



**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**

|   |  |  |
|---|--|--|
| <b>Title of the PoA</b>   | Fuel Efficient Stoves in Zambia              |  |
| <b>UNFCCC reference number of the PoA</b>   | PoA 6864                                     |  |
| <b>Version numbers of the PoA-DD applicable to this monitoring report</b>   | Version 7.2                                  |  |
| <b>Version number of this monitoring report</b>   | 1.0  |  |
| <b>Completion date of this monitoring report</b>  | 30/10/2020                                   |  |
| <b>Monitoring period number</b>   | 4  |  |
| <b>Duration of this monitoring period</b>   | 28/01/2018 – 31/01/2020                      |  |
| <b>Monitoring report number for this monitoring period</b>  | 2  |  |
| <b>Coordinating/managing entity</b>   | 3 Rocks Ltd.                                 |  |
| <b>Host Parties</b>   | <b>Host Party of the PoA</b>                 | <b>Is this the host Party of a CPA covered in this monitoring report? (yes/no)</b> |
|   | Zambia                                       | Yes  |
| <b>Applied methodologies and standardized baselines</b>   | AMS II.G version 3                           |  |
| <b>Sectoral scopes</b>  | 3: Energy demand                             |  |
| <b>Amount of GHG emission reductions or net anthropogenic GHG removals achieved by all CPAs covered in this monitoring report in this monitoring period</b>                           | <b>Amount achieved before 1 January 2013</b> | <b>Amount achieved from 1 January 2013</b>   |
|   | 0  | 0  |
| <b>Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the CPA-DDs for the CPAs covered in this monitoring report</b> | 862  |  |

## PART I      Monitoring of programme of activities (PoA)

### SECTION A.    Description of PoA

#### A.1.    General description of PoA

The small scale PoA involves the distribution of fuel-efficient stoves by 3 Rocks Ltd. (3RL) in individual households in Zambia, as described in each of the PoA's Component Project Activity Design Documents (CPA-DD) and according to the requirements of the appropriate small-scale methodology: AMS II.G *Energy efficiency measures in thermal applications of non-renewable biomass*, Version 3.

The efficient stoves are based on designs approved by 3RL and will be distributed by CPA Implementers. The stove design to be distributed in each CPA will be tested independently in accordance with a published Water Boil Test (WBT) methodology, such as the “*Stove Manufacturers Emissions & Performance Test Protocol (EPTP)*”<sup>1</sup> and certified by the manufacturer or an independent laboratory to determine the baseline thermal efficiency. 3RL is the Coordinating/Managing Entity (CME) for the PoA.

Traditionally, the majority of Zambian families cook on an open fire or charcoal grate to heat pots. This method is inefficient and leads to the unsustainable use of non-renewable biomass in the process. The replacement fuel-efficient stoves will lead to a reduction in the annual usage of biomass for users. The majority of Zambians do not have access to the market for fuel-efficient cooking stoves, mainly for economic reasons. Utilizing carbon finance, the proposed PoA aims to overcome this barrier to market entry for households, substituting baseline appliances for fuel-efficient stoves. The benefits of the stove and various user commitments will be clearly explained to prospective users during communication events at the CPA implementation stage.

Stoves will be distributed by CPA Implementers, or their local partners (collectively known hereafter as “CPA Implementer”), and distribution teams will be trained to distribute the stoves and capture the monitoring data from the distribution process; identifying each stove via unique end user information, including: owner name and/or government identification number, address or location, and GPS location reference. Each stove will be assigned a unique reference number in the monitoring database.

Data collected during the distribution process will be captured from the end-user on electronic devices, or via paper forms, and uploaded to the monitoring database. This database will be maintained locally in Zambia and backed-up securely offsite. This system will be available for review by the Designated Operational Entity (DOE) during verification of the PoA.

3RL has completed stakeholder consultations at the PoA level, including national awareness raising meetings, regional meetings and user trials of prototype stoves. It is, furthermore, the intention of 3RL to run an ongoing, post-registration programme of awareness-raising of the optimal usage of the stove, allowing a further mechanism for feedback on its performance from recipients.

The PoA is funded entirely by private investment and does not form a part of any government-funded or supported programme in Zambia.

