



**Validation report form for post-registration changes for
CDM programme of activities
(Version 03.0)**

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

BASIC INFORMATION

| | |
|---|--|
| Title and UNFCCC reference number of the programme of activities (PoA) | Fuel Efficient Stoves in Africa (Original title: Fuel Efficient Stoves in Zambia) UNFCCC No.6864 |
| Process track | <input checked="" type="checkbox"/> Prior approval <input type="checkbox"/> Issuance <input type="checkbox"/> Renewal of PoA period |
| Version number of the validation report | 2.1 |
| Completion date of the validation report | 16/09/2020 |
| Version number of PoA-DD applicable to this validation report | 9.5 |
| Type(s) of PoA PRCs | <input type="checkbox"/> Corrections <input type="checkbox"/> Inclusion of monitoring plan <input checked="" type="checkbox"/> Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from applied methodologies, standardized baselines, or other methodological regulatory documents ¹ <input checked="" type="checkbox"/> Changes to the programme design <input type="checkbox"/> Addition of CPA inclusion template <input type="checkbox"/> Change of coordinating/managing entity <input type="checkbox"/> Changes specific to afforestation and reforestation activities |
| Coordinating/managing entity (CME) | 3 Rocks Limited |
| Host Parties | Zambia Zimbabwe |
| Applied methodologies and standardized baselines | AMS II.G. Energy efficiency measures in thermal applications of non-renewable biomass; Version 11 |
| Mandatory sectoral scopes | 3: Energy Demand |
| Conditional sectoral scopes, if applicable | NA |
| Name and UNFCCC reference number of the DOE | Earthood Services Private Limited E-0066 |

¹ Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

Name, position and signature of the approver
of the validation report



Dr Kaviraj Singh
Managing Director

SECTION A. Executive summary

>> The PoA involves dissemination of improved cook stoves in households of Zambia and Zimbabwe. The cook stoves with an efficiency greater than the traditional cookstove, at least 20% thermal efficiency, provide thermal energy for cooking purpose. Due to efficient combustion, the stove consumes less fuel. The decrease in consumption of fuel leads to reduction in greenhouse gases.

In baseline scenario, non-renewable biomass (wood) is burnt in traditional cook stoves for cooking. In project scenario, the same amount of thermal energy is generated from less amount of non-renewable biomass. The design of the cook stove help in achieving greater efficiency using lesser fuel as compared to traditional cook stove.

The coordinating and managing entity (CME) for the proposed project is 3 Rocks Ltd (3RL).

Scope of PRC validation

ESPL has been contracted by 3 Rocks Limited to perform validation of the proposed permanent changes to the registered monitoring plan and changes to the programme design including a change in the PoA title in revised version 9.5 from the renewed PoA-DD, version 8.5/01/ of registered CDM PoA 'Fuel Efficient Stoves in Africa' (former title 'Fuel Efficient Stoves in Zambia') and UNFCCC Reference No. 6864/02/, in accordance with the procedure detailed in CDM VVS for PoA, ver. 02.0/03/, CDM PS for PoA, ver. 02.0/4/ and CDM PCP for PoA, ver. 02.0/5/.

The scope of the validation includes the assessment of the proposed PRCs primarily identified by PP as permanent changes to the registered monitoring plan and programme design. The purpose of this PRC validation is to have an independent third-party assessment of the permanent changes in revised PoA-DD, version 9.5/31/. In particular, the level of accuracy and/or completeness in the proposed revision to the PoA-DD, and the conformity with approved monitoring methodology/6/ applicable to the programme of activity, will be checked. Following Changes were proposed under PRC of the PoA:

Permanent Changes to the registered Monitoring Plan

1. Update in the applied methodology AMS-II.G. Version 11.0
 - a. Update in the Monitoring Plan (Section I.7)
 - b. Default regional emission factors used
 - c. Efficiency loss of project devices as per para 37 of the methodology Version 11 (Section I.7.1)
2. Charcoal conversion factor
3. Zimbabwe parameter values added (Bold,HH, fNRB), new meth version parameter values added (EF projected_fossil_fuel)
4. New default emission factors added in Section I.6.1
5. The provision is included for allowing CPA-level establishment of Bold in Section I.6.2, where more accurate region-level data is available
6. Provisions for the use of survey data and the fraction of stove failure in year 1 are included in Section I.7.1, as per the General Guidelines for SSC CDM methodologies, v.23

Changes to programme design are as follows:

1. Change of the name of the PoA to reflect multiple Host countries (expansion of the geographical coverage or to include additional host Parties (Zimbabwe))
2. Zimbabwe LSC Summary included (Section 7)
3. Sampling Survey and Standard latest Version (Version 8.0) applied to the PoA

PRC Validation process

The validation process is undertaken by validation team that involves the desk review of proposed changes as submitted by CME, undertaking site visit (if necessary), interviews or interactions with the representative of CME, reporting and closure of findings, as appropriate and preparing a draft validation report complying with the CDM requirements. The validation report prepared by validation team is reviewed by an independent Technical Review team. The final validation report that is accepted by Technical Reviewer is then approved on behalf of Earthood Services Private Limited and processed further as per CDM procedures.

Conclusion

With respect to PoA's post registration changes, it is confirmed that:

- the proposed revision points have been described, and an assessment has been provided to substantiate the reasons for each of the proposed revision points of the revised PoA-DD, version 9.5 /31/, using objective evidence;
- the proposed revisions to the PoA-DD ensures that the level of accuracy and completeness in the monitoring and verification process is not reduced as a result of the revisions;
- Prior approval of CDM EB is requested on proposed permanent changes in accordance with CDM VVS for PoA, ver. 02.0/3/ and CDM PS for PoA, ver. 02.0/4/;
- the information included in the revised PoA-DD/31/ template is materially the same as the information in the renewed PoA-DD /1/. The changes that are the subject of the request for approval are in track change.

SECTION B. Validation team, technical reviewer and approver**B.1. Validation team member**

| No. | Role | Type of resource | Last name | First name | Affiliation (e.g. name of central or other office of DOE or outsourced entity) | Involvement in | | | |
|-----|---------------------------|------------------|-----------|------------|---|-----------------|--------------------|------------|---------------------|
| | | | | | | Document review | On-site inspection | Interviews | Validation findings |
| 1. | Team Leader | IR | Garg | Shreya | Central Office | Y | N | Y | Y |
| 2. | Validator | IR | Vatsa | Vaishali | Central Office | Y | N | N | Y |
| 3. | Local Expert | EI | Chuma | Munatsi | Central Office | Y | N | N | Y |
| 4. | Local Expert | EI | Chipompwe | Selwyn | Central Office | Y | N | N | Y |
| 5. | Technical Expert (TA:3.1) | IR | Garg | Shreya | Central Office | Y | N | Y | Y |
| 6. | Methodology Expert | IR | Garg | Shreya | Central Office | Y | N | Y | Y |

B.2. Technical reviewer and approver of the validation report on PoA PRCs

| No. | Role | Type of resource | Last name | First name | Affiliation (e.g. name of central or other office of DOE or outsourced entity) |
|-----|------------------------|------------------|-----------|------------|---|
| 1. | Technical reviewer | IR | Singh | Kaviraj | Central Office |
| 2. | Technical Expert to TR | IR | Singh | Kaviraj | Central Office |
| 3. | Approver | IR | Singh | Kaviraj | Central Office |

SECTION C. Means of validation**C.1. Document review**

A desk review is undertaken, involving but not limited to,

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

ESPL reviewed the revised PoA-DD, using a risk-based approach and conducted follow-up interviews. The information in revised PoA-DD, ver. 9.5/31/ is reviewed against CDM VVS for PoA, ver. 02.0/3/, CDM PS for PoA, ver. 02.0/4/, Kyoto Protocol requirements, UNFCCC rules, applied methodology and associated interpretations. List of all documents reviewed or referenced during the validation is included in the Appendix 3 below.

C.2. On-site inspection

| Duration of on-site inspection: NA | | | | |
|------------------------------------|----------------------------|---------------|------|-------------|
| No. | Activity performed on-site | Site location | Date | Team member |
| 1. | NA | NA | NA | NA |

No site visit was conducted for the scope of validation of PRCs. As the proposed PRC does not have any information on the field to be corroborated. The changes are proposed in the monitoring plan and in the programme design to make the revised PoA-DD/31/ consistent with the with the expansion of the PoA along with methodology update.

