as per option 1 provided in the methodology.
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data/parameter	Calculation of baseline emissions
Additional comments	-

Data/Parameter	$OF_{y\ i,j}$
Unit	Fraction
Description	The percentage of project lamps distributed to end users that are operating and in service
Measured/calculated/ default	Since the option-1 has been chosen, as per methodology, project lamps are assumed to operate for two years, and this value of 100% would be used as default for two years for each lamp.
Source of data	AMS III-AR Version 5
Value(s) of monitored parameter	100%
Monitoring equipment	Default value for two years for each lamp.
Measuring/reading/recording frequency	Default value for two years for each lamp.
Calculation method (if applicable)	Calculation of baseline emissions
QA/QC procedures	-
Purpose of data/parameter	Calculation of baseline emissions
Additional comments	This parameter is notated as $f_{i,j}$ in CPA-DD and PoA-DD.

Data/Parameter	$Lamps_{baseline}$
Unit	Fuel type consumed in the lamps
Description	This parameter would capture the fuel type for each baseline lamp that is getting replaced with the project lamps, and would ensure that project lamps are only distributed to the households which are using Kerosene for lighting in

	the baseline lamps
Measured/calculated/ default	Measured
Source of data	MEC Tracker Platform
Value(s) of monitored parameter	100% Kerosene
Monitoring equipment	The lamp used in baseline lamp would be recorded in the database on the basis of information provided by the user at the time of purchase
Measuring/reading/recording frequency	Once at the time of sale of lamps
Calculation method (if applicable)	-
QA/QC procedures	This information is recorded in the MEC tracker platform. This information is gathered from each household at the time of making the sales and is subsequently recorded in the platform.
Purpose of data/parameter	This is to fulfil the methodology applicability criterion; that each lamp replaced would ensure that baseline fuel is fossil fuel
Additional comments	This is to ensure that methodological requirement of replacement of only fossil fuel fired lamps is being met. This is not used directly in emission reduction equation. A particular project lamp would be counted only if Kerosene consuming baseline lamp is getting replaced as monitored by this parameter.

Cookstove Parameters to be monitored:

Data/Parameter	$N_{y,i,j}$
Unit	Number
Description	Number of project devices of type *i* and batch *j* operating during year *y*.
Measured/calculated/ default	Measured
Source of data	Survey
Value(s) of monitored parameter	(see nested table below)
Monitoring equipment	-
Measuring/reading/recording frequency	Annually
Calculation method (if applicable)	Measured directly or based on a representative sample. Sampling standard has been used for determining the sample size to achieve 90/10 confidence precision. A discount has been applied based on the percentage of devices operational as determined by the sample survey Separate samples have been taken for each batch.
QA/QC procedures	The data is derived from the sampling surveys. The PO also regularly contacts households for checking this and any servicing needs outside the monitoring requirements.
Purpose of data/parameter	Calculation of emission reductions
Additional comments	The ICS have not been credited during this monitoring period

Values Applied	Year-1	Year-2	Year-3	Year-4
Jikokoa B1 Ny,I,j	412	398	326	317
Jikokoa B2 Ny,I,j	-	1199	1158	1116
Jikokoa B3 Ny,I,j	-	-	583	563
Jikokoa B4 Ny,I,j	-	-	-	1113
Jikobora B1 Ny,I,j	-	620	599	570
Jikobora B2 Ny,I,j	-	-	69	67
Jikofresh B1 Ny,I,j	-	119	115	115

Data/Parameter	$Stove_{baseline}$

Unit	-
Description	This parameter would capture the type of each baseline stove that is being replaced with the project stoves, and would ensure that only inefficient cookstoves are being replaced.
Measured/calculated/ default	Measured
Source of data	Monitoring survey
Value(s) of monitored parameter	-
Monitoring equipment	-
Measuring/reading/recording frequency	Tracked directly at the time of new and efficient stove distribution based on the response by the users/customers of the new stoves
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data/parameter	Calculation of Baseline emissions
Additional comments	This is to ensure that methodological requirement of replacement of only old and inefficient stoves is being met.