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<sup>1</sup> Stove Manufacturers Emissions & Performance Test Protocol (EPTP): A protocol for testing stove fuel efficiency and emissions and a standard for improved stoves; Defoort, L'Orange, Kreutzer (EECL), Lorenz (Envirofit), Kamping (Philips) 2009

**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 |
|--|-----------------------|-----------------|--|
| Fuel Efficient Stoves in Zambia<br>(3RL CPA No.XX)             | 6.2                   | 3               | AMS II.G version 3                               |
| Fuel Efficient Stoves in Zambia<br>[CPA Implementer] CPA No.xx | 7.2                   | 3               | AMS II.G version 3                               |

**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) |
|---|-----------------------|--|---|---|
| CPA 6864-P1-0001-CP1: Fuel Efficient Stoves in Zambia (3RL CPA No. 01)<br>Version 6.2<br>Dated: 07/01/2013  | 6.2                   | Fuel Efficient Stoves in Zambia (3RL CPA No. XX)               | 7 years, renewable<br>(28/01/2013 – 27/01/2020) | No  |
| CPA 6864-P1-0002-CP1: Fuel Efficient Stoves in Zambia (3RL CPA No. 02)<br>Version 2.1<br>Dated: 23/10/2013  | 6.2                   | Fuel Efficient Stoves in Zambia (3RL CPA No. XX)               | 7 years, renewable<br>(25/10/2013 – 23/10/2020) | No  |
| CPA 6864-P1-0003-CP1: Fuel Efficient Stoves in Zambia (3RL CPA No. 03)<br>Version 2.1<br>Dated: 23/10/2013  | 6.2                   | Fuel Efficient Stoves in Zambia (3RL CPA No. XX)               | 7 years, renewable<br>(01/11/2013 – 31/10/2020) | No  |
| 6864-P1-0004-CP1: Fuel Efficient Stoves in Zambia<br>(Korea Carbon Offsets Ltd. CPA No.01)<br>Version 01.3<br>Dated: 23/09/2019   | 7.2                   | Fuel Efficient Stoves in Zambia<br>[CPA Implementer] CPA No.xx | 10 years, fixed<br>(10/10/2019 – 09/10/2029)    | No  |
| 6864-P1-0005-CP1: Fuel Efficient Stoves in Zambia – Korea Carbon Management Ltd. CPA No.1<br>Version 1.3<br>Dated: 12/05/2020<br>(Previous Version 1.2 Dated: 13/01/2020) | 7.2                   | Fuel Efficient Stoves in Zambia<br>[CPA Implementer] CPA No.xx | 10 years, fixed<br>(26/01/2020 – 25/01/2030)    | Yes   |

**A.2. Coordinating/managing entity**

3 Rocks Ltd.

**SECTION B. Implementation of PoA****B.1. Description of implemented PoA****Information on how the management system described in the PoA-DD was implemented:**

CPA 6864-P1-0005-CP1 was not implemented during this monitoring period and no monitoring was carried out during this monitoring period. CPA 6864-P1-0005-CP1 does not claim any emission reductions or carbon credits (CERs) during this monitoring period.

**B.2. Post-registration changes to PoA****B.2.1. Corrections**

Corrections were made to the registered PoA-DD during a Post-Registration Change (PRC) process, from the registered version 6.2 of the PoA-DD to the current version 7.2 completed on 07/05/2019, with a validation report version 1.0 dated 23/05/2019, approved on 22/07/2019 under the reference number PRC-6864-001.

A number of editorial changes have been made to help clarify and simplify the PoA-DD and CPA-DD:

- a. 'Installation' of stoves has been changed to 'distribution'
- b. '3 stone fires' or '3 rock fires' have been changed to 'baseline appliance'
- c. 'Monitoring database' is now the unified term for the repository of unique stove end user data, removing references to 'installation database'
- d. References to a signed 'emissions rights agreement' with end users have been removed, as in practice this is not a requirement
- e. 'CME' and 'CPA Implementer' are used in all circumstances to clarify the various roles and responsibilities defined under the PoA-DD and CPA-DD. This has clarified a variety of references to:
  - '3RL', '3RL administration', 'data administration teams', 'Zambian project manager' etc. for the CME, and
  - 'regional logistics managers', 'installers', 'installation teams', 'post-installation teams', 'local partners' etc. for the CPA Implementer
- f. Annex 4 monitoring information has been deleted as it is no longer accurate and is now clearly outlined in Section I of the PoA-DD
- g. 'where possible' has been added to 'data capture' section of Section B: Management System, to indicate that it is not always realistically possible to collect all the distribution data that is listed in the PoA-DD. For example, when working in rural locations in Zambia addresses may not be available, or GPS datapoints may not pinpoint the exact location. There will always be a unique listing of each stove with a unique user in the monitoring database, but it will not always contain all the datapoints listed in the PoA-DD.