Moreover, the change proposed by the CME are in PoA-DD pertains mainly to §271 and do not fall into the categories mentioned under §279 of CDM VVS for PoA/3/, which require a mandatory on-site inspection. Thus, the assessment team confirms that validation opinion can be concluded without conducting the site-visit for the changes proposed by CME in revised PoA-DD/31/. Therefore, no on-site visit was conducted.

The assessment team chose to select alternate means such as telephonic interviews with the CME representatives and independent data research. The representatives of the CME were interviewed, who are responsible for implementation of PoA in the host countries. The information provided by CME representatives during the interviews were cross-checked with the evidences provided by the CME. The details of the interview can be found in the section below.

C.3. Interviews²

| No. | Interviewee | | | Date | Subject | Team member |
|-----|-------------|------------|--------------|------------|------------------|-------------|
| | Last name | First name | Affiliation | | | |
| 1. | Marshall | Nick | 3 Rocks Ltd. | 05/04/2020 | Proposed changes | Shreya Garg |

C.4. Clarification requests, corrective action requests and forward action requests raised

| Areas of validation findings | No. of CL | No. of CAR | No. of FAR |
|--|-----------|------------|------------|
| Compliance with PoA-DD form | - | - | - |
| Corrections | - | - | - |
| Inclusion of monitoring plan | - | - | - |
| Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from applied methodologies, standardized baselines, or other methodological regulatory documents | - | - | - |
| Changes to the programme design | 02 03 | 01 | |
| Addition of CPA inclusion template | - | - | - |
| Change of coordinating/managing entity | - | - | - |
| Changes specific to afforestation and reforestation activities | - | - | - |
| Others (evidences) | 01 | - | - |
| Total | 03 | 01 | 00 |

² (Via Telephone call)

SECTION D. Validation findings**D.1. Compliance with the PoA-DD form**

| | |
|----------------------------|--|
| Means of validation | The revised PoA-DD/31/ (both in tracked-change and clean versions) complies with the valid version of the applicable PoA-DD form/7/ and the instructions therein. The valid version as per UNFCCC website was found to be 09.0 and same version has been applied by CME. The CME has used the latest valid version (9.0) of the PoA-DD for preparing the revised PoA-DD/31/, therefore, it is confirmed that the information transferred to the later valid version of the PoA-DD/31/ form is materially the same as that in the renewed PoA-DD/1/ except for the content of proposed PRCs. |
| Findings | No Findings were raised. |
| Conclusion | The validation team confirms that the proposed post registration changes as included in the revised PoA-DD/31/ have been presented by using the valid version of CDM-PoA-DD-FORM/7/ and were found complying with the instructions contained therein. The CME has used the latest version of PoA-DD FORM/7/ and the validation team confirms that the information transferred in this process is materially the same except the proposed post registration changes (listed under further sections). |

D.2. Corrections

| | |
|----------------------------|----|
| Means of validation | NA |
| Findings | NA |
| Conclusion | NA |

D.3. Inclusion of monitoring plan

| | |
|----------------------------|----|
| Means of validation | NA |
| Findings | NA |
| Conclusion | NA |

D.4. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from applied methodologies, standardized baselines, or other methodological regulatory documents

| | | |
|----------------------------|--|---|
| Means of validation | <p>The registered monitoring plan for the PoA remains same. However, due to the addition of new host country i.e. Zimbabwe and update in the applied methodology version, the monitoring plan has been revised.</p> <p>Following changes are included in the revised PoA-DD discussed in detail under respective sections:</p> <ol style="list-style-type: none"> Update in the applied methodology AMS-II.G. Version 11.0 <ol style="list-style-type: none"> Update in the Monitoring Plan (Section I.7) Default regional emission factors used Efficiency loss of project devices as per para 37 of the methodology Version 11 (Section I.7.1) Charcoal conversion factor Zimbabwe parameter values added (Bold,HH, fNRB), new meth version parameter values added (EF projected_fossil_fuel) New default emission factors added in Section I.6.1 The provision is included for allowing CPA-level establishment of Bold in Section I.6.2, where more accurate region-level data is available Provisions for the use of survey data and the fraction of stove failure in year 1 are included in Section I.7.1, as per the General Guidelines for SSC CDM methodologies, v.23 | |
| | Proposed Changes | 1. Update in the applied methodology AMS-II.G. Version 11.0 a) Monitoring Plan (Section I.7): |
| | Assessment | CME has revised the monitoring plan in accordance to the updated Version of the applied methodology/6/. The change includes only the revision in the value of the monitored parameter 'fnRB', B _{old,HH} , Inclusion of default emission factors as now the PoA includes Zimbabwe as the additional host |

party.

a) Assessment of f_{NRB} :

The value for parameter ' $f_{NRB,y}$ ' fraction of renewable biomass was determined by an C4 Eco solution hired by CME. An f_{NRB} calculation sheet and report/11/ was submitted by the CME along with the details of the sources used. The parameters used to determine this value were demonstrated in the calculation sheet/11/ and were assessed by the assessment team. The following formula was used for f_{NRB} calculation, which is found to be in line with TOOL30/12/:

$$f_{NRB} = NRB / (NRB + RB)$$

Where,

| | |
|-----------|--|
| f_{NRB} | Fraction of non-renewable biomass in the country/region or project area (fraction or %) |
| NRB | Quantity of non-renewable biomass (t/yr) in the country/region or project area, determined as per paragraphs 10 and 11 below |
| RB | Quantity of renewable biomass in the country/region or project area, determined as per section 4.2 below (t/yr) |

Since NRB is determined on a country specific basis by the CME, the following method was applied in line with paragraph 9 of TOOL30/12/:

$$NRB = H - RB$$

Where,

| | |
|---|---|
| H | Total annual consumption of wood in the absence of the project activity in the country/region/project area (t/yr) |
|---|---|

The NRB was calculated by the CME in-line to equation 2 of the applied Tool-30 and was found to be acceptable as the f_{NRB} here is calculated for a specific country (i.e. Zimbabwe) that is being added to expand the project geographical boundary.

The **consumption of woody biomass (H)** was determined in accordance with paragraph 11 of TOOL30/12/, which provides two options to calculate this parameter. The parameter was determined using option (a) i.e. official statistics and reports. The calculations were checked from the calculation sheet/11/ and sources provided in that sheet as well as cross check against online resources wherever deemed necessary by the assessment team.

The total annual consumption of wood in the absence of project activity in the country was calculated based on total fuelwood and charcoal consumption from domestic and non-domestic sources. The values for all these variables were obtained from UN online database for the year 2016/16/, which is the latest year for which annual wood consumption data is available.

All source links were assessed and discussed in detail against each input parameter in detail. These calculations were assessed and accepted by the assessment team. The total annual consumption of wood in absence of project activity was calculated to be 23,520, 035 t/yr as verified from the f_{NRB} calculation sheet /11/.

Estimation of **renewable biomass (RB)** is carried out in line with paragraph 15 of TOOL30/12/:

$$RB = \sum(MAI_{forest,i} \times (F_{forest,i} - P_{forest})) + \sum(MAI_{other,i} \times (F_{other,i} - P_{other}))$$

Where,

| | |
|------------------|---|
| $MAI_{forest,i}$ | Mean Annual Increment of woody biomass growth per hectare in subcategory i of forest areas (t/ha/yr) |
| $MAI_{other,i}$ | Mean Annual Increment of woody biomass growth per hectare in subcategory i of other wooded land areas (t/ha/yr) |
| $F_{forest,i}$ | Extent of forest in sub-category i (ha) |

| | |
|---------------|--|
| $F_{other,i}$ | Extent of other wooded land in sub-category i (ha) |
| P_{forest} | Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within forest areas (ha) |
| P_{other} | Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within other wooded land areas (ha) |
| i | Sub-category i of forest areas and other wooded land areas |

Country-specific renewable biomass was calculated by the third-party C4ES using a GIS analysis study. Geospatial data derived from Global Forest Change 2000 and 2018 data/14/ was used to estimate the forest and other wooded area land cover for years 2000 to 2018. Latest data available for aforementioned parameter 'consumption of woody biomass' (H) is from 2018 and therefore, usage of 2018 data for determination of parameter 'renewable biomass' (RB) was accepted by the assessment team in accordance with paragraph 18 of TOOL30/12/.

