




**Verification and certification report form for
CDM project 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 project activity	Efficient Fuel Wood Stoves for Nigeria (UNFCCC Reference Number: 2711)
Scale of the project activity	<input type="checkbox"/> Large-scale <input checked="" type="checkbox"/> Small-scale
Version number of the verification and certification report	Version 4
Completion date of the verification and certification report	16/07/2019
Monitoring period number and duration of this monitoring period	Monitoring Period Number: 8 Duration of the Monitoring Period: 01/07/2017 – 30/06/2018 (including both the dates)
Version number of the monitoring report to which this report applies	Version 07
Crediting period of the project activity corresponding to this monitoring period	12/10/2009 – 11/10/2019 (including both the dates)
Project participants	Developmental Association for Renewable Energies; Atmosfair gGmbH ; Lernen-Helfen-Leben e.V.
Host Party	Nigeria
Applied methodologies and standardized baselines	AMS-II.G. version 1 - Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass
Mandatory sectoral scopes	Sectoral Scope 3
Conditional sectoral scopes, if applicable	NA
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	34,027 tCO _{2e}
Certified amount of GHG emission reductions or GHG removals for this monitoring period	12,090 tCO _{2e}
Name and UNFCCC reference number of the DOE	Carbon Check (India) Private Ltd. (E-0052)
Name, position and signature of the approver of the verification and certification report	Vikash Kumar Singh, Compliance Officer 

SECTION A. Executive summary

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Purpose, general description and location of the project activity:

The project participant atmosfair gGmbH has commissioned the DOE, Carbon Check (India) Private Ltd. (CC IPL) to perform an independent verification of the CDM project activity “Efficient Fuel Wood Stoves for Nigeria” in Nigeria (hereafter referred to as the “project activity”). The project activity includes distribution of energy efficient stoves for cooking purposes. The project activity saves greenhouse gas emissions by replacing baseline stoves with improved cookstoves.

This report summarises the findings of the verification of the project activity, performed on the basis of the paragraph 62 of the CDM M & P, as well as the criteria given to provide for consistent project operations, monitoring and reporting and the subsequent decisions by the CDM Executive Board. Verification is required for all registered CDM project activities intending to confirm their achieved emission reductions and proceed with the request for issuance of CERs. This report contains the findings and resolutions from the verification and a certification statement for the certified emission reductions.

Verification is the periodic independent review and ex-post determination of both quantitative and qualitative information by a Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of the registered CDM project activity during a defined monitoring period.

Certification is the written assurance by a DOE that, during a specific period in time, a project activity achieved the emission reductions as verified.

The objective of this verification is to verify and certify emission reductions reported for the project activity “Efficient Fuel Wood Stoves for Nigeria” in the host country “Nigeria” for the period 01/07/2017 to 30/06/2018 (including both the days).

The purpose of verification is to review the monitoring results and verify that the monitoring methodology was implemented according to the monitoring plan and monitoring data, and used to confirm the reductions in anthropogenic emissions by sources, is sufficient, definitive and presented in a concise and transparent manner. CC IPL’s objective is to perform a thorough, independent assessment of the registered project activity.

In particular, the monitoring plan, monitoring report and the project’s compliance with the relevant UNFCCC and the host Party criteria are verified in order to confirm that the component project/s has/have been implemented in accordance with the previously registered/included component project design and conservative assumptions, as documented. It is also confirmed if the monitoring plan is in compliance with the registered/revised approved PDD/B04/ and the approved monitoring methodology.

Scope of the verification:

The scope of the verification is:

1. To verify the project implementation and operation with respect to the registered/revised approved PDD/B04/
2. To verify the implemented monitoring plan with the registered PDD or approved revised PDD/B04/ and applied baseline and monitoring methodology.

3. To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
4. To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
5. To verify that the reported GHG emission data is sufficiently supported by evidence.

The verification shall ensure that the reported emission reductions are complete and accurate in order to be certified.

Verification process:

The verification comprises a review of the monitoring report over the monitoring period from 01/07/2017 to 30/06/2018 and based on the registered/revised approved PDD /B04/ in part of the monitoring parameters and monitoring plan, emission reduction calculation spreadsheet, monitoring methodology and all related evidence provided by the project participant.

On-site visit and stakeholders' interviews are also performed as part of the verification process.

Conclusion:

The verification team assigned by the DOE concludes that the PDD (Version 3, dated 18/02/2013) /B04/ and the monitoring report (version 07, dated 04/07/2019) /02/, meets all the relevant requirements of the UNFCCC for CDM project activities including the article 12 of the Kyoto Protocol and paragraph 62 of CDM M& P, the modalities and procedures for CDM (Marrakesh Accords) and the subsequent decisions by the COP/MOP and CDM Executive Board. The verification has been conducted in-line with the CDM VVS for project activities, version 02.0 /B01-1/ requirements.

The project activity was correctly implemented according to selected monitoring methodology, monitoring plan and the registered PDD/B04/. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the review and on site visit the verification team confirms that the project activity has resulted in the 12,090 tCO₂e emission reductions during the eighth monitoring period.

CC IPL as a DOE is therefore pleased to issue a positive verification opinion expressed in the attached Certification statement.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification 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			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader/ Verifier/	IR	Dimri	Anubhav	CC IPL	X	X	X	X

	Technical Expert/ Local Expert								
2.	Local Expert	EI	Sunday	Siyanbola	CCIPL		X	X	

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

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Anand	Amit	CCIPL
2.	Approver	IR	Singh	Vikash Kumar	CCIPL

SECTION C. Application of materiality

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human Error: Recording and reporting of the information in the ER spreadsheet.	Medium	All the ER spreadsheet data of the stoves, including sales database, determination of parameter for efficiency testing including data calculation. This includes all the parameters to be monitored ex-post as per the registered/revised approved PDD.	The risk has been mitigated by the training of the personnel involved in the data capture, calculation and by following the monitoring responsibilities. The training records of the monitoring personnel involved in the spot check interviews and the WBTs have been checked by the verification team /11/.
2.	Information System: Use of spreadsheets without adequate controls related to data changes/updates, version tracking, traceability, security	Medium	The data is recorded in the spreadsheets based on the raw data collected during the field visits. The access to the spreadsheets for calculation of ERs, monitoring and sales database and Stove efficiency testing records.	The identified risk has been mitigated by managing access to the records. It was confirmed through interviews that the raw data is collected by the field monitoring agents and then transmitted and stored electronically to the PP's office. The data quality control is maintained by the Assigned Monitoring Officer of the Project Participant.
3.	Accuracy of the measuring equipment and the compliance to the QA/QC procedures	Medium	Check the calibration records for the measurement equipment and the personnel/institutional capacity involved with the monitoring.	The risk due to accuracy of the measuring equipment has been ensured by planning to check calibration certificates /07/ of the measuring equipment used for stove efficiency (water boiling tests) and the training records of the personnel involved in testing the stove efficiency (water boiling tests)/11/. The monitoring personnel have been trained to conduct the WBTs before the tests were conducted by the personnel.

C.2. Consideration of materiality in conducting the verification

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The threshold of materiality was evaluated based on §13 of “Guideline: Application of materiality in verifications” Version 02.0 /B04/. It was concluded that the materiality threshold applicable to the project activity based on actual emission reductions achieved is 5% of 12,090 tCO_{2e} which is equal to 605 tCO_{2e}.

In planning the verification, verification team took cognizance of para 11 and 12 of the “Guideline: Application of materiality in verifications” Version 02.0 /B04/. A materiality threshold of 605 tCO_{2e} is determined in line with para 13(a) of “Guideline: Application of materiality in verifications” Version 02.0 /B04/.

Based on the above, activities in which risks were assessed were:

1. Monitoring system including the data input procedure
2. Copy of the agreement between household and the Project Participant (s) (origin of data)
3. Stove unique ID system
4. ER sheet (application of data)
5. Data flow
6. Data control procedures
7. Stove efficiency test (WBT) records

In conducting the verification, DOE took cognizance of para 13-17 of the “Guideline: Application of materiality in verifications” Version 02.0 /B04/ and based on the input of data from different sources checked through sampling of records during OSV observed that no records were found to have inconsistent data from hand written (Copy of the agreement between household and Project Participant) to the electronic monitoring database. Data flow was checked through comparison of data in hand written forms, electronic database and ER sheet. The training records of the personnel involved in conducting the stove efficiency testing, recording of data and calculation of the emission reductions data has been checked by the verification team /11/.

The risks identified were mitigated through cross check with all sets of documents. The verification team performed the following checks in order to mitigate the effects of the above-identified sources of error:

Mitigation of Human error risks: The verification team mitigated the risk by checking the training records /11/ of the personnel during the on-site visit. These records have been provided to the verification team by the PP. Furthermore, data was crosschecked with the ER calculation spreadsheet /04/ and the spot check user records therein. Verification team, based on the above, confirms that the risk is appropriately mitigated.

Mitigation due to error in Information system: Verification team by conducting interviews with the personnel responsible for such activities mitigated the risk due to error in information system. It was confirmed through interviews that the raw data is collected by the field agents and then transmitted and stored electronically to the PP’s office. The data quality control is maintained by the Assigned Monitoring Officer from the PP.