Reason for change: To update, clarify and simplify descriptions across the PoA-DD and to avoid misunderstandings

#### **B.2.2. Inclusion of monitoring plan**

Not applicable

#### **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**

Not applicable

### B.2.4. Changes to programme design

Post-registration changes were made from the registered version 6.2 of the PoA-DD to the current version 7.2 completed on 07/05/2019, with a validation report version 1.0 dated 23/05/2019, approved on 22/07/2019 under the reference number PRC-6864-001.

It should be noted that all changes noted here are permanent changes to the registered PoA-DD and have been approved by the CDM Board. The changes are as follows:

#### 1. Form Version

- Changing the PoA-DD form completed to use the latest version: “Programme of activities design document form (Version 08.1)”
- Reason for change: to update the form to the latest available version

#### 2. Technology employed

Under the initially registered PoA-DD a specific stove model was identified for implementation in the first 3 included CPAs in Zambia. This has now been changed to allow for the inclusion of new stove models in the CPAs on the proviso that they meet with the methodology’s requirements for the Level of Service and Type of Service provided. This has led to corrections being made throughout the PoA-DD and CPA-DD, but with most relevance in the following sections:

- a. PoA-DD Section A3: Technologies/Measures
- b. PoA-DD Section C: Demonstration of Additionality of the PoA
- c. Generic CPA-DD Section H3: Purpose and general description of generic CPA
- d. Generic CPA-DD Section H4: Technologies/Measures
- e. Generic CPA-DD Section I.6.2: Data and parameters fixed ex ante ( $B_{old}$  &  $\eta_{new}$ )
- f. Generic CPA-DD Section I.7.2: Sampling plan (groups of CPAs are only homogenous when they have the same stove technology employed)
- g. Generic CPA-DD Section K: Eligibility Criteria for the Inclusion of CPAs (number 3)

The baseline efficiency parameter ( $\eta_{new}$ ) of initial stove model listed in Version 6.2 of the PoA-DD, and the first 3 included CPAs, has been maintained for use in the illustration of the “ex-ante ER calculation (per stove)” (Generic CPA-DD Section I.6.3).

Reason for change: To allow for the distribution of multiple models of cookstove. Since the PoA was first registered, more efficient stove models have been developed by new manufacturers entering the market. This change is instigated to incorporate the best available technology.

#### 3. Additionality

Additionality is automatically proven in both the registered version 6.2 of the PDD and the PRC version 7 of the PDD, although the method has been revised in accordance with the latest guidelines and to make it more simplified. This involves applying the following tools:

- Tool 19 version 8: Demonstration of additionality of microscale project activities
- Tool 21 version 12: Demonstration of additionality of small-scale project activities

And the following sections have been updated accordingly:

- a. PoA-DD Section C: Demonstration of additionality of PoA
- b. CPA-DD Section K: Eligibility Criteria for the Inclusion of CPAs (number 6)

Reason for change: To update and simplify the additionality argument to reflect the latest available guidance

#### 4. Thresholds

In the application of the Tools 19 and 21 (above), the requirement to demonstrate compliance with the methodological threshold is fixed at the microscale sub-unit level. This means that the CME: is not required to demonstrate compliance of the CPA with the microscale or small-scale thresholds at the aggregate level of the CPA (Tool 19, para17).

This has led to the following changes:

- a.PoA-DD Section B.7.a: Management System
- b.PoA-DD Section C: Demonstration of additionality of PoA
- c.Generic CPA-DD Section K: Eligibility Criteria for the Inclusion of CPAs (number 11)

Reason for change: To simplify and streamline the CPA eligibility criteria and to reflect the latest available guidance.