Data/Parameter	$\overline{\mu_y}$
Unit	Fraction
Description	Adjustment to account for any continued use of pre-project devices during the year *y*
Measured/calculated/ default	Measured
Source of data	MEC tracker platform
Value(s) of monitored parameter	
Monitoring equipment	-
Measuring/reading/recording frequency	At least once every two years (biennial)
Calculation method (if applicable)	This parameter has been calculated by the monitoring surveys designed to capture the cooking habits and stove usage of households in the region, including quantification of use of baseline devices, by formulating questions and/or collecting evidences to determine the frequency of usage of both the project devices and baseline devices. The household surveys has been carried out for random sample drawn separately for each batch. The use of data loggers was not practical in case of the Households, as the baseline devices were three stone fire. Hence, the survey was deemed to be appropriate method.
QA/QC procedures	During survey, the availability and continued usage of baseline device has been checked. In addition, the usage frequency of such devices has been recorded and used for calculation of adjustment fraction.
Purpose of data/parameter	Calculation of Baseline emissions
Additional comments	The ICS have not been credited during this monitoring period

Values Applied	Year-1	Year-2	Year-3	Year-4
Jikokoa B1 uy	0.93	0.90	0.74	0.70
Jikokoa B2 uy	-	0.93	0.92	0.79
Jikokoa B3 uy	-	-	0.93	0.80
Jikokoa B4 uy	-	-	-	0.95
Jikobora B1 uy	-	0.94	0.90	0.88
Jikobora B2 uy	-	-	0.92	0.92
Jikofresh B1 uy	-	0.94	0.89	0.90

Data/Parameter	$\eta_{new,i,j}$

Unit	Fraction
Description	Efficiency of the device of each type i and batch j implemented as part of the project activity.
Measured/calculated/default	Measured
Source of data	Monitoring
Value(s) of monitored Parameter	

Values Applied	Year-1	Year-2	Year-3	Year-4
Jikokoa B1 nnew,I,j	35.00%	30.00%	25.00%	20.00%
Jikokoa B2 nnew,I,j	-	35.00%	30.00%	25.00%
Jikokoa B3 nnew,I,j	-	-	35.00%	35.00%
Jikokoa B4 nnew,I,j	-	-	-	40.00%
Jikobora B1 nnew,I,j	-	30.64%	27.10%	23.55%
Jikobora B2 nnew,I,j	-	-	30.64%	27.10%
Jikofresh B1 nnew,I,j	-	29.73%	26.48%	23.24%

Monitoring equipment	-
Measuring/reading/recording frequency	(i) Recorded at the time of commissioning/distribution (ii) Adjusted for the loss of efficiency
Calculation method (if applicable)	Linear degradation method picked from methodology (para 25a of AMS-III.AR v5) has been used to arrive the annual efficiency value for the ICS. This method is in deviation to the originally proposed WBT method as per the CPA-DD and PoA-DD. Hence CME has proposed a temporary deviation as outlined in section C.3.1
QA/QC procedures	-
Purpose of data/parameter	Calculation of baseline emissions
Additional comments	The ICS have not been credited during this monitoring period. As per CPA-DD section A.3, page -4, additional models of ICS have been distributed during the monitoring period.