Accuracy of the measuring equipment: The risk due to inaccuracy in measurements is assessed by reviewing calibration certificates of all the project equipment. The verification team has reviewed the dates of calibration and to check whether all equipment is being calibrated at regularly defined intervals as per the registered PDD /B04/. The risk due to the QA/QC procedures is mitigated through the training of personnel/11/ involved in the WBT. The results of the WBT are verified by a third-party researcher, Mr. Namadi Muktar/16/. Dr. Muktar has a Ph.D. in Analytical Chemistry and is trained in ISO 14001/15/.

Based on the review of the PDD /B04/, monitoring report /02/, emission reduction calculation spread sheet /04/ and the data provided and the assessment carried out above, CCIPL confirms with a reasonable level of assurance that the claimed emission reductions or removals are free from material errors, omissions or misstatements.

CCIPL confirms with a reasonable level of assurance that the claimed emission reductions or removals are free from material errors, omissions or misstatements.

SECTION D. Means of verification

D.1. Desk/document review

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List of all documents reviewed or referenced during the validation is provided in Appendix-3 below.

D.2. On-site inspection

Duration of on-site inspection: 19/07/2018 to 23/07/2018				
No.	Activity performed on-site	Site location	Date	Team member
1.	An assessment of the implementation and operation of the registered project activity as per the registered PDD	Nigeria	19/07/2018 to 23/07/2018	Anubhav Dimri, Siyanbola Sunday
2.	A review of information flows for generating, aggregating and reporting the monitoring parameters	Nigeria	19/07/2018 to 23/07/2018	Anubhav Dimri, Siyanbola Sunday
3.	Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PDD	Nigeria	19/07/2018 to 23/07/2018	Anubhav Dimri, Siyanbola Sunday
4.	A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, inventories, purchase records or similar data sources	Nigeria	19/07/2018 to 23/07/2018	Anubhav Dimri, Siyanbola Sunday
5.	A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology and corresponding tool(s), where applicable	Nigeria	19/07/2018 to 23/07/2018	Anubhav Dimri, Siyanbola Sunday
6.	A review of calculations and assumptions made in determining the GHG data and emission reductions	Nigeria	19/07/2018 to 23/07/2018	Anubhav Dimri, Siyanbola Sunday
7.	An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters	Nigeria	19/07/2018 to 23/07/2018	Anubhav Dimri, Siyanbola Sunday

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Oshaniwa	Toyin	atmosfair gGmbH	19/07/2018 to 23/07/2018	Project implementation and operation,	Anubhav Dimri, Siyanbola Sunday

					monitoring procedure, data and information flow, CER calculation and completeness of monitoring report, QA/QC Procedures, Stove Efficiency Tests procedures and records, Quality Assurance – Management and operating system	
2.	Olorunmaiye	Tosin	atmosfair gGmbH	19/07/2018 to 23/07/2018	Monitoring procedure, QA/QC Procedures, Stove Efficiency Tests, Quality Assurance – Management and operating system	Anubhav Dimri, Siyanbola Sunday
3.	Olajide	Rachel	atmosfair gGmbH	19/07/2018 to 23/07/2018	Monitoring procedure, QA/QC Procedures, Stove Efficiency Tests, Quality Assurance – Management and operating system	Anubhav Dimri, Siyanbola Sunday
4.	Mikolajewski	Katrin	atmosfair gGmbH (via Skype)	26/07/2018	Project implementation and operation, monitoring procedure, data and information flow, CER calculation and completeness of monitoring report, QA/QC Procedures, Stove Efficiency Tests, Quality Assurance – Management and operating system	Anubhav Dimri

D.4. Sampling approach

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The total population size of the improved cook stoves distributed under this monitoring period is 4,784. The monitoring parameters required to be monitored through the sampling plan are “Number of SAVE80 systems in use per vintage” ($N_{y,i}$) and “Efficiency of the SAVE80 system for each vintage” ($\eta_{new,i}$).

For the monitoring parameter “ $N_{y,j}$ ”, sampling was done based on a survey of 100 households and a dropout rate of 6 % was observed in the survey as has been checked from the spot check records and verified during the onsite visit. In accordance with the INQ-04074-EB /13/, the monitoring activity was undertaken along with the verification by the verification team. The verification team was able to survey (verify) all the households visited as part of the monitoring survey (PP’s set of records), thus the acceptance sampling as described in the steps indicated in paragraphs 25–32 of the sampling standard, version 07 /B06/ is not applicable in this case. Verification team based on OSV verification, confirms the correctness of the drop-out rate and thus PP’s set of records has been accepted.

Verification team further confirms that the sampling plan and the parameter values are in accordance with the clarification letter provided by UNFCCC secretariat /13/ and the revised monitoring plan provided in revised PDD /B05/. The sample chosen by the PP has been selected at random as confirmed through the random number generator provided by the PP/09/.

For the monitoring parameter $\eta_{new,l}$ the water boiling test were conducted and the values determined for 3 stoves. Three different tests have been conducted for 3 different stoves and average value has been used according to the equation provided in the monitoring report. Further an average from the observation of values for previous monitoring periods has also been used. This is in accordance with the registered monitoring plan and the previous monitoring reports /B05/. These values were approved in the presence of the researcher, Dr. Namadi Muktar/16/.

The verification team checked the water boiling test reports /06/ with records of all the sampled stoves for the verification of the stove efficiency of the project stoves. No sampling was required for the verification of the tests of the efficiency conducted.

D.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	00	00	00
Compliance of the project implementation and operation with the registered PDD	01	00	00
Post-registration changes	00	00	00
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	00	00	00
Compliance of monitoring activities with the registered monitoring plan	06	02	00
Compliance with the calibration frequency requirements for measuring instruments	00	01	00
Assessment of data and calculation of emission reductions or net removals	01	00	00
Assessment of reported sustainable development co-benefits	00	00	00
Global stakeholder consultation	00	00	00
Others (please specify)	00	00	00
Total	08	03	00

SECTION E. Verification findings

E.1. Compliance of the monitoring report with the monitoring report form

Means of verification	Document Review, Interview
Findings	There are no findings on this section of the VR.
Conclusion	The verification team has determined whether the monitoring report was completed using the valid version of the applicable monitoring report form /B03/. The verification team has checked, whether all the sections of the monitoring report

	<p>follow the guidelines provided in the template and instruction text requirement.</p> <p>Verification team confirms that the latest available version of the monitoring report template /B03/ has been used by the PP and the MR /02/ is in compliance of the monitoring report form and instructions therein.</p> <p>CCIPL, had made the version 01, dated 07/09/2018 of the monitoring report /01/, covering the monitoring period from 01/07/2017 to 30/06/2018 (both days inclusive) publicly available on 14/09/2018 through its dedicated interface on the UNFCCC website /B07-1/. The site visit was conducted prior to submitting monitoring report for public availability in accordance with the clarification letter issued by the UNFCCC Secretariat /13/ before undertaking the site visit for the verification team from 19/07/2018 to 23/07/2018.</p> <p>This confirms compliance with the §352 and §353 of CDM VVS for project activities, version 02.0 /B01-1/.</p>
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E.2. Remaining forward action requests from validation and/or previous verifications

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There was one forward action request from validation which was resolved during the first verification. Also, there was one forward action request during the first periodic verification which was resolved during the subsequent verification. There is no forward action request from the previous verification of the project activity.

E.3. Compliance of the project implementation and operation with the registered project design document

Means of verification	Document Review, Interview																
Findings	CL01 had been raised in this regard and has been resolved.																
Conclusion	<p>The project activity was implemented, and project devices distributed as described in the registered PDD /B05/.</p> <p>The implementation of the project activity is summarized below:</p> <table border="1" style="width: 100%;"> <tr> <td>Project Participants:</td> <td>Developmental Association for Renewable Energies; atmosfair gGmbH; Lernen-Helfen-Leben e.V.</td> </tr> <tr> <td>Title of project activity:</td> <td>Efficient Fuel Wood Stoves for Nigeria</td> </tr> <tr> <td>UNFCCC registration No:</td> <td>2711</td> </tr> <tr> <td>Applied Baseline and monitoring methodology:</td> <td>AMS-II.G (version 01)</td> </tr> <tr> <td>Project Scale:</td> <td>Small scale</td> </tr> <tr> <td>Location of the project activity:</td> <td>Federal Republic of Nigeria</td> </tr> <tr> <td>Project's crediting period:</td> <td>12/10/2009 to 11/10/2019</td> </tr> <tr> <td>Reported monitoring Period verified in this verification:</td> <td>01/07/2017 to 30/06/2018</td> </tr> </table> <p>As a part of the site visit, the verification team was able to confirm that the project implementation is in accordance with the project description contained in the registered PDD and approved revised PDD of 18/02/2013 /B04/ including the applied methodology /B02/.</p> <p>Till the end of the monitoring period 4,784 SAVE80 cookstove units had been disseminated in the project activity. The number of stoves have been readjusted from the previous monitoring period as 586 unique households could not be traced out of 5,370 households. Thus, only unique households have been identified by the PP as 4,784. The household details have been checked by the verification team</p>	Project Participants:	Developmental Association for Renewable Energies; atmosfair gGmbH; Lernen-Helfen-Leben e.V.	Title of project activity:	Efficient Fuel Wood Stoves for Nigeria	UNFCCC registration No:	2711	Applied Baseline and monitoring methodology:	AMS-II.G (version 01)	Project Scale:	Small scale	Location of the project activity:	Federal Republic of Nigeria	Project's crediting period:	12/10/2009 to 11/10/2019	Reported monitoring Period verified in this verification:	01/07/2017 to 30/06/2018
Project Participants:	Developmental Association for Renewable Energies; atmosfair gGmbH; Lernen-Helfen-Leben e.V.																
Title of project activity:	Efficient Fuel Wood Stoves for Nigeria																
UNFCCC registration No:	2711																
Applied Baseline and monitoring methodology:	AMS-II.G (version 01)																
Project Scale:	Small scale																
Location of the project activity:	Federal Republic of Nigeria																
Project's crediting period:	12/10/2009 to 11/10/2019																
Reported monitoring Period verified in this verification:	01/07/2017 to 30/06/2018																

from the sales and monitoring database/14/. The stoves have been distributed across different locations in the Guinea Savannah Zone of Nigeria.