#### B.2.5. Changes specific to afforestation or reforestation activities

Not applicable

## PART II Monitoring of CPAs

### SECTION C. Implementation of CPAs

#### C.1. Description of implemented CPAs

1. Provide a brief summary of the CPA covered in this monitoring report in terms of the purpose of the CPAs and the measures taken for GHG emission reductions or net anthropogenic GHG removals.

CPA 6864-P1-0005-CP1 was not implemented during this monitoring period and no monitoring was carried out during this monitoring period. CPA 6864-P1-0005-CP1 does not claim any emission reductions or carbon credits (CERs) during this monitoring period.

2. Provide information on the implementation status of the CPAs in accordance with the applicable provisions on the description of implemented CPAs in the project standard, including:
  - (a) Description of the installed technologies, technical processes and equipment for the CPAs;

CPA 6864-P1-0005-CP1 was not implemented during this monitoring period.

- (b) Information on the implementation and actual operation of the CPAs, including relevant dates (e.g. construction, commissioning, start of operation). If a CPA consists of more than one site, describe the status of implementation and start date of operation for each site. If a CPA is implemented in phases, indicate the progress of the CPA achieved in each phase.

CPA 6864-P1-0005-CP1 was not implemented during this monitoring period.

3. For the description of the installed technologies, technical processes and equipment, include diagrams, where appropriate.

CPA 6864-P1-0005-CP1 was not implemented during this monitoring period.

## C.2. Location of CPAs

The geographical boundary of the CPAs is the country of Zambia. The **Republic of Zambia** lies **within the latitude and longitude** of 15 00 S and 30 00 E<sup>2</sup>. The approximate GPS coordinates derived from Google Earth for the furthest extremities of the Zambian border are:

North (border with Tanzania and DRC): 08°12'11.83" S & 30°46'22.26" E

South (border with Zimbabwe): 18°04'34.03" S & 26°41'47.24" E

East (border with Malawi): 10°33'43.01" S & 33°42'08.00" E

West (border with Angola): 14°33'34.57" S & 21°59'58.74" E



## 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

Not applicable

### C.3.2. Corrections

PRC ref No.: PRC-6864-001.

Date of approval: 22/07/2019

Details can be found at: <https://cdm.unfccc.int/PRCContainer/DB/prcp328341810/view>

<sup>2</sup> <https://greenwichmeantime.com/time-zone/africa/zambia/map-zambia/>

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

Not applicable

**C.3.4. Inclusion of monitoring plan**

Not applicable

**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**

Not applicable

**C.3.6. Changes to project design**

PRC ref No.: PRC-6864-001.

Date of approval: 22/07/2019

Details can be found at: <https://cdm.unfccc.int/PRCContainer/DB/prcp328341810/view>

**C.3.7. Changes specific to afforestation or reforestation CPA**

Not applicable

**SECTION D. Description of monitoring system of CPAs**

**Provide a description of the monitoring system of each CPA or group of CPAs covered in this monitoring report in accordance with the applicable provisions on the description of monitoring system in the project standard and the monitoring plans in the respective CPA-DDs. Include line diagrams showing all relevant monitoring points.**

CPA 6864-P1-0005-CP1 was not implemented during this monitoring period and no monitoring was carried out during this monitoring period. CPA 6864-P1-0005-CP1 does not claim any emission reductions or carbon credits (CERs) during this monitoring period.

## SECTION E. Data and parameters

### E.1. Data and parameters fixed ex ante

|  |  |
|--|--|
| <b>Data/Parameter</b>                                | <i>B<sub>old</sub></i>   |
| Data unit  | Tonnes per annum   |
| Description  | Quantity of biomass used in absence of the project activity  |
| Source of data                                       | Baseline survey  |
| Value(s) applied                                     | 4.1  |
| Choice of data or Measurement methods and procedures | The baseline survey assessed the average domestic biomass usage for cooking and water heating per household per annum amongst users of traditional 3-rock fires, according to interviews. This data was gathered according to: General Guidelines for Sampling and Surveys For Small-Scale CDM Project Activities (Version 01); CDM EB50 Annex 30. |
| Purpose of data                                      | Baseline emissions calculations  |
| Additional comment                                   | See Annex 3 & Sampling Plan for Household Annual Average Woodfuel Usage Survey for details.  |