Data/Parameter	**$NCV_{biomass}$**
Unit	TJ/tonne
Description	Net calorific value of the non-renewable woody biomass, briquettes or charcoal used in project devices.
Measured/calculated/ Default	Default
Source of data	IPCC default value provided in methodology AMS II.G. version 8
Value(s) of monitored parameter	0.015 for wood 0.029 for charcoal
Monitoring equipment	-
Measuring/reading/recording frequency	-
Calculation method (if applicable)	IPCC default for wood fuel, 0.015 TJ/tonne, based on the gross weight of the wood that is 'air-dried' to used if fuel used in project device is also woody biomass. If fuel used in the project device is charcoal, 0.029 TJ/tonne to be used.
QA/QC procedures	-
Purpose of data/parameter	To calculate emission reductions
Additional comments	The ICS have not been credited during this monitoring period

Data/Parameter	$\eta_{old,i,j}$
Unit	Fraction

Description	Efficiency of pre - project device, which are the conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney.
Measured/calculated/ Default	-
Source of data	Based on monitoring of devices replaced
Value(s) of monitored parameter	0.1
Monitoring equipment	-
Measuring/reading/recording Frequency	Once for each household when included in the project activity database
Calculation method (if applicable)	Based on the parameter $Stove_{baseline}$ as defined above
QA/QC procedures	-
Purpose of data	To calculate emission reductions
Additional comment	The ICS have not been credited during this monitoring period

Data/Parameter	**Date of commissioning of batch *j***
Unit	Date
Description	To establish the date of commissioning, the Project Participant devices would be grouped in "batches" and the latest date of commissioning of a device within the batch shall be used as the date of commissioning for the entire batch
Measured/calculated/ Default	Internal records
Source of data	MEC tracker platform
Value(s) of monitored Parameter	**Batches** / **Date of commissioning** Jikokoa B1 / 29/12/2016 Jikokoa B2 / 30/12/2017 Jikokoa B3 / 31/12/2018 Jikokoa B4 / 30/12/2019 Jikobora B1 / 30/12/2017 Jikobora B2 / 27/11/2018 Jikofresh B1 / 29/12/2017
Monitoring equipment	-
Measuring/reading/recording Frequency	Recorded once at the time of commissioning/distribution of the last project device in the batch
Calculation method (if applicable)	As per the dates captured in tracker database
QA/QC procedures	-
Purpose of data/parameter	-
Additional comments	The ICS have not been credited during this monitoring period

Data/Parameter	**Date of commissioning of project device i**
Unit	Date
Description	Actual date of commissioning of the project device.
Measured/calculated/ Default	Internal records
Source of data	Internal records
Value(s) of monitored parameter	Refer ER sheet, where date of commissioning of each project device is mentioned in the database
Monitoring equipment	-
Measuring/reading/recording	Recorded once at the time of commissioning/distribution

frequency	
Calculation method (if applicable)	As per the dates captured in tracker database
QA/QC procedures	-
Purpose of data/parameter	-
Additional comments	The ICS have not been credited during this monitoring period

Data/Parameter	$N_{d,HH}$
Unit	Number
Description	Number of project devices distributed per household
Measured/calculated/ Default	Measured
Source of data	MEC Tracker platform
Value(s) of monitored parameter	1
Monitoring equipment	Recorded at the time of distribution of project devices
Measuring/reading/recording frequency	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	-
Additional comment	The ICS have not been credited during this monitoring period

E.3. Implementation of sampling plan

>>

Parameter values has been estimated by sampling in accordance with the requirements in the applied methodology separately and independently for CPA-1. 90/10 confidence/precision has been used as the criteria for reliability of sampling efforts for small-scale project activities (according to EB 69 Annex 4).

Sampling Objective – The sampling objective for each parameter is to determine via survey with statistically significant value for the emission reduction calculations. This parameter is defined in the tables presented in section E.2 under “Data / Parameter”.

During the current monitoring period, there has been no sampling done for AMS III A.R based parameters as all the parameters are applying default values for Solar Lighting Systems, which are as per chosen option – I, para 5.1.2 of AMS III AR. Version 5.

For ICS parameters as per AMS II.G. version 8, sampling has been carried out in line with the methodology requirements. However, these results have not been applied for calculations for the current monitoring period, due to temporary deviation from the monitoring plan.

Sample method – Simple random sampling has been used.