The project activity includes distribution of energy efficient stoves for cooking purposes. The stove design is based on SAVE80 design /10/. The interior parts of "Save80" are made of stainless steel to ensure a life-span of many years, high efficiency and burning at high temperatures for complete combustion with the low emission of smoke. The stove comes with a heat retaining box called "Wonderbox". The "Wonderbox" is used for cooking with retained heat and for conserving high temperature of the content for many hours. It is suited to the 8-litre-pot (with lid) of "Save80". The technology used in the stoves claims to save 80% firewood consumption of a traditional three-stone-fire.

The information (including data and variables) provided in the MR /02/ have been found to be in line with the details provided in the approved revised PDD /B05/.

The starting date of the Project Activity is 01/04/2008, that is when the stoves were first disseminated in the project activity. The total number of stoves with unique household distributed till the end of monitoring period is 4,784. The sample sales receipt provided confirm the CER waiver agreement with the households /05/. Operation of the devices was confirmed during the site visit by the verification team. Following was verified at the project site:

1. Electronic monitoring system
2. Actual implementation of the stoves
3. Household-representatives were interviewed regarding the usage of stove
4. Whether or not baseline technology was still in use
5. Process of data collection during installation of stove
6. Agreements between households and Project Participant.
7. Water Boiling Tests for efficiency

CC IPL's verification team confirms that the project activity is implemented within the boundary of the project activity as described in the PDD /B04/ and the implementation and operation of the project activity has been conducted in accordance with the description contained in the revised PDD /B04/.

In summary, the monitoring period is reasonable, and the operation of the project activity is in accordance with the registered/revised approved PDD /B04/.

There were no changes observed during OSV from the technology stated during the validation and earlier verifications.

Procedures for tracking of changes of ownership and/or relocations of SAVE80 systems have been implemented to address FAR01 during the first verification. This has been implemented in the monitoring system of the PP and the changes have been reflected for the households in the project database /09/.

The verified timeline of the project's implementation is as follow:

Milestone of the project activity	Timeline	Assessment by the verification team
Starting date of operation:	01/04/2008	The sales and distribution of first stoves started on 01/04/2008. This was validated during the registration /B04/ of the project activity.
Registration of the project activity	12/10/2009	The project got registered on 12/10/2009 /B07-3/.
Crediting period		
1 st monitoring period	12/10/2009 – 30/06/2010	Issuance complete /B04-3/

	2nd monitoring period	01/07/2010 – 30/06/2012	Issuance complete /B04-3/
	3rd monitoring period	01/07/2012 – 30/06/2013	Issuance complete /B04-3/
	4th monitoring period	01/07/2013 – 30/06/2014	Issuance complete /B04-3/
	5th monitoring period	01/07/2014 – 30/06/2015	Issuance complete /B04-3/
	6th monitoring period	01/07/2015 – 30/06/2016	Issuance complete /B04-3/
	7th monitoring period	01/07/2016 – 30/06/2017	Issuance complete /B04-3/
	8th monitoring period	01/07/2017 – 30/06/2018	Reported monitoring period.
	<p>A joint site visit was undertaken for monitoring and verification for the project activity in accordance with the clarification reference INQ-04074-EB /13/. As part of the site visit the verification team was able to confirm that the project implementation is in accordance with the project description contained in the registered PDD and approved revised PDD of 18/02/2013 /B04/. The verification team took cognizance of §338 (b)(i), §354, §355 and §356 of CDM VVS for project activities, version 02 /B01-1/.</p> <p>CC IPL’s verification team considers the project description of the project contained in the registered PDD and approved revised PDD /B04/ to be complete and accurate. The PDD complies with the relevant methodology, tools, forms and guidance at the time of PDD submission for registration /B04/.</p>		

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents¹

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There are no temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline.

E.4.2. Corrections

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There are no corrections submitted with the request for issuance for the current monitoring period. However, a post registration change has been approved for the project activity with reference number PRC-2711-001 during the third monitoring period.

E.4.3. Changes to the start date of the crediting period

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There are no changes to the start date of the crediting period.

E.4.4. Inclusion of a monitoring plan

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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).

There are no changes to the monitoring plan of the registered project activity.

E.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

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There are no permanent changes from the registered monitoring plan, applied methodology or standardized baseline during this monitoring period or submitted with this monitoring report.

E.4.6. Changes to the project design

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There are no permanent changes from the registered monitoring plan, applied methodology or standardized baseline during this monitoring period or submitted with this monitoring report.

E.4.7. Changes specific to afforestation and reforestation project activities

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Not applicable, since the project activity is not an afforestation and reforestation project activity.

E.5. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents

Means of verification	Document Review, Interview
Findings	There are no findings on this section of this report.
Conclusion	<p>The verification team is able to confirm that the monitoring plan contained in the registered PDD /B05/ is in accordance with the approved methodology applied by the project activity, i.e. AMS-II.G (version 1) /B02/. The verification team determined against all the information provided in the MR /02/, whether it is in-line with the applied monitoring methodology. The calculation of emissions has been done in accordance with the formulae and methods described in monitoring plan and the applied methodology. The required information provided in the monitoring report has been cross-checked against the data provided in the ER sheet, monitoring database, copies of agreement between the households and the PP and the observations during OSV.</p> <p>The verification team took cognizance of §357, 358 and §359 of CDM VVS for project activities, version 02 /B01-1/.</p>

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	Document Review, Interview
Findings	CL 02 had been raised in this regard and has been resolved.
Conclusion	<p>The verification team confirms that the data and parameters fixed ex-ante are in compliance with the registered PDD and its monitoring plan /B05/.</p> <p>Detailed assessment of each parameter has been provided in Appendix-5.</p> <p>The verification team took cognizance of §364 of CDM VVS for project activities, version 02 /B01-1/.</p>

E.6.2. Data and parameters monitored

Means of verification	Document Review, Interview
Findings	CAR 01, CL 03, CL04, CL 05 and CL 06 had been raised in this regard and have been resolved.
Conclusion	<p>The verification team confirms that the data and parameters monitored are in compliance with the registered PDD and the monitoring plan /B04/.</p> <p><u>Assessment of Data information flow:</u></p>

	<p>A random number generator was used to generate random numbers/09/ and the stoves with the same serial number were sampled from population for monitoring.</p> <ol style="list-style-type: none"> 1. The verification team checked the random numbers generated/09/ and verified that the samples selected for monitoring were adhering to the same random numbers in the population. 2. The verification team checked the WBT records and verified that the values mentioned in the ER spread sheet for stove efficiency were consistent with the primary records. 3. The verification team checked the monitoring equipment used for testing and their calibration status to verify that the values monitored using the equipment were reliable. 4. The verification team interviewed personnel involved in stoves efficiency testing and found them competent for conducting WBTs. <p>Thus, it is confirmed that the verification team assessed the data / information flow from the point of monitoring to emission reduction calculation and found no gap in the same.</p> <p>Detailed assessment of each parameter has been provided in Appendix-6.</p> <p>The verification team took cognizance of §360, §361 and §364 of CDM VVS for project activities, version 02/B01-1/.</p>
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E.6.3. Implementation of sampling plan