|  |   |
|--|---|
| <b>Data/Parameter</b>                                | $f_{NRB,y}$   |
| Data unit  | Fraction  |
| Description  | Non-renewable biomass usage in Zambia, as a proportion of total biomass usage   |
| Source of data                                       | EB 67 country-specific default value for Zambia   |
| Value(s) applied                                     | 0.81  |
| Choice of data or Measurement methods and procedures | An independent consultant calculated the overall biomass usage in Zambia and, according to independently published sources, ascertained the proportion of that biomass which is non-renewable to be 0.93. However, EB 67, Annex 22 indicates a country-specific default value for Zambia at 0.81. For conservativeness, the latter value is selected. |
| Purpose of data                                      | Baseline emissions calculations   |
| Additional comment                                   |   |

|  |   |
|--|---|
| <b>Data/Parameter</b>                                | $\eta_{old}$                            |
| Data unit  | Fraction                                |
| Description  | Efficiency of the system being replaced |
| Source of data                                       | Methodology default                     |
| Value(s) applied                                     | 0.10                                    |
| Choice of data or Measurement methods and procedures | AMS II.G, version 3                     |
| Purpose of data                                      | Baseline emissions calculations         |

|                    |  |
|--------------------|--|
| Additional comment |  |
|--------------------|--|

|  |  |
|--|--|
| <b>Data/Parameter</b>                                | $NCV_{biomass}$  |
| Data unit  | TJ/tonne   |
| Description  | Net calorific value of the non-renewable woody biomass that is substituted |
| Source of data                                       | IPCC default   |
| Value(s) applied                                     | 0.015  |
| Choice of data or Measurement methods and procedures | AMS II.G, version 3  |
| Purpose of data                                      | Baseline emissions calculation   |
| Additional comment                                   |  |

|  |   |
|--|---|
| <b>Data/Parameter</b>                                | $EF_{projected\_fossilfuel}$  |
| Data unit  | tCO <sub>2</sub> /TJ  |
| Description  | Emission factor: substitution of non-renewable biomass by similar consumers |
| Source of data                                       | Methodology default   |
| Value(s) applied                                     | 81.6  |
| Choice of data or Measurement methods and procedures | AMS II.G, version 3   |
| Purpose of data                                      | Baseline emissions calculation  |
| Additional comment                                   |   |

|  |                                |
|--|--------------------------------|
| <b>Data/Parameter</b>                                | $L_y$                          |
| Data unit  | Fraction                       |
| Description  | Leakage                        |
| Source of data                                       | Methodology default            |
| Value(s) applied                                     | 0.95                           |
| Choice of data or Measurement methods and procedures | AMS II.G, version 3            |
| Purpose of data                                      | Baseline emissions calculation |
| Additional comment                                   |                                |

|                       |              |
|-----------------------|--------------|
| <b>Data/Parameter</b> | $\eta_{new}$ |
|-----------------------|--------------|

|  |  |
|--|--|
| Data unit  | Fraction   |
| Description  | Thermal efficiency of the stove  |
| Source of data                                       | WBT Protocol or Stove Manufacturers Emissions & Performance Test Protocol (EPTP)   |
| Value(s) applied                                     | 0.3117   |
| Choice of data or Measurement methods and procedures | From an independent lab report from the Indian Institute of Technology (IIT) dated 17/12/2015.   |
| Purpose of data                                      | Baseline emissions calculation   |
| Additional comment                                   | The first included CPAs (1-3) consisted of an initial stove model with a thermal efficiency of 0.295, as tested in a recognized lab using the EPTP. Following PRC, new stove models may be introduced in new CPAs, which must comply with the methodology and PoA eligibility criteria. An example is used here of the Greenway Jumbo Stove, but others may be outlined in the relevant CPA monitoring reports |

|  |   |
|--|---|
| <b>Data/Parameter</b>                                | <i>DRB</i>  |
| Data unit  | Tonnes  |
| Description  | Demonstrably renewable biomass  |
| Source of data                                       | <i>fNRB,y</i> baseline study  |
| Value(s) applied                                     | 1,278,025   |
| Choice of data or Measurement methods and procedures | The justification is clearly outlined in the full <i>fNRB,y</i> baseline study, presented in Appendix 3 |
| Purpose of data                                      | Baseline emissions calculation  |
| Additional comment                                   |   |