The total renewable biomass in the host country was calculated to be 1,984,101 t/yr.

fNRB calculation:

$$NRB = H - RB = 23,520,035 - 1,984,101 \text{ t/yr}$$

$$= 21,535,934 \text{ t/yr}$$

$$fNRB = NRB / (NRB + RB)$$

$$= 21,535,934 / (21,535,934 + 1,984,101)$$

$$= 0.92$$

A summary of sources and assessment of all parameters in line with applied methodology/6/ and TOOL30/12/ mentioned above used in calculation of fNRB_y (for Zimbabwe) have been provided in table below:

| Parameter description | Value | Data Source | Assessment |
|--|-----------------|---|---|
| fNRB (Fraction of non-renewable biomass in the country/region or project area) | 0.92 | Calculated in line with TOOL30 equation (1)/12/ | The calculation of this parameter was found to be in line with equation (1) of TOOL30/12/ as checked against fNRB calculation sheet/11/ and revised PoA-DD/31/. |
| NRB (Quantity of non-renewable biomass (t/yr) in the country/region or project area) | 21,535,934 t/yr | Calculated in line with TOOL30 equation (2)/12/ | The calculation of this parameter was found to be in line with equation (2) of TOOL30 as checked against fNRB calculation sheet/11/ |

| | | | | | |
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| | | | | | and revised PoA-DD/31/. |
| | | RB (Quantity of renewable biomass in the country/region or project area) | 1,984,101t/yr | Calculated in line with TOOL30 equation (6)/12/ | <p>The calculation of this parameter was found to be in line with equation (6) of TOOL30/12/ as checked against fNRB calculation sheet/11/ and revised PoA-DD/1/.</p> <p>The calculation was checked in revised PoA-DD/1/ and calculation sheet/11/. It was checked and confirmed by the assessment team that recent spatial forest cover dataset/14/ has been used and all woody cover across all forest ecological zones in the country has been included, thus leaving no woody cover to be categorised into "other wooded land areas".</p> <p>The value was also compared by assessment team against value in approved PoA-DD for registered PoA 9007 in the host country/23/.</p> |

| | | | | |
|--|--|-----------------|---|--|
| | | | | which was 1,440,239 t/yr m ³ in year 2015. Thus, this shows increase in the renewable biomass over the years. Therefore, the calculation has been accepted by the assessment team. |
| | H (Total annual consumption of wood in the absence of the project activity in the country/region/project area) | 23,520,035 t/yr | UN database/15/,/16/ for fuelwood and charcoal consumption data. FAO data/17/ and IPCC value/18/ for 'Wood density' and 'Charcoal to wood biomass factor' respectively. | Determined in line with TOOL30 para 11 (a)/12/. The value was calculated based on total fuelwood and charcoal consumption from domestic and non-domestic sources, which was obtained from official stats/15/,/16/. |

The current fNRB value of 0.92 has been obtained from 2018 data/11/. Since, it is evident from FAO trends/13/ that forest cover in Zimbabwe has declined over the years, and the calculated fNRB value of 0.92 was found reasonable as it indicates that the consumption of woody biomass within Zimbabwe was found to be greater than the country's capacity to renewably or sustainably supply /13/.

The approach and sources used for determination of parameter fNRB,y was found to be in accordance with applied methodology/6/ and TOOL30/12/.

Therefore, the derived value of 0.92 for fNRB,y has been accepted by the assessment team.

For all other parameters, their values are determined at CPA level and hence the checks have been included in the PoA-DD to aid their correctness at the time of CPA inclusion.

Through an independent desk review, it was confirmed that the data sources used for fNRB calculation for Zimbabwe are the latest published for Zimbabwe and of equivalent vintage. Also, the calculated value of 92% was found conservative when compared with the 97% fNRB default value issued by UNFCCC issued in 2010.

Thus, it can be stated that the fNRB value for Zimbabwe, is acceptable, and

have been calculated following applicable calculations, as defined by the applied methodology/6/.

b) Assessment of $B_{old,HH}$:

For the host country Zimbabwe, the value for the parameter was sourced from the historical data analysis in-line to the option 2 of the data/parameter table 3 of the applied methodology/6/.

The calculations for the parameter was checked from the ER sheet provided by CME and were found to be satisfactorily demonstrated. In line with applied methodology AMS-II.G version 11.0/6/ Parameter table 3, choosing option 2, $B_{old,HH}$ has been calculated in revised PoA-DD/31/ based on historical data. The calculation has been carried out in accordance with General guidelines for SSC CDM methodologies (version 23.0)/21/. The PoA DD includes justification for all values, data and sources which have been used in the calculation. Para 23(a) of the general SSC guidelines/21/ require project participant to transparently list and describe the original sources of values considered, with justification as to why the values were selected. The assessment team reviewed the information and data sources provided, and the key parameters used for calculation of the updated value of $B_{old,HH}$ have been listed and assessed in the table below in line with applied methodology/6/ and guidelines/21/:

| Parameter and description | Data Label | Value | Data Source | Assessment |
|--------------------------------|------------|---------------------------|-----------------------|--|
| Household Fuelwood Consumption | A | 21,786,000 m ³ | UN data from 2016/22/ | The original source of data has been referenced which is transparently listed in Appendix 4 of revised PoA-DD/31/. The official UN stats have been used to determine this parameter which is considered a credible source produced by 'United Nations Statistics Division'. The source was checked, and the value was found to be consistent. The value was also cross-checked independently from other registered CDM PoAs for the Host Country. The value was chosen from the same source for the year 2016. The value was found |

| | | | | | | |
|--|--|---------------------|---|------------------------|-----|---|
| | | | | | | comparable by assessment team against value in approved PoA-DD for PoA 9007/23/, which was 21,786,000 m ³ . The weblink tabulates the household fuelwood consumption from 1990 to 2016 and the data trend is evident and the increase in the value was found acceptable. The use of similar vintage data (2016) was found rationally appropriate for the coherence of vintage with the vintage of other parameters used in the calculation. The use of the most recent available data for this parameter has been avoided by CME to keep it consistent with vintage with other parameters. |
| | | Density of fuelwood | B | 0.725 t/m ³ | FAO | The value has been sourced from an official Food and Agriculture Organization of United Nations report 'The Charcoal Transition'/24/. This source of data has been referenced and transparently listed in Appendix 4 of the revised PoA-DD/31/. The value was checked and was found to be consistent. Since |

| | | | | | | |
|--|--|--|---|-----------------|-----------------------|--|
| | | | | | | FAO is an international organization which is a credible source of information, the value considered is found to be an appropriate choice. Though the vintage of the applied value is the year 2017, which is different from the vintage of other parameters (as all others parameters used to calculate $B_{old,HH}$ were from the year 2016) but in the opinion of the assessment team, the density of fuelwood is more of a constant value and would not change materially over a period of time. |
| | | Household fuelwood consumption (in tonnes) | C | 15,794,850 tons | Calculated (A X B) | A conversion factor of 1 m3 of wood = 0.725 Tons ('Density of fuelwood') was used to calculate this value in tonnes. This is found to be an appropriate approach by the assessment team and cross-checked from an FAO report/13/, which provides the same approach. |
| | | Population of Zimbabwe | D | 14,030,390 | World Bank (2016)/25/ | The original source of data is World Bank database/25/, which has been referenced and transparently listed in Appendix 4 of revised PoA- |

| | | | | | | |
|--|--|-------------------|---|-----|--------------------------|---|
| | | | | | | <p>DD/31/. The quoted source was checked. World Bank is considered a credible source and value was found to be consistent. Although more recent data was available, population data from 2016 has been selected by the CME. The use of similar vintage data (2016) was found rationally appropriate for the coherence of vintage with the vintage of other parameters used in the calculation. Moreover, the use of data from 2016 was found acceptable as the population of Zimbabwe has increased as per the statistics and would have led to a higher value of B_{old} and consequently, a higher value of ERs.</p> |
| | | % using wood fuel | E | 68% | UNFPA/Zimstat (2017)/26/ | <p>The value is sourced from 'Intercensal Survey Sheet' conducted in 2017 by Zimbabwe National Statistics Agency of Republic of Zimbabwe. The survey is also supported by United Nations fund for population activities. The source is transparently listed in Appendix 4 of revised PoA-</p> |

| | | | | | | | |
|--|--|--|--|--|--|---|--|
| | | | | | | <p>DD/31/. The source was checked, and the applied value was found to be consistent. The value was also cross-checked against CPA-DD for UNFCCC ref. number 9007-P1-0008-CP1/27/ (included in 2019) according to which, the percentage of households relying on wood fuel in Zimbabwe was 67.7%. This value (67.7%) was obtained from Demographic and Health Survey conducted in 2015/28/ by Ministry of Health in Zimbabwe. This value is similar to the parameter value used in the current PoA.</p> <p>Since the Zimbabwe stat study is conducted by a Zimbabwe government organisation which is dependent on their own primary data for determining these values, the value has been found to be acceptable by the assessment team. It was checked and confirmed that this study was conducted in 2015 and is the latest data available for this parameter, which is also a</p> | |
|--|--|--|--|--|--|---|--|