Means of verification	Document Review, Interview
Findings	CAR 02 and CL 07 had been raised in this regard and have been resolved.
Conclusion	<p>The total population size of the improved cook stoves distributed under this monitoring period is 4,784. The monitoring parameters required to be monitored through the sampling plan are “Number of SAVE80 systems in use per vintage” ($N_{y,i}$) and “Efficiency of the SAVE80 system for each vintage” ($\eta_{new,i}$).</p> <p>For the monitoring parameter “$N_{y,j}$”, sampling was done based on a survey of 100 households and a dropout rate of 6 % was observed in the survey as has been checked from the spot check records and verified during the onsite visit. In accordance with the INQ-04074-EB /13/, the monitoring activity was undertaken along with the verification by the verification team. The verification team was able to survey (verify) all the households visited as part of the monitoring survey (PP’s set of records), thus the acceptance sampling as described in the steps indicated in paragraphs 25–32 of the sampling standard, version 07 /B06/ is not applicable in this case. Verification team based on OSV verification, confirms the correctness of the drop-out rate and thus PP’s set of records has been accepted.</p> <p>Verification team further confirms that the sampling plan and the parameter values are in accordance with the clarification letter provided by UNFCCC secretariat /13/ and the revised monitoring plan provided in revised PDD /B05/. The sample chosen by the PP has been selected at random as confirmed through the random number generator provided by the PP/09/.</p> <p>For the monitoring parameter $\eta_{new,l}$ the water boiling test were conducted and the values determined for 3 stoves. Three different tests have been conducted for 3 different stoves and average value has been used according to the equation provided in the monitoring report. Further an average from the observation of values for previous monitoring periods has also been used. This is in accordance with the registered monitoring plan and the previous monitoring reports /B05/. These values were approved in the presence of the researcher,</p> <p>The verification team checked the water boiling test reports /06/ with records of all</p>

	the sampled stoves for the verification of the stove efficiency of the project stoves. No sampling was required for the verification of the tests of the efficiency conducted.
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E.7. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	Document Review, Interview
Findings	CAR 03 had been raised in this regard and has been resolved.
Conclusion	<p>The monitoring plan does not require any specific monitoring equipment for the monitoring of the monitoring parameters. Calibration was undertaken for thermometer and the weight balance/07/ and was done before conducting water boiling tests. No other calibration of any other equipment was required as per monitoring plan. The appropriate QA/QC procedures have been followed for the monitoring parameters.</p> <p>In summary, the verification team is able to verify that the accuracy of the monitoring equipment was set according to the registered monitoring plan. Furthermore, the verification team confirms all calibration procedures were carried at the frequency as specified by the methodology, monitoring plan of the registered PDD or the approved revised monitoring plan and aligned with the manufacturer specifications. Therefore, accuracy of monitoring equipment's is assured. The verification took cognizance of § 260 (b) of CDM Project Standard for project activities version 2 /B01-2/ and § 368-374 of VVS for project activities (version 02.0) /B01-1/.</p>

E.8. Assessment of data and calculation of emission reductions or net removals

E.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	Document Review, Interview
Findings	There are no findings on this section of the VR.
Conclusion	<p>In line with the requirement of § 372 of CDM VVS for project activities, version 02.0, verification team has reviewed the Monitoring report and ER spread sheet to check the arithmetic calculation of the emission reductions. The equation used for the calculation is compared with those provided in the registered PDD /B05/ and the applied methodology AMS-II.G, version 1 /B02/ and found to be correct.</p> <p>The equations for baseline emissions as provided in the monitoring report /02/ and confirmed with the registered PDD /B05/ and the methodology AMS-II.G, version 01 /B02/ are:</p> $ER_y = B_{y,savings} \cdot f_{NRB,y} \cdot NCV_{biomass} \cdot EF_{projected_fossilfuel}$ <p>Where:</p> <p>ER_y Emission reductions during the year in t CO₂e</p> <p>B_{y,savings} Quantity of biomass that is saved in tonnes</p> <p>f_{NRB,y} Fraction of biomass saved by the project activity in year y that can be established as non-renewable biomass using survey methods</p> <p>NCV_{biomass} Net calorific value of non-renewable biomass that is substituted (IPCC default value for fuel wood 0.015 TJ/tonne, i.e. 15 MJ/kg wood)</p> <p>EF_{projected_fossilfuel} Emission factor for the substitution of non-renewable biomass by similar consumers</p> <p>Calculation of Biomass Savings (B_{y,savings}):</p>

	$B_{y,savings} = \sum_{i=1}^n B_{yadjusted,i} \cdot \left(1 - \frac{\eta_{old}}{\eta_{new,i}}\right)$ $= \sum_{i=1}^n B_{yappliance} \cdot L_y \cdot N_{y,i} \cdot \left(1 - \frac{\eta_{old}}{\eta_{new,i}}\right)$ <p>Where:</p> <p>$B_{y,adjusted,i}$ Adjusted quantity of biomass used in the absence of the (tonnes/year/vintage)</p> <p>$B_{y,appliance}$ Average annual biomass consumption per appliance (remains fixed throughout the crediting period)</p> <p>L_y Leakage Correction Factor (remains fixed throughout period)</p> <p>$N_{y,i}$ Number of appliances operating per year and vintage</p> <p>η_{old} Efficiency of the system being replaced, measured using sampling methods or based on referenced literature va (remains fixed throughout the crediting period)</p> <p>$\eta_{new,i}$ Efficiency of the system</p> <p>Number of appliances operating per year ($N_{y,i}$):</p> $N_{y,i} = \sum_{j=1}^{N_{y,i}} n_{y,i} \cdot t_{y,i}$ <p>Where:</p> <p>$n_{y,j}$ = Appliance operating per year and vintage</p> <p>$t_{y,j}$ = Fraction of operation time per SAVE80 system per vintage (months/months per year).</p> <p>The verification took cognizance of § 372-374 of CDM VVS for project activities, version 02.0) /B01-1/.</p>
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E.8.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	Document Review, Interview
Findings	There are no findings on this section of the VR.
Conclusion	There are no project emissions identified in the monitoring methodology /B02/ or the PDD /B05/.

E.8.3. Calculation of leakage GHG emissions

Means of verification	Document Review, Interview
Findings	There are no findings on this section of the VR.
Conclusion	The leakage correction factor has been accounted for in the equation above biomass savings ($B_{y,savings}$). This is in accordance with the methodology AMS-II.G, version 01 /B02/.

E.8.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	Document Review, Interview
Findings	There are no findings on this section of the VR.
Conclusion	Verification team confirms that all parameters are used correctly in the calculations, all results are verifiable and transparent, all assumptions are described and based

	on verifiable evidence and calculations are done in accordance with the pre-defined formulae from registered PDD /B05/. The total number of Ers achieved during the monitoring period is 12,090 tCO ₂ e.
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E.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	Document Review, Interview
Findings	There are no findings on this section of the VR.
Conclusion	<p>The verification team has compared the actual Ers achieved during this monitoring period with the estimated value for the monitoring period.</p> <p>The ex-ante estimate value of the emission reductions for the monitoring period as per the registered PDD /B05/ is 34,027 tCO₂e and the actual emission reductions achieved for the monitoring period is 12,090 tCO₂e. The actual emission reductions are lower than the estimate of the registered PDD /B05/ for the current monitoring period.</p> <p>The verification team took cognizance of §373 and §374 of CDM VVS for project activities, version 02 /B01-1/.</p>

E.8.6. Remarks on difference from estimated value in registered PDD

Means of verification	Document Review, Interview
Findings	CL 08 had been raised in this regard and has been resolved.
Conclusion	<p>Emission reductions achieved during the current monitoring period are lower than the estimated value in the registered PDD for the corresponding period for which the monitoring has been reported and emission reductions are being claimed (01/07/2017 to 30/06/2018).</p> <p>The monitored value of the ERs per unit of stove is 2.75 tCO₂e/year/02//04/ for the reported monitoring period. The value of ex-ante estimated ERs per stove is 2.72 tCO₂e/year. The value of monitored value is more than ex-ante estimated values due to the higher value of the efficiency monitored during the monitoring period compared to the ex-ante estimations (0.3634 compared to 0.3515).</p> <p>The verification team took cognizance of § 267 of CDM Project Standard for project activities, version 02 /B01-2/.</p>

E.8.7. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Means of verification	Document Review, Interview
Findings	There are no findings on this section of the VR.
Conclusion	<p>CERs achieved up to 31st December 2012 – 0 t CO₂e</p> <p>CERs achieved from 1st January 2013 – 12,090 tCO₂e</p>

E.9. Assessment of reported sustainable development co-benefits

Means of verification	Not Applicable
Findings	There are no findings on this section of the VR.
Conclusion	Not Applicable

E.10. Global stakeholder consultation

Means of verification	Not applicable (this is not first MP)
Findings	There are no findings on this section of the VR.
Conclusion	Not Applicable

SECTION F. Internal quality control

>>

The final verification report has passed a technical review before being submitted to the UNFCCC Executive Board. A technical reviewer qualified in accordance with the CCIPL's qualification scheme for CDM validation and verification performed the technical review.

SECTION G. Verification opinion

>>

Carbon Check (India) Private Ltd. (CC IPL) has performed the eighth periodic verification of the registered CDM Project Activity “Efficient Fuel Wood Stoves for Nigeria” having UNFCCC reference number 2711.

The verification team assigned by the DOE concludes that the project activity as described in the registered PDD (revised) (version 03 dated 18/02/2013) /B05/ and the monitoring report (version 07 dated 04/07/2019) /02/, meets all the relevant requirements of the UNFCCC for CDM project activities including article 12 of the Kyoto Protocol and paragraph 62 of CDM Modalities & Procedures, the modalities and procedures for CDM Executive Board (Marrakesh Accords) and subsequent decisions by the COP/MOP and CDM Executive Board. The verification has been conducted in-line with the CDM VVS for project activities, version 02.0 requirements /B01-1/.

Verification methodology and process

The verification team confirms the contractual relationship signed on 26/06/2018 between the DOE, CC IPL and the Project Participant (atmosfair gGmbH). The team assigned to the verification meets the CC IPL’s internal procedures including the UNFCCC requirements for the team composition and competence. The verification team has conducted a thorough review as per UNFCCC and CC IPL’s procedures and requirements.