Single stage simple random sampling has been applied per CDM EB Guidelines for sampling and surveys for CDM project activities and programme of activities, Version 4. To ensure a random sample selection, random number generators has been applied. Each CEP in the target population is uniquely identifiable by its number assigned in the credit tracker platform. Each CEP within a sampling frame has been allocated a Sample Selection Number in each monitoring period, starting at 1 and increasing up to the total number of CEPs in the Credit Tracker Platform for that pre-defined sampling frame. Applying the random number generators, the CEP has been randomly chosen from the defined population up to the required sample size as calculated by the CME.

Implementation - The sampling for surveyed data has been implemented consistent with the approach described above.

The monitoring activity provides a framework for project preparation and monitoring processes that has been undertaken at the CPA level for this CPA, as required by the CDM rules. This schedule takes into account the key parameters that are needed during the crediting periods of the project. All required monitoring and documentation has been implemented, reported, consolidated and managed by the CME to meet verification requirements. Monitored data has been stored in MEC tracker platform.

Summary:

1. Each PO keeps a record of all the CEPs it installs in the MEC Credit Tracker Platform. The record includes the name, date of installation, model of CEP and ID number of the user and mobile number of the user. All records are screened by the CME and crosschecked with the PO records to confirm the installation record is authentic and no double counting occurs.

2. The values of the emission reduction parameters required for ex-post ER calculation, number of CEPs still operating are found from sampling of CEP installations

3. The records kept in the MEC Credit Tracker Platform relate to paper copies of title transfer agreements received from individual households.

Quality assurance
The sampling approaches described above follow the CDM EB General Guidelines For Sampling and Surveys for Small Scale CDM Project Activities, version 04.

Generalities

The CME along with the PO coordinates all ex-post monitoring activities in the PoA. The CME is ultimately responsible for implementing the monitoring plan, ensuring the quality of data obtained and the use of this data for emissions reduction calculations.

Monitoring has been carried out by the CPA implementer and CME according to the procedures and monitoring framework established below. The managing entity has stored the data in an electronic database.

The MEC Credit Tracker Platform has been used to keep detailed records of all installations under each CPA. Each installation is monitored annually to check usage status. The Project monitors a representative sample of households and all monitoring records are maintained in the Credit Tracker Platform.

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

2. The emissions parameters required for ex-post management are also maintained in the Credit Tracker Platform.

3. The CME has used the Credit Tracker Platform to cross-check the new records with the existing Platform in order to confirm that the installation record is authentic and that no double-counting occurs.

4. The electronic files holding installation records are backed up on the Internet, reducing risk of any loss of data.

5. 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.

Quality Assurance/Quality control

CME undertakes the following strategies, tailoring the specific approach to the local circumstances:

1)Ensuring end user awareness. At the time of sale, the CEP customer is made aware that they are required to participate in monitoring activities. This has been done via training sales personnel to explain the importance of monitoring to each customer, and during regularly scheduled microfinance group meetings for end-users.

2)Questionnaire design. The design of the questionnaire ensures that the questions are non-intrusive and easy to understand for both the interviewee and interviewer.

3)Drawing on local knowledge. The local contractors hired by the CME in each region plays an important role in tailoring the approach to suit local circumstances.

4)Quality of contractors. Third parties hired by the CME to carry out sampling demonstrates a high level of cultural awareness, local language skills and appropriate experience with data entry and data management. Training has also been provided on how to deal with non-responses, refusals and other problems that occurs during monitoring.

SECTION F. Calculation of emission reductions or net anthropogenic removals

F.1. Calculation of baseline emissions or baseline net removals

>>

The methodological choice and emission reduction equations used in the proposed SSC-CPA is based on the methodological choice approved in the PoA.. The methodological choice is in line with the applied methodologies - **AMS-III.AR "Substituting fossil fuel based lighting with LED/CFL lighting systems"** (Version 5) and **AMS-II.G "Energy efficiency measures in thermal applications of non- renewable biomass"** (Version 8).