## E.2. Data and parameters monitored

|                                       |   |
|---------------------------------------|---|
| <b>Data/Parameter</b>                 | <i>NS</i>   |
| Unit                                  | Number  |
| Description                           | Number of stoves still operation during the monitoring period |
| Measured/calculated/default           | Measured  |
| Source of data                        | Monitoring database   |
| Value(s) of monitored parameter       | Not applicable  |
| Monitoring equipment                  | Not applicable  |
| Measuring/reading/recording frequency | Annual -  |
| Calculation method (if applicable)    | Not applicable  |

|                           |   |
|---------------------------|---|
| QA/QC procedures          | Not applicable  |
| Purpose of data/parameter | Not applicable  |
| Additional comments       | CPA 6864-P1-0005-CP1 was not implemented during this monitoring period and no monitoring was carried out during this monitoring period. CPA 6864-P1-0005-CP1 does not claim any emission reductions or carbon credits (CERs) during this monitoring period. |

|                                       |   |
|---------------------------------------|---|
| <b>Data/Parameter</b>                 | <i>OD</i>   |
| Unit                                  | Days  |
| Description                           | Total stove operating days in monitoring period   |
| Measured/calculated/default           | Calculated  |
| Source of data                        | Distribution and monitoring survey data in monitoring database  |
| Value(s) of monitored parameter       | Not applicable  |
| Monitoring equipment                  | Not applicable  |
| Measuring/reading/recording frequency | Annual  |
| Calculation method (if applicable)    | Not applicable  |
| QA/QC procedures                      | Not applicable  |
| Purpose of data/parameter             | Emissions calculations  |
| Additional comments                   | CPA 6864-P1-0005-CP1 was not implemented during this monitoring period and no monitoring was carried out during this monitoring period. CPA 6864-P1-0005-CP1 does not claim any emission reductions or carbon credits (CERs) during this monitoring period. |

|                                       |                                 |
|---------------------------------------|---------------------------------|
| <b>Data/Parameter</b>                 | $\eta_{new,i}$                  |
| Unit                                  | Fraction                        |
| Description                           | Thermal efficiency of the stove |
| Measured/calculated/default           | Measured                        |
| Source of data                        | WBT                             |
| Value(s) of monitored parameter       | Not applicable                  |
| Monitoring equipment                  | Not applicable                  |
| Measuring/reading/recording frequency | Annual                          |
| Calculation method (if applicable)    | Not applicable                  |

|                           |   |
|---------------------------|---|
| QA/QC procedures          | Not applicable  |
| Purpose of data/parameter | Emissions calculations  |
| Additional comments       | CPA 6864-P1-0005-CP1 was not implemented during this monitoring period and no monitoring was carried out during this monitoring period. CPA 6864-P1-0005-CP1 does not claim any emission reductions or carbon credits (CERs) during this monitoring period. |

|                                       |   |
|---------------------------------------|---|
| <b>Data/Parameter</b>                 | <i>B<sub>new</sub></i>  |
| Unit                                  | Tonnes per annum  |
| Description                           | Quantity of biomass saved per stove per annum   |
| Measured/calculated/default           | Measured  |
| Source of data                        | Survey  |
| Value(s) of monitored parameter       | Not applicable  |
| Monitoring equipment                  | Not applicable  |
| Measuring/reading/recording frequency | Annual  |
| Calculation method (if applicable)    | Not applicable  |
| QA/QC procedures                      | Not applicable  |
| Purpose of data/parameter             | Emissions calculation   |
| Additional comments                   | CPA 6864-P1-0005-CP1 was not implemented during this monitoring period and no monitoring was carried out during this monitoring period. CPA 6864-P1-0005-CP1 does not claim any emission reductions or carbon credits (CERs) during this monitoring period. |

### E.3. Implementation of sampling plan

CPA 6864-P1-0005-CP1 was not implemented during this monitoring period and no monitoring was carried out during this monitoring period. CPA 6864-P1-0005-CP1 does not claim any emission reductions or carbon credits (CERs) during this monitoring period.