The verification has been performed as per the requirements described in the CDM VVS for project activities, version 02.0 /B01-1/ and constitutes the review and completion of the following steps:

1. Reviewing the registered PDD (version 2.1, dated 12/10/2009) and the revised PDD (version 03 dated 18/02/2013) /B04/, including the monitoring plan and the corresponding validation report /B05/;
2. On-site assessment (19/07/2018 to 23/07/2018)
3. Publication of the MR (version 01 dated 07/09/2018) /01/ on the UNFCCC website /B07-1/ on 14/09/2018);
4. Desk review of the validation report /B04/, previous verification reports/B04/, MR /01/ and other relevant documents including documents related to the project activities in emission reductions;
5. Review of the applied monitoring methodology (AMS-II.G version 1) /B02/;
6. Review of any CMP and EB decisions, clarifications and guidance;
7. Resolution of CARs and CLs raised during verification
8. Issuance of Verification Report

The project activity was correctly implemented according to the selected monitoring methodology, monitoring plan and registered PDD /B04/. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the review an on-site visit the verification team confirms that the project activity has resulted in 12,090 tCO₂e emission reductions during the seventh monitoring period.

The break-up of emission reduction up-to 31/12/2012 and 01/01/2013 onwards as verified during the course of verification are as below:

Item	Emission reductions up to 31 December 2012	Emission reductions from 1 January 2013 onwards
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Emission reductions (t CO₂e)	0	12,090
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CC IPL is therefore pleased to issue a positive verification opinion expressed in the attached Certification statement.

SECTION H. Certification statement

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Carbon Check (India) Private Ltd., the DOE, has performed the verification of the registered project activity “Efficient Fuel Wood Stoves for Nigeria” having UNFCCC Registration Number 2711. The project activity is designed to generate emission reductions by distribution of the fuel-efficient cook stoves in Nigeria.

The project participants are responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project. It is DOE’s responsibility to express an independent verification statement on the reported GHG emission reductions from the project. The DOE does not express any opinion on the selected baseline scenario or on the validated and registered PDD/B04/. The verification is carried out in-line with the CDM VVS for project activities requirements/B01-1/.

The verification was performed to identify the compliance of the project activity with the implementation and the monitoring requirements, and to verify the actual amount of achieved emission reductions, through obtaining evidence and information on-site that included i) checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied and ii) the collection of evidence supporting the reported data.

The verification is based on:

- PDD version 2.1 and the corresponding validation report registered with the CDM Executive Board on 12/10/2009 and its monitoring plan /B04/;
- Approved revised PDD version 3, date 18/02/2013 and the corresponding validation opinion; approved by EB on 08/11/2013 /B04/
- Approved monitoring methodology AMS-II.G “Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass”, version 01 /B02/;
- Previous verification reports for the project activity /B04/;
- Monitoring report(s) version(s) 01; 02, 03, 04, 05, 06 and 07, dated 07/09/2018; 12/10/2018, 24/10/2018, 21/12/2018, 28/03/2019, 12/06/2019 and 04/07/2019 respectively.

This statement covers verification period from 01/07/2017 to 30/06/2018 (inclusive of both days).

The DOE had raised 08 clarification requests and 03 corrective action requests, which have been successfully resolved by the PP.

The DOE considers necessary to give reasonable assurance that the reported GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology and the monitoring plan / revised approved monitoring plan contained in the registered PDD/revised approved PDD are fairly stated.

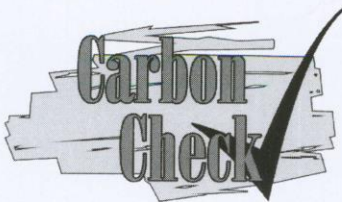
The DOE, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to 12,090 tCO₂e equivalent and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records. The break-up of emission reductions from 01/07/2017 to 30/06/2018 as verified during the course of the verification are as below:

Item	Emission reductions up to 31 December 2012	Emission reductions from 1 January 2013 onwards
Emission reductions (t CO ₂ e)	0	12,090

Appendix 1. Abbreviations

Abbreviations	Full texts
AQL	Acceptable quality level
BE	Baseline Emissions
CA	Corrective Action/ Clarification Action
CER	Certified Emission Reduction
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CDM	Clean Development Mechanism
CH ₄	Methane
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DVR	Draft Verification Report
EB	CDM Executive Board
EF	Emission Factor
FA	Final Approval
FAR	Forward Action Request
FVR	Final Validation Report
GHG	Greenhouse gas(es)
GWh	Giga Watt Hour
GWP	Global Warming Potential
I & R	Information and Reporting
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
MP	Monitoring Period
MR	Monitoring Report
MWh	Mega Watt Hour
OSV	On Site Visit
PE	Project Emissions
PP(s)	Project Participant(s)
PRC	Post registration change
QC/QA	Quality Control/ Quality Assurance
TA	Technical Area
TR	Technical Review
UQL	Unacceptable quality level
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers



Carbon Check (India) Private Ltd.

Anubhav Dimri

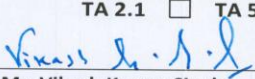
has been qualified as per CCIPL's internal qualification procedures, in accordance with requirements of Accreditation Standard (version 06.0):

For following functions:

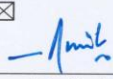
Validator	<input checked="" type="checkbox"/>	Team Leader	<input checked="" type="checkbox"/>	Technical reviewer	<input checked="" type="checkbox"/>
Verifier	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>	Local Expert ¹	<input checked="" type="checkbox"/>

In the following Technical Areas:

TA 1.1	<input checked="" type="checkbox"/>	TA 3.1	<input checked="" type="checkbox"/>	TA 5.2	<input type="checkbox"/>	TA 9.2	<input type="checkbox"/>	TA 13.2	<input type="checkbox"/>
TA 1.2	<input checked="" type="checkbox"/>	TA 4.1	<input type="checkbox"/>	TA 8.1	<input checked="" type="checkbox"/>	TA 10.1	<input type="checkbox"/>	TA 14.1	<input type="checkbox"/>
TA 2.1	<input type="checkbox"/>	TA 5.1	<input type="checkbox"/>	TA 9.1	<input type="checkbox"/>	TA 13.1	<input checked="" type="checkbox"/>		



Mr. Vikash Kumar Singh
Compliance Officer



Mr. Amit Anand
CEO

Date of Approval
24/12/2018

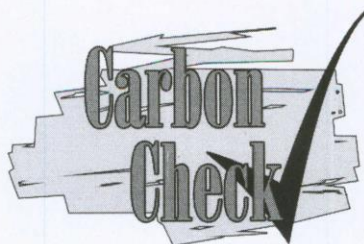
Valid Till
23/12/2019

Revision History of the Document

26/12/2014	Initial Adoption
24/12/2015	Annual Revision
20/01/2016	Interim Revision for office address change
23/12/2016	Annual Revision
24/12/2017	Annual Revision
24/12/2018	Annual Revision

¹ India, South Africa

CARBON CHECK (INDIA) PRIVATE LIMITED
Registered in India: U74930DL2012PTC232495
Regd. Off: 2071/38, 2nd Floor, Naiwala, Karol Bagh, New Delhi - 110005
Corporate off: G 49 & 50, 3rd Floor, Sector - 3, NOIDA (Uttar Pradesh) - 201301
Tel: +91 120 4373114| URL: www.carboncheck.co.in
e-mail: info@carboncheck.co.in



Carbon Check (India) Private Ltd.

Amit Anand

has been qualified as per CCIPL’s internal qualification procedures, in accordance with requirements of Accreditation Standard (version 07.0):

For following functions:

- Validator Team Leader Technical reviewer
 Verifier Technical Expert Local Expert¹

In the following Technical Areas:

- TA 1.1 TA 3.1 TA 5.2 TA 9.2 TA 13.2
 TA 1.2 TA 4.1 TA 8.1 TA 10.1 TA 14.1
 TA 2.1 TA 5.1 TA 9.1 TA 13.1

Mr. Vikash Kumar Singh
Compliance Officer

Date of Approval	Valid Till
24/12/2018	23/12/2019

Revision History of the Document	
26/12/2014	Initial Adoption
24/12/2015	Annual Revision
20/01/2016	Interim Revision for office address change
23/12/2016	Annual Revision
24/12/2017	Annual Revision
24/12/2018	Annual Revision

¹ India, South Africa

CARBON CHECK (INDIA) PRIVATE LIMITED
 Registered in India: U74930DL2012PTC232495
 Regd. Off: 2071/38, 2nd Floor, Naiwala, Karol Bagh, New Delhi - 110005
 Corporate off: G 49 & 50, 3rd Floor, Sector - 3, NOIDA (Uttar Pradesh) - 201301
 Tel: +91 120 4373114| URL: www.carboncheck.co.in
 e-mail: info@carboncheck.co.in