For solar lighting:

The methodology AMS III.AR provides for a default annual baseline emissions factor for the project lamps.

$$DV = FUR \times O \times U \times EF \div 1000 \times LF \times n \times NTG$$

Where the following assumptions are made about the equivalent baseline lighting system:

DV = Lamp Emission Factor (default is 0.092 t CO_2e per project lamp)

FUR = Fuel use rate (0.03 liters/hour)

O = Utilization rate (3.5 hours/day)

U = Annual utilization (365 days/year)

EF = Fuel emissions factor (2.4 $kgCO_2$/liter)

LF = Leakage factor (1.0)

N = Number of fuel-based lamps replaced per project lamp (1.0)

NTG = Net-to-gross adjustment factor (1.0)

1. Baseline emissions are calculated per below equation:

$$BE_y = DV \times GF_y \times DB_y$$

Where:

BE_y = Baseline emissions per project lamp in year *y* (t CO2e)

GF_y = Grid Factor in year y,

Equal to 1.0 when charging option defined in paragraph 3(a) of the methodology is used; which is indeed the case for this CPA, as the CPA uses charging option of Solar PV.

DB_y = Dynamic Baseline Factor (change in baseline fuel, fuel use rate, and/or utilization during crediting period) in year y. Calculated as either:

- Option 1: default of 1.0 in the absence of relevant information;
- Option 2: value of 1.0+FFg where FFg is the documented national growth rate of kerosene fuel use in lighting from the preceding years (use the most recent available data for a three or five years average (fraction))

CPA choses to apply option 1: hence default of 1.0 is considered

As per the methodology AMS III.AR, there are no project emissions for the projects involving solar PV as the charging option. Hence in this case the project emissions are zero.

The per-lamp baseline emissions are calculated in above steps. To calculate total emission reductions, these must be aggregated across all lamps in use in the period under consideration. This is done using the following equations:

Annual emission reductions are calculated as:

$$ER_y = \sum_{i,j} N_{i,j} \times \left(BE_{y,i} - PE_{y,i,j}\right) \times \left(OF_{y,i,j}\right)$$

Where:

ER_y = Emission reductions in year *y* (t CO_2e)

$N_{i,j}$ = Number of project lamps distributed to end users of type *i* with charging method *j*

$OF_{y, i, j}$ = Percentage of project lamps distributed to end users that are operating and in service in year *y*, for each lamp type *i* and charging method *j.* Assumed to be equal to 100 per cent for years 1, 2 and 3 as per the methodology.

Example of Calculations:

All the lamps under this model have been distributed under option-1 as per the methodology and hence, they are assumed to operate up to two years from their date of installation.

Emission reductions has been calculated for each lamp sold under the CPA for up to 2 years from their date of distribution. Individual lamp ERs have been calculated and summated to get annualised emission reductions. Below is the table outlining value of each parameter and its calculation:

Symbol	Value	Unit	Source
$N_{i,a}$	1	Number	Monitored
DV	0.092	t CO2/ lamp	Default – AMS III. AR
.GF	1	-	Default – AMS III. AR
DB	1	-	Default
BE	0.092	t CO2/ lamp	(BE)y = DV×(GF)y × (DB)y
PE	0	tCO2/ lamp	Default – AMS III. AR
$OF_{y\,i,j}$	100%	-	Default – AMS III. AR
ER	**0.092**	**tCO2/ lamp**	ERy = ∑(i,j) Ni,j ×(BEy,i -PEy,i,j) × OFy,i,j

For cookstoves:

In the absence of the project activity, the baseline scenario is the use of higher amounts of charcoal in the inefficient baseline stoves.

Emission reductions are calculated as:

$$ER_y = \sum_i \sum_j ER_{y,i,j} - LE_y$$

Where:

i = Different types of project device introduced to replace the pre-project devices[12]

[12] In case of this CPA, three types of devices are being used, and further device type may get added during the course of CPA implementation

j = Indicates different batches under the CPA. .