| | | | | | | |
|--|--|---------------------------------------|---|-----------|--------------------------------|---|
| | | | | | | similar vintage for other parameters used in this calculation. |
| | | Population using wood | F | 9,540,665 | Calculated (D X E) | Population using wood has been determined by calculating '% using wood fuel' times total 'population of Zimbabwe' (determined above in this table), which is an acceptable method in the opinion of the assessment team. |
| | | Average annual consumption per capita | G | 1.66 tons | Calculated (C / F) | The total amount of fuelwood consumption by households has been divided by total number of the population using wood to arrive at a value for Average annual consumption of wood per capita. This approach has been found acceptable by the assessment team. |
| | | Average household size in Zimbabwe | H | 4.2 | UNFPA Zimbabwe Stat (2017)/26/ | The value is sourced from Intercensal Survey Sheet' conducted in 2017 by Zimbabwe National Statistics Agency of Republic of Zimbabwe. The survey is also supported by World Bank Group. Since this study is conducted by a Zimbabwe government organisation which is dependent on their own |

| | | | | | | |
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| | | | | | | primary data for determining these values, the value is found to be acceptable by the assessment team. It was checked and confirmed that this the latest data available for this parameter, which is also of similar vintage for other parameters used in this calculation. |
| | | <p>Using the values obtained for parameters assessed in the table above, $B_{old,HH}$ was determined:</p> <p>$B_{old,HH}$ = 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</p> <p>= (Average Annual consumption of wood per capita) X (Average household size in Zambia)</p> <p>= 1.66 X 4.2</p> <p>= 6.95 tonnes per annum</p> <p>All data was found to be sourced from available sources of the similar vintage duration i.e. from 2016. As described above, the data for some of the parameters may be available for more recent vintage but it was not considered appropriate to apply the same in order to keep the vintage consistent with other parameters for which no recent data were available after the year 2017. If the latest data for all parameters is applied regardless of the variation the vintage, the calculated value for $B_{old,HH}$ (that would be 7 tonnes per annum) would not be conservative than the applied value (6.95 tonnes per annum).</p> <p>As evident from 2017 Intercensal Demography Survey Sheet/26/, firewood is the main source of cooking energy in Zimbabwe. Fuelwood consumption UN data/25/ was checked, and a trend of increasing household fuelwood consumption was observed, as can be seen below:</p> <p>2013: 19,986,000 m³ 2014: 20,499,000 m³ 2015: 21,017,000 m³ 2016: 21,781,000 m³</p> <p>It was also observed from the registered CDM projects in Zimbabwe, that there is an upward trend for the Bold value. In 2019, Zimbabwe has been added to project boundary of CDM PoA 9007: <i>Distribution of Improved Cook Stoves in Sub-Saharan Africa/23/</i>. The value of Bold for Zimbabwe in approved PoA-DD for PoA 9007 is 5.92 tonnes per annum, which is comparable to value calculated for current PoA. Moreover, the latest available sources for similar vintages have been used for the calculation of $B_{old,HH}$ as assessed in table above.</p> <p>The approach for determination of this parameter was found to be in</p> | | | | |

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| | | <p>accordance with applied methodology/6/ and General guidelines for SSC CDM methodologies (version 23.0)/21/. The approach is also found to be in line with para 45 of applied methodology/6/, according to which this parameter can be determined PoA-level. Therefore, the derived value of 6.95 tonnes for parameter $B_{old,HH}$ for PoA has been accepted by the assessment team.</p> <p><u>Assessment of CPA-Level establishment of B_{old} in section I.6.2:</u> CME has now added the provision of determination of the value of $B_{old,HH}$ at the CPA-level in the parameter table under section I.6.2 of the revised PoA-DD/31/. This approach of the CME was found to be acceptable as more relevant accurate regional data will be available at the CPA-level and also the approach was found to be in-line with para 45 of the applied methodology.</p> <p>c) Assessment of EF Projected fossilfuel: The value for the parameter '$EF_{projected_fossilfuel}$' Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass by similar consumers was determined from the methodology applied. The value for the parameter applied is a default value in-line to the Table 2 of the applied methodology /6/. The PoA now includes two host countries Zambia and Zimbabwe thus, the application of 73.2 tCO₂e/TJ was found to be acceptable and appropriate.</p> <p>Thus, the revision in the monitoring plan by the CME was found to be acceptable and justifiable.</p> |
| | Proposed Changes | <p>1) PoA updated to reflect methodology Version 11</p> <ol style="list-style-type: none"> Default regional emissions factors used (Section I.6.1) Efficiency loss of project devices (N_{new}) as per para 37 (Section I.7.1) |
| | Assessment | <p>CME updated the version of the applied methodology of the PoA version 11 in accordance with §238(i) of CDM PS for PoA, ver. 02.0/4/. The sections of the revised PoA-DD reflect the updates from the new version of the applied methodology.</p> <p>i) Assessment of default regional emission factor used(73.2 for Sub-Saharan Africa): The value for the parameter '$EF_{projected_fossilfuel}$' Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass by similar consumers was determined from the methodology applied. The value for the parameter applied is a default value in-line to the Table 2 of the applied methodology /6/. The PoA now includes two host countries Zambia and Zimbabwe thus, the application of 73.2 tCO₂e/TJ was found to be acceptable and appropriate.</p> <p>ii) Assessment of provisions for efficiency loss of the project devices under parameter $\eta_{new,ij}$: The PoA involves the dissemination of ICS in Africa. Thus, the provision of accounting the loss of efficiency of the project devices under parameter $\eta_{new,ij}$ was found to be acceptable by the validation team as CME was already following this provision which has been added from para 37 of the applied methodology AMS-II.G. Version 11 /6/ and during the current validation it has only updated the para in-line to the updated applied methodology version 11.0 /6/.</p> |
| | Proposed Changes | <p>2. Charcoal Conversion Factor:</p> |

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| | Assessment: | <p>CME has updated the version of the applied methodology i.e. Version 11. As per the updated methodology AMS-II.G Version 11 /6/ the charcoal conversion factors are added for the baseline calculation . Thus, in-line to para 35 of the applied methodology CME has now added the charcoal conversion factor under section I.6.1 of the revised PoA-DD/31/.</p> <p>The CME had already applied the charcoal conversion factor in the calculation of Woody biomass consumption of Zambia but the same was not reflected under section I.6.1 (methodological choices) of the PoA-DD. Thus, the same has now been included in the revised PoA-DD/31/.</p> <p>Thus, the addition of the charcoal conversion factor in the revised PoA-DD/31/ was found to be acceptable and justifiable by the assessment team.</p> |
| | Proposed Changes | 3. Zimbabwe parameter values added (B_{old} , HH, fNRB), new meth version parameter values added ($EF_{projected_fossil_fuel}$) |
| | Assessment: | The proposed change has already been discussed under permanent change 1(a). Please refer above for details. |
| | Proposed Changes | 4. Addition of new default emission factors |
| | Assessment: | The value for the parameter ' $EF_{projected_fossilfuel}$ ' Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass by similar consumers was determined from the methodology applied. The value for the parameter applied is a default value in-line to the Table 2 of the applied methodology /6/. The PoA now includes two host countries Zambia and Zimbabwe thus, the application of 73.2 tCO ₂ e/TJ was found to be acceptable and appropriate. |
| | Proposed Changes | 5. CPA-Level establishment of B_{old} in section I.6.2 |
| | Assessment | The proposed change of CPA-Level establishment of parameter B_{old} has already been discussed under proposed change 1(b)ii . Please refer above for details. |
| | Proposed Changes | 6. Provisions for the use of survey data and the fraction of stove failure in year 1 |
| | Assessment | <p>CME has now added the provision for the use of monitoring survey data for a period of 1 year from the date of survey when the following conditions in line to para 27 of the General Guidelines for SSC CDM methodologies, v.23 were found to be followed:</p> <ul style="list-style-type: none"> a) The average lifetime of the units is known and is four years or more. It shall also be confirmed by e.g. previous experience with similar technologies or manufacturer or the elements of the project design, in order to assure that the local conditions are unlikely to result in premature failure of the technology. b) At least 50 per cent of the distributed units were functional in the previous survey undertaken by PAs/CPAs (this condition is applicable only after the first monitoring survey is concluded). <p>In-line to para 28 of the General guidelines for SSC CDM methodologies version 23.0 /21/, CME has now added the provision for assuming zero percent as a fraction of failure during the first 12 months after the implementation of first unit in the CPA instead of conducting a survey:</p> <p>1(a)The average lifetime of the units is known and is four years or more. It shall also be confirmed by e.g. previous experience with similar technologies or manufacturer or the elements of the project design, in order to assure that the local conditions are unlikely to result in premature failure of the technology.</p> |