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	atmosfair gGmbH	1. Webhosted Monitoring Report 2. Monitoring Report 3. Monitoring Report 4. Monitoring Report 5. Monitoring Report 6. Monitoring Report	Version 01, 07/09/2018 Version 02, 12/10/2018 Version 03, 24/10/2018 Version 04, 21/12/2018 Version 05, 28/03/2019 Version 06, 12/06/2019	PP
2	atmosfair gGmbH	Final monitoring report	Version 07, 04/07/2019	PP
3	atmosfair gGmbH	1. Emission reduction spreadsheet corresponding to /01-1/ 2. Emission reduction spreadsheet corresponding to /01-2/ 3. Emission reduction spreadsheet corresponding to /01-3/ 4. Emission reduction spreadsheet corresponding to /01-4/	Version 01, 07/09/2018 Version 02, 12/10/2018 Version 03, 24/10/2018 Version 04, 21/12/2018	PP
4	atmosfair gGmbH	Emission reduction spreadsheet corresponding to /02/	Version 05, 28/03/2019	PP
5	atmosfair gGmbH	Sample Carbon Credit waiver forms/ Sales receipts for the stoves	--	PP
6	atmosfair gGmbH	Water Boiling test records 1. Data Entry Forms 2. WBT Calculation Sheets 3. WBT Summary Sheets	--	PP
7	atmosfair gGmbH	Water boiling test equipment manuals / calibration certificates: 1. Weighing Scale 2. Thermocouple	--	PP
8	atmosfair gGmbH	Spot Check user records	--	PP
9	atmosfair gGmbH	Sample Random number generator	--	PP
10	atmosfair gGmbH	Technical specification of the stoves distributed (SAVE80 Factsheet)	--	PP
11	atmosfair gGmbH	Training records	--	PP
12	atmosfair gGmbH	CDM Manual	--	PP
13	atmosfair gGmbH	Clarification letter from UNFCCC (INQ-04074-EB) dated 30/11/2015	INQ-04074-EB	PP
14	atmosfair gGmbH	Stove Sales/Distribution Database	--	PP
15	atmosfair gGmbH	QA/QC requirements – Credentials for Dr. Muktar (including relevant certificates)	NA	PP
16	atmosfair gGmbH	WBT results attestation by third	Dated 23/07/2018	PP

		party researcher		
/B01/	UNFCCC	1. CDM validation and verification standard for project activities, version 02.0 2. CDM project standard for project activities, version 02.0 3. CDM project cycle procedure for project activates, version 02.0	-	Other
/B02/	UNFCCC	Applied baseline and monitoring methodology, AMS-II.G, version 01	-	Other
/B03/	UNFCCC	Monitoring report form and guidelines, version 06.0	-	Other
/B04/	UNFCCC	CDM Project documents: 1. Registered PDD (version 2.1 and dated 08/06/2009) and corresponding validation report. 2. Revised PDD (version 3 and dated 18/02/2013) and corresponding validation opinion on the change in project design and monitoring plan 3. Monitoring reports and corresponding verification reports of previous verifications available on the UNFCCC website.	-	Other
/B05/	UNFCCC	Guideline on the application of Materiality in verifications, version 02	-	Other
/B06/	UNFCCC	Standard: Sampling and surveys for CDM project activities and programme of activities, version 07	-	Other
/B07/	UNFCCC	Weblinks: 1. http://cdm.unfccc.int/ 2. FAO, 2003 report 3. (Project View page)	-	Other

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

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

FAR ID	xx	Section no.	E.2	Date: DD/MM/YYYY
Description of FAR				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				Date: DD/MM/YYYY

Table 2. CL from this verification

CL ID	01	Section no.	E.3	Date: 10/10/2018
Description of CL				
<i>In section B.1 of the MR, it is stated that "Please note: Not all SAVE80 systems sold under this SSC project are yet recorded in the database. Hence in case SAVE80 systems already sold but not yet recorded will be recorded in the database at a later time, deployment figures in the subsequent monitoring reports may slightly vary." Since, the last ICS was deployed in 2014, it needs to be clarified if this statement is relevant for the project activity and no new stoves have been recorded since 2014 in the database.</i>				
Project participant response				Date: 19/10/2018
<i>No new stoves were recorded in the database since 2014.</i>				
Documentation provided by project participant				
DOE assessment				Date: 22/10/2018
<i>PP has clarified that no new stoves were recorded in the database since 2014. However, since the statement in the section B.1 of the MR is inconsistent with the information provided, the statement needs to be corrected accordingly.</i>				
Project participant response				Date: 25/10/2018
<i>PP deleted the sentence.</i>				
Documentation provided by project participant				
<i>Nigeria SSC 2711_MR_MP8_v03</i>				
DOE assessment				Date: 27/10/2018
<i>PP has deleted the redundant sentence from the section B.1 of the MR and has clarified that no new stoves were recorded in the database since 2014.</i>				

CL ID	02	Section no.	E.6.1	Date: 10/10/2018
Description of CL				
<i>The value of the parameter $EF_{\text{projected fossil fuel}}$ is different in the section D.1 of the MR from the registered PDD.</i>				
Project participant response				Date: 19/10/2018
<i>In the registered PDD the value is wrong stated. The IPCC default value for Kerosene is 71.5 t CO₂/TJ as stated correctly in the MR.</i>				
Documentation provided by project participant				
DOE assessment				Date: 22/10/2018
<i>PP has clarified that the value is incorrect in the registered PDD and it is due to the misplacement of decimal in the registered PDD. The value has been checked with the para 6 of the applied methodology and is found correct for the replacement fuel, Kerosene (IPCC default value).</i>				

CL ID	03	Section no.	E.6.2	Date: 10/10/2018
Description of CL				
<i>Interview Date and Name of Interviewer is not provided for all the sampled households in the Inspection Database workbook of the ER sheet.</i>				
Project participant response				Date: 19/10/2018
<i>PP corrected it accordingly in the inspection database. Interview Date and name of Interviewer were stated on the questionnaires.</i>				
Documentation provided by project participant				
<i>ER calculation spreadsheet_SSC_2711_MP8_v02; Questionnaires</i>				
DOE assessment				Date: 22/10/2018
<i>The inspection database has been updated and provides interview dates and name of interviewer for the households where the sample survey was conducted. For stove number 3722, the interview date has been stated as 04/07/2011, which is much earlier than the monitoring period. The questionnaire form also states the same date. It needs to be clarified how this household is considered during the monitoring period.</i>				
Project participant response				Date: 25/10/2018
<i>This is a spelling mistake on the questionnaire. PP changed the interview date within the inspection data base.</i>				
Documentation provided by project participant				
<i>ER calculation spreadsheet_SSC_2711_MP8_v03</i>				
DOE assessment				Date: 28/10/2018
<i>PP has clarified that it was a mistake in the questionnaire on the date and it go transferred to the ER sheet as well. The questionnaire and the inspection database has been corrected with the date.</i>				

CL ID	04	Section no.	E.6.2	Date: 10/10/2018
Description of CL				
For some of the households reported in the Inspection Database in column O, for Save 80 Intact a response of no is received and still in column P the Save 80 in use has been marked as yes (row 10, 56, 57, 63). For some of the households reported in the Inspection Database in column F, the phone number has been marked as 0 and still in column N, the type of contact has been marked as telephone (row 14, 27, 34, 39, 40, 42).				
Project participant response				Date: 19/10/2018
In this cases the stove damages were not functional relevant, so that the stoves can be still used. PP corrected it accordingly in the inspection database. Telephone numbers were stated on the questionnaires. In two cases the telephone numbers were not stated. In this cases another stove user know the end-user and help with the number and then a call was initiated during the on site visit.				
Documentation provided by project participant				
ER calculation spreadsheet_SSC_2711_MP8_v02; Questionnaires				
DOE assessment				Date: 22/10/2018
PP has clarified that in case of the stove damage, other question on "not functional"/Save 80 in use response was considered and determined that the stoves can be still used. However, in case of the damaged stove even if the stoves are functional, might not perform with the required efficiency or functionality as proposed in the project design. PP needs to clarify how the efficiency and functionality level of the damaged stoves has been used to determine the emission reductions from such stoves. PP has clarified that for some of the cases the telephone numbers from the households were not copied from the questionnaires to the inspection database workbook. For the remaining, 2 cases the telephone numbers were not stated. In this cases another stove user know the end-user and help with the number and then a call was initiated during the on site visit. PP shall state the contact number used to contact such households and in remarks or additional row of the inspection database explain the same.				
Project participant response				Date: 25/10/2018
The monitoring team reported that the damages of the stoves were not relevant for the stove efficiency. Those 2 stoves (ID 1351, 1421) without telephone number are in Makarfi. There the monitoring team had difficulties accessing the end-user. Jarma Ayuba Lawal insisted that he is the sub-distributor and that the monitoring team can only get access to the end user through him. Such Jarma Ayuba Lawal called the end user and the monitoring team was next to him to ask the questions from the questionnaire. This is the same for other stoves in Makarfi. PP included the telephone number from Jarma Ayuba Lawal and the explanation in the inspection list.				
Documentation provided by project participant				
ER calculation spreadsheet_SSC_2711_MP8_v03				
DOE assessment				Date: 28/10/2018
PP has clarified that the damaged stoves were not relevant for the stove efficiency. PP shall explain the level of damage to the stove and shall explain and justify that the damage has any impact on the functionality and efficiency of the stoves. For the 2 stoves without telephone numbers, PP has clarified that the households were accessed through the sub-distributor. Since, the interviews were conducted with the households, it is acceptable to the verification team.				
Project participant response				Date: 29/10/2018
Stove 1770 and 1767, stove handle damage, not relating to stove efficiency Stove 334 was mishandled by the stove user, so that two of its bolts are out, which affect the stove balance a little but the functionality and efficiency is not impacted.				
Documentation provided by project participant				
DOE assessment				Date: 30/10/2018
PP has clarified that for stoves with stove ID 1770 and 1767, it was a stove handle damage and for stove 334, the balance of the stove was not fine. The functionality and the efficiency of the stoves is not impacted.				
CL ID	05	Section no.	E.6.2	Date: 28/03/2019
Description of CL				
It has been observed that the dropout rate for MP 8 (6%) is lower that of MP 7 (11%), MP 6 (13.33%), and MP 5 (19.23%). PP shall explain the reason for this decrease in drop out rate considering the fact that no new stoves have been implemented in the project since June 2015.				
Project participant response				Date: 28/03/2019