ER_y = Emission reductions during year *y* in t CO_2e

$ER_{y,i,j}$ = Emission reductions by ICS of type *i and* batch *j* during year *y* in t CO_2e

LE_y = Leakage emissions in the year *y*

$$ER_{y,i,j} = B_{y,savings,i,j} \times N_{y,i,j} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossil\,fuel}$$

Where:

$B_{y,savings,i,j}$ = Quantity of charcoal that is saved in tonnes per cook stove device of type *i* and batch *j* during year *y*

$f_{NRB,y}$ = Fraction of woody biomass that can be established as non-renewable biomass using survey methods or government data or default country specific fraction of non-renewable woody biomass (fNRB) values available on the CDM website[13]

$NCV_{biomass}$ = Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.015 TJ/tonne, based on the gross weight of the wood that is 'air-dried'). Same value in case of charcoal is 0.029 TJ/tonne

$EF_{projected\_fossilfuel}$ = Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass/charcoal by similar consumers. Use a value of 81.6 t CO_2/TJ[14]

$N_{y,i,j}$ = Number of project devices of type *i* and batch *j* operating during year *y*

μ_y = Adjustment to account for any continued use of pre-project devices during the year *y*

$B_{y,savings,i,j}$ due to implementation of efficient thermal devices is estimated as per the Option 3 provided in AMS IIG version 08: water boiling test (WBT):

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

[13] Default values endorsed by designated national authorities and approved by the Board are available at <http://cdm.unfccc.int/DNA/fNRB/index.html> or <http://cdm.unfccc.int/methodologies/standard_base/index.html>.

[14] This value represents the emission factor of the substitution fuels likely to be used by similar users, on a weighted average basis. It is assumed that the mix of present and future fuels used would consist of a solid fossil fuel (lowest in the ladder of fuel choices), a liquid fossil fuel (represents a progression over solid fuel in the ladder of fuel use choices) and a gaseous fuel (represents a progression over liquid fuel in the ladder of fuel use choices). Thus a 50 per cent weight is assigned to coal as the alternative solid fossil fuel (96 t CO_2/TJ) and a 25 per cent weight is assigned to both liquid and gaseous fuels (71.5 t CO_2/TJ for kerosene and 63.0 t CO_2/TJ for liquefied petroleum gas (LPG).

As per temporary deviation mentioned in section C.3.1 of this monitoring report, CME was unable to carry out the WBT for arriving at annual efficiency values of the ICS distributed under this CPA. An alternate approach of linear degradation of efficiency was followed as per para 25a of the methodology AMS II.G. version 08.

As per this approach, a default schedule of linear decrease in efficiency up to the terminal efficiency assumed as 20 per cent has been applied through the life span of the project device. As an example, the life span Burn Jikokoa is 5 years it has an efficiency of 45 per cent at commissioning, hence a 5 per cent decrease in efficiency every year has been applied. Please refer to ER sheet for more details.

Value of $B_{old,i,j}$:

For this CPA, a default value of 0.5 tonnes/capita per year[15] has been applied for the stoves using non-renewable biomass.

F.2. Calculation of project emissions or actual net removals

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N.A. There are no project emission calculations for the CPA requesting issuance. For solar lighting systems, there are no project emissions as the solar PV systems are used for charging of the battery systems of the lamps . For improved cookstoves, the equation for calculating emission reductions already accounts for project emissions.

F.3. Calculation of leakage emissions

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For Solar Lighting:
Default Leakage Factor (LF) of 1 is used as per the prescribed provision in the methodology.