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| | <p>(b) At least 50 per cent of the distributed units were functional in the previous survey undertaken by PAs/CPAs (this condition is applicable only after the first monitoring survey is concluded).</p> <p>2. They have maintenance/service infrastructure evidenced through, for example:</p> <ul style="list-style-type: none"> (i) Presence of a dedicated service team or a contract with a service provider with track record; or (ii) Maintenance logbook of the service team's activities; or (iii) Comprehensiveness of the scope for the warranty/service guarantee, applicable for the period. <p>The addition of the monitoring survey requirement provision to the parameter $N_{y,i,j}$ (Number of project devices of type i and batch j operating during year y) and μ_y (Adjustment to account for any continued use of pre-project devices during the year y) was found to be acceptable as it was stated under section 4.8.2 Simplified requirement on monitoring of distributed units of the General guidelines for SSC CDM methodologies version 23.0/21/.</p> |
| Findings | NA |
| Conclusion | <p>In accordance with requirements of §265, §266 and §267 of CDM VVS for PoA, ver. 02.0/3/ respectively, the validation team confirms that the changes proposed in the PRC:</p> <ul style="list-style-type: none"> • are permanent changes to the registered monitoring plan which comply with the relevant requirements of §235 and §236 of the CDM PS for PoA/4/ • are in compliance with the applied methodology/6/ and other applied standards and tools and do not reduce the level of accuracy of the monitoring compared with the requirements contained in the registered monitoring plan are unlikely to lead to a reduction in the accuracy of the calculation of emission reductions |

D.5. Changes to the programme design

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| Means of validation | <p>The CME has proposed (as per §238 of CDM PS for PoA/4/) changes to the programme design in the revised PoA-DD/31/. The proposed changes in the programme design is majorly due to the addition of the new host country (i.e. Zimbabwe) and the programme design of the PoA for the already included host party i.e. Zambia remains unchanged. The PoA now includes information related to Zimbabwe. Therefore, the proposed changes against respective sections are summarized below for the revised PoA-DD/31/ :</p> <ol style="list-style-type: none"> 1. Change of the name of the PoA to reflect multiple Host countries (expansion of the geographical coverage or to include additional host Parties (Zimbabwe)) 2. Zimbabwe LSC Summary included (Section 7) 3. Sampling Survey and Standard latest Version (Version 8.0) applied to the PoA | |
| | Proposed Changes | <ol style="list-style-type: none"> 1. <u>Change of the title of the PoA for expansion of the geographical coverage or to include additional host Parties</u> <p>Zimbabwe is included as additional boundary to the PoA and the relevant sections/information in PoA-DD are updated accordingly.</p> |
| | Assessment | <p>The addition of the host country (Expansion of the geographical coverage or to include additional host parties has already been assessed under proposed change 1) has led to the revision in the name of the title of the PoA. Thus, in-line to the para 69 (d) of CDM VVS for PoA Version 2.0/3/ PP has submitted the LoAs/8/,9/ from both the host countries i.e. Zimbabwe and Zambia with the PoA title "Fuel Efficient Stoves in Africa" which was revised from the old PoA title which was "Fuel Efficient Stoves in Zambia". Thus, this was found to be appropriate and acceptable.</p> |

CME requested to expand the geographical coverage of PoA to one new host country (Zimbabwe) in accordance with §238(a) of CDM PS for PoA, ver. 02.0/4/. The LoAs from the host countries has been received from the CME/8//9/.

(a) The revised PoA-DD/31/ has been revised (including sections such as LSC/30/, monitored parameter values related to the new host country) by the CME to reflect the changes. Moreover, no changes in the eligibility criteria have been made due to addition of new host country.

(b) The baseline established in the PoA-DD is applicable to the expanded PoA boundary and can be confirmed based on review of revised PoA-DD/1/.

Assessment of f_{NRB} value (0.92 for Zimbabwe):

The f_{NRB} value has already been assessed under permanent change 1(i). Please refer above for details.

Assessment of $B_{y,savings,i,j}$:

CME is using WBT for calculations and has proposed using Option 3 (Equation 7) option for $B_{y,savings,i,j}$ calculation. The option was already provided in the renewed PoA-DD, ver. 8.5/1/, and is in-line with the requirements of §32 of methodology AMS-II.G, ver. 11.0/6/. The choice was therefore found acceptable for the new host country

Assessment of n_{old} :

For the host country Zimbabwe, a default value of n_{old} is taken as 0.1, which is valid as per methodological choice provided in AMS-II.G, ver. 11.0/6/, where “option (a) mentions using optional default of 0.1 for cases where pre-project device is a three stone fire using firewood (not charcoal), or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney, and 0.2 for cases where pre-project devices in use are other than conventional device. If a mix of pre-project device is used, then the appropriate weights will be used to calculate n_{old} value.” On the other hand, option (b) gives choice of measuring the n_{old} value based on representative sampling methods or based on literature reporting results.

The renewed PoA-DD, ver. 8.5/1/, on Page 29 mention that the pre-project devices would be conventional devices and CPA implementer will confirm before the sale that the pre-project device in use was a conventional device as mentioned under the monitoring parameter ' $\eta_{old,i,j}$ ' where the baseline device information is captured at the time of project device installation. For the conventional devices (without grate/chimney) the value of 0.1 was found in accordance to the applied methodology.

Since the PoA DD includes provisions for monitoring of the pre-project devices and establishes that it ensured that it replaces conventional devices an efficiency value of 10%, the n_{old} value was found acceptable.

Assessment of the Host country DNA Letter of Approval:

Zambia:

The Letter of Approvals (older LoA and the new LoA with revised PoA title) for host country Zambia /8/ have been reviewed by the validation team, and it is concluded that the LoAs are fulfilling the requirements set in the section 7.11 of the CDM VVS for PoA, ver. 02..0/3/.

With regards to the requirements of section 7.11, §69 (a)-(d) in the LoA, the Parties being added to the CDM PoA are confirming the following:

- (a) The Party is a Party to the Kyoto Protocol;
- (b) The participation in the PoA is voluntary;
- (c) In the case of the host Party, the PoA contributes to achieving the