That the drop-out rate decreases over the last monitoring periods can be explained by changes in fuel use patterns of households from MP6 to MP8: Households restart to use the stove because of supply shortage or price increase for alternative fuels (e.g. gas, see <https://www.vanguardngr.com/2017/05/price-cooking-gas-rises-100-one-year/> for current fluctuations). Since Save80 is an industrial product that does not deteriorate over time it is not expected that stove usage is permanently ceased because of e.g. irreparable damage. Therefore, we do not expect decrease of usage rates due to the stove itself. Furthermore, the variation is still not far outside the limits of the standard error and may hence also be impacted of the pure chance of random selected samples.

- Dropout rate MP6: 13.33%, Standard error: 3.28%. Therefore, range of mean value: 10.05% - 16.62%.
- Dropout rate MP7: 11.00%, Standard error: 3.10%. Therefore, range of mean value: 7.90% - 14.10%
- Dropout rate MP8: 6%, Standard error: 2.35%. Therefore, range of mean value: 3.65% - 8.35%

Since standard error is always added to the mean value, it is ensured that for each monitoring period the conservative value is applied.

Documentation provided by project participant

Nigeria SSC 2711_MR_MP8_v05

DOE assessment **Date:** 22/10/2018

PP has clarified the justification for decrease in the dropout rate for the monitoring period. Based on the reference provided for increase in prices for cooking gas fuel and increased usage of fuelwood stoves and the justification provided with respect to the standard error the justification is found acceptable to the verification team. CL is closed.

CL ID	06	Section no.	E.6.2	Date: 29/01/2019
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Description of CL

1. *The monitoring database has multiple stove numbers referenced to more than one user in the Column C of the 'Sampling database MP 7 workbook' of the 'Sampling database MP 8' spreadsheet. As the baseline survey conducted ex-ante (provided in the section B.4 of the PDD) uses estimates based on per household consumption, it needs to be clarified how the ERs from the households where more than one stove have been distributed have been adjusted for the baseline survey conducted.*
2. *The reason for not contacting the households during the survey has not been provided in the inspection database workbook of the ER spreadsheet.*
3. *All the rows in the inspection database workbook of the ER spreadsheet are not unhidden.*

Project participant response **Date:** 08/02/2019

1. *CME can't find any stove ID referenced to more than one user. In some cases, one person bought more than one stove, as one for himself and the rest for relatives or neighbours. This is quite usual in Nigeria e.g one man buys the stove for its different wife's and families. During the stove purchase process, it was clarified that the stoves are not bought for the same household. In some cases a whole center is buying more than one stove as they have as many eaters than several households. During the monitoring the inspector is asking if the stove is in use.*
2. *CME included the reason in the inspection database*
3. *None of the rows are hidden. CME don't understand the CL*

Documentation provided by project participant

DOE assessment	Date: 05/03/2019
<ol style="list-style-type: none"> 1. CME has clarified that the same stove ID has not been referenced to more than one user. It is also clarified that there are cases where one person has bought more than one stove, as one for himself and the rest for relatives or neighbours. It needs to be clarified how the PP managed to interview such households during the random sampling for interviews/ efficiency testing in case multiple stoves with same user name are selected. CL06.1 remains open. 2. PP has provided the reason for not contacting the households in the inspection database workbook of the ER spreadsheet. The reason for not contacting a particular household has been provided as "Person couldn't be reached by phone". It needs to be clarified if any other attempts were made to reach to the households where they could not be contacted by phone. CL06.2 remains open. 3. The rows are visible in the ER sheet. CL06.3 is closed. 	
Project participant response	Date: 07/03/2019
<ol style="list-style-type: none"> 1. PP will contact the user stated in the database and the user will forward us to the other stove users supplied by him. Based on the stove id at the stove we can assure to monitor the correct stove. 2. PP followed the contingency measures for the monitoring as approved by the EB (INQ-04074-EB) and contacted the households for the monitoring interviews by phone. The security situation within Nigeria made it not possible to visit the households that couldn't be reached by phone. Any option than trying to reach the households by phone was not feasible. 	
Documentation provided by project participant	
DOE assessment	Date: 11/03/2019
<ol style="list-style-type: none"> 1. PP has clarified that in case of more than one stove attributed to a single user, the user in the database is contacted by the PP and then in directed to the actual stove user. This is acceptable to the verification team. 2. PP has clarified that due to the security situation in Nigeria and the contingency measures for the monitoring approved by the EB (INQ-04074-EB), PP visited only those households which were reachable by phone. This is acceptable to the verification team. 	

CL ID	07	Section no.	E.6.3	Date: 28/03/2019
Description of CL				
<p>In the referred section of the MR it is stated that "Simple random Sampling was applied in accordance with the registered PDD."</p> <p>However, the revised and approved PDD doesn't propose a sampling plan.</p>				
Project participant response				Date: 28/03/2019
<p><i>The sample was drawn as described in the PDD: B.7.2 Description of the monitoring plan and in the MR.. PP explained in D3 of the MR the process:</i></p> <p>"Please note that at time the project activity was registered (12/10/2009), the sampling standard (EB 65 Annex 2) was not yet adopted, neither were the sampling guidelines (EB 69 Annex 5). Therefore, the monitoring plan of the registered PDD does not contain a sampling plan.</p> <p>Nonetheless, since data and parameters monitored which are described in section D.2 above are determined by a sampling approach, a description is provided on how the sampling efforts and surveys for those data and parameters were implemented."</p> <p><i>In the MR it is stated "Simple Random Sampling Plan in accordance with the registered PDD" which means that is a valid approach under the PDD. And the approach described in the PDD is in line with the Simple Random Sampling Plan and is the one we used for the monitoring.</i></p>				
Documentation provided by project participant				
Nigeria SSC 2711_MR_MP8_v05				
DOE assessment				Date: 01/04/2019
<p>PP has clarified that simple random sampling approach has been used for the sampling of the monitoring parameters. PP has further clarified that the statement in the section D.3 of the PDD refers to the approach described in the PDD being in line with the representative Sampling approach identified in the registered/revised approved PDD.</p>				

CL ID	08	Section no.	E.8.6	Date:	10/10/2018	
Description of CL						
<i>The value of emission reductions per unit stove is not provided and compared with the estimated ex-ante per unit emission reductions in the section E.6 of the MR in accordance with the para 268 of the PS for Project activities, version 01 and para 309 (a) of the VVS for Project activities, version 01.</i>						
Project participant response					Date:	19/10/2018
<i>The ex-ante calculation per unit stove was with 2.72 tCO₂ slightly lower than within the result during this monitoring period. Where the emission reduction per stove were 2.75 tCO₂. PP included it in the MR report.</i>						
Documentation provided by project participant						
<i>Nigeria SSC 2711_MR_MP8_v02</i>						
DOE assessment					Date:	22/10/2018
<i>PP has clarified that the actual emission reductions per stove are higher than the ex-ante estimates. The reason for such increase is not provided in the section E.6 of the MR.</i>						
Project participant response					Date:	25/10/2018
<i>This is caused by the slightly higher monitored efficiency. PP included explanation in the MR.</i>						
Documentation provided by project participant						
<i>Nigeria SSC 2711_MR_MP8_v03</i>						
DOE assessment					Date:	28/10/2018
<i>PP has clarified that the higher per unit stove compared to the ex-ante estimations is due to higher value of the monitored efficiency during the monitoring period.</i>						

Table 3. CAR from this verification

CAR ID	01	Section no.	E.6.2	Date:	10/10/2018	
Description of CAR						
<i>The value of efficiency for vintage i=9 and vintage i=2 in the monitoring parameter $\eta_{new,i}$ does not match with the values as reported in the previous monitoring report.</i>						
Project participant response					Date:	12/10/2018
<i>PP corrected the values in the ER calculation and in the monitoring report.</i>						
Documentation provided by project participant						
<i>ER calculation spreadsheet_SSC_2711_MP8_v02; Nigeria SSC 2711_MR_MP8_v02</i>						
DOE assessment					Date:	22/10/2018
<i>PP has corrected the values for the efficiency for the mentioned vintages in the ER sheet and the monitoring report. However, the total ERs have marginally increased and the value of the ERs reported in the ER sheet do not match with the total ERs reported in the MR.</i>						
Project participant response					Date:	25/10/2018
<i>No it is the same amount of 13,572 t CO₂. The figure in the ER calculation was rounded up. PP corrected it.</i>						
Documentation provided by project participant						
<i>ER calculation spreadsheet_SSC_2711_MP8_v03</i>						
DOE assessment					Date:	28/10/2018
<i>The value of the emission reductions have been rounded down by the PP and the total emission reductions remains the same.</i>						