For Cookstoves:
$By,savings,i,j$ is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required as per the para 32 of applied methodology AMS II.G version 8

F.4. Calculation of emission reductions or net anthropogenic removals

CPA UNFCCC reference number	Baseline GHG emissions or baseline net GHG removals (t CO_2e)	Project GHG emissions or actual net GHG removals (t CO_2e)	Leakage GHG emissions (t CO_2e)	GHG emission reductions or net anthropogenic GHG removals (t CO_2e)		
				Before 01/01/2013	From 01/01/2013	Total amount
10341-P1-0001-CP1	151,233	0	0	0	151,233	151,233
Total	151,233	0	0	0	151,233	151,233

F.5. Comparison of emission reductions or net anthropogenic removals achieved with estimates in the included CPA-DDs

CPA UNFCCC reference number	Amount achieved during this monitoring period (t CO_2e)	Amount estimated ex ante for this monitoring period in the CPA-DD (t CO_2e)
10341-P1-0001-CP1	151,233	289,010

[15] Refer to “Annex 5 - Information note on the rationale for default factors used in AMS-I.E and AMS-II.G” of the SSC WG 42 meeting report for the derivation of the default.

Total	151,233	289,010

F.5.1. Explanation of calculation of "amount estimated ex ante for this monitoring period in the CPA-DD"

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"Amount estimated ex ante for this monitoring period in the CPA-DD (t CO_2e)" is calculated from the Total emission reduction estimated for year of operation of the CPA and number of crediting days.

The monitoring period for MP1 is the first three year crediting period of the CPA 10341-P1-0001-CP1.

Since only the solar lighting systems are implemented in the CPA, only the values pertaining to solar lighting system from the ex-ante emission reduction is used for estimation[16].

F.6. Remarks on increase in achieved emission reductions

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The emission reductions achieved are lesser than estimated ex-ante emission reduction of registered CPA-DD.

F.7. Remarks on scale of small-scale CPAs

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CPA 10341-P1-0001-CP1 is under the scale limit of each type of small-scale project. This is demonstrated in emission reduction calculation sheet of CPA[17]. Please find the below table where the final scale of implementation for the current monitoring period is summarized.

Table for Solar Devices

	ER - Solar tCO_2	Threshold for Type-III tCO_2
Year - 1	30,739	60,000
Year - 2	58,184	60,000
Year - 3	57,900	60,000
Year - 4	4,410	60,000
Total	151,233	

From above table, it can be demonstrated that in any of the years, the Emission reductions does not exceed the 60,000 tCO_2 per annum threshold for Type III methodologies.

	Year - 1	Year - 2	Year - 3	Year - 4
ER Calculated	178	1137	1281	377
ER Claimed after discounting due to temporary deviation	0	0	0	0
Thermal Savings during the year (GWhth)	0.78	4.98	6.04	1.88
Threshold for Type II	180 GWhth	180 GWhth	180 GWhth	180 GWhth

[16] For detailed calculation of "Amount estimated ex ante for this monitoring period in the CPA-DD (t CO_2e)" of CPA 10341-P1-0001-CP1 please refer emission reduction calculation sheets.

[17] For demonstration of scale of small-scale project types (Type-II and III) of CPA 10341-P1-0001-CP1 please refer respective emission reduction calculation sheets. .

From above table, it can be demonstrated that in any of the years, the Energy Savings does not exceed the 180 GWhth per annum threshold for Type II methodologies. Additionally, the Emissions Reductions have been claimed as zero due to issue with the temporary deviation from the monitoring plan.

Document information

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03.0	31 May 2019	Revision to: • Ensure consistency with version 02.0 of the "CDM project standard for programmes of activities" (CDM-EB93-A07-STAN); • Add a section on remarks on the observance of the scale limit of small-scale CPAs during the crediting periods; • Add "changes specific to afforestation or reforestation activities/CPA" as a possible post-registration changes; • Clarify the reporting of net anthropogenic GHG removals for A/R PoAs between two commitment periods; • Make structural and editorial improvements.
02.0	7 June 2017	Revision to: • Ensure consistency with version 01.0 of the "CDM project standard for programmes of activities (CDM-EB93-A07-STAN); • Make editorial improvements.
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