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| | | <p>sustainable development of the country; (d) It refers to the precise title of the PoA in the PoA-DD being submitted for registration (i.e. there is no difference between the title in the letter and that in the PoA-DD).</p> <p><u>Zimbabwe:</u> <u>Zimbabwe</u> has been indicated as the party involved in the renewed PoA DD/1/. The CME has submitted the LoA/9/ received from the DNA of Zimbabwe (Republic of Zimbabwe)/9/, The LoA/9/ confirms that: (a) The Party is a Party to the Kyoto Protocol; (b) The participation in the PoA is voluntary; (c) the PoA contributes to achieving the sustainable development of the country; (d) It refers to the precise title of the PoA in the PoA-DD being submitted for registration.</p> <p>The LoA/9/ received is unconditional with respect to para 69a-c of PS for PoA version 2.0/4/ and is valid for the proposed CDM PoA under validation.</p> <p>Based on the review of LoAs/8//9/, validation team confirms that the changes proposed for the PoA design are not impacting the PoA-DD in terms of its compliance with CDM PS for PoA, ver. 02.0/4/ and therefore, found acceptable.</p> <p>Assessment of changes on the additionality:</p> <ol style="list-style-type: none"> 1. In the renewed PoA-DD, ver. 8.5/01/, CME has demonstrated the additionality of the CPAs based on methodological tool 19: "Demonstration of Additionality of microscale project activities"; version 09.0/20/, where the CPAs are additional based on the auto-additionality criterion 11 (a) and 12 (a). The criterion 11 (a) and 12 (a) of the tool specify 'project activities are additional if the geographic location for micro-scale activities is in one of the LDCs or SIDS'. The statement was applicable for the host countries in the renewed PoA-DD, ver. 8.5/01/. All the host countries in the PoA-DD were LDCs or SIDS, however, adding the host country Zimbabwe to the PoA, the additionality criterion is no longer valid for Zimbabwe because it is not an LDC or SIDS. <p>Due to introduction of a Host Party (Zimbabwe) section C. (Demonstration of additionality of PoA) has been updated in the revised PoA-DD (version 9.5) /31/ for the following;</p> <ol style="list-style-type: none"> a) The revised PoA DD has been updated for "Application of microscale thresholds at unit level of CPAs' in line to para 14 of the tool 19. b) The revised PoA DD requires the demonstration of additionality at CPA level which was found acceptable as para 14 of tool 19 has been applied to define UNIT. c) In the revised PoA-DD, ver. 9.5/31/, CME has added the provisions in-line to appendix of Tool 21 for assessing the additionality of the CPAs by applying microscale thresholds at unit level rather than aggregate level of the CPA. <p>Following provisions have been included for demonstration of additionality at CPA level:</p> <ol style="list-style-type: none"> 1) Applying figure 1 under Tool 21 "Demonstration of additionality of small-scale project activities" version 13.0.: This option requires the CPA to demonstrate the fulfilment of the conditions under figure 1 in appendix of the tool. The conditions under the tool have been replicated in the PoA DD hence was found acceptable by the team |
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| | | <p>2) Applying tool 19 "Demonstration of additionality of microscale project activities" version 9: This option requires CPA to demonstrate additionality by application of paragraph 12 of the tool. The PoA DD/31/ has included the requirement to check penetration rate where condition of para 12(a) are not fulfilled. This requirement will ensure compliance with the provisions of Appendix of TOOL19 "Demonstration of additionality of microscale project activities", regarding penetration of the technology (improved cook stoves) to be considered as automatic additional.</p> <p>The conditions stated in the PoA DD were found consistent to the applied tool hence the option was found acceptable.</p> <p>3) Applying Tool 21 "Demonstration of additionality of small-scale project activities" version 13.0 This option allows the CPA to demonstrate additionality via other provisions under the tool. The option was found acceptable to the validation team.</p> <p>The revised additionality argument is applicable to both the host countries and would be demonstrated at CPA level.</p> <p>The inclusion of the provisions was found acceptable since the latest tools available for the demonstration of additionality of small-scale project activities have been used.</p> |
| | Proposed Changes | 2. Zimbabwe LSC summary included under section 7 of the PoA-DD |
| | Assessment | <p>The LSC information stated in the revised PoA-DD for Zimbabwe was checked from the LSC evidences (LSC report for Zimbabwe, Presentation, LSC Attendance list, Summary comment sheet, Invitations) shared by the CME /30/ and was found to be in-line with the requirements stated under section 7.9 of the VVS for PoA/3/ which confirms that: The local stakeholder consultation was conducted for the whole PoA. The LSC has been conducted at PoA level, which is clearly specified under section F of the revised PoA DD/31/.</p> <p>List of invitees/30/ were checked to ascertain that relevant stakeholder were part of the LSC: The group of stakeholders were defined and invited. The following participated:</p> <ul style="list-style-type: none"> a. Department of Climate Change Management Ministry of Environment, Water and Climate, Zimbabwe (DNA) b. Forest Commission c. Environmental Management Agency(EMA) d. Following NGO's: Weltehungershilfe CARE Danish Church Rescue Christian Aid Action Aid International Youth Foundation Technoserve e. Representatives from various private sectors f. Following Agencies WWF Sustainable Afforestation Association <p>The CME invited the minimum relevant local stakeholder referred in para 54 of PS for PoA version 2.0/4/. In line with para 55, PS for PoA, version 2.0/4/.</p> |

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| | | <p>the CME has provided evidence to confirm that the relevant stakeholders were invited through notice published in local newspaper and emails/30/.</p> <p>While interviewing the CME representative during the validation process of this PRC, it was confirmed that the information provided by them through the LSC report and other supportive evidences were followed for conducting the LSC process. Also, it was confirmed from the LSC report that no negative comments were raised by the attendees and all the queries related to the process were answered adequately and there are no host party rules applicable on LSC.</p> <p>Summary report of queries raised has been included by the CME in the revised PoA-DD/31/, which was reviewed to confirm that all the questions had been answered appropriately and no negative comments from local stakeholder had been received.</p> <p>The presentation/30/ shown to the stakeholder were scrutinized to confirm that it includes:</p> <p>(a) A summary of the proposed CDM PoA, explaining the PoA in simple, non-technical terms, and containing a description of the direct positive and negative impacts.</p> <p>(b) Information on the projected scope, lifetime, and direct positive and negative impacts of the proposed CDM PoA.</p> <p>(c) Other relevant information about the proposed CDM PoA, considering confidentiality provisions of the applicable CDM M&P above.</p> <p>(d) The means to provide comments about the proposed CDM PoA.</p> <p>There are no significant changes made to the PoA DD which might impact the scope of the local stakeholders engaged. The comments received through the LSC were mere inquisitive in nature and are still valid.</p> <p>The PoA now includes Zimbabwe as one of the host country thus, in-line to the PoA-DD template guidelines and the requirements set out under section 7.8 of the PS for PoA version 2.0/4/, the inclusion of information under section F of the revised PoA-DD /31/ regarding the LSC conducted for Zimbabwe on 20/11/2018 was found to be acceptable.</p> <p>LSC report and evidence for means of invitation/photos, attendance sheet/30/ were used as the means to confirm that the LSC has been conducted adequately.</p> <p>Thus, the validation team confirms that the conduction of consultation has been done in accordance with the relevant requirements in the "CDM project standard for programmes of activities".</p> |
| | Proposed Changes | 3. Sampling Survey and Standard latest Version (Version 8.0) applied to the PoA |
| | Assessment | <p>CME in-line to the para 238(I) of PS for PoA Version 2.0/4/, has applied the latest version of 'Standard: Sampling and Survey for CDM Project activities and programme of activities' available on the UNFCCC page/29/. The applied methodology in-line to para 13(c) refers to the application of latest version of the standards.</p> <p>It is to be noted that CME has elaborated on the sampling requirements of the monitoring parameters Ny,i,j and whose value is determined through the survey records.</p> <p>The clarification, in line to para 46 of the the updated version of applied methodology, has been added for cases where the desired precision would not be met lower bound of the 95% confidence interval as an alternative to repeated survey.</p> |

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| | | <p>The provision of application of the lower bound values in such cases was found in accordance to the applied methodology. Also para 10 of Standard: Sampling and surveys for CDM project activities and programmes of activities, Version 08, states 'Requirements for sampling are defined either in the applicable CDM methodology or in the paragraphs below'. Therefore, the application of the lower bound values was found acceptable.</p> <p>There are no significant changes made to the PoA-DD which might impact the sampling requirements of the mentioned monitored parameters.</p> <p>Thus, the proposed change by the CME was found to be acceptable by the assessment team.</p> |
| Findings | CL#02, CL#03 and CAR#01 were raised and resolved | |
| Conclusion | <p>In line with §279 of CDM VVS for PoA/3/, the validation team, through interview of CME representatives and review of revised PoA-DD/31/, confirms that the description accurately reflects the implementation, operation and monitoring of the modified PoA.</p> <p>In line with §281 of CDM VVS for PoA/3/, the validation team, through interview of CME representatives and review of revised PoA-DD/31/, confirms that:</p> <ul style="list-style-type: none"> • The applicability of applied methodologies remains intact. • The eligibility criteria of technology remain fulfilled and intact. • The given description accurately describes the actual implementation plan of PoA. • The changes do not affect the scale and additionality of the PoA and the additionality remains same as previously applied "Methodological tool 19: Demonstration of additionality of microscale project activities, version 09.0"/20/, as the added host country is also an LDC making it auto-additional. Thus, no further changes were required in the additionality already demonstrated at the registered PoA level. • The changes do not affect the applicability of methodology. • There is no material impact due to the changes listed above. • There is no material impact on eligibility criteria for inclusion of CPAs in PoA. | |

D.6. Addition of CPA inclusion template

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| Means of validation | NA |
| Findings | NA |
| Conclusion | NA |

D.7. Change of coordinating/managing entity

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| Means of validation | NA |
| Findings | NA |
| Conclusion | NA |

D.8. Changes specific to afforestation and reforestation activities

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| Means of validation | NA |
| Findings | NA |
| Conclusion | NA |

SECTION E. Internal quality control

The draft validation report prepared by validation team is reviewed by an independent technical review team (one or more members) to confirm if the internal procedures established and implemented by Earthood Services Private Limited were duly complied with and whether such opinion/conclusion were reached in an objective manner that complies with the applicable CDM rules/requirements. The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scopes the project activity / PoA falls into. All team members of technical review team were independent of the validation team. During the technical review process, additional findings may be identified, or the closed-out findings may be opened, which needs to be satisfactorily resolved by validation team before the validation report/opinion is finalized. The independent technical reviewer may either approve the report as such or reject/return the same in such case providing the comments/findings/issues that needs to be resolved by the validation team.