## SECTION F. Calculation of emission reductions or net anthropogenic removals

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

Emissions reductions are calculated as follows:

$$ER_y = (B_{y, savings} * f_{NRB,y} * NCV_{biomass} * EF_{projected\_fossilfuel})$$

Where:

1.  $B_{y, savings}$  - Quantity of woody biomass that is saved per stove per annum in tonnes. The formula for calculating this is:  $B_{new} * (1 - \eta_{old} / \eta_{new,i})$
2.  $f_{NRB,y}$  - Fraction of biomass used in absence of the project that is non-renewable. Country-specific default value selected (0.81).

3.  $NCV_{biomass}$  - Methodology default (0.015 TJ/tonne)
4.  $EF_{projected\_fossilfuel}$  - Methodology default (81.6 tCO<sub>2</sub>/TJ)
5.  $B_{new}$  - Monitored average quantity of woody biomass saved per stove per annum
6.  $\eta_{old}$  - Methodology default (0.10)
7.  $\eta_{new,i}$  - Monitored thermal efficiency of the new appliance

$ER_y$  per stove is then converted to emissions reductions per stove per diem and this figure will be multiplied by the total aggregated number of stove operating days per monitoring period ( $OD$ ) to give the total emissions reductions per monitoring period.

CPA 6864-P1-0005-CP1 was not implemented during this monitoring period and no monitoring was carried out during this monitoring period. CPA 6864-P1-0005-CP1 does not claim any emission reductions or carbon credits (CERs) during this monitoring period.

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

Not applicable

## F.3. Calculation of leakage emissions

Leakage emissions are calculated using 5%, the methodology default and applied in the ex-post emissions calculations:

$$L_y = 0.95$$

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

| CPA UNFCCC reference number | Baseline GHG emissions or baseline net GHG removals (t CO <sub>2</sub> e) | Project GHG emissions or actual net GHG removals (t CO <sub>2</sub> e) | Leakage GHG emissions (t CO <sub>2</sub> e) | GHG emission reductions or net anthropogenic GHG removals (t CO <sub>2</sub> e) |                 |              |
|-----------------------------|---|--|---|---|-----------------|--------------|
|                             |   |  |   | Before 01/01/2013   | From 01/01/2013 | Total amount |
| 6864-P1-0005-CP1            | 0   | 0  | 0   | 0   | 0               | 0            |
| <b>Total</b>                | 0   | 0  | 0   | 0   | 0               | 0            |

## 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 <sub>2</sub> e) | Amount estimated ex ante for this monitoring period in the CPA-DD (t CO <sub>2</sub> e) |
|-----------------------------|---|---|
| 6864-P1-0005-CP1            | 0   | 862   |
| <b>Total</b>                | 0   | 862   |

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

Ex-ante emissions are calculated based on the total amount of 20,000 stoves distributed with the assumption that all stoves are operational and that no baseline stoves continue to be operated. As the project was not implemented during the monitoring period, zero ERs were achieved.

**F.6. Remarks on increase in achieved emission reductions**

No increase in emissions reductions are observed.

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

Each stove distributed in the CPA in future will be a microscale unit according to Tool 19, para 9 because CPA 6864-P1-0005-CP1 was not implemented during this monitoring period.

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**Document information**

| <i>Version</i>   | <i>Date</i>  | <i>Description</i>  |
|--|--------------|---|
| 03.0   | 31 May 2019  | Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 02.0 of the “CDM project standard for programmes of activities” (CDM-EB93-A07-STAN);</li> <li>• Add a section on remarks on the observance of the scale limit of small-scale CPAs during the crediting periods;</li> <li>• Add "changes specific to afforestation or reforestation activities/CPA" as a possible post-registration changes;</li> <li>• Clarify the reporting of net anthropogenic GHG removals for A/R PoAs between two commitment periods;</li> <li>• Make structural and editorial improvements.</li> </ul> |
| 02.0   | 7 June 2017  | Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 01.0 of the “CDM project standard for programmes of activities (CDM-EB93-A07-STAN);</li> <li>• Make editorial improvements.</li> </ul>  |
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