CAR ID	02	Section no.	E.6.3	Date:	10/10/2018	
Description of CAR						
<i>In section D.3 of the MR, it is stated that the cut-off date is 20/06/2018. It needs to be clarified, how the sample thus obtained is appropriate as the end date of the monitoring period is 30/06/2018.</i>						
Project participant response					Date:	12/10/2018
<i>No new stoves were distributed within the monitoring period and such no changes on the stove database has been done. Such we draw the sample already short before the end of the monitoring period, so that our local staff could prepare the monitoring. So that we were able to start the monitoring directly after end of the monitoring period.</i>						
Documentation provided by project participant						
DOE assessment					Date:	22/10/2018
<i>PP has clarified that since no new stoves were distributed from the cut-off date to the end date of the monitoring period the sample drawn is appropriate and includes the appropriate population of all the stoves for the samples drawn. This is deemed acceptable as the sample covers all the stoves that claim the emission reductions during the monitoring period without any bias.</i>						

CAR ID	03	Section no.	E.7	Date: 10/10/2018
Description of CAR				
<p><i>In section D.3 of the MR, the accuracy class for the thermocouple used for monitoring of WBT is not provided. The applicable calibration certificates for the monitoring equipment are not provided. Also, the abilities, qualifications and recognition of involved personnel and the experienced researcher for WBT are not provided.</i></p>				
Project participant response				Date: 12/10/2018
<p><i>Test protocol and documentation about WBT personal provided. Accuracy class +/-0.03°C included in the monitoring report under D2.</i></p>				
Documentation provided by project participant				
<p><i>Nigeria SSC 2711_MR_MP8_v02; Calibration Certificate</i></p>				
DOE assessment				Date: DD/MM/YYYY
<p>The accuracy class for the thermocouple used for monitoring of WBT has been provided. The calibration certificates for the monitoring equipment have been provided to the verification team. However, the abilities, qualifications and recognition of involved personnel and the experienced researcher for WBT are not provided.</p>				
Project participant response				Date: 25/10/2018
<p>PP provided the WBT tester certificates. Those are the same as for the Nigeria PoA 5067 as both projects have been monitored by the same team.</p>				
Documentation provided by project participant				
<p>WBT Preparation form and WBT Certificates</p>				
DOE assessment				Date: 28/10/2018
<p>PP has clarified that the WBT tester certificates are same for the ones provided for PoA 5067 as both projects have been monitored by the same team.</p>				

Table 4. FAR from this verification

FAR ID	xx	Section No.		Date: DD/MM/YYYY
Description of FAR				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				Date: DD/MM/YYYY

Appendix 5. Data and parameters fixed ex ante

Data/Parameter	$B_{\text{appliance}}$ - Quantity of Biomass used in the absence of the project activity (per appliance)
Default values used:	4.6534
Purpose of data	Calculation of baseline emissions
Source and Verification of the source	Baseline survey. The value has been determined in the PDD/B04/ through household baseline surveys.

Data/Parameter	L_y - Leakage Correction Factor
Default values used:	0.99
Purpose of data	Calculation of baseline emissions
Source and Verification of the source	Derived from leakage assessment. The value has been assessed in the PDD /B04/.

Data/Parameter	η_{old} - Efficiency of the system being replaced
Default values used:	0.1
Purpose of data	Calculation of baseline emissions
Source and Verification of the source	The value has been determined through water boiling test experiments. The value has been assessed in the PDD /B04/.

Data/Parameter	$f_{\text{NRB}, y}$ - Fraction of non-renewable biomass saved by the project activity
Default values used:	0.77
Purpose of data	Calculation of baseline emissions
Source and Verification of the source	The value has been taken from FAO (2003) report /B07-2/. The value has been assessed in the PDD /B04/.

Data/Parameter	$\text{NCV}_{\text{biomass}}$ - Net calorific value of non-renewable biomass that is substituted
Default values used:	0.015 TJ/tonne
Purpose of data	Calculation of baseline emissions
Source and Verification of the source	IPCC default value. The value is default IPCC value as provided in the methodology /B02/.

Data/Parameter	$\text{EF}_{\text{projected fossil fuel}}$ - Emission factor for the substitution of non-renewable biomass by similar consumers
Default values used:	71.5 tCO ₂ /TJ
Purpose of data	Calculation of baseline emissions
Source and Verification of the source	IPCC default value. The value has been determined based on the default IPCC value for kerosene and the household survey conducted.

Appendix 6. Data and parameters monitored

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of PDD):	Number of SAVE80 systems in use per vintage ($N_{y,i}$)
Measuring frequency/Time Interval:	Continuous recording
Reporting frequency:	Spot Checks: Annually
Reported value:	4,384.54
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	The data is recorded in the electronic database
Is accuracy of the monitoring equipment as stated in the PDD? If the PDD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of the PDD? If the PDD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA
Company performing the calibration (internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	The reported data has been cross-checked against spot check user records/08/ and compared with the MR /02/ and the ER sheet /04/. The reported value has also been compared with the value reported in the previous monitoring period (MP7) – 4,612.85 and it is determined that the value of the parameter has increased due to the increase in drop-out rate. The value used is less than the ex-ante estimations, that is 12,500/B04/.
How were the values in the monitoring report verified?	The reported data has been cross-checked against spot check user records/08/ and compared with the MR /02/ and the ER sheet /04/. The data was then verified against the sample households checked during the site visit.
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA. Full data is available for the monitoring period.

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
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Data / Parameter: (as in monitoring plan of PDD):	$t_{y,j}$ – Operation time per SAVE80 system per vintage (months of the Monitoring Period/months per year).
Measuring frequency/Time Interval:	The measuring and reporting frequency is consistent with the registered PDD /B04/ and the previous monitoring reports /B04/.
Reporting frequency:	The measuring and reporting frequency is consistent with the registered PDD and the previous monitoring reports.
Reported value:	$t_{y,j} = 1$ for all deployed systems in vintage 1-9
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	The measuring and reporting frequency is consistent with the registered PDD/B04/ and the previous monitoring reports/B04/.
Details of monitoring equipment:	NA
Is accuracy of the monitoring equipment as stated in the PDD? If the PDD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of the PDD? If the PDD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	NA
Company performing the calibration (internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	The data has been cross-checked with the ER sheet /02/ and the MR /04/. The values provided are consistent. The reported value has been compared with the previous monitoring period (MP7) and the same value of $t_{y,j} = 1$ is reported for the previous monitoring period. Since, no new stoves were distributed during the monitoring period thus the values are acceptable to the verification team. The ex-ante estimations also used a value of 1/B04/ for the parameter.
How were the values in the monitoring report verified?	The project monitoring database /04/ was checked to confirm the values.
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA. The data has been monitored in accordance with the registered monitoring plan.

Monitoring Parameter Requirement	Assessment/ Observation by the DOE
Data / Parameter: (as in monitoring plan of PDD):	$\eta_{new,i}$ Efficiency of the SAVE80 system for each vintage
Measuring frequency/Time Interval:	Annually
Reporting frequency:	Annually

Reported value:	36.34 % (weighted average for MP8)
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	KD 8000 Weighing scale /07/ Greisinger Präzisionsthermometer GMH 3710 Thermocouple /07/
Is accuracy of the monitoring equipment as stated in the PDD? If the PDD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	NA. The accuracy of weighing scale is +/- 1 g /07/ and of the thermocouple is +/-0.03°C /07/.
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	The calibration has been done at an annual frequency.
Is the calibration interval in line with the monitoring plan of the PDD? If the PDD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	The calibration frequency is not provided in the registered/revised approved PDD/B04/ and the applied methodology AMS-II.G, version 01/B04/.
Company performing the calibration (internal or external calibration):	Ecolabs Nigeria Ltd./07/
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes, the calibration confirms proper functioning of monitoring equipment.
Is (are) calibration(s) valid for the whole reporting period?	Yes, the calibration confirms proper functioning of monitoring equipment.
If applicable, has the reported data been cross-checked with other available data?	The reported data has been cross-checked with the WBT test records, ER sheet and MR. The reported value has also been cross-checked with the value in the previous verification (MP7) and the reported value 36.34 % is less than the value for the previous monitoring period 36.97%. The value reported has been compared with ex-ante value which, is 35.15% and was found to be comparatively higher. This has resulted in the increase in the reported emission reductions (MP8) compared to the ex-ante estimates/B04/.
How were the values in the monitoring report verified?	The value for the reported data was verified against the WBT test records.
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The tests were conducted under the supervision of a third-party researcher, Dr. Namadi Muktar/16/. The test reports have been certified by the third-party researcher. Dr. Namadi Muktar has a Ph.D. in Chemistry and has experience in conducting WBT tests. He is a director of a laboratory in Nigeria thus his credentials are deemed sufficient to have necessary QA/QC processes in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA. The data has been monitored in accordance with the registered monitoring plan.

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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"> • Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN); • Make structural and editorial improvements.
02.1	11 January 2018	Editorial revision to correct the numbering of appendices in the instructions.
02.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23 March 2015	Initial publication.

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