The decision taken by the Technical Reviewer is final and is authorized by the Managing Director on behalf of Earthood Services Private Limited.

SECTION F. Validation opinion

Earthood Services Private Limited (ESPL) has performed the validation of the post registration changes of the PoA 6864: **Fuel Efficient Stoves in Africa**. The validation was performed on the basis of rules and requirements defined by UNFCCC for the CDM PoAs. The review of the PoA DD, supporting documentation (if any) and subsequent follow-up actions (including on-site inspection and interviews), have provided ESPL with sufficient evidence to determine the fulfilment of stated criteria. The proposed changes to the programme design comply with the CDM PS, CDM VVS and CDM PCP. The description as contained in the revised PoA-DD meets all relevant UNFCCC requirements for the CDM and correctly applies the monitoring methodology/ies, standardized baseline. This report is the combined assessment opinion for all the changes that are proposed in the revised PoA-DD as the changes are acceptable as a permanent change to the renewed PoA DD.

Appendix 1. Abbreviations

| Abbreviations | Full texts |
|---------------|--|
| CAR | Corrective Action Request |
| CDM | Clean Development Mechanism |
| CDM PCP | Clean Development Mechanism Project Cycle Procedure |
| CDM PS | Clean Development Mechanism Project Standard |
| CDM VVS | Clean Development Mechanism Validation and Verification Standard |
| CER | Certified Emission Reduction |
| CL | Clarification Request |
| CME | Coordinating or Managing Entity |
| CP | Crediting Period |
| DOE | Designated Operational Entity |
| DNA | Designated National Authority |
| EB | Executive Board |
| ESPL | Earthood Services Private Limited |
| FAR | Forward Action Request |
| GHG | Greenhouse Gas(es) |
| IPCC | Intergovernmental Panel on Climate Change |
| PoA-DD | Programme of Activity Design Document |
| PRC | Post Registration changes |
| TA | Technical Area (with in Sectoral Scope) |
| TR | Technical Reviewer |
| UNFCCC | United Nations Framework Convention on Climate Change |

Appendix 2. Competence of team members and technical reviewers

| Competence Statement | | | |
|---------------------------|---|-------------|------------|
| Name | Shreya Garg | | |
| Country | India | | |
| Education | M.Sc. (Climate Science & Policy), TERI University | | |
| Experience | 6 Years + | | |
| Field | Climate Change | | |
| Approved Roles | | | |
| Team Leader | YES | | |
| Validator | YES | | |
| Verifier | YES | | |
| Methodology Expert | AMS.I.A., AMS.I.C., AMS.I.D., AMS.I.F., AMS.II.D., AMS.II.G., AMS.II.J., AMS.III. AV., ACM0002, ACM0012 | | |
| Local expert | YES (India) | | |
| Financial Expert | NO | | |
| Technical Reviewer | YES | | |
| TA Expert | YES (TA 1.2, TA 3.1) | | |
| Reviewed by | Abhishek Mahawar | Date | 01/03/2018 |
| Approved by | Ashok Gautam | Date | 01/03/2018 |

| Competence Statement | | | |
|---------------------------|--|-------------|------------|
| Name | Vaishali Vatsa | | |
| Education | M.Sc. (Environmental Studies and Resource Management), TERI University | | |
| Experience | 4 months | | |
| Field | Climate Change | | |
| Approved Roles | | | |
| Team Leader | NO | | |
| Validator | Yes | | |
| Verifier | Yes | | |
| Methodology Expert | NO | | |
| Local expert | NO | | |
| Financial Expert | NO | | |
| Technical Reviewer | NO | | |
| TA Expert (X.X) | NO | | |
| Trainee | NO | | |
| Reviewed by | Shreya Garg | Date | 30/12/2019 |
| Approved by | Anshika Gupta | Date | 02/01/2020 |

| Competence Statement | | | |
|---------------------------|---|-------------|------------|
| Name | Munatsi Chuma | | |
| Education | Bachelor's degree in Industrial and Manufacturing Engineering | | |
| Experience | 2+ years | | |
| Field | Power and Electricity | | |
| Approved Roles | | | |
| Team Leader | No | | |
| Validator | No | | |
| Verifier | No | | |
| Methodology Expert | No | | |
| Local expert | Yes (Zimbabwe) | | |
| Financial Expert | No | | |
| Technical Reviewer | No | | |
| TA Expert | No | | |
| Reviewed by | Shreya Garg | Date | 15/06/2020 |
| Approved by | Ashok Kumar Gautam | Date | 15/06/2020 |

| Competence Statement | | | |
|---------------------------|-------------------------------|-------------|------------|
| Name | Selwyn Chipompwe | | |
| Country | Zambia | | |
| Education | Higher Diploma in Agriculture | | |
| Experience | 4 years + | | |
| Field | Agriculture | | |
| Approved Roles | | | |
| Team Leader | NO | | |
| Validator | NO | | |
| Verifier | NO | | |
| Methodology Expert | NO | | |
| Local expert | YES (Zambia) | | |
| Financial Expert | NO | | |
| Technical Reviewer | NO | | |
| TA Expert | NO | | |
| Reviewed by | Abhishek Mahawar | Date | 01/03/2018 |
| Approved by | Ashok Kumar Gautam | Date | 01/03/2018 |

| Competence Statement | |
|----------------------|---|
| Name | Kaviraj Singh |
| Country | India |
| Education | Ph.D. (Environmental Engineering), IIT Delhi Masters (Energy & Environmental), DAVV Indore |
| Experience | 15 Years + |
| Field | Climate Change & Environment |

| Approved Roles | | | |
|--------------------|---|------|------------|
| Team Leader | YES | | |
| Validator | YES | | |
| Verifier | YES | | |
| Methodology Expert | AMS-I.D., AMS-II.D., ACM0006, AMS-I.A., AMS-I.C., AMS-II.B., AMS-III.H, ACM0002, ACM0001, AM0080, ACM0018 | | |
| Local expert | YES (India) | | |
| Financial Expert | YES | | |
| Technical Reviewer | YES | | |
| TA Expert | YES (TA 1.1, TA 1.2, TA 3.1, TA 13.1, TA 13.2) | | |
| | | | |
| Reviewed by | Abhishek Mahawar | Date | 12/02/2020 |
| Approved by | Ashok Gautam | Date | 12/02/2020 |

Appendix 3. Documents reviewed or referenced

| No. | Author | Title | References to the document | Provider |
|-----|------------------------------|---|----------------------------|----------|
| 1 | 3 Rocks Limited | Renewed PoA-DD (CP2) (Old) | Version 8.5 | Others |
| 2 | 3 Rocks Limited | Project Webpage: https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/YC9QEKSX8NPJ5BFIDLTWZ0M3RVGUA2/view | - | Others |
| 3 | UNFCCC | CDM VVS for PoA | Version 2.0 | Others |
| 4 | UNFCCC | CDM PS for PoA | Version 2.0 | Others |
| 5 | UNFCCC | CDM PCP for PoA | Version 2.0 | Others |
| 6 | UNFCCC | AMS-II. G Energy efficiency measures in thermal applications of non-renewable biomass | Version 11.0 | Others |
| 7 | UNFCCC | CDM PoA-DD Form | Version 9.0 | Others |
| 8 | Republic of Zambia | LoA -Zambia LoA-Zambia (old) | 09/06/2020 15/04/2011 | PP |
| 9 | Republic of Zimbabwe | LoA-Zimbabwe | 27/05/2020 | CME |
| 10 | UNFCCC | EB 67 Annexure 22 | - | Others |
| 11 | 3 Rocks Limited | fNRB sheet (Zimbabwe) fNRB report | - | CME |
| 12 | UNFCCC | Tool 30: fNRB Calculation | - | CME |
| 13 | FAO | Global forest resource assessment | 2015 | Others |
| 14 | Hansen/UMD/Google/USGS/NASA. | Global Forest Change 2000–2018. Version 1.6. http://earthenginepartners.appspot.com/science-2013-global-forest/download_v1.6.html | 2019 | Others |
| 15 | UN Statistics Division | Energy Statistics Database: Charcoal: http://data.un.org/Data.aspx?d=EDATA&f=cmlID%3ACH | - | Others |
| 16 | UN Statistics Division | Energy Statistics Database: Fuel wood: http://data.un.org/Data.aspx?d=EDATA&f=cmlID%3AFW | - | Others |
| 17 | FAOSTAT | Forestry Production and Trade http://www.fao.org/faostat/en/#data/FO | - | Others |
| 18 | IPCC | Chapter 4: Forest land. in Guidelines for national greenhouse gas inventories. Volume 4: Agriculture, forestry and other land use. | 2006 | Others |
| 19 | UNFCCC | fNRB default value https://cdm.unfccc.int/Panels/ssc_wg/meetings/037/sc_37_an14.pdf | 2010 | Others |

| | | | | |
|----|----------------------|---|----------------------------------|--------|
| 20 | UNFCCC | Tool19: "Demonstration of Additionality of microscale project activities"; | Version 9.0 | Others |
| 21 | UNFCCC | General guidelines for SSC CDM methodologies | Version 23.0 | Others |
| 22 | UNFCCC | Energy database statistics | 2016 | Others |
| 23 | UNFCCC | PoA 9007 : https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/XFNYUSZ7QV3L28649RPEJKWMT05HB1/view | - | Others |
| 24 | FAO | FAO Report http://www.fao.org/3/X6760E/X6760E03.htm | - | Others |
| 25 | World Bank | Data Bank: https://data.worldbank.org/country/zimbabwe | 2016 | Others |
| 26 | UNFPA | Intercensal Demography Survey Sheet (Zimbabwe) | 2017 | Others |
| 27 | UNFCCC | CPA-DD for UNFCCC ref. Number 9007 (9007-P1-0008) | - | Others |
| 28 | Republic of Zimbabwe | Demographic and Health Survey Report | 2015 | Others |
| 29 | UNFCCC | Sampling Survey Standard | Version 8.0 | Others |
| 30 | 3 Rocks Limited | LSC Report (Zimbabwe) Supporting documentation: i) Guest List ii) Invitation sample and invitation photos iii) Newspaper advertisement iv) LSC presentation | - | CME |
| 31 | 3 Rocks Limited | Revised PoA-DD (Final) | Version 9.5 Dated: 14/09/2020 | CME |
| 32 | UNFCCC | Tool 21: Demonstration of additionality of small-scale project activities | Version 13 | Others |

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

Table 1. CLs from this validation

| CL ID | 01 | Section no. | D.5. | Date | : 08/04/2020 |
|--|----|-------------|------|------|-------------------------|
| Description of CL | | | | | |
| PP is requested to provide the following pending documents: i) Letter of Approval from DNA of Zimbabwe ii) Letter of Approval from DNA of Zambia (for confirmation of revised title of the PoA) iii) fNRB Calculation Sheet (excel sheet) | | | | | |
| Project participant response | | | | | Date: 21/04/2020 |
| i) Provided ii) Provided iii) Provided in the dropbox folder | | | | | |
| Documentation provided by project participant | | | | | |
| Excel spreadsheet: "Zimbabwe fNRB calculation Sheet_ 30 March 2020" | | | | | |
| DOE assessment | | | | | Date: 29/04/2020 |
| PP has submitted all the requested documents to the DOE. (Closed) Thus, CL#1 stands closed | | | | | |

| | | | | |
|--|----|--------------------|--------|--------------------------|
| CL ID | 02 | Section no. | PoA-DD | Date : 08/04/2020 |
| Description of CL | | | | |
| As per the project webpage and RCP PoA-DD Korea Carbon Management Limited is listed as the PP, whereas section A.5 and Appendix 1 of the PoA-DD (version 9.1) does not list the entity under project proponent list. Please clarify. | | | | |
| Project participant response | | | | Date: 21/04/2020 |
| The PP is now listed in the revised PoA-DD sections A.5 and Appendix 1 | | | | |
| Documentation provided by project participant | | | | |
| PoA-DD Version 9.2 | | | | |
| DOE assessment | | | | Date: 29/04/2020 |
| Korea Carbon Management Limited is now listed as the PP under section A.5 and Appendix 1 of the revised PoA-DD version 9.2 (Closed) | | | | |

| | | | | |
|---|----|--------------------|-----|--------------------------|
| CL ID | 03 | Section no. | D.5 | Date : 18/08/2020 |
| Description of CL | | | | |
| <ol style="list-style-type: none"> 1. CME shall clarify how it confirmed that the provisions of Appendix of TOOL19 "Demonstration of additionality of microscale project activities" regarding penetration of proposed technology will be complied for ICS distribution in the newly added host country Zimbabwe. 2. It is not clear how applying the lower bound of the confidence interval against repeating the survey as mentioned in the PoA-DD to determine the parameters estimated using survey is in compliance with the requirement stipulated in para 18(c) of the Standard: Sampling and surveys for CDM project activities and programmes of activities Version08.0. CME shall clarify the same. | | | | |
| Project participant response | | | | Date: 19/08/2020 |
| <ol style="list-style-type: none"> 1. Section C of the PoA now demonstrates determining additionality at CPA-level and following the provision of micro-scale unit provision as stated under appendix of Tool 21 to demonstrate the additionality of the Zimbabwe in line to the provisions set under Appendix of TOOL19 "Demonstration of additionality of microscale project activities". 2. Section Sampling Plan and Sampling requirement of the parameter $N_{y,i,j}$ and has now been updated to demonstrate applying the lower bound of the confidence interval is in compliance with the requirement stipulated in para 18(c) of the Standard: Sampling and surveys for CDM project activities and programmes of activities Version08.0. | | | | |
| Documentation provided by project participant | | | | |
| PoA-DD Version revised | | | | |
| DOE assessment | | | | Date: 20/08/2020 |
| <ol style="list-style-type: none"> 1. The validation team has reviewed the changes in determining the additionality of the PoA and confirms that the additionality has been determined in-line with the appendix of tool 21 which directs to use the micro-scale unit provision under tool 19 and determines additionality at the unit level and not at the CPA-level. Thus, the CME's approach of determining the additionality based on tool 21 at the unit level for each of independent sub-systems which are less than 1% of the methodology thresholds was found to be acceptable. 2. The applied methodology AMS-II.G Version 11.0, sets out the requirements of sampling and in line para 10 of the Standards: Sampling and surveys for CDM project activities and programmes of activities Version08.0, the methodology provision is considered over following sampling requirements set out under para 12 onwards in Sampling and Survey standards. Thus, CME's approach of following lower bound confidence interval against repeating the survey for determining the parameters $N_{y,i,j}$ and was found to be acceptable | | | | |
| Thus, CL#03 stands closed. | | | | |

Table 2. CARs from this validation

| | | | | |
|--|----|--------------------|-----|-------------------------|
| CAR ID | 01 | Section no. | D.5 | Date: 15/05/2020 |
| Description of CAR | | | | |
| Section C of the revised PoA-DD (Version 9.2) includes only the additionality assessment of Zambia. PP is requested to include the additionality assessment of Zimbabwe under the same section. (Open) | | | | |

| | |
|---|-------------------------|
| Project participant response | Date: 28/05/2020 |
| Section C has been revised to show the additionality argument to be applied for all CPAs included in the PoA. | |
| Documentation provided by project participant | |
| | |
| DOE assessment | Date: 01/06/2020 |
| CME has revised the section C of the PoA-DD (Version 9.3). The additionality section of the PoA-DD (Version 9.3) now includes the additionality arguments to be applied to all the CPAs (whether it be of Zambia or Zimbabwe) going to be included in the PoA. Thus, meeting the requirement (Closed) | |

Table 3. FARs from this validation

| | | | | |
|--------------------------------------|----|--------------------|----|-------------------------|
| FAR ID | xx | Section no. | NA | Date: DD/MM/YYYY |
| Description of FAR | | | | |
| NA | | | | |
| CME's response | | | | Date: DD/MM/YYYY |
| NA | | | | |
| Documentation provided by CME | | | | |
| NA | | | | |
| DOE assessment | | | | Date: DD/MM/YYYY |
| NA | | | | |

Document information

| <i>Version</i> | <i>Date</i> | <i>Description</i> |
|--|------------------|---|
| 03.0 | 31 May 2019 | Revision to: <ul style="list-style-type: none"> Ensure consistency with version 02.0 of the "CDM validation and verification standard for programmes of activities" (CDM-EB93-A08-STAN); Make editorial improvements. |
| 02.0 | 29 December 2017 | Revision to align with the requirements of the "CDM validation and verification standard for programme of activities" (version 01.0). |
| 01.0 | 5 June 2015 | Initial publication. |
| Decision Class: Regulatory | | |
| Document Type: Form | | |
| Business Function: Registration | | |
| Keywords: post-registration change, programme of activities, validation report | | |